

MEMORANDUM

TO: Council, AP and SSC Members

FROM: Clarence G. Pautzke
Executive Director



DATE: June 18, 1992

SUBJECT: Inshore-Offshore

ACTION REQUIRED:

- (a) Receive staff summary of Amendment 18 draft supplementary analysis.
- (b) Receive AP and SSC reports.
- (c) Consider approving supplementary analysis of Amendment 18 for public review.

BACKGROUND:

In March 1992 the Commerce Department accepted in its entirety the Gulf of Alaska (Amendment 23) inshore/offshore plan, and portions of the BS/AI Amendment 18. Regarding Amendment 18, Commerce Undersecretary for Oceans and Atmosphere John Knauss approved the Western Alaska Community Development Quota program, as well as the first year 35/65 inshore allocation of pollock in the BS/AI, including designation of the catcher vessel operational area. The Undersecretary disapproved and returned to the Council the allocations proposed for 1993-95, however, citing concern over projected economic losses estimated in a National Marine Fisheries Service (NMFS) cost-benefit analysis of the allocations.

During the April 1992 meeting, the Council considered the actions and recommendation made in the Commerce Department decision, and elected to consider developing a revised amendment and supplementary supporting analysis for Secretarial action. The Council reviewed the concerns raised in the NMFS cost-benefit analysis of the original allocation proposals, and received testimony concerning the scope, accuracy, and implications of that analysis. Based on this information, the Council adopted a modified set alternatives to be considered under the supplemental analysis. These revised alternatives are contained in C-2(a).

The analytical team organized to complete the supplementary analysis has been working under strict time and resource restraints. The multi-agency team (noted below) includes 12 analysts representing the Council staff, the NMFS regional office in Juneau, the NMFS research centers in Seattle and LaJolla, as well as the NMFS central office in Silver Springs, Maryland. Following the April Council meeting, the analytical team met with industry representatives in Seattle on May 13 to discuss the scope of the study, address concerns over the NMFS cost-benefit analysis, and identify appropriate data sources for the supplementary analysis. Industry comments received on the cost-benefit analysis are under item C-2(b).

The supplementary analysis of the revised Amendment 18 alternatives was completed and mailed to the Council on June 16. The document is comprised of four parts: 1) a cost-benefit analysis; 2) an economic impact analysis; 3) an analysis of the catcher vessel operational area; and 4) a summary and update of pertinent findings from the original social impact assessment. This information is a supplementary analysis to that already presented in the SEIS regulatory analysis. Staff will summarize the results of the supplementary analysis.

The Council needs to consider approving the Amendment 18 supplemental analysis for public review at this meeting. If released, the public review period would be during July. The Council is scheduled for a special meeting August 4 and 5th to consider final action for submission of the revised inshore/offshore analysis to Secretarial review. Undersecretary Knauss advised the Council that the allocations for the latter years of the proposal could be resubmitted with supplementary supporting analyses for a 60-day Secretarial review, in order to have a plan in place for implementation early in 1993.

Analytical Team Membership

Jim Cornelius, Team Leader	NPFMC, Anchorage
Jerry Berger	NMFS-NWAFC, Seattle
Steve Freese	NMFS-NWAFC, Seattle
Jay Ginter	NMFS-AKR, Juneau
David Hamm	NMFS-AKR, Juneau
Marcus Hartley	NPFMC, Anchorage
Jim Hastie	NMFS-NWAFC, Seattle
Sam Herrick	NMFS-SWC, LaJolla
Mort Miller	NMFS, Silver Springs
Russ Nelson	NMFS-NWAFC, Seattle
Brent Paine	NPFMC, Anchorage
Galen Tromble	NMFS-AKR, Juneau

Amendment 18 Inshore/Offshore Revised Alternatives

Alternative 1

This is the status quo, or "do nothing" option. Under this alternative, no inshore/offshore allocations would be made for 1993, 1994, or 1995. The allocations prescribed from 1992, as well as the designated catcher vessel operational area would lapse at the end of the 1992 season, although the Western Alaska Community Development Quota program would remain in effect. No other explicit actions would be taken to address preemption of the inshore sector in the BS/AI.

Alternative 2

Allocation of the BS/AI pollock TAC between the inshore and offshore sectors, after deducting the apportionment made the Western Alaska Community Quota Development Program (CDQ), as follows:

<u>Year</u>	<u>Inshore</u>	<u>Offshore</u>
1993	30%	70%
1994	30%	70%
1995	30%	70%

The fixed 30/70 allocation will be considered with and without the designation of a catcher vessel operational zone around Dutch Harbor (see attached map). This allocation alternative is an approximation of actual inshore and offshore shares of the pollock TAC in the recent past¹. Establishing this allocation at existing market shares is different, however, than an unregulated status quo. Under the status quo, the allocation split in future years would not be prescribed. Thus, Alternative 2 would fix the allocation of the TAC between the inshore and offshore sectors based on a continuance of the inshore/offshore shares that existed in 1991.

