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Fact Sheet

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This research was sponsored by the New York Sea Grant Institute and Maine/New Hampshire Sea Grant under grants (NA81AAD00027 and NA81AAD00035 respectively) from the Office of Sea Grant, National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce.

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ABSTRACT

Problems related to marketing are currently seen by many fishing industry analysts as a primary matter of concern to the small-scale fisherman. The formation of cooperatives has been an increasingly popular response to difficulties experienced in the marketplace. In Maine and New Hampshire a ten-fold expansion in the numbers of fishery cooperatives has been observed over the past decade.

Fishery marketing cooperatives in the study area of Maine and New Hampshire have experienced substantial variability in success rates from one organization to the next. The following study is an evaluation of the success of these cooperatives and an identification of fundamental reasons for the differential rates of effectiveness in improving members' returns net of marketing costs.

Most information was collected through informal on-site interviews with cooperative managers and members during the summer and fall of 1981. Secondary sources of specific relevance were limited as little analysis to date had been devoted to the roles of cooperatives in the marketing of fish and shellfish.

Through preliminary analysis significant differences in net returns to member fishermen were demonstrated. Conclusions showed that variations in net prices for lobster were greater than for groundfish due to differences in marketing systems and the wider range of alternatives available to the managers of the predominantly lobster cooperatives.

The two most important explanatory factors subsequently identified in the analysis of differential rates of economic effectiveness were the competence of management and levels of conflict extant within the cooperative. The acquisition and retention of an effective manager and the role of the manager in reducing conflict levels were established as preconditions, but not as guarantees, of economic success. It was further concluded that at the time of the study such preconditions did not exist at most of the cooperatives surveyed. An increased awareness by the board of directors of the importance of the manager and knowledge of procedures required to identify and retain competent managers are key needs of the cooperatives studied.

Fishery Marketing Cooperatives in Northern New England

INTRODUCTION

The purpose of this study is to document the functions and analyze the roles of fishery marketing cooperatives in the small-scale domestic fishing industry, using cooperatives in Maine and New Hampshire as case studies. Problems related to marketing are currently seen by many industry analysts as a principal concern of the domestic fisheries. One means of reducing the adverse effects of market-related problems that have been increasing in recent years is joint action in the form of marketing cooperatives. This alternative has been particularly attractive to small-scale producers who lack sufficient individual volumes to achieve size economies in many marketing activities. The attractiveness of the cooperative concept can be partially gauged by the ten-fold increase in the number of fishery cooperatives in Maine and New Hampshire during the past decade.

Field observations suggest that the success rate of fishery marketing cooperatives varies substantially from one organization to the next. Some cooperatives have grown in membership and in the number of functions performed, while for others, survival is questionable. Despite the continuing seriousness of the marketing problems facing many fishermen and the potential benefits of cooperative marketing operations, relatively little analysis has been devoted to documenting and evaluating the operations of existing cooperatives in the study area and in identifying the reasons for the relative success or failure of these enterprises. The current study is an initial attempt to address these issues.

Why Cooperatives?

The roles or combinations of roles of fishery marketing cooperatives in enhancing the welfare of members may be grouped into three broad functional areas: 1) achieving savings through improved operating practices, particularly those requiring larger volumes; 2) increasing prices through the use of new marketing channels or through the improvement of products by use of higher quality standards; and 3) exerting increased bargaining power with buyers and suppliers. Since each of these activities involve costs, the relative economic success of a cooperative should be measured by its effect on returns to fishermen net of all marketing costs.

The basis of concern by northern New England fishermen regarding their economic situation is evident from landings and price statistics. Based on data collected from field interviews, the incomes of area

fishermen from the sale of marine products net of direct costs were estimated to range from $4,300 to $14,800 in 1981. If part-time fishermen are excluded from this range, the approximate average net member income that year was $11,000. Typically, lobster fishermen had incomes slightly lower than this average, while ground-fish fishermen had somewhat higher incomes. Continued depressed ex-vessel prices over the past several years have meant that these low-level incomes probably have not changed significantly.

While the functions of the cooperatives studied were predominantly economic in nature, these organizations can also provide benefits which are best described as social. Examples of such benefits would be increased community solidarity, improved social interaction, and the provision of a forum for political action. This last activity may have been significant in the decision to form several of the cooperatives in northern New England as their establishment dates to the early 1970s--the critical period leading up to the passage of the Fisheries Management and Conservation Act of 1976. That act, commonly known as the 200-mile limit law, limits fishing by foreign flag vessels over a much enlarged portion of the continental shelf off the U.S. At the time of its passage, it was widely seen as the salvation of the domestic fishing industry, an expectation which proved overstated. Because of the difficulty in measuring these relatively less tangible benefits which fishermen and their communities may derive from cooperatives, the principal focus of this study is on marketing issues. Nevertheless, the importance of potential social benefits resulting from the existence of cooperatives should not be discounted.

Why the Study?

The specfic objectives of this study are three-fold: 1) to document and describe the activities of existing fishery marketing cooperatives in Maine and New Hampshire, 2) to evaluate the accomplishments of the study cooperatives in increasing returns to fishermen net of marketing costs, and 3) to make a preliminary determination of the base causes of differences in the apparent economic success of the area cooperatives. Although the results are specific to the northern New England area, the marketing problems facing small-scale fishermen are generally common along much of our coastline so that insights gained in one area may be useful in other regions as well. However, due to of the limited amount of previous research directed towards domestic fishery cooperatives in general, or towards the ones in the study in particular, the results of this study cannot be substantiated with prior analysis. Thus, the conclusions should be viewed as tentative.

DATA SOURCES AND METHODOLOGY

Secondary data from the study area are limited to figures on landings and average ex-vessel prices (e.g., receipts), Boston auction prices, and license information (National Marine Fisheries Service, Maine Department of Marine Resources). The landings, and particularly ex-vessel price data, are used cautiously since many of the area fishermen and dealers who supplied the information emphasized that their filings were only reliable for measuring general trends. Hence, much of the data for this analysis was collected from personal interviews. In total, 17 cooperatives in the region-all those in the region but the two at the northern-most point of Maine-were surveyed.

Data were collected using personal interviews during the summer and fall of 1981. All managers were interviewed, and typically records, membership, and coop by-laws were made available for review. All skippers at the smaller cooperatives (e.g., 15 boats or fewer) were interviewed, and about one-third at the remainder. Selected crew members on both coop and non-coop boats were also chosen to be interviewed in order to reflect different perspectives on the activities of the cooperatives and the relationships among members.

