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RESOURCE ACCESS AND SUPPLY CONTINUITY IN THE ATLANTIC FISHERIES

Gardner Pinfold Consulting Economists

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**Resource Access and Supply Continuity
in the Atlantic Fisheries**

by



**Gardner Pinfold
Consulting Economists Ltd.**

July, 1993

The views expressed in this paper are the responsibility of the author and do not necessarily reflect the views of the Task Force or the Government of Canada.

TABLE OF CONTENTS

	Page
Résumé	v
I. Introduction	
1. Overview	1
2. Outline	1
II. Plant Supply Discontinuity: Cause and Effects	
1. Overview	2
2. Harvesting Sector	2
3. Processing Sector	5
4. Conclusion	7
III. Resource Access: The Processing Sector Response	
1. Supply Continuity and Capital Expansion	8
2. Efforts to Secure Direct Resource Access	9
3. Conclusion	12
IV. Supply Continuity: Issues and Options	
1. Issues	13
2. Options	21
3. Conclusion	31

RÉSUMÉ

L'étude traite de l'accès à la ressource et de la continuité des approvisionnements en matière première (le poisson) dans les usines de transformation du poisson de la région de l'Atlantique; elle met particulièrement l'accent sur la situation des usines qui sont tributaires des prises effectuées dans les eaux côtières.

La discontinuité des approvisionnements préoccupe depuis longtemps le secteur de la transformation de l'Atlantique, encore plus maintenant compte tenu du déclin de la ressource et de la surcapacité de pêche. L'étude analyse les principales causes et les effets majeurs de la discontinuité des approvisionnements, et décrit comment les transformateurs ont fait face à ce problème.

Selon les auteurs, pour améliorer l'accès à la ressource et assurer la continuité des approvisionnements, l'industrie des pêches de l'Atlantique devra modifier profondément sa structure et ses méthodes de gestion. Ils proposent certaines mesures et options à cette fin.

I. INTRODUCTION

1. OVERVIEW

Having access to a continuous supply of high quality raw material is fundamental to the long-run success of any manufacturing enterprise. It allows assets to be used effectively, a reliable workforce to be retained, markets to be served, debt service requirements to be met and adequate returns on investment to be realized. In the ordinary course of things market systems function reasonably well in this regard, though some firms in some industries sometimes face supply discontinuities.

But what is the exception for most industries, tends to be the norm in the fishing industry. Discontinuity of raw material supply is a major problem. It has both short-term and long-term dimensions and in one way or another, affects virtually all industry participants. Processing plants relying on inshore vessels face the greatest continuity of supply difficulties, given the range of natural, regulatory and competitive factors at work. This sector is the focus of this paper. The offshore sector also faces difficulties, but vertical integration and enterprise allocations tend to make these more manageable.

Supply discontinuity can take both short-term and long-term forms, some predictable, some not. Among the factors leading to short term discontinuities are seasonal landings, competition among established buyers, unemployment insurance rules, fishery closures and environmental conditions such as bad weather and ice. Among the main long-term sources are processing sector expansion and stock depletion.

The supply continuity difficulties experienced by many inshore plants may be traced to the natural, regulatory and competitive environment in which the industry operates. These causes are examined in this paper. But this environment leads participants to make investment decisions which, while rational from an individual perspective, taken collectively only make the original difficulties even worse. These effects, and the subsequent round of supply difficulties they generate, are also examined.

In short, while the lack of supply security has posed fundamental problems for the industry, it is the response to this problem and its underlying causes which has led to the seemingly intractable financial weakness of the industry. Contributing factors during the late 1970s and throughout much of the 1980s included the forces of optimism about resource growth and the socio-economic context shaping the industry. The elaborate industry superstructure which resulted simply could not be sustained by the base of revenues that could be extracted from the fishery.

2. OUTLINE

The analysis in Section II begins with an examination of the causes and effects of supply discontinuity. The initial focus is on conditions in the harvesting sector. The raw material supply problems facing inshore processing companies cannot be fully appreciated without a clear understanding of the forces shaping harvesting behaviour.

How processors responded to the problem is examined in Section III. Responses such as capital expansion and efforts to secure direct access to the resource are reviewed.

An assessment of current circumstances in the fishery together with options for dealing with resource access and supply continuity are set out in Section IV.

II. PLANT SUPPLY DISCONTINUITY: CAUSE AND EFFECT

1. OVERVIEW

The market economy is founded on the notion that within a competitive framework individual rationality leads to the maximization of collective economic welfare. This proposition is at odds with observed circumstances in the fishery where the rule for many participants is that rational behaviour leads ultimately to social welfare. The proximate cause in many instances is overinvestment in vessels and gear (commonly referred to as excess capacity) which leads to irregular and unpredictable landings, often of poor quality.

The several factors determining the pattern and quality of landings may be grouped into four general categories:

- natural
- economic
- regulatory
- policy

The main factors under each heading are discussed briefly below, first for the harvesting sector and then for processing. The list is not intended to be exhaustive.

2. HARVESTING SECTOR

Natural

Biology

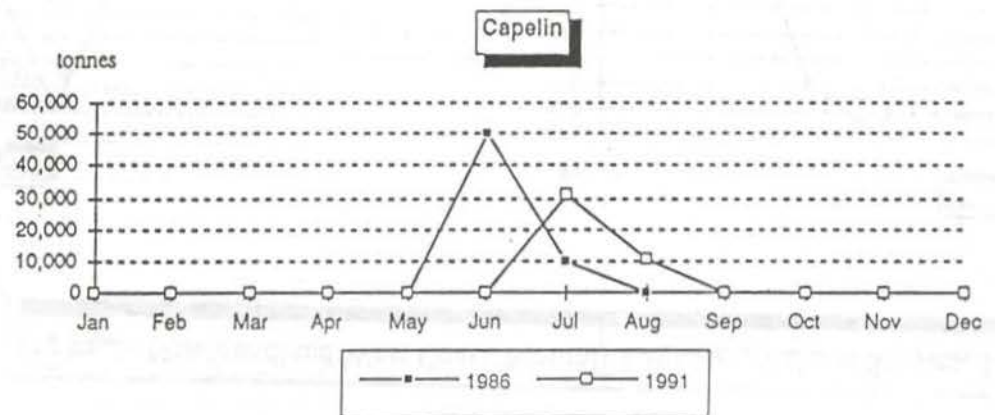
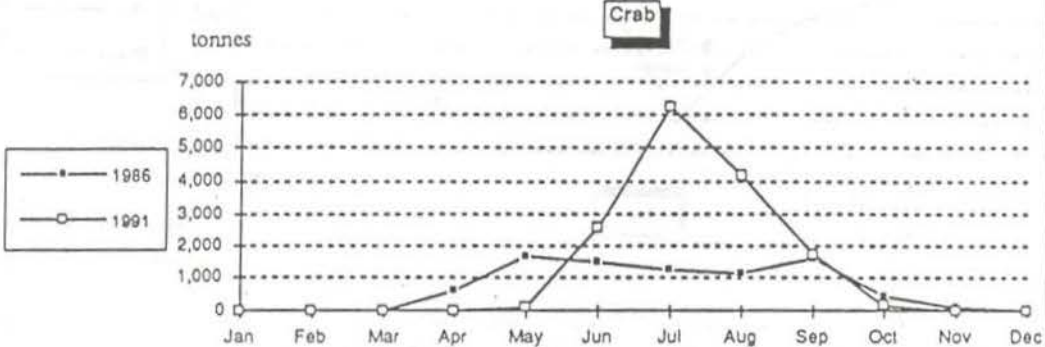
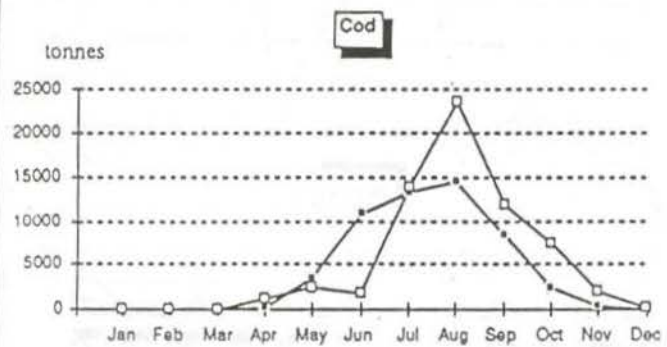
The biological characteristics of several species limit the duration of fishing seasons. This means specialized vessels and gear can be used for a limited time each year or used efficiently for only short periods. Short seasons can lead to intense fishing effort resulting in poor quality.

How biological factors influence landing patterns is illustrated for several distinct (by species and area) Atlantic Canada fisheries in Figures 1-8. These provide a comparison of monthly landings for 1986 and 1991.

Seasonal migrations of cod and capelin along the northeast coast of Newfoundland result in harvesting seasons of only one to two months. Most herring fisheries last only a few weeks, also because of schooling characteristics. The lobster fishery in the Gulf of St. Lawrence is nominally open for nine weeks (the season is sandwiched between ice-free navigation and the molting period), but low catch rates at the end of the season tend to limit effort and landings.

In biologically determined fishing seasons, the length of the seasons vary little from year to year, though the peak may vary due to quota limits or abundance and fishing intensity.

Figure 1: Newfoundland Northeast Coast, Monthly Landings, Various Species, 1986 and 1991



Prepared by Gardner Pinfold Consulting Economists Ltd.
Source : DFO

Figure 2 : Newfoundland West Coast, Monthly Landings, Various Species, 1986 and 1991

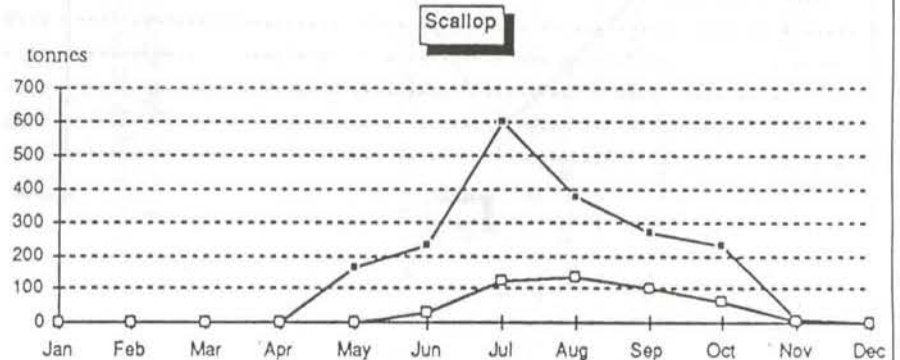
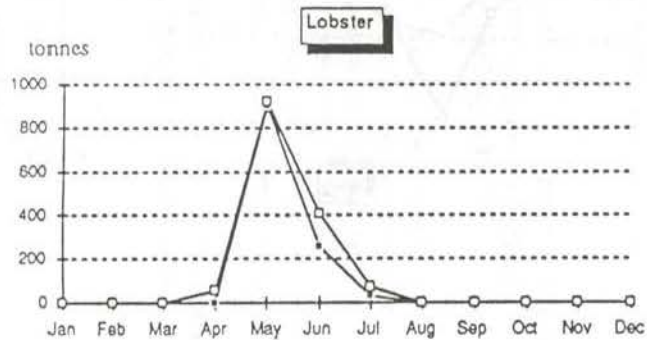
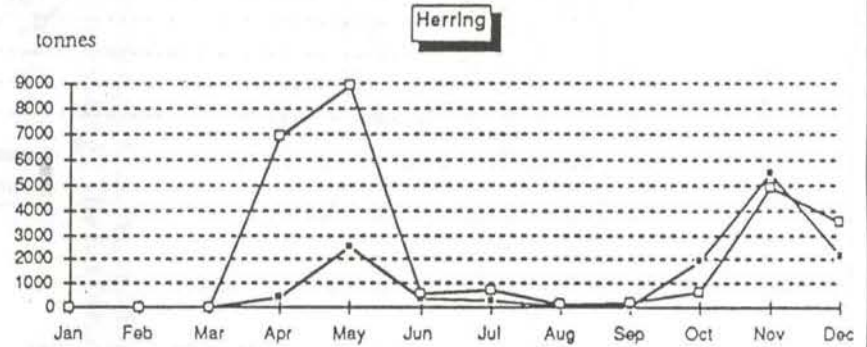
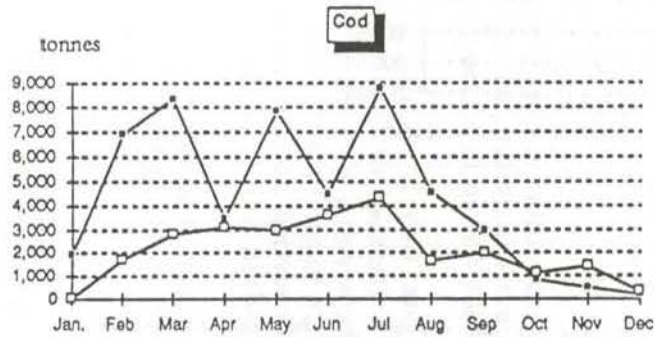
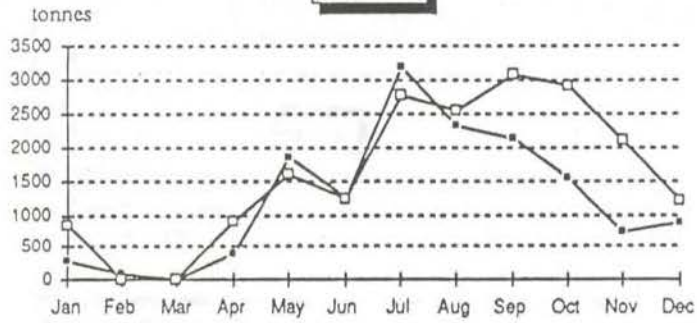
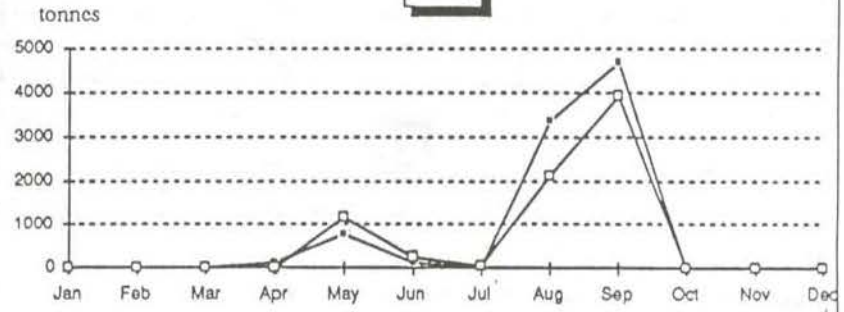