Alternative 3

Allocation of the BS/AI pollock TAC between the inshore and offshore sectors, after deducting the apportionment made to the CDQ program, as follows:

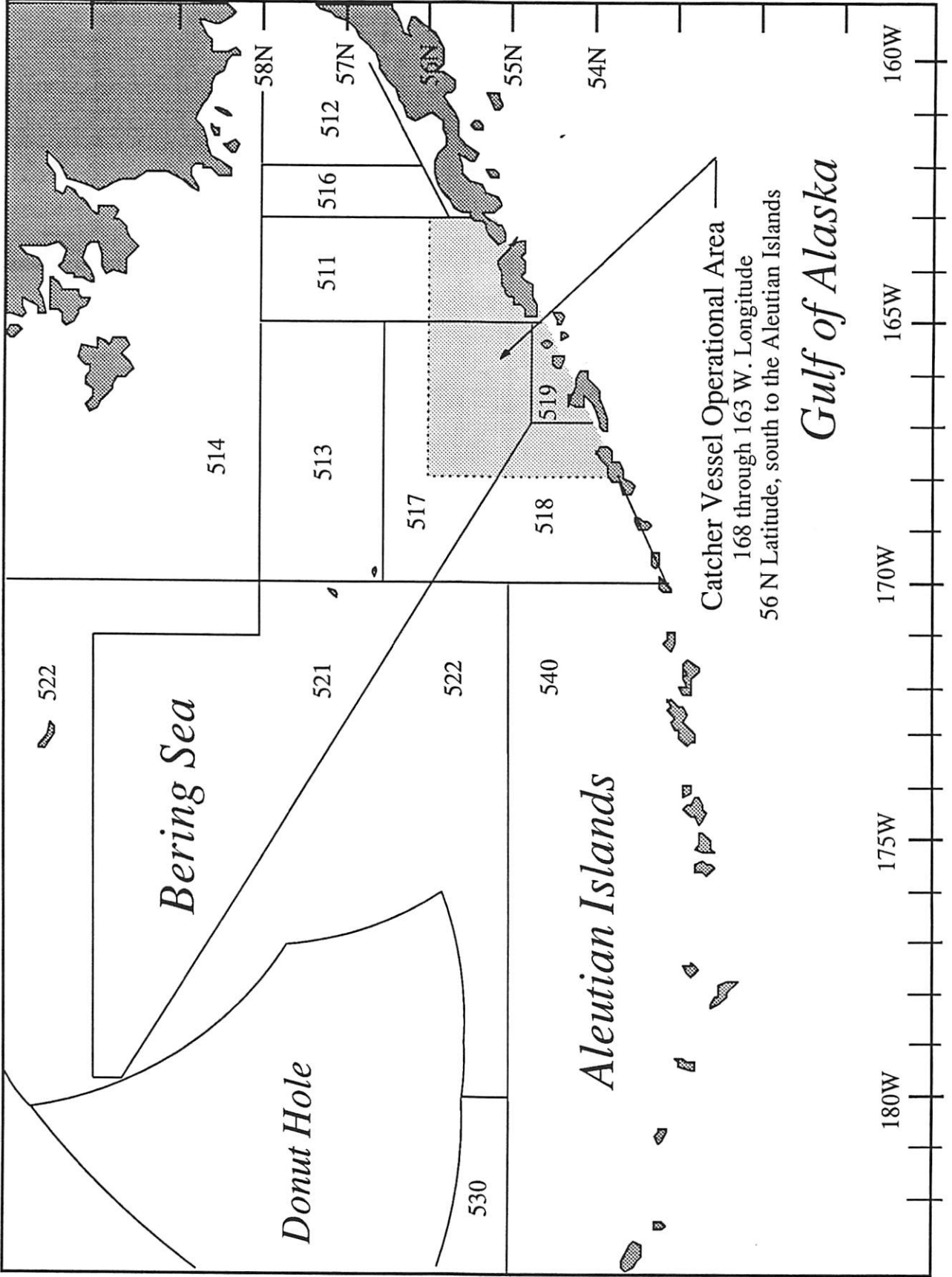
<u>Year</u>	<u>Inshore</u>	<u>Offshore</u>
1993	35%	65%
1994	40%	60%
1995	45%	55%

This phased annual increasing allocation to the inshore sector also will be examined with and without the designation of a catcher vessel operational zone around Dutch Harbor. Alternative 3 is the same percentage share allocations prescribed in the preferred alternative developed in the SEIS.

¹According to the NMFS estimates for 1991, approximately 28 percent of the pollock TAC was accounted for by shorebased processors. Combining this percentage with the catch volume accounted for by other qualifying inshore processors, such as "inshore" motherships as defined in the Amendment, the resulting status quo split of the TAC is approximately 29.50 percent inshore and 70.1 percent offshore.

Catcher Vessel Operational Area

Even with the designated share allocations of the BS/AI pollock TAC as noted above, there is the possibility that inshore operations may be preempted from harvesting their share of the TAC, if offshore vessels concentrate their harvest operations in the waters adjacent to Dutch Harbor and Akutan. A catcher vessel operational area (CVOA), defined as those waters inside 168 through 163 W longitude, and 56 N latitude south to the Aleutian Islands, has been proposed as fishing grounds that either restrict or exclude access by offshore processors in order to insure that inshore vessels are able to harvest their share of the TAC. The CVOA is intended as an option to be considered under Alternatives 2 and 3.