The direct economic benefits of area lobster marketing cooperatives are estimated using a combination of cross-sectional price comparisons and impressions of coop members concerning relative price movements since the establishment of the cooperatives or since their joining. Prices are adjusted to reflect patronage dividends, a common occurrence among both cooperatives and proprietors' firms handling lobsters. The economic benefits to the members of the four groundfish marketing cooperatives are more difficult to assess as the Boston fish auction prices in effect establish prices throughout much of the region. In addition, quality gradations are more relevant for fish than for lobster. Under such circumstances, there is little price variability which can be directly attributed to the existence of a coop. As an alternative, cooperative benefits are measurable primarily as reductions in handling costs charged to the producer or as quality improvements.

Beyond the direct measure of economic benefits, the success of cooperatives can be inferred in part from membership changes and the need to include sales by-laws requiring members to sell a majority (typically 50-100%) of their catch through the coop. Members were also asked to rank their trust in their manager and to assess the conflict level among members and between members and the manager. Correlation analysis is used to determine the relationships between the economic rank of a cooperative (a ranking of the direct economic benefits) and its characteristics including membership changes, conflict levels, and demographics of the manager (age, education, etc.). These results give some insights into the institutional factors explaining the relative success of some cooperatives over others.

DESCRIPTION OF THE STUDY AREA

The study area encompasses the Gulf of Maine, bounded on the south by Cape Cod and on the north by Nova Scotia. The bottom and coastline are both rough, jagged and fissured; the two hundred miles of lateral coastline cover over three thousand miles if all of the indentures are measured.

Only an estimated 4,500 to 5,000 full-time fishermen fished the Maine waters in 1980, although over 10,000 licenses were issued (Maine DMR). No data on numbers of fishermen were available from New Hampshire, but the rather limited extent of the coastline reflects a much smaller effort. Estimates place the numbers at fifty full-time fishermen and 125 fulltime lobstermen.

While the marine resource is diverse, a few species dominate the commercial catch. The major one is lobster, accounting for over fifty percent of the total value in Maine. Major groundfish are ocean perch and cod, followed by pollock, haddock and dab. Ocean scallops have become a more important product in recent years (Maine DMR). Overall, landings in Maine and New Hampshire represented approximately one-third of the New England total in 1980, but only four percent of the national total (NMFS).

Virtually all fishing is carried out independently in day-trip vessels. Lobster boats are generally quite small, i.e., in the 25-foot range. Even trawlers are typically only 35-40 feet long, making them only moderate in size by regional standards.

MARKETING SYSTEMS

The vast majority of fish and lobster landed in Maine and New Hampshire is marketed in the northeastern United States. Sales are for the most part in the form of fresh fish or live lobster, as processing and freezing facilities in the area are limited and fresh products have greater market value. An important change in the regional industry during the past few years has been the increased feasibility of shipping fresh fish and live lobster to more distant markets.

Except for groundfish shipped to Boston and sold through the regional auction, fish and lobster are most commonly sold by individual bargaining between fishermen and intermediary dealers. Sales are typically made by fishermen to a single dealer who often offers the only marketing option at specific times or locations.

The majority of smaller-scale draggers and gillnetters sell to local "truckers" who ship fish into Boston. Little processing takes place in Maine or New Hampshire, although a few relatively small cutting houses do exist. The truckers act as brokers for the fishermen, remitting the Boston board price for catch less trucking fees, a fixed percentage for marketing services, and varying amounts for shrinkage. Considerable opportunity for abuses exist within this system as fishermen assume the risks of losses due to poor handling and to dishonesty at a number of levels. Market control by one or as a few buyers within certain locales may also exist since there is little apparent competition among truckers to provide such services.

Lobster are generally sold to local wholesale dealers who pay an ex-vessel price based on the dealer's contacts with the wholesale and retail markets. These contacts may be with local retail businesses and restaurants or with wholesale markets in Boston, New York, or New Jersey. The local wholesale dealers are most commonly the owners of "wharves"; they also provide essential services to lobstermen, such as the sale of fuel and bait and the provision of space for gear storage and repairs. These services tend to tie a lobsterman to a specific wharf, and shifting from one wharf to another is often difficult due to local custom and to the controlled nature of interactions among wharf owners. The result is that potential for buyers to set prices between the competitive level is not uncommon. It is not unusual in a number of situations for dealers to discipline lobstermen who display an unwelcome degree of independence in selling their catch. Nevertheless, the traditional wharf system has the offsetting advantage of providing services to lobstermen and, in some cases, guaranteeing a steady market.

DESCRIPTION OF THE STUDY COOPERATIVES

A significant feature of the regional cooperatives is their newness; fifteen of the seventeen were founded in the 1970s. Some are quite small with but twelve vessels, while others have up to 70 (see Table 1). Vessel numbers are a more accurate basis by which to compare various coops, as membership policies widely differ, especially regarding crew members. Some coops admit crews as they are paid on shares or lays and hence share in the risks of fishing, while other coops only allow owners/skippers as members.

Most cooperatives are dominated by the sale of lobster, both in terms of volume and gross sales. The largest, Stonington, for example, had estimated 1981 dock values of $1.6 M for lobster and $.9 M for fish, even though the volume of fish handled was 3.5 times that of lobster.