Figure 3 : Prince Edward Island, Monthly Landings, Various Species, 1986 and 1991

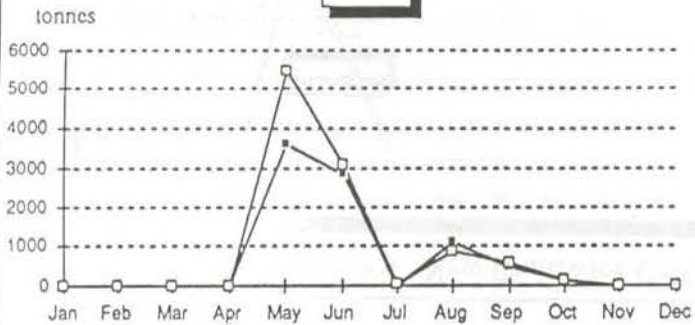
Groundfish



Herring



Lobster



Crab

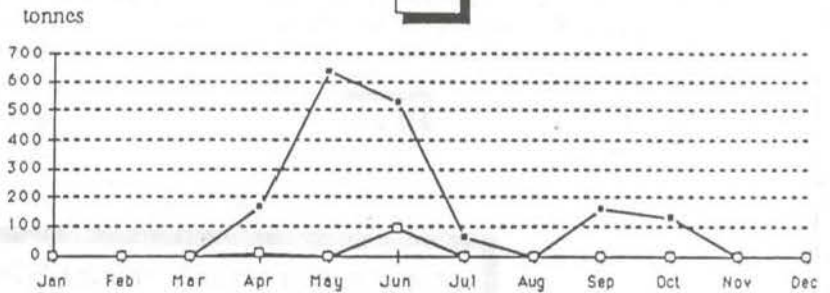


Figure 4 : New Brunswick Gulf, Monthly Landings, Various Species, 1986 and 1991

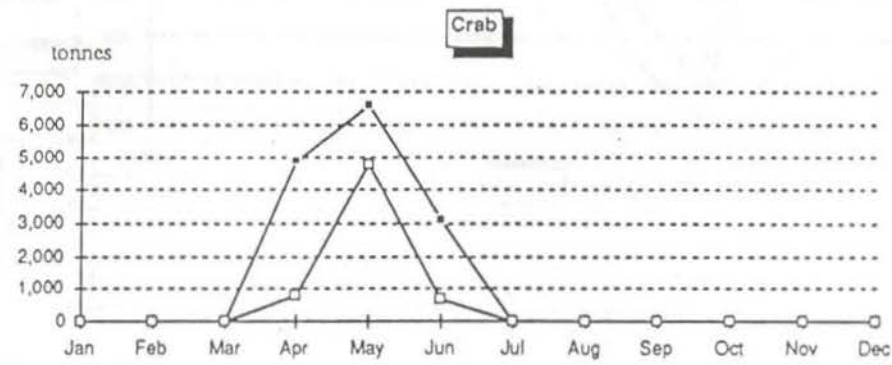
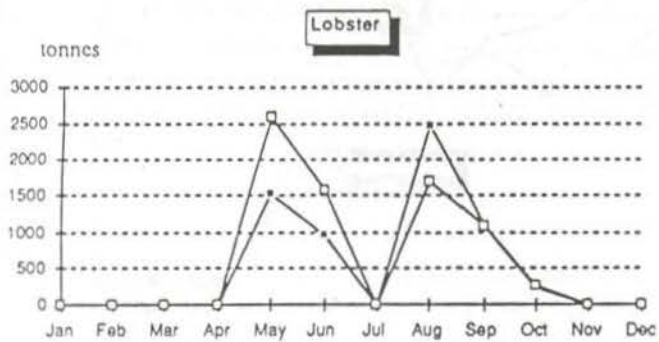
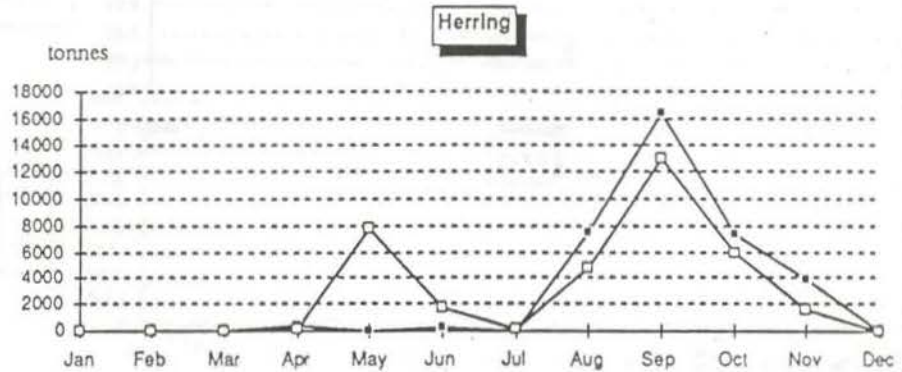
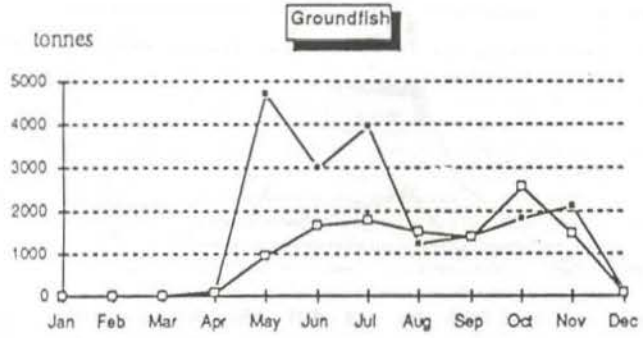
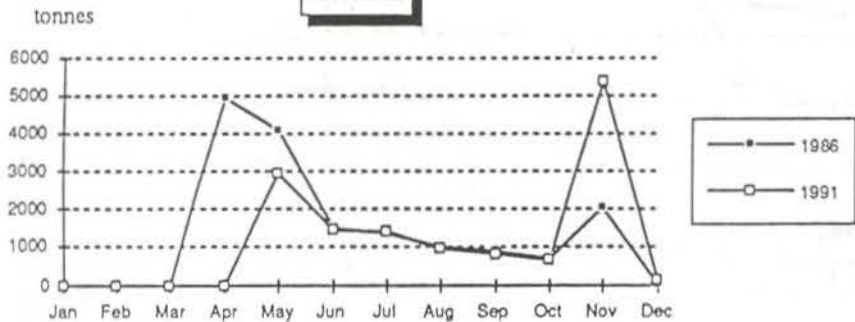
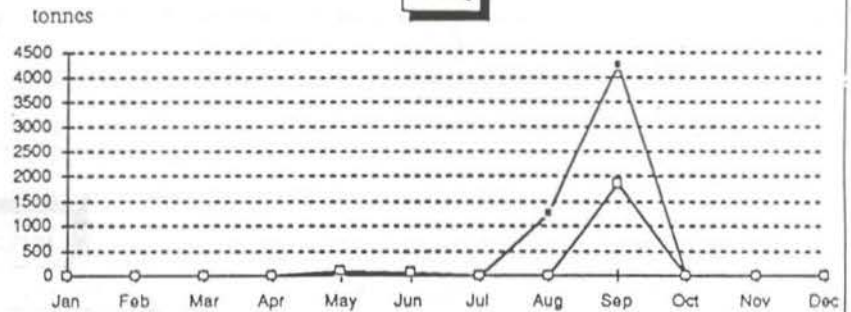