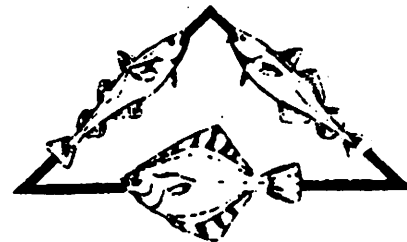
Alaska Groundfish Data Bank

TO: RICK LAUBER, CHAIRMAN
NORTH PACIFIC FISHERY MANAGEMENT COUNCIL

RE: COMMENTS ON COST/BENEFIT ANALYSIS

DATE: APRIL 30, 1992

SENT BY FAX:



**COMMENTS ON THE COST/BENEFIT ANALYSIS
FOR THE PROPOSED ALLOCATION OF POLLOCK
BETWEEN INSHORE AND OFFSHORE PROCESSORS IN THE BERING SEA**

We appreciate the opportunity to comment on the cost/benefit analysis National Marine Fisheries Service presented to the North Pacific Fishery Management Council at the April 1992 meeting.

Any criteria used in allocative decisions becomes, in effect, policy and we have grave concerns that the cost/benefit analysis sets policies contrary to and detrimental to the conservation policies which have guided the North Pacific Fishery Management Council since its inception.

There are also what we feel are serious errors in the numbers used by the analysts and serious policy concerns raised by some of the assumptions.

Finally, we are concerned that the economists, by developing a cost/benefit analysis which fits only one school of thought within the economic community, are pre-empting the Council's policy making authority.

Our concerns in these three areas are detailed in the following sections.

I. COST/BENEFIT VERSUS CONSERVATION

The Council, Congress and the public have increasingly focused on what is perceived as the fishing industry's failure to engage in "wise use" of the resource. The major targets of concern have been bycatch of halibut, crab, salmon and herring in the trawl fisheries and discards of target species. The trawl industry definitely feels it has been put on notice that its fishing practices must be modified to meet the "wise use" standard.

However, the cost/benefit analysis does not factor in the cost of "wise use" and, instead, encourages what are viewed by the public as wasteful practices.

A. BYCATCH

Reducing the bycatch of halibut, salmon, crab and herring has costs which are borne by the trawl industry.

1. Cost in fuel, time and reduced catch rates when a vessel goes through the process of making test tows to check on halibut presence and moves on to another area in search of fishing grounds with low halibut bycatch rates. In Kodiak vessels report spending up to a day just looking for clean grounds.

- There are times when avoiding bycatch requires running to more distant grounds which also adds increased fuel and time costs.
2. Cost in total earnings when lower priced species rather than higher priced species are targeted to avoid halibut bycatch. The Gulf of Alaska shorebased industry's decision to target the lower valued Dover sole rather than the higher valued rex sole was based solely on the differential halibut bycatch rates in the two fisheries.

Under the current management system of bycatch caps which close all or portions of fisheries when the cap is reached, any vessel with higher than average bycatch rates is reducing the amount of target catch which can be taken by the fleet in aggregate. This, too, is a substantial cost to industry.

Further, every pound of bycatch species left on the ground is a benefit to the segments of industry which do target halibut, herring, crab, and salmon.

However, were the cost benefit analysis to be the sole decision making document, the "winner" would be the vessel which ignored bycatch concerns in favor of maximizing its own profitability.

Any segment of industry which reduces its "producer surplus" to avoid bycatch is penalized under cost/benefit analyses.

Further, if the analysis is to actually look at "net benefit to the nation" rather than the simplistic maximizing of surplus profits in a segment of industry, any reduction in catch and income to other segments of industry caused by bycatch -- whether direct such as removal of halibut or indirect such as closures due to caps being reached -- should be factored into the equations.

Already there are a number of regulations in place, such as time/area closures which are costly to the trawl industry but are perceived as beneficial to the resource or nation -- most of these would not be justified by the type of cost/benefit analysis presented to the Council.

B. WASTE

Avoidance of waste -- the discard of undersized fish or other target species also has associated costs to the industry.

1. As discussed under "Bycatch" vessels spend time and fuel looking for grounds where small fish can be avoided and, at times, running to distant grounds where small fish can be avoided rather than fishing nearer processing plants.
2. Vessels and processors may, and do, decide to deliver and process lower value species or low profit species taken incidentally in the catch rather than discard those species. This practice both reduces discards and reduces overall producer surplus.
3. Processors, in an effort to reduce waste, may, and are, making investments in machinery that will process smaller pollock and expanding their ability to process and market other groundfish species. These expenses reduce discards, but lower producer surplus by requiring investment and may lower producer surplus because if the profit per unit for small fish and incidentally taken groundfish species is lower than for large fish and for pollock and Pacific cod - the principle target species.

As in the case of bycatch, discussed in the previous section, reduction of waste reduces "producer surplus," and, while encouraged by Council policy and perhaps mandated by public opinion, it is counter-indicated under the parameters used in the cost-benefit analysis.

C. DISCUSSION

The Council, both directly, and through the aggregate trends of its decisions, sets policy.

Part of the business of fishing in the current competitive and allocative environment is assessing policy trends and making business decisions that have the greatest likelihood of guaranteeing the business allocations of fish.

A strict interpretation of the cost-benefit analysis presented to the Council indicates that, under the cost-benefit parameters, allocations will be given to those businesses which concentrate on high profit products, such as roe, from high profit species, spend little or nothing on reducing waste and avoiding bycatch and minimize investments in labor, upgrading equipment or developing new markets or product forms -- in short, the cost-benefit analysis favors short term profit taking.