A third significant characteristic of these cooperatives is their degree of isolation. Taking Boston as a regional focal point, highway

Table 1: Selected Characteristics of Study Cooperatives, Summer-Fall 1981

Cooperative	Year Founded	Number of Members	Size of Board of Directors	Number of Boats	Size Range of Boats	Types of Boats
Beals-Jonesport	1970	60	10	50	18'-40'	Lobster, Scallop
Boothbay Harbor	1971	17	5	14	28-42	Lobster, Dragger
Bucks Harbor	1976	18	5	40	16-38	Lobster
Casco Bay	1974	37	6	12	60-80	Dragger
Corea	1970	44	9	44	15-38	Lobster, Scallop
Cranberry Isles	1978	22	5	22-25	32-40	Lobster, Dragger, Scallop
New Harbor	1972	55	9	25	16-50	Lobster, Dragger
Pemaquid	1948	45	9	30	14-40	Lobster
Pine Point	1975	10	4	12	32-46	Lobster
Port Clyde	1972	35	11	35	16-36	Lobster, Dragger
Portsmouth	1979	15	9	15	35-55	Dragger, Gillnetter
South Bristol	1972	48	5	28	20-40	Lobster, Dragger
Spruce Head	1974	41	5	15	19-45	Lobster, Dragger, Scallop
Stonington	1947	85	11	70	16-55	Lobster, Gillnetter, Scallop
Swans Island	1973	30	7	18-22	18-40	Lobster
Vinalhaven	1974	50	5	40	15-45	Lobster, SCallop
Winter Harbor	1971	23	9	unknown	26-38	Lobster, Scallop

miles varied from less than 100 for Portsmouth to 300 plus for Beals-Jonesport, Bucks Harbor, Corea, Cranberry Isles, and Swans Island. Three-Vinalhaven, Swans Island and Cranberry Isles--further rely on ferry service which, except for Cranberry Isles, is provided by the state. The more remote coops are, of course, closer to Canada and provide some additional marketing opportunities.

COOPERATIVE MARKETING SYSTEMS

The marketing services provided by the study cooperatives are described in Table 2. Most handle input supplies such as line, ice and fuel, an important service in these remote areas. Coop wharf ownership provides access to the boats, thus eliminating one factor that allegedly is used by private handlers to limit competition. Lobster cars--floating boxes that hold lobsters for short periods during the assembly of full loads or during brief intervals of depressed prices--are often provided by coops; however, disease and other problems limit the duration during which it is profitable to use these enclosures.

Coop-operated trucks are used primarily for carrying fish. Since transporting live lobsters is technologically complex, it is attempted only by the larger, more experienced cooperatives such as Stonington. In the main, the cooperatives depend on dealers' equipment to transport their catches to market.

Among cooperatives marketing fish, the major distinction is whether the cooperative ships to the Boston auction market or attempts to find an alternative arrangement. Alternatives are often sought because fishermen wish to avoid the vagaries of the Boston market and are also concerned with the occasional disappearance of whole boxes of fish. When the market is used, a broker is usually involved who receives approximately an 8% commission. On the other hand, Stonington ships to a dealer outside of Boston and receives a fixed price that is five cents below the Boston market price. This system has the advantage of providing access to the market early in the day when prices are normally higher. Efforts to sell fish locally are limited by the small size of the communities and the lack of processing operations.

The alternatives for lobster sales are broader, but sales to local dealers nonetheless predominate. At some coops, the board sets the marketing policy, including distributing the catch to available outlets. Those located in high tourism areas, such as Cranberry Isles, sell or resell directly to local restaurants. Although summer prices are high, they drop sharply at the end of the season. Several coops, including Boothbay, Pine Point, and New Harbor, have their own retail outlets.

Table 2: Services and Facilities of Study Cooperatives, Summer-Fall 1981

Cooperative	Marketing	Supplies	Insurance	Wharf: Owned	Wharf: Leased	Wharf: Rented	Lobster Cars	Trucks	Other
Beals-Jonesport	X	X		X			X	X	Supply store
Boothbay	X	X		X					Holding tanks, ice machine, restaurant, retail store
Bucks Harbor	X	X		X					Supply store
Casco Bay	X		X	X				X	Freezer, cooler
Corea	X	X		X			X		Supply store
Cranberry Isles	X			X			X		Bait cooler, freezer, boat
New Harbor	X	X		X			X	X	Restaurant/fish market, supply store, holding tanks
Pemaquid	X	X		X			X	X	Marine railway, retail store, cooler, holding tanks
Pine Point	X	X	X	X					Restaurant/retail store, bait cooler, holding tanks
Port Clyde	X	X			X		X		Supply store
Portsmouth	X		X	State Commercial Pier				X	Ice machine, forklift
South Bristol	X	X		X			X	X	Bait freezer, cold storage, retail & supply store
Spruce Head	X	X	X			X	X		Bait cooler, supply store
Stonington	X	X		X			X	X	2 buying stations, 4 ice machines, retail & supply store
Swans Island	X	X		X			X		
Vinalhaven	X	X	X	X			X		Retail
Winter Harbor	X	X	X	X			X	X	Freezer, bait cooler, holding tanks

The final major variant includes sales for long-term storage. Since this necessitates the use of lobster pounds, the option is limited to Beals-Jonesport and Pemaquid, from which the lobsters move into Nova Scotia. The storage of lobsters in pounds provides an important market outlet because local sales drop at the end of the summer season while supplies remain high, at least through September. Pounds require considerable technical expertise and working capital to maintain, and no regional cooperatives currently use them in their operations.

Evaluation of Relative Economic Success

Because the channels for lobster and groundfish are so diverse, the two products are examined separately.

Lobster

Table 3 summarizes data gathered on the ex-vessel price of lobster at the time of interviews with cooperative managers, cooperative payments from surplus funds known as patronage dividends for the preceding year, and members' beliefs about changes in ex-vessel price trends since the establishment of the cooperatives. Complete information was not available at each cooperative, however sufficient data were available to allow reasonable assessments to be made of the economic performance of each cooperative.

A number of explanatory comments are necessary in order to clarify information presented in Table 3. In the case of lobster cooperatives, no per pound handling charge is assessed. Lobster are sold directly to the cooperative and patronage dividends representing a share of the cooperative's profits are distributed on a per pound delivered basis to the individual members. The net effect is for the patronage dividend to increase the ex-vessel price by that amount.

Biological factors affecting lobster stocks have also affected the survey data. The survey, consisting of initial interviews with cooperative managers, was conducted from June 15 to August 15 of 1981. Cooperatives were surveyed from south to north, coinciding with the direction in which the lobster shedding season moves up the coast due to changes in water temperature. Because of the effects of the lobster shedding season on prices and availability, listed ex-vessel prices are roughly comparable, despite the 60-day time span in price data acquisition. Lobster prices tend overall to be reasonably stable between the middle of June and the end of August. However, at Boothbay and New Harbor only shedders were coming in at the time of the survey, while at Stonington the reverse was true and shedder season had not yet begun.

Table 3: Ex-vessel lobster prices, 1980 patronage dividends, and price trend perceptions at cooperatives surveyed, Summer-Fall 1981.