Figure 5 : Nova Scotia Gulf, Monthly Landings, Various Species, 1986 and 1991

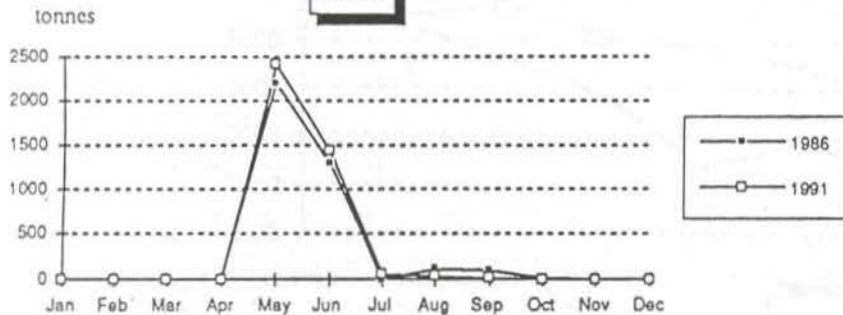
Groundfish



Herring



Lobster



Crab

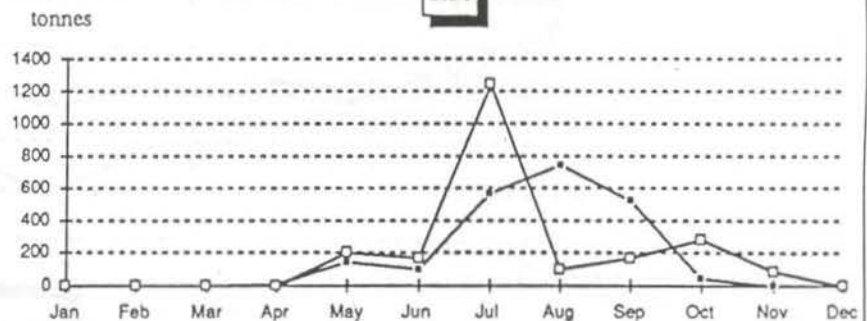


Figure 6 : Eastern Nova Scotia, Monthly Landings, Various Species, 1986 and 1991

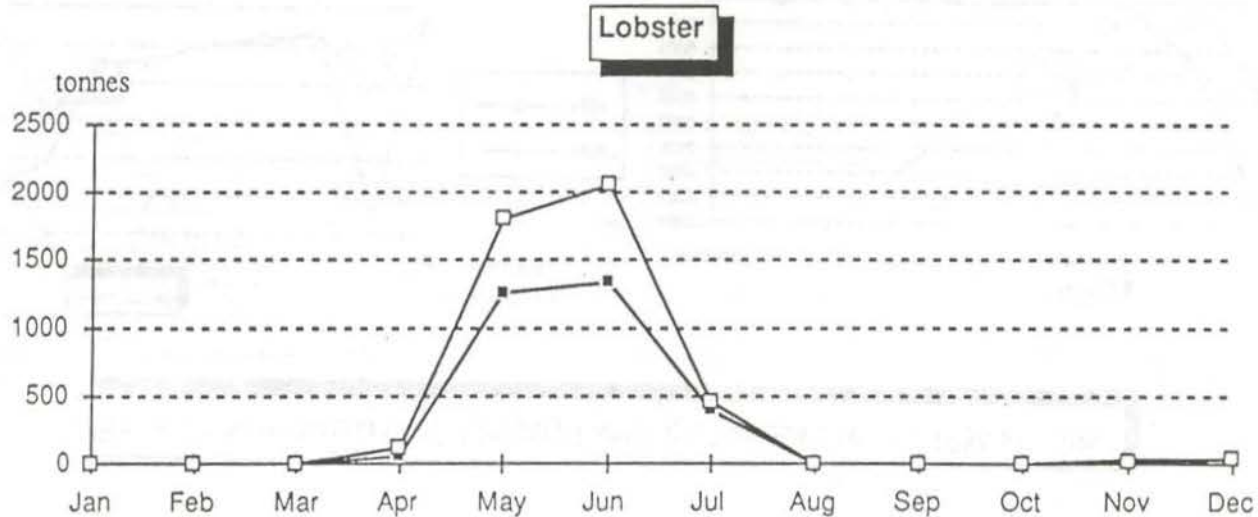
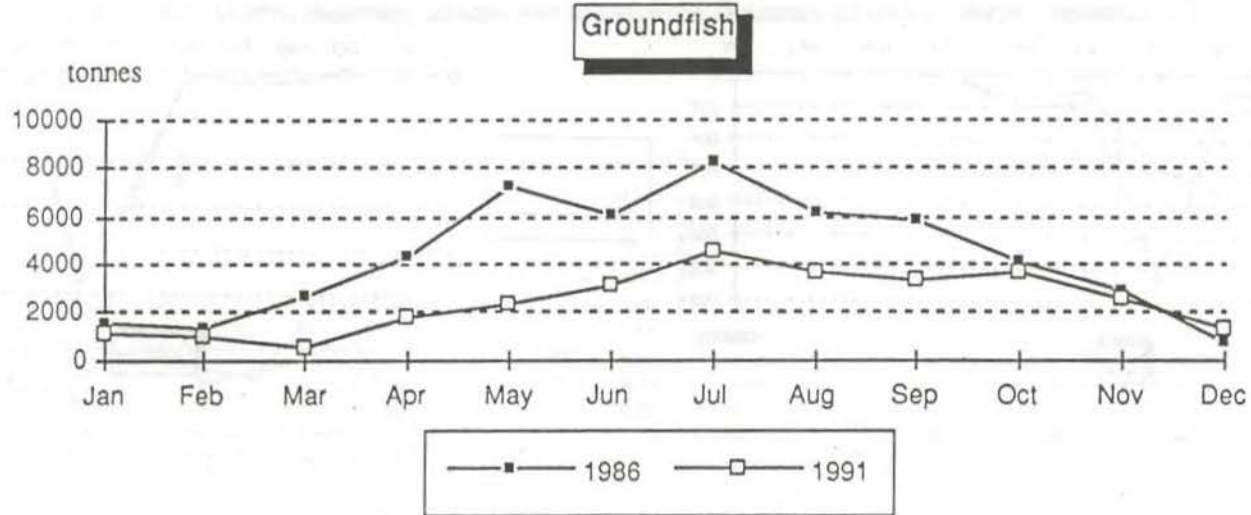


Figure 7 : Southwest Nova Scotia, Monthly Landings, Various Species, 1986 and 1991

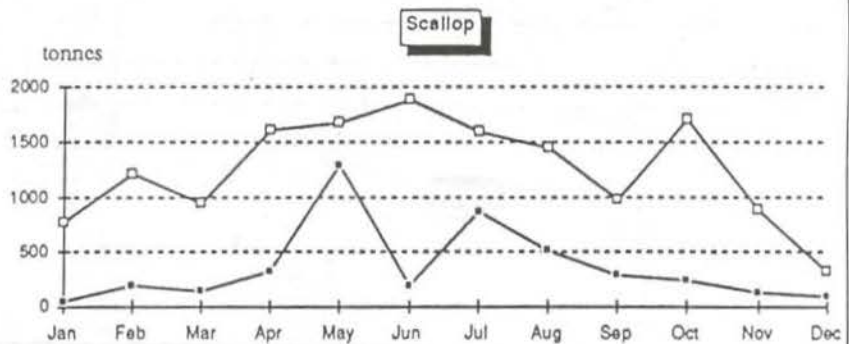
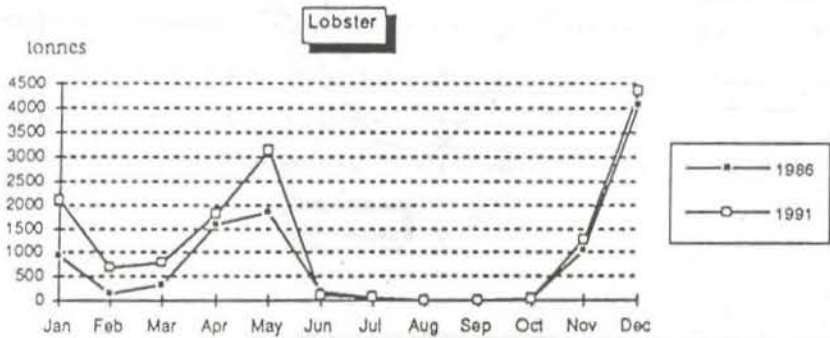
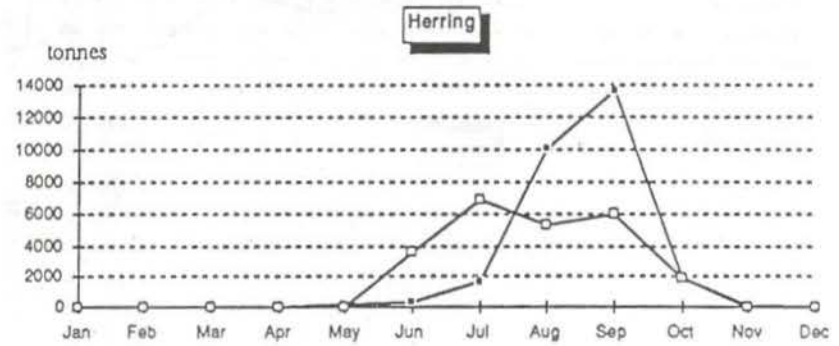
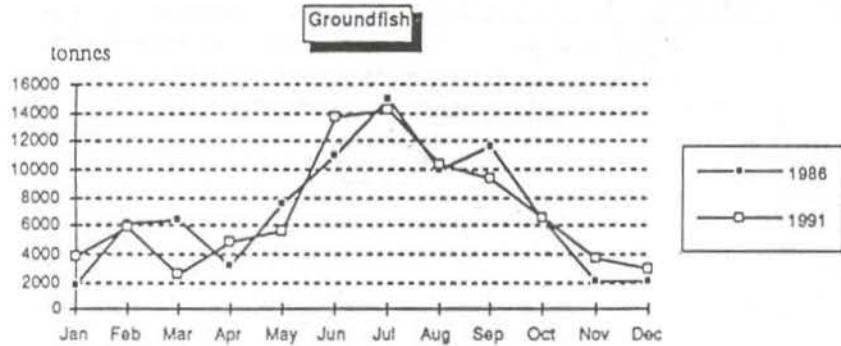
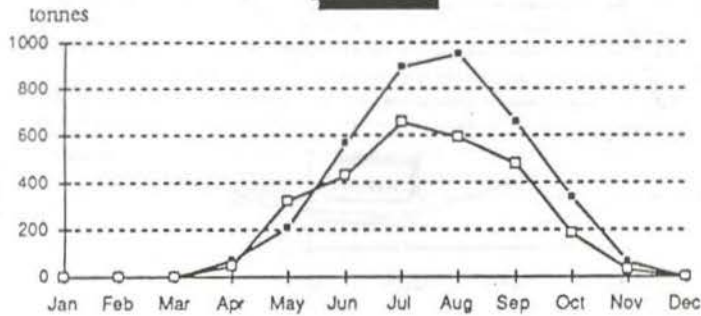
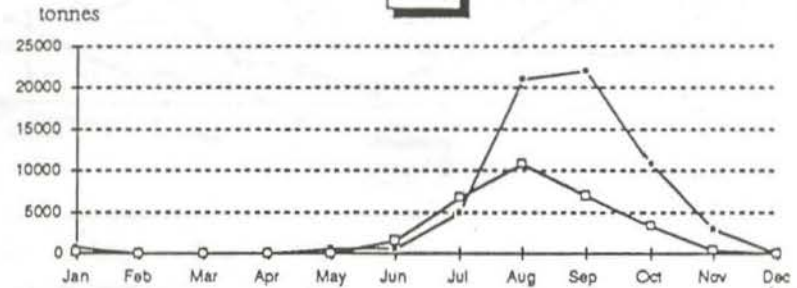


Figure 8 : Southern New Brunswick, Monthly Landings, Various Species, 1986 and 1991

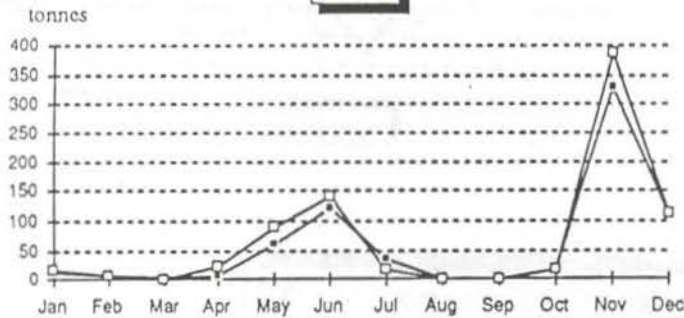
Groundfish



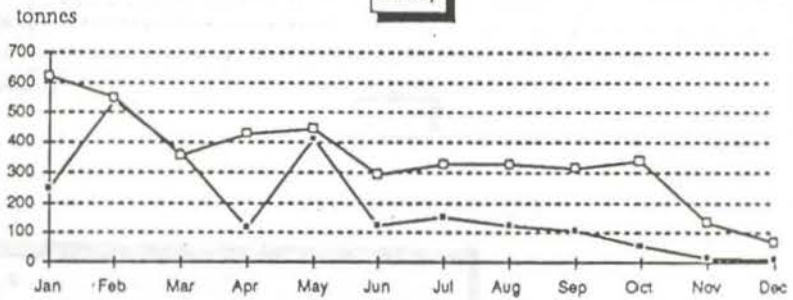
Herring



Lobster



Scallop



Environment

Most of the Atlantic inshore fishery is shut down during the winter months. This leaves harvesting capital idle. For the most part, the only active fisheries are groundfish on the west coast of Newfoundland (Figure 2); groundfish, lobster and scallop in southwest Nova Scotia (Figure 7); and, scallop in southern New Brunswick.

Economic

Share maximization

The source of the problem in the harvesting sector is well known: in a quota-limited competitive fishery, common property in the resource acts to defeat collective welfare by inducing share maximization leading to **over-capitalization**, dissipation of potential rents, poor quality landings and eventual resource depletion. Attempts to modify behaviour through input controls (e.g., vessel replacement and gear restrictions) failed because the incentive to maximize share remains unaffected.

Gluts and interrupted landings due to seasonal closures were common in many fisheries during the 1980s. Extreme examples of competitive fishing leading to gluts and short seasons include: crab in Newfoundland, where the season has been reduced from several months to just a few weeks (Figure 1); crab in New Brunswick before the introduction of ITQs (Figure 4); lobster in most areas (landings decline after the first few weeks); and, herring in most areas. Trip and weekly limits helped to extend seasons, but in many cases served to regularize rather than eliminate supply discontinuities; these fisheries are often characterized by a distinctive "saw-tooth" landing pattern. Examples are groundfish on the west coast of Newfoundland and southwest Nova Scotia (Figures 2 and 7).

Revenue maximization

Fishermen naturally seek the highest prices for their landings. Notwithstanding any informal (or formal) arrangements with specific processors, many will sell to the highest bidder thus forcing up the shore price for all buyers. With substantial excess processing capacity, top prices tend to be paid for all landings, regardless of any quality differences.

Revenue maximization is a predictable result of the long-term response to share maximization: the need to cover the substantial capital investments in larger and more powerful vessels and more sophisticated equipment.

Regulatory

Allocation

Current inshore fleet capacity in most fisheries was determined largely through the share-maximization incentive provided by competitive fishing, whether for quota-regulated species (e.g., groundfish, crab, herring) or non-quota regulated

species (e.g., lobster). Unconstrained competitive allocations result in a race for fish in the short run and capacity expansion in the long run.