Industry's ability and willingness to respond to perceived policy decisions is evident in the amount of effort which pours into a fishery anytime limited entry is discussed. When discussions of a moratorium began, processors urged their fixed gear vessels to make Pacific cod deliveries to assure the vessels a groundfish history.

Further, if substantial weight is given to the cost-benefit analysis in deciding the inshore/offshore allocation issue, then industry will demand the same process be used in other allocative issues such as the setting of bycatch caps, time/area closures and allocations among gear groups.

II. DATA AND ASSUMPTIONS

A. DATA

1. Product recovery rates:

The use of 18% for offshore surimi is contrary to the product recovery rate used by NMFS. The current product recovery rate of 15% should be used under the requirement for best available information. Nor is there any justification for using 20% in the triangulation performed for the offshore fleet -- in fact all available information indicates that 20% is seldom if ever achieved offshore.

Recovery rates for onshore and offshore operations can be obtained from both sectors weekly product recovery reports and the argument that triangulation is only possible for the offshore sector strikes us as weak. Either triangulation is possible for both or neither sector.

2. Product Mix:

The Council's Inshore/Offshore EA/RIR on page 3-58 lists a different percentage mix of pollock products than shown in the cost/benefit analysis on page 27. According to the EA/RIR the mix of 79.6% surimi, 18.9% meal and 1.5% roe for inshore and 76.6% surimi, 20.5% meal and 2.9% roe for offshore operations.

These product percentages are at substantial variance with the percentages shown in Table 4 of the cost/benefit analysis.

- 3. Treatment of employment costs:** The cost/benefit analysis treats "rents" as benefits, so everyone paid on a shares basis is a net benefit to the nation. The same person, if paid a salary, becomes a liability. This may be splendid theory, but it makes no sense in a document designed for decision makers in a real life situation. All employment costs, regardless of how the employee is paid, should be treated the same.

B. ASSUMPTIONS

- 1. Producer Surplus equals a benefit to the nation:**
While a common economic assumption, it ignores "deferred costs." In other words, the cost to the nation of bankruptcies both within the industry and within support services when the money has been borrowed from U.S. citizens or financial institutions is ignored; the cost of bycatch, waste, etc., is ignored - only theoretically could producer surplus be equated with net benefit to the nation.
- 2. Adding the CDQ to the inshore sector:**
We feel the CDQ program is a third sector. It is to be expected that both inshore and offshore operations will seek to benefit from the CDQ program. Participation by offshore operations may result in their becoming inshore operations, but the allocative issue is among existing operations and the need for processing capacity in the CDQ program will, in many instances, be met by floating processors now in the offshore sector as they can, with least expense, provide processing capacity.
Therefore, it seems inappropriate to assume that the CDQ quota is added to the inshore sector.
- 3. Snapshot Approach:**
The snapshot approach values short-term profit taking, but ignores the long-term economic picture. An appropriately timed snapshot of the savings and loan industry would have concluded that the practices which lead to the whole S&L scandal and loss of revenue to the nation were actually, at one point, a net benefit to the nation.
One of the strongest indictments of the Alaskan fishing industry comes from brokers and potential buyers who complain
 - 1. The industry cannot be depended on for product; product forms shift to whatever is bringing the highest price, leaving markets without fish. Some major companies are now seeking fish abroad because they have found the Alaska industry impossible to deal with.**
 - 2. The management system precludes a steady flow of product, which increases costs and reduces quality.**

There are operations who continue to produce less profitable products in order to hold onto a market because experience has taught them that this year's winner is next year's loser and vice-versa. Long term economic survival is often maintaining diverse markets. However, the cost-benefit analysis penalizes the long term stayers in favor of the short term profiteers.

4. **To Whom the Producer and Consumer Surpluses Accrue:** The cost/benefit analysis notes on page 12 that much of the surplus may accrue to citizens who are not citizens of the U.S. We agree identifying to whom benefits accrue is probably beyond the time and resources of any analysts; however, this fact invalidates simply looking at the bottom line of who wins and who loses in terms of producer surplus.
5. **Additional Investment:** The cost/benefit analysis raises the question of whether shorebased operations would need to make additional investments to process an increased allocation. A survey of existing capacity would indicate that this is not an issue and the existing capacity is more than adequate to process the proposed reallocation of pollock.

III. ECONOMIC SCHOOLS OF THOUGHT

The authors of the paper state on page 13 that "Cost-Benefit analysis is widely recognized as the appropriate method for analyzing public sector decisions."

We feel to compelled to point out that "widely recognized" does not equate with "applicable." Social and conservation concerns have by and large outweighed "producer surplus" concerns throughout the history of U.S. fisheries management. Unless there is to be an abrupt change in policy, cost/benefit analyses are not applicable to the U.S. fishing industry and do not represent what the public perceives as "net benefit to the nation" or as "efficiency."

On page 2 the authors state that a cost/benefit analysis "allows estimates to be made of net economic gains or losses, for society and for private enterprises." In the case of the cost/benefit analysis before the Council, the interests of society, which has expressed loudly its concerns about waste, bycatch, marine mammals, the ecosystem, privatization of public resources and jobs have not been part of the cost/benefit analysis.