Cooperative	Lobster Price/lb.	1980 Patronage Dividends	Price Trend Perceptions [3.]
Beals-Jonesport	2.00/2.75	.19/lb.	Higher
Boothbay	1.60 (S.)[1.]	Net loss	More consistent
Bucks Harbor	2.02/2.77	.13/lb.	Same as before
Corea	1.60/2.75	.305/lb.	More consistent
Cranberry Isles	1.70/3.00	.05/lb.	Same as before
New Harbor	1.50 (S.)	.07/lb.	Higher
Pemaquid	1.65/2.90	N/A	Higher
Port Clyde	1.55/2.55	N/A	Higher
South Bristol	2.20/3.20	Broke even	Higher
Spruce Head	1.38/2.38	.24/lb.	Higher
Stonington	2.76 (H.)[2.]	.10/lb.	Higher
Swans Island	1.60/2.75	Net loss	Higher
Vinalhaven	1.50/2.50	Broke even	Higher
Winter Harbor	1.60/2.75	Net loss	Higher

Source: Information provided by managers and members of study cooperatives.

1. Shedders
2. Hard shell
3. Since establishment of the cooperative.

Patronage dividends are listed on a per pound basis for ease of comparison. Only Pemaquid and Port Clyde declined to provide this information, although both of these cooperatives were identified as distributing some level of patronage dividends in 1980. At two of the cooperatives showing net losses for 1980, Pine Point and Winter Harbor, new managers were subsequently hired, and both were operating profitably at the time of the study and were expecting to pay dividends in 1981. South Bristol had been making payments on a large capital investment in real estate and was expecting to pay its first patronage dividend in 1981. Vinalhaven was also recovering from the effects of high start-up costs.

An interesting interview on the subject of patronage dividends is that fishermen generally refer to them as "bonuses." Moreover, some dealers competing with cooperatives have begun to pay what they refer to as "bonuses" above standard ex-vessel prices, either at the time of purchase or, more frequently, at the end of the season. An understandable confusion has resulted in the minds of fishermen as to what advantage lies in belonging to a cooperative if private buyers are paying a "bonus." This dealer practice has resulted in member commitment problems for a number of cooperatives.

Of the lobster cooperatives paying patronage dividends in 1980, the average amount on a per pound basis was .155¢. Random checks with dealers established that ex-vessel prices paid by cooperatives during the study period were very similar and in many cases even a few cents higher than prices offered by lobster buying stations in the same or nearby anchorages. Thus, overall cooperatives gave evidence of paying slightly higher prices than proprietary handlers during the study. Nevertheless, it remains difficult to prove the contention that some cooperatives are actually paying higher ex-vessel prices than private dealers in certain ports due to the limited detailed secondary data and the secrecy customary in the industry. Thus, member beliefs about price trends are used to provide some corroboration. Members were asked to state whether they believed prices were higher, more consistent, lower, or the same as before the cooperative came into existence. Table 3 shows the most frequently occurring response. The general perception is that ex-vessel prices were higher at the time of the study than before the formation of the cooperative.

Cooperatives paying patronage dividends by definition provide direct economic benefits to members. Per pound dividends can be added to the ex-vessel price for shedder lobster in order to arrive at a basis for comparison of these monetary benefits at the time of the survey. To adjust for the effects of cooperative net losses, an estimate of .05/pound was subtracted from ex-vessel prices at Boothbay, Swans Island and Winter Harbor. This adjustment was based on information provided by local observers and does not precisely reflect the short term reality as net operating losses are usually covered by borrowing additional funds.

An average patronage dividend of .155/pound was added to the ex-vessel prices at Pemaquid and Port Clyde where dividends were being paid but information on precise amounts was not available. Due to the early organization of Pemaquid, it is probable that dividends at this cooperative were actually somewhat higher than this average figure. To allow for the fact that no shedders were being landed at Stonington whereas the majority of landings at other cooperatives were shedders, a projected shedder price of $2.01/pound was used for Stonington. This estimate was based on conventional hard shell/shedder price relationships and is probably a conservative estimate, as prices at Stonington tend to be higher than at many other locales.

Rankings of direct economic effectiveness as evidenced by higher ex-vessel prices and given the stated adjustments are as follows: South Bristol, Beals-Jonesport, Bucks Harbor, Stonington, Corea, Pemaquid, Cranberry Isles, Port Clyde, Spruce Head, New Harbor, Boothbay, Swans Island, Vinalhaven, and Winter Harbor. These rankings are, of course, valid only for the time period of the study. Detailed records of prices on a year-round basis would be required for future comparisons. In the absence of such data, this is the best available means of comparing performance.

It should be noted that the relatively high positions in the ranking order of Port Clyde and Spruce Head are somewhat misleading because these [illegible] assets in the form of real estate and permanent [illegible] investment in fixed facilities. The rankings of these two cooperatives would certainly be lower if this fact were to be taken into consideration. On the other hand, the very low ranking of Winter Harbor is also misleading because of this cooperative's greatly improved performance since its recent change in management. The position of Vinalhaven is not a true indicator of this cooperative's success for quite a different reason. During previous years, ex-vessel prices at the southern tip of the island of Vinalhaven tended to be among the lowest anywhere. Considering that the Vinalhaven cooperative has been able to both raise local prices and to break even in the face of its high initial investment and relatively higher operating costs compared to most other cooperatives, this organization's overall performance must be viewed quite positively.

Groundfish

The direct economic benefits of the four cooperatives marketing groundfish are more difficult to assess. This is appreciable amounts of to a large extent due to the pervasive use of Boston auction prices as the basis for determining value throughout the region. In addition, quality variables are more important for fish than for lobster.

The Casco Bay cooperative would have to be considered a financial failure by most standards since it was wavering on the edge of bankruptcy at the time of the survey. Casco Bay was shipping to more distant markets in New York and Montreal rather than Boston in the hope that the net rewards would be greater. It was not possible to determine whether increased trucking costs attributable to the greater shipping distances involved, or the effects of quality problems, or some combination of these factors resulted in the financial difficulties of this cooperative. Both South Bristol and Stonington would have to be considered economically more successful than Portsmouth due to the slightly greater financial rewards accruing to member fishermen, and despite the fact that patronage dividends were being paid to member fishermen at Portsmouth while dividends were not being paid to member draggers and gillnetters at Stonington and South Bristol. At South Bristol, fishermen were benefiting from cooperative efforts to stimulate local sales of fresh fish. The majority of fish was still sold through contract truckers, but subjective statements indicated that average ex-vessel prices received by members were close to or slightly above Boston board prices because of the small volume of fish being marketed locally.