The use of individual transferable quotas (ITQ) have helped to extend seasons which are not biologically limited: for groundfish vessels using mobile gear and the crab fishery (nearshore fleet) in the Gulf of St. Lawrence. ITQs have had a limited effect in the herring fishery given its biological characteristics.

Licensing and regulation

The introduction of limited entry licencing in the late 1970s and early 1980s helped to constrain harvesting capacity growth but it did not stop it. Complementary input controls (e.g., vessel replacement restrictions) merely slowed the pace of growth. Moreover, vessels eventually conformed to regulatory limits and were not optimized for specific needs of the fishery thus further impairing efficiency. By the mid-1980s when allocations and landings were at their peak, harvesting capacity in most areas was a multiple of that required to catch the available resource.

Policy

Social

The unemployment insurance system serves a genuine insurance need for many fishermen. But for many, participation in the fishery is simply the means to gain access to this source of income. UI serves to distort fishing seasons and practices, acts as an incentive to participate in the fishery and, provides a strong disincentive to leave the industry.

The UI contribution requirements (weeks fished) also serve to structure fishing patterns with fishermen often tailoring their effort to that needed to qualify. DFO also contributes to the problem by setting seasons to correspond with UI qualifying periods. These factors contribute to supply discontinuities.

Economic

Vessel subsidies and soft loans contributed greatly to the build-up of capacity during the 1970s and early 1980s. Excellent markets, good landings and high prices for most species during the mid-to late 1980s, coupled with advantageous tax laws fueled a wave of vessel replacement, adding substantially to the capital base of the harvesting sector in many areas. Aggressive fishing to meet debt service costs contributed to shorter seasons, particularly in groundfish.

There is little question that the combination of these factors have contributed to the excessive pressure on the resource and the widespread stock depletion the industry now faces. This has led to a far more serious form of supply discontinuity; one that is not just seasonal or intermittent, but that is likely to last for the several years that it takes stocks to rebuild.

3. PROCESSING SECTOR

Natural

Biology

Seasonal landings induce investment in sufficient capacity to meet peak requirements. For fisheries with sharp peaks (e.g., the cod trap fishery in Newfoundland, lobster fishery in the Gulf, herring fishery in Nova Scotia), this can mean idle capacity for many plants for much of the year.

Environment

Even where fisheries are not short for biological reasons, harsh winters and ice conditions in the northwest Atlantic and in the Gulf limit inshore vessel operations (and hence the supply of fish) to just a few months each year. This is evident from Figures 3 to 5.

Economic

Supply maximization

Due largely to excess capacity, the processing sector is supply driven. In many areas, the competition among processors for landings is similar to the share maximization behaviour driving fishermen at the harvesting stage. This is good for fishermen because it bids up the price of fish. But it also drives up the cost of raw material, often to levels that leave little or no margin.

This situation is made worse in areas where processors find themselves competing with low overhead "suitcase" buyers. Prices can be driven up to unprofitable levels even though these buyers take only a small quantity off the market. These factors weaken the processing sector as a whole. This apparently self-destructive pricing behaviour is justified by processors on the grounds that it is necessary to match prices of any competitor in order to hold on to vessels and supply. Under these circumstances, prices tend not to be sensitive to quality differences and top prices are paid for all fish.

Profit maximization

For individual plants, maximizing profits in the long run also means adjusting capacity to peak seasonal supply. Even though processing capacity at the industry level may be adequate to meet peak supply, it is at the plant level that investment decisions are made. The logic driving investment decisions at the plant level appears to be that supply should not be turned away. Turning away supply not only mean foregone profits (and the risk of losing vessels), but it sustains competitors.

Regulatory

Fleet separation

Inshore processing plants relying on independent fishermen do not have direct access to the resource and hence do not have control over the timing, species mix, quantity and quality of raw material supply. In most industries, manufacturers would have the ability to set such specifications and hence be responsive to market demand. Integrated inshore processors have some advantage in this respect, though they would always be subject to weather, season, quota and species availability. The lack of direct control means landings are subject to greater competition. Because there have been few barriers to entry to the processing sector, investments of established processors are at risk from (among others) those who are able to control supply (e.g., fishermen who decide to build plants).

Licensing

Until the late 1980s, entry into the fish processing industry was unrestricted. Most provinces now have a moratorium on licences, though it is still possible to enter the industry by acquiring the licence of a plant that has gone or is going out of business. Ease of entry poses two kinds of problems for established processors: they must compete with so-called "suitcase" buyers who have little or no overhead and no real commitment to the local area; and, they face competition for raw material from fishermen who wish to establish processing plants. Many cite the latter as unfair since it violates the spirit of the fleet separation policy. In effect, it creates two classes of inshore processors: those with direct access to the resource and the advantages this confers; and, those with only indirect access with all its limitations.

Policy

Social

As in the harvesting sector, unemployment insurance is an important source of supplementary income for those in the many coastal communities heavily dependent on the fishery. At the same time, UI also provides a substantial subsidy to the processing sector by allowing it to hold on to a large seasonal workforce which in many areas could not live on wages earned from fish processing alone. In an indirect way this sustains industry capacity at a higher level than it would otherwise be.

Economic

Financial assistance of one form or another allowed processing capacity to expand rapidly during the late 1970s and again in the mid-1980s. Grants and subsidies made uneconomic investments possible and provided the basis for preventing or forestalling the closure of unprofitable plants. Both contributed to redundant capacity and intensified the competition for raw material.

4. CONCLUSION

Processing plants face raw material supply discontinuity from several sources: highly peaked landings due to natural factors; short seasons due to competitive fishing; competition from other buyers; and, ease of entry into the processing sector.

Processors responded to these difficulties in various ways. Little could be done about natural factors. So, capacity was expanded to meet seasonal peak landings. This contributed to the financial weakness of the industry since it was often difficult to meet overhead costs with limited throughput. Little could be done about competitive fishing since plants had little or no control over vessels. Even if they had, it is unlikely they could (or would) have exerted much control, since they are also driven by the need to maximize supply (pre-enterprise allocation experience of the vertically integrated offshore sector would support this observation). So the problem persisted, despite attempts by DFO to extend fishing seasons.

Allocation and licencing policy after extension of jurisdiction was aimed at strengthening the inshore sector. Groundfish allocations in the Gulf and Scotia-Fundy tended to favour the inshore based on the adjacency principle. The lobster and crab fisheries were the preserve of the inshore sector (with the exception of a small offshore lobster fishery on Georges Bank). Herring, too, effectively became an inshore vessel fishery following the buy-back during the early 1980s. Fishing effort of the offshore sector was generally shifted north.

These changes led to a more seasonal fishery, particularly in Newfoundland. Processing capacity became increasingly geared towards seasonal peaks. Markets improved as allocations and landings increased. Competition for the resource at the harvesting level intensified in all fisheries. Inshore fleet capacity in all fisheries expanded and vessel costs increased substantially. Strong market demand and rising prices fueled a general increase in processing capacity in the mid-1980s. Competition for raw material consequently intensified.

III. RESOURCE ACCESS: THE PROCESSING SECTOR RESPONSE

1. SUPPLY CONTINUITY AND CAPITAL EXPANSION

Dimensions of the problem

During the late 1970s and throughout much of the 1980s, two distinct dimensions of the supply continuity problem (from a processing sector perspective) could be identified:

- that related to biological and environmental factors over which there was limited control under any circumstances; and,
- that related to the fisheries management regime governing the harvesting and processing sectors. Allocation tended to exacerbate seasonality of landings and licensing tended to restrict the direct access of processors to the resource.

Investment behaviour

In a broad sense, investment behaviour became the thread linking these dimensions of the resource access problem. In short, just as fishermen attempted to address their share maximization objective through investment in larger, more sophisticated vessels, so too did processing companies attempt to solve their raw material supply problems through investment; initially in seasonal peak capacity, and eventually by attempting to secure direct access to the resource through informal vertical integration.

The driving forces behind capital expansion in the harvesting and processing sectors are depicted schematically in Figure 9.

The factors listed in Figure 9 have led to an actual level of investment that is unsustainable or not viable based solely on the resource base. It also shows the smaller (notional) level of capital that is viable. It is to be emphasized that this portrays the circumstances during the 1970s and 1980s, not the current situation. Reduced resource abundance in the early 1990s has elevated a systemic weakness to a problem of crisis proportions.

The lack of direct resource access (due to the 1978 fleet separation policy) *causes* investment in processing capacity two ways: the lack of control over resources by processors promotes competition for raw material and encourages entry into the industry by prospective processing interests; and, the policy provides an opportunity for fishermen to invest in processing facilities and by-pass established companies. Fleet separation also provides an incentive for investment in vessel capacity because competition for raw material drives up landed prices and revenues and, hence, intensifies share maximization in both the short and long term.

Lack of direct resource access by the inshore processing sector is also an *effect* of excessive investment. The policy was announced in 1977 as the apparent power of the processing sector was growing. There existed a substantial vertically integrated offshore sector with apparent control over landed prices based on the ownership and control of vessels. There were fears this pattern would emerge in the inshore sector, with the industry soon dominated by the processing companies. Fleet separation was

implemented to pre-empt this development. (The Appendix to this paper contains excerpts from the Minister of Fisheries' 1977 speech setting out the rationale for the policy.)

2. EFFORTS TO SECURE DIRECT RESOURCE ACCESS

The Rationale for Fleet Separation

Fleet separation was introduced to protect the interests of fishermen; a response to a perceived imbalance of power. Like other regulations, it was an attempt to maintain a certain structure and organize behaviour in a certain way. It was introduced at a time when there did not seem to be a pressing need for it. Few inshore vessels were owned by processing companies. Few companies saw the need for vertical integration. If the generally poor financial performance of the offshore sector up to 1977 served as any guide, then the advantages of vertical integration *per se* were by no means obvious.

There was limited vertical integration in the inshore sector in the late 1970s because the existing arrangements met the needs of most processors. The processing sector was neither as large nor as capital-intensive as it had become by the mid-1980s. Moreover, securing raw material supply at acceptable prices was not a problem given the reasonable balance between processing capacity and resource availability.

The variation in landings due to natural factors presented difficulties, but vertical integration would confer no particular advantage in this respect since owned vessels would operate subject to the same constraints as independent ones. In short, there was little obvious need for plants to own or control harvesting capacity.

What inshore processors could not foresee was that the forces shaping the industry up to the late 1970s would change rapidly and significantly over the next few years. These structural changes would invite changes in behaviour by participants, particularly with respect to the need for processors to secure reliable supplies of raw material.

It is important to emphasize that the difficulty facing processors was not fleet separation *per se*, but rather the underlying factors that turned lack of direct access to the resource into a problem it had not been before.

Industry Structure and Behaviour

In any industry, structure conditions certain types of behaviour. In the text-book world of market-driven supply and demand that the Minister alluded to in his 1977 speech, one could expect to emerge the kind of balanced, prosperous industry the Minister imagined. But reality is more complex, particularly the reality of a common property fishery which by its very nature defies the precepts of market rules.

For the reasons given earlier, if there is a natural tendency in the fishery, it is towards imbalance – particularly between harvesting capacity and the resource base. These tendencies were only reinforced by social and economic policy. Regulation was an attempt to introduce order. But regulation addressed symptoms rather than causes (share maximization), and introduced rigidity (and inefficiency) into a system which had traditionally relied on flexibility for its survival.

The structure to emerge by the mid-1980s was one characterized by over-capacity. The harvesting sector had expanded faster than could be justified or explained by resource availability or value. The processing sector also expanded, with more plants and greater capital intensity. Overheads had to be covered. Individual vessels and plants responded predictably.

- On the demand side, plants engaged in increasingly intense competition for raw material. This was characterized by investments in plant and equipment needed to meet seasonal peaks, and also in efforts to attract and retain vessels. The forms of vessel-processor relationship to emerge are discussed below.
- On the supply side, vessels intensified the race for fish. Plants had difficulty processing the frequent gluts, quality suffered and seasons were short. Trip limits served to stretch seasons in some fisheries, but at the expense of increased inefficiency.