I happened read a May 1991 Scientific American on the plane back to Anchorage from Washington, D.C. and two articles caught by attention.

"The sting of truth" an essay by John Kenneth Galbraith opens with the question: "Does mainstream economic theory and instruction serve to conceal economic reality?" and continues "alas, yes."

Galbraith goes on to state: "The self-service of the management of the enterprise, not the service of the public, is the reality that the established doctrine conceals. Economic education then extends that concealment in colleges and universities."

Though Galbraith goes on to apply his thesis to the military-industrial complex, his question and statements appeared pertinent to the whole question of the value of the historically correct cost-benefit analysis format to decide allocative questions in the fishing industry where social and public values play such a large part in management decisions.

The second article "Bursting Bubbles" in the column "The Analytical Economist" by Elizabeth Corcoran and Paul Wallich discusses the indifference of economists to the real estate market and the facts that house sales are not part of economic

Indicators and that the value of homes is not included in measures of national savings.

The article goes on to discuss "Bubbles" -- inefficient markets which have rapid price escalations followed by rapid declines -- bubbles created by wishful thinking or rosy expectations. The description seemed apropos to the fishing industry where rumors of stock shortages send markets soaring, only to be followed by collapses; rumors of one vessel making high profits creates a whole fleet of new vessels.

Bubbles, the article concludes, create terrible misallocations of resources. "When the bubble bursts, the economy `loses a ton of money.'" Economists, the article states, find bubbles an unfashionable subject of study "because of economists' deeply held reliance on efficient markets."

A snapshot cost-benefit analysis taken when the bubble was growing would conclude that the bubble was in the benefit of the nation. In terms of cost-benefit and producer surplus, joint ventures would probably turn out to have been the most economically efficient method of harvesting fish.

The point is, cost/benefit analyses or other standard historic economic theories may not be applicable to the fishing industry, may be contrary to the national benefit and certainly change what have been the prevailing policies.

IV. SUGGESTIONS

Since cost-benefit is one of the items the Council is required to consider in making allocations among user groups, we feel the Council should be provided the data necessary to determine its policies and justify its decisions.

We suggest the cost-benefit analysis be done in the same format as provided the Council in April (with the data and assumptions modified as suggested in Part II: Data and Assumptions), but, with an appendix which gives the results of modifying the analysis as follows:

EVALUATING BYCATCH

1. The value of the herring, salmon, crab and halibut, tonnage to be based on current bycatch rates, which would be taken by the inshore and offshore sectors under the current and proposed allocation of target species be evaluated and presented, perhaps in terms of dollars/MT of target.
2. Any increase or decrease in target tonnage under existing bycatch caps be evaluated under the current and proposed allocative allocation of target species, i.e., if the shorebased sector has lower halibut bycatch rates, increased allocations of target species to the shorebased sector would allow more target species to be taken under the halibut cap or vice versa. This data should be clearly presented.

Bycatch is not included in the economic analysis and therefore the analysis precludes the Council from identifying bycatch as a decision factor as a matter of policy.

EVALUATING WASTE

1. The value and tonnage of the potential target species discarded by each sector under the current allocation and the change in value and tonnage of retained and discarded target species under the proposed allocations. In the case of pollock most of the discards appear to be pollock.

The cost benefit analysis in essence disregards the value of waste on the grounds that the offshore sector receives a higher value for its product and therefore waste may not be inefficient "in an economic sense." This dismissal of waste as an issue pre-empts the Council's ability to include discards in the decision making process as a matter of policy.

OTHER POLICIES

Any other social, conservation or public policies the Council feels should be part of allocative decisions aside from producer surplus should be clearly articulated. Stopping roe stripping was a minor skirmish in which the public's priorities prevailed over the cost/benefit analysis.

The Inshore/Offshore allocation is a major skirmish which will shape not only future business practices within the industry, but the public perception of the fishing industry and the guidelines by which future allocative decisions will be made.

Again, we thank you for this opportunity to comment.

Sincerely,



Chris Blackburn, Director
Alaska Groundfish Data Bank



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MAY 1, 1992

TO: JIM CORNELIUS
NORTH PACIFIC FISHERIES MANAGEMENT COUNCIL

FROM: CHRIS RILEY
TRIDENT SEAFOODS CORP.

ATTACHED ARE MY COMMENTS ON THE NMFS COST BENEFIT STUDY, ALONG WITH SUMMARY MODEL.

I WILL BE SENDING COMPLETE DOCUMENTS.

THANK YOU.

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COMMENTS ON THE NMFS COST- BENEFIT ANALYSIS

This document has serious shortcomings. Problems can be found in both the methodology and the assumptions. In order to estimate the magnitude of the distortions I have constructed a spreadsheet model that mimics the treatment in the analysis of Bering Sea pollock. This model examines only the predicted effects of allocating Bering Sea pollock, as this is the only part of the allocation that is still at issue. A copy of the results along with a disc are included. The following is a list of the problems, along with, where possible, an estimate of magnitude.

I. THE STUDY FAILS TO MEET ANY DEFINITION OF COST-BENEFIT ANALYSIS, INCLUDING THE DEFINITION PROVIDED IN THE PAPER

A cost-benefit analysis is an estimate of the changes likely to occur in the value of the consumer and producer surpluses. This study ignores consumer surplus and so effectively estimates the change in consumer surplus at zero.