Portsmouth was assessing a $.06/lb. trucking charge at the time of the survey and was also paying an 8 percent brokerage fee at the auction. The result was that on a pound of yellowtail flounder selling for $.40/lb. at Boston, only $.31/lb. was being remitted to the fisherman. In contrast, the Stonington cooperative was charging a $.06/lb. trucking fee and was paying no brokerage fees, although they were receiving a consistent price of $.05/lb. below the Boston board price for the day. The result would superficially appear to show that a Stonington fisherman was receiving $.29/lb. for the yellowtail flounder for which the Portsmouth fisherman was receiving $.31/lb. However, this appraisal does not adequately describe the situation at Stonington for three reasons: 1. The meaning of the phrase "Boston board price", 2. The influence of quality issues on sales, and 3. The cost of membership shares in the cooperative.

Since Portsmouth ships to a brokerage house at the Boston auction, the result is that Portsmouth usually receives an amount somewhat below the average Boston board price for the day because the catch is offered later in the trading day when prices have declined substantially. Stonington, however, receives a fixed sum of $.05/lb. less than the average price for the day, meaning that the actual difference between the Stonington and the Portsmouth price is less than appears at first analysis.

The next factor is the problem of quality control. Portsmouth has in the past experienced periodic problems with lots being rejected due to inadequate quality standards. On the other hand, Stonington has an excellent reputation for high quality fish and has not had to write off occasional bad shipments. The result is that Stonington fishermen are receiving roughly equivalent or somewhat higher net returns than

Portsmouth fishermen, despite the dividend of $.005/lb. being paid at Portsmouth and the approximately 200 mile shipping difference to major markets. Finally, when the third factor, the relative cost of membership is taken into account, the relative gap in benefits widens. Membership in the Portsmouth cooperative requires an initial investment of $1,000; at Stonington, the cost of a share is only $100.

One general conclusion that can be drawn is that alternative marketing arrangements result in relatively higher prices for fishermen as well as for lobstermen. A significant aspect of the marketing program is careful attention to quality. Higher and more consistent quality enhances prices due to a reduction in lots unsold and facilitates access to alternative outlets not available to cooperatives with reputations for poorer quality. However, the net economic benefit of quality control can not be determined as no attempt was made to measure the costs of improved handling procedures.

Second, it may tentatively be concluded that direct economic benefits from cooperative fish marketing appear to exist primarily as a result of size economies achieved from group marketing activities. Little effect of group action on price levels is likely due to the widespread reliance on Boston auction prices as the basis for valuing the catch. Therefore, the net effect of the operations of fish cooperatives is to achieve economies of size in assembly and transport of product to market. Based on the analysis of four cooperatives, the achievable sizerelated economics appear to be more significant than the cost-effect of varying transport distances.

REASONS FOR SUCCESS

The analysis of the economic success of the study cooperatives demonstrates that there are notable differences among them in the net prices returned to producers. These differences are observable largely as lower service costs for finfish and as higher net prices for lobster largely due to combining several functions in the coop. Although the specific reasons why one coop prospered while another did not can always be identified, it is worthwhile exploring the possibility that there are systematic determining factors among the study group.

Two factors were selected for further analysis: member commitment, and quality of management. Member commitment describes both the latitude the manager has in experimenting with and entering into alternative marketing efforts and the time required to maintain cooperation with and among the membership. Management quality relates to the ability of the manager to direct the cooperative, to elicit cooperation with members and to identify and pursue effective marketing alternatives.

Member Commitment

Member Commitment can be measured in four inter-related ways: (1) membership charges, (2) meeting attendance, (3) the use of minimum sales agreements and, (4) conflict levels.

1) Membership Charges

Historic membership trends, as presented in Table 4, provide an indication of past turmoil in specific cooperatives in the form of membership turnover. While the overall average change in membership shows a 16% increase, it ranges from a 53% decrease to a 175% increase. In fact, only four out of the seventeen study cooperatives have maintained stable membership levels since formation. Fluctuations in membership appear to present particular problems for the generally small-scale study cooperatives, reducing managerial efficiency and rendering long-range planning difficult.

Table 4: Historic Membership Trends; Formation of Cooperative-Present

Cooperative	Present Membership	Members when Organized	Date of Organization	Percentage Changes + or -
Beals-Jonesport	60	35-40	1970	+25-30%
Boothbay	17	36	1971	-53%
Bucks Harbor	18	30	1976	-40%
Casco Bay	37	37	1974	0
Corea	44	44	1970	0
Cranberry Isles	22	22	1978	0
New Harbor	55	59	1972	-7%
Pemaquid	45	N/A	1948	N/A
Pine Point	10	10	1975	0
Port Clyde	35	17	1972	+106%
Portsmouth	15	10	1979	+50%
South Bristol	48	fewer	1972	+?
Spruce Head	41	15	1974	+175
Stonington	85	N/A	1947	N/A
Swans Island	30	22	1973	+37%
Vinalhaven	50	40	1974	+25%
Winter Harbor	23	20	1971	+15%
Average	37.4	28.5		+15%

Source: Managers, secretaries and bookkeepers of study cooperatives

2) Meeting Attendance

Meeting attendance reflects a measure of the willingness of members to participate actively in their cooperative. Attendance at meetings is considered to be a minimal indication of interest on the part of its members. It should be noted, however, that in small organizations, where members interact on an almost daily basis, attendance at meetings is not necessary in order to keep the members informed about the cooperatives' activities. In these cases, meetings serve more as a forum for discussion.

Table 5 presents information on meeting attendance rates at the study cooperatives. General meetings commonly take place on an annual or semi-annual basis and therefore require a very limited time commitment from members. Meetings of boards of directors are either monthly or are called at irregular intervals to deal with specific problems. The overall average attendance at board meetings is 88%, while general meeting attendance averages only 57%. This difference can be attributed to the nature of the boards of directors; a fisherman active in and interested in the operation of the cooperative is likely to be serving on the board. A note should be made that the unusually low general meeting attendance rates at the two cooperatives founded during the 1940s, Pemaquid and Stonington, are a function of the high proportion of retired or inactive members.