Vessel-Processor Relationships

Securing control over raw material supply indirectly through arrangements with vessels is perhaps the oldest strategy followed by inshore plants not permitted to hold licences (i.e., plants without grandfathered licences and plants not owned by active fishermen). This strategy has taken at least four forms over the years, and continues to evolve:

- *Customary arrangements:* many vessels deliver consistently to the same plant because of family ties or feelings of community responsibility. Also, in smaller, isolated communities there may not be any alternative buyer. Except in monopsony situations, plants could not rely on customary arrangements as a basis for paying less than the prevailing shore price.
- *Service arrangements:* this closely tied to customary arrangements. Vessels would guarantee delivery to specific plants at prevailing shore prices in return for services such as provision of ice, bait, wharfage, unloading and extension of credit.
- *Financing arrangements:* this extends the service arrangement to include plant involvement in the financing of vessel debt. With the substantial increase in capital investment in larger and more expensive vessels during the mid-1980s, plant involvement increased substantially and is now common practice throughout the Atlantic fisheries. Once again, this type of involvement (amounting to outright ownership in many cases) secures supply, but at prevailing market prices.
- *Vessel and licence ownership:* this is the ultimate form of plant access to the resource. It is becoming increasingly common, particularly in ITQ fisheries where quota rights are defined (these are also commonly owned by plants). Less than the prevailing shore price may be paid in these circumstances, with the fishermen trading off prices against greater guarantees of landings (and possibly higher revenue where the

vessel fishes quota purchased and assigned from other licence-holders).

These and other vessel-plant arrangements (i.e., cooperatives and fisherman-owned plants) form a spectrum of relationships ranging from full fleet separation through to full vertical integration. What proportion of vessels and plants fall into any particular category is not known. The categories are summarized in Figure 10 together with some examples of the fisheries to which they apply.

Full Fleet Separation

Fleet separation policy works more or less as it was intended in this case. Included are the customary and service arrangements. The only control plants have over supply is exercised indirectly through the price mechanism. Examples of this arrangement include the Atlantic-wide herring (purse seine) fishery and the small-boat fixed gear groundfish and market lobster fisheries where vessels operate from relatively isolated ports. The groundfish and lobster fisheries share two important characteristics: they have relatively low capital and operating costs and hence relatively low financial dependency on buyers, and relative isolation means there is limited competition. These characteristics go a long way towards explaining fleet separation.

The herring purse seine fleet has completely different characteristics: few, high cost vessels and a limited number of processors with a fair balance between the available resource and processing capacity (though there would probably be some rationalization if fleet separation were eliminated). That the fleet remains separate is largely because relationships tend not to be threatened by new competitors (and also because processors are wary of entering into "under the table" ownership arrangements where performance is difficult to enforce). Capital and market access represent substantial barriers to entering the processing sector and hence there is relative stability.

Partial Fleet Separation

This describes the case where plants have a direct financial interest in vessels. This is common in many fisheries throughout Atlantic Canada including lobster, crab and groundfish. In spite of the dependency, there is active price competition, particularly in the high-value species where "suitcase" buyers represent a constant threat. Outright ownership in these fisheries is rare because fishermen have little interest in selling their licences and processors generally have insufficient leverage to gain control.

Nominal Fleet Separation

In this case, fleet separation "... is a custom more honoured in the breach than the observance". The high capital cost of vessels makes independent ownership by fishermen difficult at the best of times. Gradually, vessels and licences are owned by plants. To comply with the letter of the law, the fisherman's name continues to appear on the licence and it is held in trust for the company. Processors in these circumstances are effectively fully integrated. Company control of the fleet is virtually complete in the mobile gear groundfish fleet (draggers between 45' and 65') in Scotia-Fundy, with substantial control in the

Gulf and Newfoundland. The introduction of ITQs (an intangible asset) has accelerated the shift of control.

The Bay of Fundy scallop fleet is also substantially owned and controlled by processors who appear to be positioning themselves for the introduction of ITQs in this fishery. Outright ownership and control of this type is not uncommon in most other fisheries, though it is not as widespread as in the high capital cost fleets where control is important for competitive reasons.

Full Integration

In this case plant ownership and control of vessels is completely legal because the plants are owned by the fishermen who hold the vessel licences. Examples include cooperatives processing canner lobster and crab in Newfoundland and the Gulf, and independent fisherman-owned groundfish plants in Scotia-Fundy. That fisherman may own plants but plants may not (legally) hold fishing licences is seen as discriminatory by plant owners.

3. CONCLUSIONS

By the mid-1980s, the stage was set for changes in plant-vessel arrangements in certain fisheries. The impetus for these changes came both from fishermen and plants. Some fishermen saw resource and market conditions as favourable and decided to enter the processing business as vertically integrated operations. This is within the letter of the law, and not, strictly speaking, inconsistent with its intent. Plants facing increasing competition for raw material sought to secure access through vessel control. This suited the needs of many fishermen who, for various reasons, agreed to sell their licences and vessels. The arrangements for holding licences leaves these transactions within the letter of the law, but inconsistent with its intent.

Figure 9: Sources and Implications of Excess Capital Investment

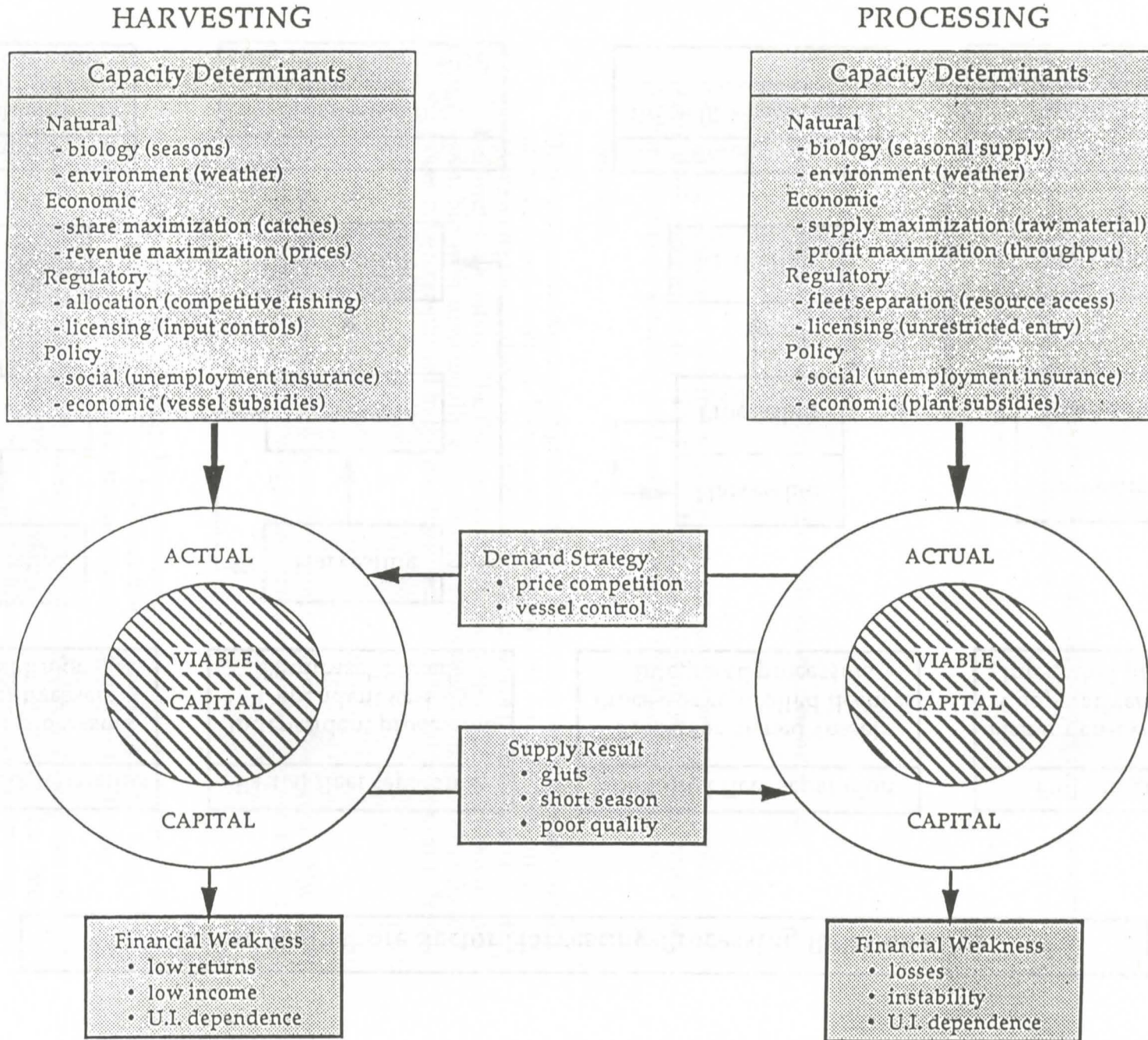
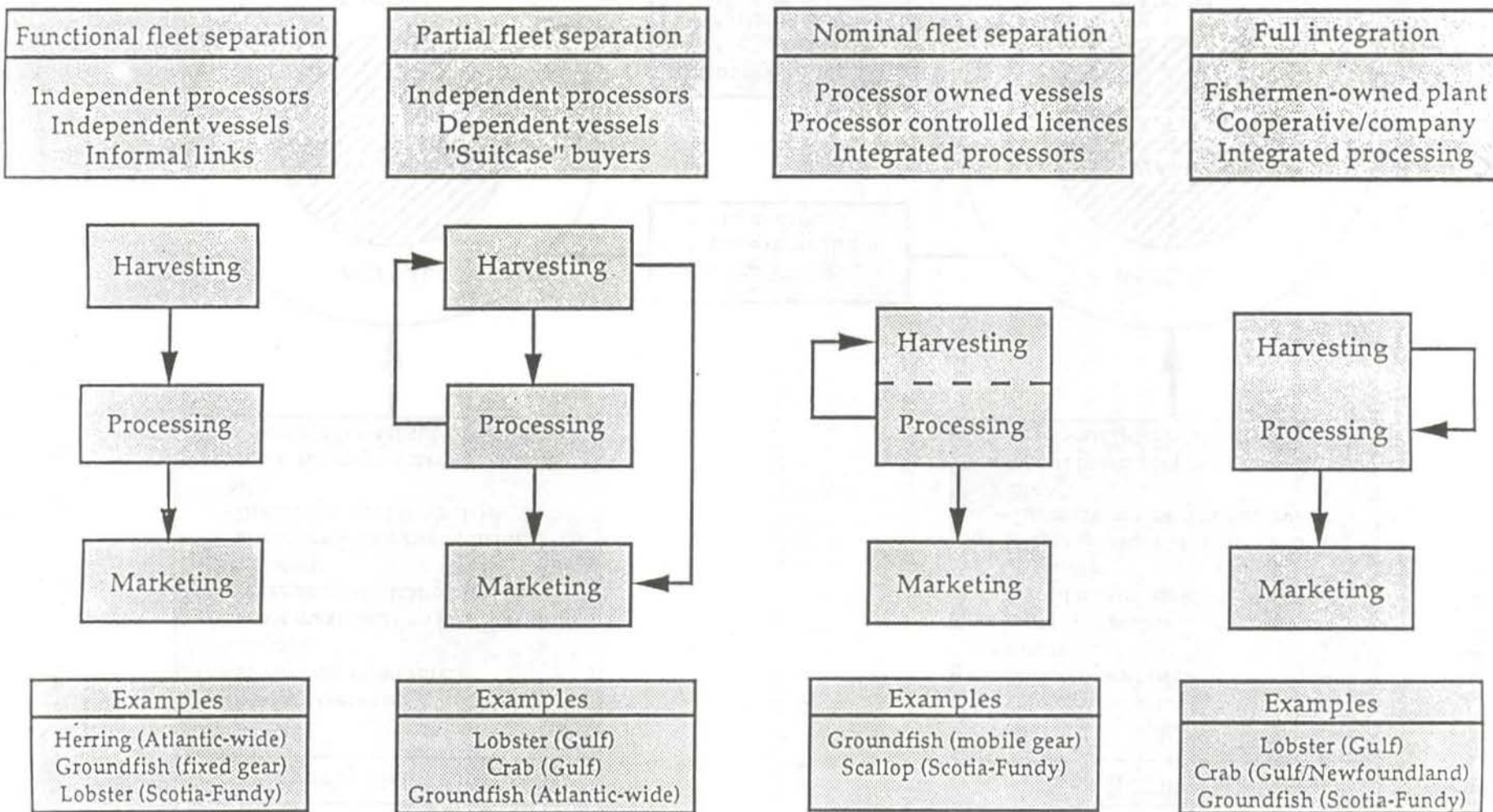


Figure 10: Inshore Sector Harvesting-Processing Relationships



IV. SUPPLY CONTINUITY: ISSUES AND OPTIONS

1. THE ISSUES

Current Circumstances

At the risk of oversimplification, the current supply difficulties facing inshore processors are attributable to four largely interdependent factors:

- relative resource abundance;
- seasonality of landings;
- access to the resource; and,
- competition among buyers.

Each of these is discussed below in the context of different species and areas.

The Resource

In general, processors face increasingly difficult long-term supply problems in groundfish and herring due to stock declines. Conditions in the crab, lobster and scallop fisheries are generally good, and in some areas continuing to improve.