This introduces a strong bias. Since the beginning of this controversy, the shore based operations have stressed their higher utilization rates, which would logically lead to increases in consumer surplus. Conversely, since the beginning, the offshore fleet has claimed that it produces at a lower cost than the shore based operations, which would logically lead to increases in producer surplus.

The fact that consumer surplus was declared to be zero introduces a bias into the results of the study that favors the position of factory trawlers.

II. THE STUDY RECOGNIZES THE EXISTENCE OF ALTERNATIVE SOURCES OF POLLOCK SUPPLY, BUT FAILS TO ACCOUNT FOR THIS IN THE ANALYSIS

The loss that a firm realizes as a result of being denied access to a "free" resource is limited by the replacement cost of that resource. The report recognizes that Russian pollock fishing rights are now being sold. The Bill Atkinson News Report (issue 442) reports a large transaction at \$258/MT. The NMFS analysis shows the value of pollock to the offshore fleet to be \$665/MT, while the value to the shore based sector is only \$473/MT, for a net loss of \$192/MT, for each ton allocated to the shore sector. If the loss to the at-sea industry is limited to the replacement cost of \$258/MT, The \$192/MT loss becomes a \$215/MT gain.

III. THE STUDY TREATS COMPENSATION FOR PROCESSING LABOR AT SEA IS TREATED AS A BENEFIT TO SOCIETY, WHILE COMPENSATION FOR THE SAME JOBS ARE TREATED AS COSTS FOR THE SHORE BASED SECTOR. THIS IS RESPONSIBLE FOR ABOUT ONE HALF OF THE PROJECTED "NET LOSS TO THE NATION"

No economic justification for this disparate treatment of process costs is provided in the study. Compensation that is calculated on an hourly basis, and that received in the form of a salary, was assumed to be a cost to the nation. Compensation that is calculated on a share basis was assumed to be a benefit to the nation. With a very few special exceptions, welfare economics in general, and fishery economics in particular treat the compensation paid for labor, however calculated, as a cost. NMFS provided no justification whatever for this disparate treatment of labor costs in the paper.

At the April NPFMC meeting NMFS representatives attempted to justify their treatment of labor costs by saying that the opportunity cost of these peoples time and effort is zero, and that what these people were really doing is collecting the economic rent in the fishery. An examination of the implications of this statement expose it's absurdity.

If a seafood processor felt that his (her) opportunity cost of a period of factory trawl employment were zero, this person would be willing to accept such employment at an infinitesimal wage. The fact that these people receive significant compensation raises two questions.

1. Why do the owners of factory trawlers pay tens or even hundreds of millions of dollars each year for services that are available at negligible cost?
2. Why do factory trawlers experience high turnover? Why would any rational person quit such a job?

An argument could have been made that part of the compensation to those employees with scarce skills specific to this industry is a quasi-rent. The most obvious category for this would be the fishermen. No such argument was made. If some fraction of fishermen compensation were treated as a quasi-rent the effect would favor the shore based sector, as this group spends about five times more per ton on harvest labor.

If all labor costs are treated conventionally, (as costs) the \$192/MT "loss to the Nation" projected in the study falls to \$103/MT

IV. PRODUCT MIX AND RECOVERY ASSUMPTIONS TEND TO OVERESTIMATE THE REVENUE GENERATED PER METRIC TON FOR THE AT-SEA OPERATIONS, WHILE GROSSLY UNDERESTIMATING REVENUE PER METRIC TON FOR THE SHORE-BASED SECTOR. THE NET EFFECT OF THESE DISTORTIONS IS MUCH LARGER THAN THE ENTIRE "LOSS TO THE NATION" PROJECTED IN THE STUDY. THE STUDY FAILS TO DOCUMENT KEY ASSUMPTIONS. WE MUST KNOW THE SOURCE OF EACH VARIABLE THAT IS USED IN THE ESTIMATE. IN MANY CASES IT IS APPARENT THAT NON-PARALLEL DATA IS USED. WHEN THIS IS THE CASE IT MUST BE JUSTIFIED.

A. MEAL

The study assumes that the shore based sector will produce no fishmeal from the allocated fish. Every Bering Sea shore plant has a meal plant and legally, these plants must run all of their waste to meal. Meal recovery is about 9% from raw product into the plant. Nearly one fifth of the "net loss to the Nation" predicted in the study is attributable to the prediction that Bering Sea shore plants will not produce meal from any of the fish allocated. Meal prices are said to come from the Urner Barry Newsletter. This newsletter does not cover fishmeal.

B. ROE

The study assumes that the offshore fleet recovers nearly six times as much roe from the fish than the shore plants. Every Bering Sea shore plant is set up to extract the roe from every fish processed. not all factory ships are able to do this. On the other hand, factory ships are able to target schools of fish with high roe content. One should expect expect these advantages to cancel, and that roe recovery would be similar for the two sectors.

An estimate of roe production, by operation, is provided in the Bill Atkinson News Letter (issue 444). Using this information and harvest data from the NMFS bulletin board yields an estimated roe recovery of 2.7 % for the offshore operations and 4.2 % for the shore plants.

Relative roe recovery is an extremely significant part of the "net loss to the nation" that NMFS is predicting. Ninety eight of the one hundred ninety nine dollar per metric ton "loss" disappears when both sectors are assumed to have a 2 % (year-round) roe recovery.