Table 5. Meeting attendence rates at study cooperatives, Summer-Fall 1981.

General Membership	Board of Directors	Cooperative
75%	100%	Beals-Jonesport
40%	75%	Boothbay
60%	90%	Bucks Harbor
100%	100%	Casco Bay
50%	100%	Corea
100%	100%	Cranberry Isles
20%	60%	New Harbor
30%	90%	Pemaquid
90%	90%	Pine Point
50%	75%	Port Clyde
50%	60%	Portsmouth
35%	----	South Bristol
95%	----	Spruce Head
20%	100%	Stonington
75%	100%	Swans Island
25%	90%	Vinalhaven
50%	90%	Winter Haven

f study cooperatives.

Source: Managers o

General meeting attendance is an indicator of both internal conflict and of productive member involvement. It is also subject to varying interpretations. Low attendance rates can indicate a high degree of confidence in the manager. Such confidence, while positive in terms of reduced conflict, is potentially detrimental because it inevitably results in inadequate member participation in the cooperative. On the other hand, low general meeting attendance can be symptomatic of high member/member conflict rates which have a corrosive effect in cooperative operations.

High attendance rates at general membership meetings are also subject to conflicting interpretations. Two cases of very high average attendance initially appeared to be the result of high levels of conflict between both member/member and manager/member. However, in these cases, the eruption of conflict at general meetings seemed to be regarded merely as a source of entertainment. In contrast, at two other cooperatives, high attendance rates were clearly indicative of member interest and participation in the cooperative. Meetings at these cooperatives were reported to be particularly nonacrimonious and productive.

Attendance rates at meetings of boards of directors showed less variation. This can be attributed to the fact that any fisherman especially interested in the operations of the cooperative is likely to be on the board. However, when attendance rates are low at such meetings, the result is quite detrimental to the cooperative. The reasons for poor attendance at board meetings are similar to those for general meetings. At one cooperative, the cause of poor attendance of board members was conflict. At another cooperative, low board attendance was another reflection of confidence in the manager. In a third situation, low attendance was the result of poor communication; notices of board meetings were tacked on the office door a few days in advance of the meeting and were not always observed by all board members.

Conclusions regarding rates of attendance at general meetings are that both unusually high and low attendance rates are indicative of some type of problem; either high levels of conflict or a lack of member interest. In both cases, the presence of sufficient member commitment to the cooperative is questionable.

3) Sales Bylaws

Table 6 presents data related to the sales bylaw provision often included in the charter of marketing cooperatives. At a majority of the study cooperatives, such bylaws, which clearly specify the percentage of catch a member fisherman must sell to the cooperative, are included in the organizational charter. For example, Section 5 of the membership provisions of the charter of the Portsmouth Fishermen's Cooperative states that "No member shall sell his aquatic products to anyone other

than the Association except that if the Board of Directors shall determine that the sale of said aquatic products to anyone other than the Association shall not be competitive to the Association's activities at any given time, said member shall be entitled to sell his products to anyone other than the Association."

The existence of sales agreements between cooperatives and members and ensuing compliance with and enforcement of such regulations are understandably important to the organization's marketing activities. If members jump unpredictably to spot markets when higher prices are offered or when convenience dictates, cooperative managers will find it difficult

Table 6. Sales bylaw provisions of cooperatives surveyed, Summer-Fall 1981.

Cooperative	Sales Bylaw	Percentage of catch specified	Problems with enforcement
Beals-Jonesport	Yes	75%	None*
Boothbay	Yes	100%	1
Bucks Harbor	Yes	90%	None
Casco Bay	No	----	----
Corea	Yes	75%	None
Cranberry Isles	Yes	75%	1
New Harbor	No	----	----
Pemaquid	No	----	----
Pine Point	Yes	90%	None
Port Clyde	Yes	75%	1
Portsmouth	Yes	100%	1-2
South Bristol	Yes	90%	Few
Spruce Head	No	----	----
Stonington	Yes	----	Several
Swans Island	Yes	85%	5
Vinalhaven	Yes	75%	Few
Winter Harbor	Yes	85%	Few

* Estimates of numbers of noncomplying fisherman in the preceding year.

Source: Managers of cooperatives surveyed.

to plan marketing efforts and to meet commitments to intermediary dealers. This factor has been identified as a contributing cause in the demise of several fishery marketing cooperatives (Smith) and of many agricultural marketing cooperatives (Voorhis).

Four of the study cooperatives do not presently have a written sales agreement with their members. Two of these have experienced no problems with members selling to alternative markets--the result, it is felt, of a "gentlemen's agreement." The remaining two have an entirely different philosophy. The managers of these two cooperatives state that such an agreement would be impossible to implement or to enforce and would therefore be pointless. At the time of the study, these two cooperatives were experiencing problems with member fishermen selling unpredictably to other markets.

Of the twelve cooperatives having sales bylaws in their charters, seven had experienced varying degrees of difficulty with members selling elsewhere in violation of the existing formal agreement. When these problems arose, the underlying cause appeared to be manager/member or member/member conflicts rather than an opportunity to secure a higher price elsewhere. Four of the cooperatives having no problems with members selling products to other outlets were cooperatives at which the managers appeared to be especially adept at damping potential conflicts. At these cooperatives, relationships between managers and members were nonadversarial in contrast to situations observed at a number of other cooperatives. The fifth cooperative not experiencing such difficulties was operating without a manager.

The general conclusion is that member commitment insufficiencies, as reflected by sales to other markets by members, appear to be a function of inharmonious relationships between managers and some of the cooperative's members. In addition, a number of problems related to violations of sales agreements appeared to be the result of a lack of member awareness concerning the specific provisions of the organizational charter. Interviews with a majority of members at one cooperative demonstrated a general misunderstanding of the sales bylaw. No one, including the manager, was able to quote the wording and intent of the clause. Such a widespread misunderstanding indicates a lack of members' understanding about the particular organization both at the time of joining and on a continuing basis.

Conflict Levels

When viewed together, the sales bylaw provision, meeting attendance rates, and membership provide an indication that considerable variation in member commitment levels exists from one study cooperative to the next. However, it is difficult to use any of these factors as a measure of member commitment because of the opposing interpretations which can be placed on the same value. Therefore, more subjective measures of interpersonal conflict were included in the survey as an indicator of existing or potential problems related to the issue of member commitment.