Groundfish

There is a general shortage of groundfish due to declines in resource abundance, allocations and landings. The severity of the problem varies by area. It is most severe along the northeast coast of Newfoundland where the fishery is closed for the foreseeable future. The fisheries in the Gulf and on the Scotian Shelf remain open, but with substantially reduced allocations and landings. Markets and prices have strengthened in the past two years, but have yet to recover to levels of the mid-1980s.

Herring

Allocations and landings are generally reduced from 1980s levels. Also, the Japanese roe market is weak, with prices a fraction of what they were in the late 1980s.

Molluscs and Crustaceans

Crab allocations and landings have recovered from declines in the mid-1980s. Landings are at record levels in Newfoundland. Landings in the Gulf, while increasing, remain at about half the level experienced in the early 1980s.

Lobster landings (canner and market) increased markedly throughout most of Atlantic Canada during the 1980s. Landings seem to have reached a plateau in the early 1990s. Markets for both crab and lobster appear to be recovering from

the weak demand/increasing supply of the late 1980s. Prices have yet to recover to late-1980s levels.

Conditions have changed in the two major inshore scallop fisheries: for the better in the Bay of Fundy, where landings have more than doubled over the past several years; and, for the worse on the west coast of Newfoundland, where landings have declined.

Seasonality

Seasonality has increased in those fisheries with declining resources, particularly where allocations are still fished on a competitive basis. Even where allocations are increasing, competitive fishing continues to sharpen peaks and diminish quality. ITQs have helped to diminish seasonality where the fishery is not otherwise constrained by biological or environmental factors.

Groundfish

Natural and environmental factors continue to cause seasonal landing patterns, but the peaks are not as sharp as they were in the 1980s. With the moratorium on northern cod, the fishery with the most sharply peaked landings is no longer open. In other fisheries, landing patterns have become flatter for two main reasons: the introduction of ITQs has reduced the race for fish; and, the vessels accounting for the bulk of landings in most areas (mobile gear fleets) are larger and able to operate throughout most of the year. Before ITQs, these vessels contributed to the peaking problem due to their size and fishing power in the context of a competitive fishery.

Herring

Biology and fleet capacity keep the seasons short and landings sharply peaked. Fleet capacity has remained high despite ITQs because there has been virtually no fleet rationalization since the early 1980s. Given the capital costs involved, buying quota, licences and vessels is not something most fishermen could afford (particularly not under current stock conditions). This leaves processors as potential buyers. But unlike the situation with the mobile gear groundfish fleet, there has been limited interest among processors in acquiring vessels. This may be explained by the better balance between harvesting and processing capacity in the herring fishery (due largely to the barriers to entering the processing sector). The better balance precludes the need for processors to have direct access to the resource since competitive forces (coupled with informal arrangements) provide adequate assurance of supply.

Molluscs and Crustaceans

Supply patterns for crab have improved in the Gulf with the recent introduction of ITQs. Landings are spread out over a slightly longer period and fishermen are better able to control fishing effort, plan trips and coordinate delivery schedules with plants. This results in generally better quality. Seasonality has worsened in Newfoundland despite the increasing quota. The fishery continues to be competitive and effort has increased substantially over the past several years

with the expansion of the supplementary fleet. Gluts and delays in processing leading to poor quality are common.

Very little has changed in recent years in the seasonal pattern of lobster landings. Catch rates and exploitation levels are more important determinants of the duration of the fishery than fishing seasons established by regulation. This is true for both the canner and market fisheries.

Though total landings have changed markedly in both the major scallop fisheries, the seasonal landings patterns remain fairly stable in each.

Resource Access

Generally, processors have been successful in gaining direct access to the resource through increased ownership and control of vessels. The degree of access varies by species, fleet sector and area.

Groundfish

Processing plants are increasingly gaining direct access to the resource through ownership and control of the mobile gear fleet. Vessels in this gear class control a substantial proportion of the resource through the allocative process. Plant ownership has proved particularly advantageous since the introduction of ITQs, which plants are also purchasing (in the name of the fishermen whose vessels they own and licences they control).

Plants lacking the financial resources to buy vessels and licences continue to rely on informal arrangements with fishermen involved in competitive fisheries. The number of *active* fishermen in this category has declined in many areas over the past several years due to the combined effects of the decline in groundfish allocations, improved lobster landings and UI availability (which acts as a disincentive for fishermen holding dual licences to participate in the groundfish fishery). In short, supply conditions have deteriorated for plants dependent on the fixed gear fleet. There are indications that plants in some areas (southwest Nova Scotia) are extending their vessel control to the fixed gear fleet.

Herring

Most plants do not have direct access to the resource (only a few of the purse seine vessels are integrated into processing operations). Plants rely mainly on informal arrangements to secure raw material. This seems to provide a sufficient basis for supply continuity; any problems with supply have more to do with allocations and management than plant-vessel relationships.

Molluscs and Crustaceans

There is extensive vertical integration in the Gulf crab industry, while fleets in Newfoundland and Quebec are relatively independent. About 65 of the 80 vessels in the Gulf are integrated. Plants in the Newfoundland and Quebec rely mainly on informal arrangements to secure supply.

Lack of direct resource access presents supply continuity problems in the lobster fishery because there is very limited vertical integration. The problem is particularly acute for plants with substantial investments in processing or holding capacity. Processors/buyers rely on informal arrangements to secure supply, with the prevailing shore price always paid. Enough vessels in virtually all areas are sufficiently independent to make price the only factor in determining to whom lobster is sold. Many processors/buyers are left in the position of having to have sufficient flexibility (i.e., capacity) to take all that is available, while facing the risk that supply will be bid away by low overhead buyers.

Supply continuity has become less of a problem for scallop processors in recent years, with much of the fleet in the major fishery in the Bay of Fundy now integrated in a fashion similar to mobile gear vessels in the groundfish fishery.

Competition

Competition among buyers continues to be one of the main sources of supply discontinuity for plants not at least partially vertically integrated. The severity of the situation varies by species and area, with the competition strongest for the higher valued species – lobster, crab and scallop.

Groundfish

Competition for groundfish has intensified given its relative scarcity. This has accelerated the drive among processors to secure access through vessel ownership and licence control.

Herring

The increased competition for raw material in the face of declining quotas is offset to a large extent by weak markets. Entry to the processing sector is difficult given the investment and marketing requirements. Processors are relying on traditional methods to retain vessels and secure supply.

Molluscs and Crustaceans

Competition is intense for these species given their relative value and the degree of processing overcapacity.

There is aggressive price competition in all areas, though in Quebec prices are increasingly established through industry-wide negotiation and supply arrangements appear to be relatively stable. Extensive vertical integration in the Gulf limits supply discontinuities due to competition. Supply conditions are fairly stable in Newfoundland though vessels shift despite a negotiated minimum price and informal arrangements (e.g., processors subsidize bait, fuel, gear and vessel costs). Price is a key factor inducing vessels to shift. Circumstances in the fishery make it difficult to determine by how much the negotiated price exceeds the minimum.

It is not clear whether problems in the canner lobster sector are any more serious now than in previous years. But what does seem to be clear is that many plants are facing financial difficulties due to the combined effects of competition

(arising from excess capacity and low overhead buyers) for raw material and continuing weak markets for certain products. Competition is intense for market lobsters as well, resulting in generally low margins. Low overhead buyers continue to present problems for companies with substantial investments in holding capacity and marketing networks.

Scallop processors have reduced considerably the impacts of competition on supply continuity by securing direct access to the resource through vertical integration. Nonetheless, there are a sufficient number of independent vessels to ensure prices are competitively determined.

Implications

The circumstances outlined above carry both short-term and long-term implications for the fishing industry.

The Resource

The resource is obviously fundamental to sustaining the fishing industry. Changes in resource abundance will lead to short-term adjustments in capacity and the levels of employment and income able to be generated. In the long-term, changes will affect broader issues such as community stability and rural settlement patterns.

Groundfish

The decline in groundfish stocks overwhelms all other issues. For most plants in most areas (Newfoundland in particular), the question is no longer one of seasonality and excess capacity. Having *any* fish to process will be the problem. There is no obvious solution to the problem in the short run, though plants will presumably try to diversify into other species where possible. This would serve to intensify competition for those species and could result in a more widespread weakening of the processing sector than originally anticipated.

The first financial casualties could be the more highly capitalized (and leveraged) plants. If these are also the more efficient, it is possible that in the long run when the groundfish resource recovers, the processing sector could be dominated by less efficient and relatively labour intensive operations. This outcome presupposes that lending agencies will allow indebted companies to go into receivership and eventual bankruptcy. At average rates (and usual causes) of business failure, this is not an unreasonable assumption. But where there is widespread failure, there would appear to be little to be gained by this strategy since the receivership sale of operations or assets would return little or nothing. Instead, it is possible that lenders would nurture plants in the hope of an early return to "normal" operating conditions.

Herring

The resource has declined from peak levels in the 1980s, but stocks have not plummeted in the same way as groundfish. Nonetheless, there is scope for rationalization, particularly of harvesting capacity. This is likely to occur in the short run as the less financially sound enterprises begin to experience difficulties. The existence of ITQs should facilitate this.

Molluscs and Crustaceans

The resource appears healthy in all species, with dependent fleets and processors enjoying stability or growth in recent years. Any supply continuity or resource access difficulties (or financial weakness in the industry) are not due to problems of limited or declining resource abundance.

Seasonality

.In fisheries where landings have become or are likely to become more sharply peaked (or no less peaked), the implications are negative for investment, quality and socio-economic factors. A transition to more balanced annual landings in some fisheries has had a generally positive effect on these variables.

Groundfish

The current state of the resource means that short-term (seasonal) discontinuities of supply will be the least of any plant's concerns. For the foreseeable future, there will be little pressure on capacity from a resource abundance perspective. Pressure on capacity is diminished also as the result of changes in allocation methods (i.e., the introduction of ITQs). ITQs (coupled with direct plant control of vessels) should also lead to better planning of fishing trips and a more continuous supply of raw material to plants.

Herring

Even with ITQs, natural factors limit the extent to which supply in any particular area can be spread over a longer period. Without any changes in the rules governing access (discussed below), there appears to be little that can be done to reduce peak capacity requirements.

Molluscs and Crustaceans

With the introduction of ITQs in the Gulf crab fishery, fishermen are able to control fishing effort and plan trips and coordinate delivery schedules with plants. This results in generally better quality, greater plant efficiency and improved employment circumstances. In Newfoundland, the fishery continues to be competitive and effort has increased substantially over the past several years with the expansion of the supplementary fleet. The increasing seasonality results in gluts and delays in processing leading to poor quality.

Gluts are common in the canner lobster fishery and processors continue to increase capacity to meet peaks. There is less of a problem with seasonality in the market lobster fishery. Though landings are high in the early weeks of the spring fishery, the combination of holding capacity (pounds), increasing seasonal demand and falling prices ensure that markets are cleared.

The long and short term implications for the scallop fishery in the Bay of Fundy are good; landings are relatively even over the season. With the likely introduction of ITQs, there should be further improvements. Declining landings on the west coast of Newfoundland imply financial difficulties for dependent

vessels and plants. Seasonal supply continuity is not a problem, except that supplies are at generally lower levels.

Resource Access

In most fisheries, few of the larger vessels collectively responsible for the largest share of landings remain independent from processing plants. For these plants, resource access is not the impediment to supply continuity it once was, or continues to be, for plants not able (for various reasons) to secure vessel control. Vertical integration has obvious positive implications for plants: security and predictability of supply (to the extent these are possible); improved operating efficiency; better quality; and, improved marketing capability. All these factors should enhance viability. The converse holds for most plants without direct access (the severity of the problem varies by fishery and area).

From the fishermen's perspective, the greater the extent of vertical integration, the less market-determined will be landed prices. This could lead to more widespread negotiated price determination (along the lines conducted in Quebec).

Groundfish

Through vertical integration, much of the inshore quota allocated to the mobile gear fleets is effectively under the control of specific processors. This is achieved by an end-run around the licensing regulations. Within the limits of resource availability (abundance and seasonality), vertically integrated plants are in a position to be market, and not supply, driven. This affords considerable advantage from an operations and financial perspective. One potential benefit is that plants should be in position to dictate fish handling practices and quality standards on vessels. This is something a supply driven industry could never achieve.

Plant ownership and control of multiple vessels and licences should lead to a level of fleet rationalization in the short term which would not have been possible under continued ownership by individual fishermen (given the costs involved). The long-term implications (other things equal) are likely to be reduced harvesting and processing capacity and greater financial stability. The latter, of course, depends on resource recovery. It is possible that some of the plants making recent substantial investments in vessels and ITQ will face considerable hardship given the cuts in quota.