C. FILLETS

The study assumes a 26 % fillet recovery. A realistic recovery, assuming that all fish are run, is 18 % ; the number that NMFS uses for roe stripping enforcement. This was used in the SEIS, and this is what was shown in my paper of March 1991. How did the "Special Studies Team" determine that 26% was the best figure, when this was far above most published estimates, and showed an range of error

far greater than the estimate itself? As someone with considerable experience in fillet production I can state categorically, that a 26% recovery to skin-off pinbone-out fillets, using a Baader 182 is impossible at sea or on-shore. If an 18% recovery for fillets is substituted for the 26 % used, the \$192/MT "net loss to the Nation" is reduced by fifty six dollars per metric ton.

A price differential is claimed for fillets, It is implied that the source of this information is the Urner Barry Newsletter. Recent editions of "Seafood Price-Current" do not differentiate between the two sectors. It is also curious that NMFS is projecting zero fillet production for the shore based sector. Our facility was the first shore plant to process pollock, and we have produced pollock fillets every year since 1984.

D. SURIMI

The study assumes an 18% recovery for the offshore fleet. Estimates of this vary from 12 % to 18 % . NMFS now uses 15 % . Information from NMFS on the 1992 "A" season shows 14.35% (see attachment). If 15 % is used in the analysis the "loss to the Nation" is reduced by forty seven dollars, or 23.6 % of the total projected loss.

V. THE AUTHORS GROSSLY OVERSTATE THE STATISTICAL SIGNIFICANCE OF THEIR WORK THROUGH THE USE OF A SPURIOUS "RISK ANALYSIS"

In the executive summary it is stated that, on the basis of this analysis that, "[t]here is almost zero probability that the net present value of net benefits would be positive. In order for a risk analysis of this type to have any validity, every variable that effects the result, for which perfect information does not exist, must be allowed to vary. Do they really expect us to believe that they are 100% certain that no fishmeal will be produced by the Bering Sea shoreplants ? This is precisely what they are saying in this analysis.

Worse yet, they don't allow some variables to vary even after it is stated in the paper that the value is uncertain. For example, it is asserted that sufficient data are not available to allow for an estimate of net changes in consumer surplus, as a result this was assumed to be zero. By not allowing this to vary in the risk analysis they are saying that they have no way of knowing what the net change in consumer surplus is but they are 100% certain that the value of this is zero. The same can be said about the treatment of crew compensation as rents. (see footnote 16).

VI CONCLUSIONS

It is clear that the "net loss to the Nation" predicted in this study is a reflection of inappropriate methodology and biased assumptions, rather than any inherent efficiency advantage on the part of the offshore sector.

An appropriate response to this document would be to correct the methodological flaws, replace the erroneous assumptions with defensible ranges, assign ranges to ALL key variables, then run the analysis again.

I am confident that when a proper method and realistic assumptions are used the study will show a significant probability that the net value will be positive.

SPREADSHEET MODEL

In that the only species that is now under dispute here is pollock I have separated out the partial effect of an allocation of one MT of pollock. Tables A-D outline the derivation of revenues and costs. references to numbered tables refer to the original NMFS document.

The following shows how the \$192/MT loss becomes a \$118/MT gain, by sequentially correcting the most obvious errors.

NMFS estimate of loss to society from 1 mt allocation	\$ 192
correct for crew-rent problem	\$ 103
correct fillet recovery from 26% to 18%	\$ 47
correct surimi recovery from 18% to 15%	\$ 16
equalize roe recovery	\$ 83 gain
include shore side meal	\$118 gain

TABLE E-1

ESTIMATED BENEFIT OF ALLOCATING ONE MT OF POLLOCK FROM
 OFFSHORE SECTOR TO SHOREBASED OPERATIONS
 NMFS METHOD, ASSUMPTIONS CORRECTED AS IN COMMENTS

	REVENUE (\$/MT)	COST (\$/MT)	ESTIMATED BENEFIT (\$/MT)
INSHORE			
VESSEL/PLANT	812	293	519
VESSEL CREW	89	0	89
TOTAL			608
OFFSHORE			
VESSEL/PLANT	652	251	401
VESSEL CREW	148	0	148
TOTAL	800	251	549
NET			
VESSEL/PLANT	161	42	118
VESSEL CREW	-60	0	-60
TOTAL	101	42	59
NET (TREATING CREW COMPENSATION AS COST)			118

TABLE E-1

ESTIMATED BENEFIT OF ALLOCATING ONE MT OF POLLOCK FROM
OFFSHORE SECTOR TO SHOREBASED OPERATIONS
NMFS METHOD, ASSUMPTIONS

INSHORE	REVENUE (\$/MT)	COST (\$/MT)	ESTIMATED BENEFIT (\$/MT)
VESSEL/PLANT	655	270	384
VESSEL CREW	89	0	89
TOTAL			473
OFFSHORE			
VESSEL/PLANT	779	292	488
VESSEL CREW	177	0	177
TOTAL	957	292	665
NET			
VESSEL/PLANT	-125	-22	-103
VESSEL CREW	-89	0	-89
TOTAL	-213	-22	-192
TOTAL IF CREW COMPENSATION FOR BOTH SECTORS IS TREATED AS COST SO ONLY VESSELS AND PLANTS RECEIVE PRODUCER SURPLUS			-103