Managers and members were asked to assess conflict levels on a point scale and discussion on the subject was encouraged so that causes and effects of intrgorganizational conflict could be further examined. Data collected are presented on Table 7 in association with previously discussed measures of economic success or failure.

On the basis of oral histories collected, high conflict levels were present in the organizational phases of all of the study cooperatives for which such information was available. The evolution of progressively lower conflict levels were in turn related to a number of factors, notably the manager's skill in conflict management. Member awareness of economic benefits was important as was the existence of local marketing alternatives for cooperative members. Also significant was the nature of individual relationships among members of each cooperative. The predominating influences, however, are managerial skill and economic benefits, factors which can be attained through improved design for cooperative operations. This became evident through observation of the cooperatives over the course of the survey, through subsequent analysis, and was further supported by a review of literature concerning both fishing and agricultural cooperatives.

Quality of Management

As with any enterprise, competent management is a fundamental requirement for a successful cooperative. Digby and Smith both cite the quality of management as being a particularly critical factor in the case of fishery marketing cooperatives. Thus, it is necessary to examine the selection process for managers and the characteristics of individuals currently serving in that capacity at the study cooperatives in an attempt to further isolate the reasons for varying degrees of economic success.

While the responsibility for the selection of managers rests ultimately with all members of the cooperative, the board of directors is typically invested with the authority to engage and to supervise the activities of a manager. The role of the board of directors is to supervise the operations of the cooperative for the benefit of the general membership.

The size of boards of directors and the seriousness with which board responsibilities are taken tends to vary substantially from one study cooperative to the next. In general, the board/member ratio, in cases 50 percent or higher, was quite high in comparison to most agricultural cooperatives (Voorhis). Moreover, it is possible for any fisherman willing to serve on the board to do so. Nevertheless, a frequent concern expressed by both managers and members was the difficulty in finding fishermen willing to serve at all. This could be the result of both time constraints and of socio-occupational factors. At a few cooperatives there also appeared to be a definite tendency among fishermen not to take the board and its duties seriously. This attitude was expressed by

Table 7: Comparison of conflict perceptions to patronage dividends and economic success rankings, study cooperatives, summer-fall, 1981.

Cooperative (1)	Economic ranking (2)	Manager/Member conflict level perceptions (3)	Conflict level rankings (4)	1980 Patronage dividends (5)
South Bristol	1	2/1	8.5	Broke even
Beals-Jonesport	2	0/0	1.5	.19/lb.
Bucks Harbor	3	0/0	1.5	.13/lb.
Stonington	4	1/1	5.5	.10/lb.
Corea	5	1/1	5.5	.305/lb.
Cranberry Isles	7	1/0	3.5	.05/lb.
Spruce Head	9	2/0	7	.24/lb.
New Harbor	10	1/0	3.5	.07/lb.
Boothbay	11	3/3	12	Net loss
Swans Island	12	3/1	11	Net loss
Winter Harbor	13	2/1	8.5	Net loss
Vinalhaven	14	2/1.5	10	Broke even
Fish: (6)				
Stonington	1	1/1	1	Broke even
Portsmouth	2	2/1.5	2	.005/lb.
Casco Bay	3	3/3	3	Net loss

Notes: (1) Pemaquid, Port Clyde and Pine Point were not included because of imprecise information on exact amounts of patronage dividends.
(2) From Chapter IV.
(3) A 0-3 point scale was used to assess conflict levels; 0 represented no conflict while 3 indicated extreme levels.
(4) Conflict level rankings were determined by averaging ordinal rankings between cooperatives tied for the same position on the scale.
(5) Table IV-1, Chapter IV.
(6) Cooperatives marketing primarily fish as opposed to lobster, Stonington considered as two separate entities.

managers as well as members. This appears to be a reflection of the lack of member involvement at a number of cooperatives, resulting in a lack of qualified and interested supervision of the activities of the manager and of the cooperative as a whole.

A general reluctance to participate on the board of directors and a refusal by some to take the board's activities seriously provide a partial explanation for the difficulties inherent in the selection of potential managers. A further explanation lies in the social biases inherent in the selection process itself. Digby notes that in many societies fishermen tend to have a low social status as a group and are inclined to be suspicious of outsiders. Indeed, the obvious reluctance of members in the study cooperatives to select an unknown individual as manager seems to corroborate this theory and most probably relates to the closed nature of many fishing communities in the study area (see Acheson). Eleven out of the sixteen managers of study cooperatives come from local backgrounds, with only three individuals being "from away" or from outside the state of Maine. A comment frequently heard at many cooperatives was that a person from outside the immediate area would never be able to manage the cooperative due to his/her inability to understand the fishermen involved.

The majority of the study cooperatives are located in small economically depressed communities, especially those in Hancock and Washington counties. The trend over many years has been for local residents pursuing professional careers to leave the community in search of better employment opportunities elsewhere, thus severely limiting the pool of qualified potential managerial candidates from local backgrounds. Fishermen in the study area also tend to regard what they refer to as "educated" people with suspicion, a factor further restricting the selection process. Those who do leave these communities to obtain an education are frequently regarded as "different" when and if they return.

Another problem in the selection process involves attitudes toward the labor requirements of management. Since fishermen daily perform hard physical labor, they see no reason why their cooperative manager should not also undertake the duties of a dock worker. This explains the tendency of a number of cooperatives to hire manual laborers as managers, and partially explains the failure of cooperatives to consider well-qualified women as prospective managers. The desire to reduce costs by combining the duties of a manager and a lumper, who unloads catches, also explains the long hours and reduced managerial efficiency of many cooperative managers. The net result of the limited pool of possible candidates combined with selection biases is that inappropriate or unqualified individuals are often employed as managers. As might be expected, these individuals often fail to perform competently and a very high turnover rate inevitabily ensues (Table 8).

The survey documented a general lack among existing study cooperative managers of what could be considered an adequate educational and professional background for the operation of a marketing organization. Out of the sixteen managers interviewed, only nine had practical experience in some form of business management. The range of previous occupations was wide, varying from truck driver to lawyer. Fishing, understandably, was the most common prior occupation, with four managers having been commercial fishermen.