Plants continuing to rely on independent vessels and competitive quotas will continue to face the risk of supply discontinuities and the attendant financial and marketing difficulties these imply.

Herring

Until markets improve it is unlikely that processors will have much impetus to secure access to the resource through vertical integration. This will limit the extent of fleet and capacity rationalization in the short term.

Molluscs and Crustaceans

Vertical integration in the crab and scallop fisheries has improved supply security and continuity. It has also led to some rationalization of processing capacity. Rationalization of harvesting capacity can be expected with the introduction of ITQs (yet to be implemented in scallop).

Supply security and continuity remain elusive in the lobster fishery. Informal arrangements with vessels to secure supplies are likely to continue, leaving processors vulnerable to price competition (from suitcase buyers) and occasional unpredictability of raw material quantities.

Competition

Competition among plants or buyers for raw material is the corollary of lack of vertical integration or direct processor access to the resource. The greater its intensity, the better off fishermen are, but the less sensitive prices are to quality differences. Competition in the context of excess processing capacity leads to slim (or negative) margins and financial instability in the long run.

Groundfish

Extensive vertical integration could be expected to have opposing effects: more intense competition for raw material not controlled by specific plants; and, the elimination of competition for raw material controlled by vertically integrated operations. From a fisherman's perspective, one of the negative effects of extensive vertical integration is downward pressure on landed prices. It is not unreasonable to speculate that it is not just security of supply that processors want, but also security of margin.

Competition for the landings of independent fishermen would in all likelihood continue to set the standard for shore prices for all fishermen, but only if a sufficiently large proportion of the catch lies outside the control of processors. Failing that, it seems almost inevitable that price-setting within a vertically integrated framework would evolve to some form of negotiated settlement (as is the case in the offshore sector and in other vertically integrated fisheries e.g., Iceland)

Herring

Unless and until there are regulatory changes regarding vessel ownership, competition alone is unlikely to lead to fleet or processing capacity rationalization.

Molluscs and Crustaceans

Price competition is intense for all species. It can be destructive where low overhead (suitcase) buyers compete directly with plants and buyers with substantial investments in processing or holding capacity (mainly in the lobster fisheries). The source of the destructiveness has less to do with the intensity of competition, than the circumstances in which the competition is played out:

excess processing capacity and financial weakness. In the short run, this is forcing processors to try and secure raw material at almost any cost, not only to cover overheads, but to retain fishermen. The long run implication is continued (or worsening) financial weakness. In other industries, this would be a signal for some firms to exit. The fishing industry has a history of not permitting firms to fail. This contributes to the general weakness.

2. OPTIONS

Overview

The foregoing discussion indicates that the raw material supply problems facing processors have several sources. Though there may be some interdependence among them, there is no single, simple solution. Each problem must be addressed on its own terms. The trick (as always) is to get to the heart of the issue and avoid merely attacking symptoms. It is also to avoid creating new problems along the way.

About certain of the problems (e.g., resource abundance), little can be done to remedy supply problems *in the short run*. Even in the longer term, managers can expect to be able to exert limited control over the natural environment. This limits (but does not eliminate) the ability to influence another key source of supply discontinuity – seasonality. In the following discussion of options to address the supply continuity problem, these fundamental issues consequently receive limited attention.

The main focus, then, must continue to be on resource users: fishermen and processors. Their behaviour is controlled and modified by the interplay of policy, management measures and economic forces. The options for addressing the supply continuity problem is essentially a discussion of two matters: resource access (fleet separation) and competition.

The Resource

Groundfish

Short run

Resource conditions are a given in the short run. In other words, little can be done by way of policy or management measures to increase supply. The options in the short term are obvious: cutting TACs is an important first step to rebuilding the fishery.

Long run

The more critical questions concern what is to be done in the long term to manage the fishery on a sustainable basis. Sustainability has several dimensions: the ecosystem, target species, technology, industry participants and dependent communities. A critical issue among these, and one that DFO has grappled with (largely unsuccessfully) for the past 20 years, is harvesting capability in relation to resource availability. The search for clues about why the industry has continued to limp from crisis to crisis need not go much beyond this.

It follows that among the options for sustainability must be a smaller, more efficient industry. This requires some fundamental policy shifts. DFO has already indicated

it intends to move in that direction. But if the experience of the past 20 years is any guide, this will be an extremely difficult process.

Herring

Short run

The options for the short run are to continue current management measures: conservative TACs and ITQs (for the purse seine fleet).

Long Run

The long-run option is to continue to manage conservatively and constrain fleet expansion under improved resource conditions.

Molluscs and Crustaceans

Short run

The options are to continue with conservative TACs in the crab and scallop fisheries, and to implement a consistent and more conservative minimum legal size in the canner lobster fishery. Current management measures in the market lobster fishery appear to be adequate.

Long run

Measures taken in the crab, scallop and lobster fisheries in recent years appear to have helped to improve stock abundance. These stocks are likely to come under increased pressure with the decline in groundfish abundance. Controlling effort is likely to become increasingly difficult. The use of ITQs in the crab fishery has helped, and would in all likelihood help in the scallop fishery as well. Effort has already increased substantially in the non-quota regulated lobster fishery (through better vessels, larger traps, improved electronics and more frequent trap hauls). Options to constrain effort should be explored from a resource perspective since exploitation levels are believed to be very high in most areas.

Seasonality

Groundfish

Short run

Given current resource conditions, little can be done to reduce seasonality.

Long run

Peaked landings, though largely a result of natural phenomena, are worsened by competitive fishing in some areas. DFO responded to this in many inshore fisheries with seasonal quotas and by imposing trip or weekly catch limits. These measures are a reflection of management failure. They do not address the underlying problem (capacity) and contribute to inefficiency. A more appropriate means of addressing the issue is by reducing the pressure to maximize share. This can be achieved

through the use of private fishing rights. With other management changes designed to improve flexibility (e.g., abandonment of fleet separation), such rights would contribute to fleet rationalization.

Herring

Short run

The landing pattern is determined almost exclusively by natural factors.

Long run

Reductions in fleet capacity would improve harvesting economics, but would do little to extend the season and reduce peak processing requirements.

Molluscs and Crustaceans

Short run

Landing patterns are largely determined by natural factors in most fisheries. There is limited scope to extend seasons and reduce peaks in the short run.

Long run

Seasons could be extended in crab and scallop where ITQs are not already used (e.g., for crab on the northeast coast of Newfoundland). Lobster fisheries tend to be shorter than the regulated fishing season and could be extended through better controls on effort (or through the introduction of private fishing rights should TACs eventually be used to manage the fishery).

Resource Access

The Issues

The question of resource access is essentially about fleet separation policy and accordingly is discussed in this context. Fleet separation cuts across species lines and is addressed here in general terms.

There are currently three main issues surrounding fleet separation policy:

- access to resources, and whether fleet separation is an impediment to security of raw material supply to processors;
- fairness, and whether the policy is discriminatory given the way it is formulated and applied.
- independence, and whether inshore fishermen need the protection the policy was intended to provide; and,

Access to Resources

Fleet separation was intended to improve the supply of fish and provide a better matching of harvesting and processing capacity.

In one sense, the independent inshore fleet did improve the supply of fish – vessels in virtually every fishery caught as much as they could as fast as they could. This presumably was not what the Minister had in mind. But this was not due to the policy. The presence or absence of vertical integration would not affect this. This is the way things are in a competitive fishery. In thinking that the problem was control by processors, the Minister was focusing on the wrong issue. The introduction of EAs in the offshore sector eliminated the race for fish (though it effectively created other problems: high-grading and discarding).

Improving the supply of fish is a matter of particular concern among processing companies. This is not an issue now simply because of the recent resource downturn, but has been a matter of concern throughout the 1980s. Processors contend their inability to have direct access to the resource or at least the means to control the timing and quality of supply is a major impediment to effective marketing. They point out that the offshore sector was well on its way to becoming market-driven in the mid-1980s, largely due to EAs and control over the pace and location of harvesting (discarding problems, aside). Processors contend that if the industry is to compete in a global market, DFO must abandon many of the regulations currently in place which limit the flexibility needed to compete effectively.

As described earlier, many processors have already taken steps to circumvent the policy. Many more would do so if the policy were abandoned (or if the risks and costs of circumvention were lower).

Fairness

The policy is clearly discriminatory in that vertical integration is possible for some but not for others, or at least not without a certain amount of expensive subterfuge (the lawyers and accountants needed to structure the charade).

The extent of vertical integration is probably less than it would be were it not necessary to circumvent the policy through trust arrangements. This is because there remains an element of risk to the processing company that the fisherman who has sold his interests and whose name appears on the licence will not live up to his agreement. This has happened at considerable cost to some processors and has made others reluctant to follow suit.

Fishermen's Independence

From a fisherman's perspective, fleet separation sought to achieve two key objectives:

- higher prices and improved fishermen's incomes; and,
- improved fleet development and efficiency.

Prices and Incomes

It is not clear that fishermen's incomes would have been any different with or without fleet separation. There is no relevant basis for comparison. But given the circumstances in which it was implemented and the way industry structure evolved during the 1980s, it is unlikely that fleet separation made any difference. Competition was strong and prices were very sensitive to market conditions. This was due only in a minor way to the policy (in that it contributed to competition by allowing fishermen to become plant owners). Plants and vessels remained largely independent because it was in the interests of fishermen to keep things that way.

In his speech, the Minister used the relatively low prices on offshore vessels as an indication of what vertical integration would lead to. This was misleading because in that sector prices do not determine incomes; the companies and unions negotiate target incomes and these determine prices (through the lay arrangement). Moreover, it is not vertical integration, *per se*, which affects prices and incomes, but an imbalance in bargaining power. Collective bargaining is the mechanism used to redress the balance in the offshore sector, as it is in the inshore sector in Newfoundland where many fishermen face single buyers with monopsony power. In Quebec also, prices for many species are established through industry-wide negotiations.

Simply stated, it is not obvious who is being protected by the fleet separation rule. Plants cannot obtain licences except from fishermen; they can no longer obtain licences from DFO as was the case (to a limited degree) before the policy was introduced. In other words, to obtain a licence there must be a willing seller, a fisherman. As such, it is not the rule which protects fishermen, but rather their position as licence-holders and vessel owners in the context of a competitive environment. Most fishermen are content to continue as independents, though many have informal arrangements with specific plants.

Nonetheless official fleet separation has not prevented the integration of some vessels and plants. This has occurred primarily in two fleets characterized by considerable excess capacity: 45'-65' mobile gear groundfish vessels and inshore scallop draggers. With the introduction of ITQs in the groundfish fishery, there has been some fleet rationalization and more will follow (this would have been the case even if catch levels had not suffered due to the recent downturn in the fishery).

This is what was intended (not just fewer vessels, but also that fishermen could leave the fishery with money in their pockets from the sale of ITQ). But it is unlikely that this would have occurred nearly as quickly had plants not acquired (controlled) licences and vessels. Had the fleet continued in individual ownership it is unlikely that other fishermen could have afforded the buy-outs (since it is not just the ITQ which is being sold, but vessel and licence as well).

Fleet Development

The Minister also felt that fleet development would be retarded if vertical integration were to occur in the inshore sector. It is not clear what formed the basis for this idea other than the belief that individual fishermen would take a

keener interest in ensuring that they utilized the most up to date technology in pursuing their craft. Fleet development did proceed, arguably beyond the expectations of the Minister (and the carrying capacity of the resource). But for the reasons given above, the policy itself was arguably irrelevant.

There are two ironies in all this. First, it is the most efficient fleet (groundfish dragger) that is now the *least* separate. It was effectively delivered up into the hands of the processors because of its success and high capital and operating cost. And second, it was not processors, but DFO itself through the regulatory regime which was the major agent in the process of retarding fleet development and efficiency. This was all in the name of maintaining a balance between capacity and the available resource.

The Options

There are three main options for balancing the interests of processors in gaining improved access to the resource to facilitate operating efficiency and market development and of fishermen in obtaining market determined prices and incomes: establish auctions, abandon fleet separation and establish plant quotas.

Option 1: Establish Fish Auctions

Any attempt to introduce auctions in Atlantic Canada would meet with considerable difficulty, not simply because communities are conservative and would resist change to established ways of doing things, but because in most areas the circumstances are not conducive to this method of transacting the sale of fish and because there is no guarantee buyers and sellers would be better off as a result. If the European experience is any guide, the necessary and sufficient conditions to support a fish auction in any given port in Atlantic Canada would include:

- a significant quantity of landings, with some regularity throughout the year;
- a large population in close proximity to the port generating a strong demand for fresh fish;
- a large number of competing buyers in the port;
- landings of highly valued species for which demand is relatively price elastic;
- introduction of a system providing for minimum prices to guard against severe drops in price;
- government financial and organizational support for the establishment and operation of the auction facilities; and,
- willingness on the part of fishermen and processors to depart from traditional methods of transacting fish sales.

The pros and cons of auctions in Atlantic Canada are:

pros

- open process of price formation;
- able to dispose rapidly of substantial quantities of fish;
- adaptable to variable landings; and,
- promotes quality-based prices.

cons

- requires substantial quantities of landings in single locations on a consistent basis;
- needs to be proximity to markets for fresh fish;
- no guarantees of supply security for processors with substantial investments in capacity;
- no guarantee that fishermen and processors would be better off than under the current system; and,
- establishing auction facilities would represent a considerable risk for a private investor.

Option 2: Abandon Fleet Separation Policy

The strongest test for the value of any policy is to ask, "What would change if it were not in place"?. In the case of fleet separation the answer would seem to be, "Not very much.". This is because integration has already taken place in many of the circumstances where it makes sense from the perspective of both parties. In other words, the policy has been largely ineffective in preventing from happening what in its absence would otherwise have happened. And conversely, the policy has been largely irrelevant in maintaining the independence of vessels and fleets. Where it is in the interests of fishermen to maintain their independence, they do so.

Some of the pros and cons of abandoning the policy are:

pros

- vertical integration will improve the efficiency of processing operations and enhance the ability of processors to meet market demands;
- the policy does not act in the interests of fishermen since it inhibits ease of exit from the fishery;

- it promotes evasive behaviour resulting in high transactions costs and unnecessary risks;
- it is discriminatory in that applies differently depending on the direction of integration: forward integration from vessel to plant is acceptable, but backward integration from plant to vessel is not; and,
- it undermines the investments of established processors by permitting integration and plant resource control by fishermen.

cons

- places increased control over resources in the hands of processors who have substantial investments to protect;
- reduces or eliminates the market mechanism in determining landed prices;
- places increased control over fleet rationalization in the hands of processors whose interests lie mainly in efficiency and not employment; and,
- decisions about resource management and allocation would shift gradually from fishermen to processors who are primarily interested in profits, not jobs and community stability.

Option 3: Transferable Plant Quotas

Competitive and individual transferable quotas do not necessarily provide processors with sufficient supply continuity, quality and price stability. Shifting the allocation of quota from fishermen to plants would provide such control. This would operate in a fashion similar to the current regime in the offshore sector. Plants would have the option of holding licences and operating vessels as the offshore now does, or contracting the services of independent vessels. This approach would work for those fisheries regulated through quotas (e.g., groundfish, herring, crab).

pros

- provides processors with greater control over raw material and hence a greater ability to compete effectively in a global market;
- provides greater community focus to resource allocation;
- allows for the setting of landed prices through collective bargaining or industry-wide negotiations;
- accelerates the process of fleet rationalization;
- leads to an improved balance between harvesting and processing capacity; and,

- provides greater flexibility in plant operations and planning.

cons

- reduces the traditional role of fishermen in allocation decisions;
- reduces the bargaining power of individual fishermen;
- makes long-term vessel planning decisions difficult for independent fishermen;
- vests "rights" in organizations subject to provincial jurisdiction; and,
- sets up community and inter-provincial rivalries when quotas are transferred for plant consolidation or profitability reasons.

Competition

The Issues

From a supply perspective, the corollary to lack of direct access to the resource is vulnerability to competition for raw material. Not only does this threaten supply continuity, but the ability to compete effectively is impaired by the high costs of raw material. This processors say is the direct result of excessive competition for supplies due to the absence of any controls on the entry of buyers, including new processors.

Intense competition and high prices are not due entirely to fleet separation, but the policy does play a role in two ways. It promotes competition by allowing fishermen to build up processing capacity while at the same time inhibiting established processors from having similar direct access to the resource. Established processors would appear to have legitimate grounds for complaint about the lack of a level playing field. Without control over raw material, established processors are also left open to competition from suitcase buyers who have nothing invested in the industry.

The question of the level playing field has merit and is addressed above. This leaves suitcase buyers. The real question is whether they do a disservice to the industry and, if so, how the matter could be resolved. There seems to be little question that they are instrumental in driving up prices in certain fisheries. This is good for fishermen. Processors say it is bad for them because they end up paying more for raw material without any real change in the supply. In other words, competition simply alters the shares of final product revenue (in favour of fishermen) without materially affecting supply for any particular processor.

Is this bad? No; fishermen are simply extracting the maximum under the circumstances. The problem seems to be that processors are paying more than they can afford. If this is truly the case (and many argue that it is), what forces them into this position? The answer would appear to be their circumstances. The industry has invested heavily in processing capacity over the years. By all accounts capacity is excessive and firms facing financial difficulties are seldom permitted to fail. Industry-wide competition to cover overheads is intense and margins are slim at the

best of times. Suitcase buyers may intensify competition, but they are not the source of the difficulties facing processors. A financially healthy industry should be able to withstand the incursions of itinerant buyers.

The Options

There are essentially three options for addressing the industry-wide financial difficulties arising from excessive competition for raw material: restrict entry; reduce barriers to entry and exit; and, allow processors direct resource access.

Option 1: Restrict Entry

By restricting entry is meant limiting the right to buy raw material from fishermen to companies with substantial investments in processing capacity. This would effectively preclude suitcase buyers and others with marginal involvement in and commitment to the local fishing industry and dependent communities. Some provinces have introduced regulations restricting who may buy fish and in what form it may be shipped in an effort to maximize local employment and income.

pros

- eliminates a source of upward pressure on prices;
- reduces the scope for supply discontinuity;
- increases the possibility for local value added; and,
- increases short term local industry stability.

cons

- sustains overcapacity;
- promotes inefficiency;
- reduces the scope for competitively determined prices;
- limits innovation and market adaptation; and,
- places downward pressure on fishermen's incomes.

Option 2: Reduce Barriers to entry and exit

Market economies function most effectively in terms of allocative efficiency when there are few barriers to entry and exit from an industry. Ease of entry and exit allows resources to flow where they are likely to generate the greatest returns. The fishing industry is no exception. Impediments to entry and exit tend to protect the less efficient firms, thereby sustaining a high-cost industry. The absence of artificial barriers to entry promotes innovation and provides an impetus for efficiency. Barriers to exit (e.g., subsidies), though they help to stabilize communities, also lead to industry-wide overcapacity and financial weakness.

pros

- promotes efficiency and long term industry financial stability;
- promotes technology innovation;
- encourages product development and marketing; and,
- reduces financial costs of support by governments.

cons

- rationalization will result in plant closures; and,
- plant closures will lead to community instability;

Option 3: Allow processors direct resource access

This is essentially the same as Option 2 under Resource Access and has the same pros and cons. Direct resource access would be achieved by allowing processors the right to hold licences and own and operate vessels. Those processors who felt it in their interests to secure supplies in this manner would preclude the supply discontinuity effects of competition (for the resources they controlled) from all buyers including the suitcase variety.

This measure is not an alternative to reducing barriers to entry and exit, but a complement. Obviously entry would be constrained to those who could secure supplies. But even in a fully vertically integrated fishery, entry is possible by acquiring access to resources through the purchase of the necessary rights (i.e., licence, ITQ, etc) from an existing participant.

3. CONCLUSION

Improving supply continuity in the processing sector would involve some fundamental changes in the way the fishing industry is currently structured and managed.

In the short run, little can be done about the state of the resource or about seasonal variation in supply due to natural factors. In the long run, sound conservation measures are required to place the industry on a biologically and economically sustainable footing.

Reducing the sharpness of seasonal landing peaks is possible in some fisheries by eliminating the race for fish. This means a move away from global, competitive quotas to individual quotas. Making these quotas transferable would promote harvesting efficiency (if rationalization is financially feasible for participants). Before shifting to an ITQ system, careful attention should be given to the social costs (e.g., those arising from increased monitoring and surveillance).

With respect to resource access, the auction and plant quota options represent radical departures from current methods of transacting business in the inshore sector. While this is not a reason for shying away from them, eliminating fleet separation policy is less radical and is likely in the long run to achieve similar ends.

The strongest reason for adopting the abandonment option is that if there was ever a sound rationale for fleet separation, it has long since disappeared. In short, it is not obvious whom the policy is protecting. The best protection independent fishermen have from vertical integration is that they hold the licences and the decision to sell rests with them. In economic terms, fleet separation is a distortion contributing to a less than efficient processing sector.

But it is not the only factor, nor arguably the most significant factor, underlying the supply continuity problem facing the processing sector. The intense competition for raw material by processors corresponds to the race for fish by fishermen. There are too many plants chasing too few fish. That this has been allowed to continue for many years is the result of a social policy that insulates the industry from the discipline of normal business failure. The more intense the competition, the thicker the insulating walls become with various subsidies complemented by an array of processing and shipping restrictions. If government is serious about the problem it will attack the causes and not the symptoms of supply discontinuity and financial weakness: industry must be placed on a sounder economic footing by permitting failure and attrition.

To conclude, supply continuity will always be a problem for the processing sector (as it is for harvesting). Natural factors will see to that. But within the realm of what is possible, tackling the supply continuity problem is not simply a matter of allowing processors direct access to the resource. This might help, but problem is not the product of a single cause.

APPENDIX

Background to and excerpts from a speech by the Honourable Roméo LeBlanc, Minister of Fisheries and the Environment, Yarmouth, November 28, 1977.

FLEET SEPARATION POLICY

Fleet separation was announced in 1977. It was originally directed toward the offshore sector. The Minister felt the interests of fishermen (and the industry generally) would be served if the trawlers were to be separated from the large processing companies and taken over and operated by independent fishermen. In general, the object was to strengthen the bargaining power of fishermen and to support fleet development. The policy was based on the erroneous assumption that the offshore companies paid artificially low prices and that these prices were transmitted throughout the industry, thereby depressing the incomes of all fishermen.

The policy was in fact never implemented as originally intended. Once the Minister was advised that offshore prices were merely artifacts of the trawler lay arrangements (derived from negotiated target incomes), DFO backed off and the matter was dropped. But there was also a fear that the offshore companies would extend their control over the resource by attempting to integrate the larger vessels in the inshore fleet. The policy as implemented was intended to prevent this. But it also applied to smaller companies, intending to preclude them from becoming vertically integrated.

As implemented in 1978, fleet separation means that only individual fishermen holding limited entry fishery licences have direct access to the resource. Processing companies may not may hold such licences. Since only licenced fishermen may own and operate registered fishing vessels, the rules effectively prohibit processing companies from direct participation in the fishery. The few exceptions to the rule are companies which held licences before the introduction of the policy. They may not acquire additional licences.

In his 1977 speech in Yarmouth, Nova Scotia, the Minister of Fisheries offered the following rationale for fleet separation.

The key influence on raw material price and supply in the groundfish industry is the processor-owned boats. If you pay your own boats an artificially low price, you get fish cheap. ... you also get fish from independent boats cheap, because they have no bargaining power, and because the price you pay your own boats strongly influence the price to others, pushing it downwards.

... We have in Canada allowed the creation of a fish marketing system that thwarts the workings of supply and demand, discourages the efficient use of plant capacity, gives no reward for good quality fish, creates the lowest port market prices among the north Atlantic nations, lowers profits and incomes, and holds back the individual initiative that should be developing our fishery and our fleet.

I propose that in future we separate the fishing fleet from the processing companies in Atlantic Canada. I doubt that fleet development can go ahead without facing this issue squarely and publicly ...

I believe there is clear evidence, from Canadian experience and from other fisheries, that creating a truly independent fleet should improve the efficiency of vessel operations, improve the match of catching and processing capacity, raise fish prices and fishermen's incomes, increase the fishermen's bargaining power, create a healthier balance of forces in the industry, and invigorate fleet development by the fishermen. ...

I believe that processors owning vessels have little to fear from the eventual separation of the fleets. ... Indeed, separating the fleet will improve the supply of fish to many plants, bringing about a fairer distribution. An independent fleet can be more flexible and responsive to industry needs, whether in catching or protection of fish quality. Both sides – fishermen and processors – will be more on their toes, working and bargaining for their money's worth. This move is not government intervention to control; it is a means *to free the forces of supply and demand and of individual initiative.* (emphasis added)

Fleet separation policy was not introduced in a vacuum, but against the backdrop of considerable optimism about resource prospects and markets on the one hand, and an increasingly rigid resource management system on the other. In short, in the midst of the countervailing forces of expansion and restriction was dropped fleet separation with its underlying rationale to aid and abet expansion and " ... free the forces of supply and demand and of individual initiative".

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