Educational backgrounds of the interviewed managers were generally not directly related to their responsibilities. Five of the managers had received degrees from colleges with another six listing some form of post-secondary education. Few managers had taken courses in business management or marketing. Additionally, most managers lacked any formal or informal exposure to cooperatives prior to assuming their duties. Three managers had previous contact with cooperatives, one as a member of a consumer cooperative, another as an employee of a fishery cooperative, and the third as president of the cooperative he now manages. With a few exceptions this lack of exposure to cooperatives translated into a limited understanding of cooperative principles and of the typical problems facing most cooperative organizations. Misconceptions about cooperative principles and the special functions of a cooperative manager appeared to contribute to the internal difficulties experienced by many of the study cooperatives and to a number of the observed cases of member/manager conflict.

Table 8. Management characteristics of study cooperative, Summer-Fall 1981.

Cooperative	Organization date	Number of Mgrs. since org. date	Ave. tenure	Tenure of present mgr.
Beals-Jonesport	1970	2	4.5 yrs.	10 yrs.
Boothbay	1971	6	1.7	1
Bucks Harbor	1976	5	1.0	3
Casco Bay	1974	5	1.4	1
Corea	1970	5	2.2	1
Cranberry Isles	1978	4	0.8	1
New Harbor	1972	9	1.0	2
Pemaquid	1948	4	1.5	1.5
Pine Point	1975	3	2.0	1
Port Clyde	1972	5	1.8	None
Portsmouth	1979	4	0.5	.1
South Bristol	1972	5	1.8	2
Spruce Head	1974	4	1.75	4
Stonington	1947	2	6.5	.5
Swans Island	1973	6	1.3	1
Vinalhaven	1974	3	2.3	3
Winter Harbor	1971	7	1.4	1

Source: Information provided by managers of study cooperatives.

The age range of managers was also quite wide, from twenty years of age to two individuals who were retired from previous careers. Older managers seemed to encounter less manager/member conflict due to the somewhat enhanced degree of respect with which they were regarded by member fishermen.

To summarize, the selection process itself often results in inappropriate individuals being chosen as managers. Then, a combination of inexperience, a lack of appropriate education, an unfamiliarity with cooperatives principles, and a short stay in office makes it virtually impossible for these individuals to perform up to potential. In some cases, cooperatives have suffered severe financial loss due to managerial incompetence or dishonesty. A number of cooperatives have found competent managers through a process of trial and error, but it is obvious that this is a process that requires refinement if the study cooperatives are to increase their economic effectiveness.

Analysis

Statistical analysis is used to substantiate the qualitative identification of factors explaining the relative economic success of the study cooperatives. For membership commitment, the degree of conflict within a cooperative is perhaps the base indicator of commitment. One means of analyzing the extent of membership commitment in the functioning of a cooperative is to examine the simple correlation between conflict and patronage refund (Table 7). The calculated r value showed a negative relationship of -.63. This confirms the expectation that conflict levels tend to decline as economic benefits increase. Contrary to some expectations, this result suggests that economic inducements can overcome the chronic divisive factors that exist in the industry and region among the highly independent fishermen. The direction of causality between economic success and harmony is not clear, but it is evident that harmony is a necessary, although not exclusive, condition for success, allowing, as it does, the manager to initiate new marketing practices.

In a related test, the Spearman rank order correlation coefficient is used to measure the relationship between the economic effectiveness rankings of the cooperatives and rankings based on conflict-level assessments. Analysis of the relationship between these two scales produced a positive correlation of =.63. This result is in agreement with the preceding one, and supports the conclusion concerning the relationship between lack-of-conflict and economic success.

Manager quality is more difficult to quantify than is conflict level. As a proxy value, the average length of tenure of managers at each coop is used. Longevity may not assure success, but conversely, managers require some time to identify and put into place an effective marketing program. The Spearman rank correlation is again used and the value estimated to be .84. This indicates a strong positive relationship between economic effectiveness and the apparent ability of cooperatives to identify and retain managers of at least minimal competency.

CONCLUSIONS

Seventeen fishery marketing cooperatives in Maine and New Hampshire are evaluated using field data from 1981. The results of this preliminary analysis demonstrate significant differences among them in net prices returned to fishermen. The differences are greater for lobster, the major regional product, because of the range of marketing alternatives available. In general, the more marketing activities undertaken by a coop, the more financially successful it is. Groundfish prices were quite uniform across the region, but maintenance of a quality reputation extended the channel choices of the manager and contributed to higher net prices.

Underlying the obvious locational differences among the study cooperatives which influence marketing opportunities and costs are institutional factors controlling intra-coop conflict levels. Low levels of conflict are a necessary, although not exclusive, condition for success. Success is also highly dependent on the identification and retention of a qualified manager. Most cooperatives examined do not have appropriate procedures for accomplishing this important task.

An improved understanding of the special requirements necessary for the successful management of a cooperative would assist in the process of hiring and retaining an appropriate candidate. Different perspectives are required of a cooperative manager than for managers of other types of business organizations.

A cooperative manager must be capable of adjusting decision-making to a situation where suppliers are the owners of the business. The resulting constraints placed on marketing activities must be accepted (for example, the purchase by a cooperative of all member catches during the fall lobster glut, even though such purchases would be unprofitable for another type of business).

The cooperative manager must treat all members equitably. For the larger-scale agricultural cooperatives, treatment of members is primarily financially equitable and impersonal; for small-scale fishery cooperatives, interpersonal skills may be more vital, such as the ability to deal diplomatically with members coming in late after a bad day's fishing. Constant contact with the member/owners is required as is continual evaluation of managerial performance, since it must be recognized that an employee/employer relationship exists among all members. Since the manager of a small-scale fishery cooperative interacts daily with almost all members, such relationships may be difficult and at times trying.

It is also important for a cooperative manager to adjust to the special features of business ownership and control that distinguish cooperatives from other forms of organization. The manager cannot gain control of the business for which he works but must remain with the members, owners. Ownership rights cannot be acquired by the manager who must, by the very nature of a cooperative, remain an employee. Democratic control of the decisionmaking process for major issues and long-range planning may be frustrating for the cooperative manager. Consensus decisionmaking as opposed to democratic processes is not uncommon in the study area and may present even greater frustrations to management.

An understanding by the boards of directors of the intricacies specific to cooperative management would help to refine the selection process and perhaps would translate into a more sympathetic treatment of cooperative managers. An increased recognition of the importance of competent management would also provide boards of directors with motivation to invest adequate time and money in the recruitment of well-qualified managers.

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