AMERICAN FACTORY TRAWLER ASSOCIATION



May 1, 1992

Mr. Steve Pennoyer
Director, Alaska Region
NMFS - F/AKR
P.O. Box 21668
Juneau, AK 99802

Dr. Clarence Pautzke
Executive Director
North Pacific Fishery Management Council
P.O. Box 103136
Anchorage, AK 99501

Dear Steve and Clarence:

One of the most important elements of the onshore/offshore allocation issue to the at-sea processing industry is the "exclusive operating area." This subject received virtually no analysis during the original RIR/EIS process and, we have been informed, approved for the 1992 B Season simply by default. Therefore, in considering the 1993-95 allocation alternatives the Council must provide more than lip service to the analysis of impacts of any exclusive operating area it might consider.

In doing so, the following concerns are germane and should be quantitatively dealt with:

1. The need of the shoreside sector for such an exclusive area if that sector has its own allocation, considering the fact that the offshore fleet will be operating for less than two months of the 3-month A Season and only 2-3 months of the 7-month B Season (i.e., during more than half of the pollock season, there will be no offshore pollock effort any where in the Bering Sea with which the shoreside catcherboats would have to compete);
2. The need by the shoreside sector for any such area considering increasing fishing power, capacity, and range of the shoreside catcherboat fleet (e.g. Chelsea K.);
3. The cumulative effect of this exclusionary area, the Bogoslof area closure, the winter herring savings area closure, and ice conditions on the offshore fleet during the pollock A Season;

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Mr. Pautzke
May 1, 1992

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4. The likely effects of this area on the offshore fleet's efficiency during June, July, August, September, and October (CPUE, size of fish);
5. The likelihood that such an exclusive area will lead to an increase in the bycatch and discard of undersized pollock by the offshore fleet, especially during the A Season and the latter half of the B Season (September-December);
6. The effect of the exclusionary zone on the average size of pollock available to at-sea processors, and the impact of any size reduction on the supply of pollock fillets to U.S. consumers;
7. The PSC bycatch consequences of such an exclusive area during both the A and B Seasons (the Council's bycatch model should be utilized for this portion of the analysis);
8. The overall impact of this area on small catcherboats which support motherships, particularly with regard to vessel and crew safety;
9. The effect of the exclusionary area on the availability of offshore processors to the Bristol Bay and Gulf of Alaska salmon fisheries (ie., if the pollock B Season is delayed long enough to allow factory trawlers to be available as salmon processors, will the Fall pollock distribution be such that much of the mature pollock resource will be in the exclusionary area and, thus, out of reach of the offshore fleet?). NMFS survey and observer data showing pollock distribution by size class by month will be necessary for this portion of the analysis.

The experience of the at-sea processing fleet clearly indicates that exclusion from this area will have a profound effect on that sector's operational and economic efficiency. However, to date no analysis of the potential impact on the offshore fleet has been done, nor has any real need by the shoreside sector been demonstrated. We are hopeful that this iteration of the shoreside preference amendment package will, at last, deal objectively and thoroughly with this most critical issue.

Sincerely,



H. A. Larkins
Executive Director

AMERICAN FACTORY TRAWLER ASSOCIATION



VIA FAX

May 1, 1992

Mr. Clarence Pautzke
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605 West Fourth Avenue
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Mr. Steven Pennoyer
Director
Alaska Region
National Marine Fisheries Service
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Juneau, Alaska 99802-1668

Re: Request for Comments on Amendment 18/23 Benefit/Cost
Analysis

Dear Clarence and Steve:

The following is the American Factory Trawler Association's ("AFTA") initial response to your solicitation of April 27 on the "Cost-Benefit Analysis of Pollock and Cod Quota Allocations in the Bering Sea/Aleutian Islands and Gulf of Alaska Groundfish Fisheries." These comments are submitted on behalf of AFTA and its twenty (20) member companies, who own and operate forty-two (42) vessels which harvest and process cod and pollock in the Gulf of Alaska ("GOA") and the Bering Sea/Aleutian Islands ("BSAI").

This letter is limited to general comments on the technical aspects of the benefit-cost analysis. It should not be construed that AFTA agrees with the Council's decision to proceed with a reanalysis of the allocation alternatives without a reexamination of the problem statement and the necessity for further action in view of prevailing conditions in the fishery, as well as the full range of other management alternatives including ITQs that might be available to meaningfully address the real problems confronting the BSAI pollock fishery as suggested in Dr. Knauss's letter. As you will see in the following pages, we are undertaking a substantial effort to supply NMFS and the Council with refined information upon which to base your analysis. We also have substantial comments on the requirements for undertaking a meaningful analysis of the "operational zone" and will be providing you with a copy of those comments under separate cover.

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THE PRODUCER SURPLUS MEASURES A COMPONENT OF THE VALUE THE NATION DERIVES FROM THE RESOURCES, NOT CORPORATE PROFITS

First and foremost, misstatements to the Advisory Panel, Council, and press that the Agency's analysis was a "comparison of net profits between the two sectors" (see Pacific Fishing, May, page 30) demonstrates a complete misunderstanding of the benefit/cost process, the concept of producer surplus, and the methodology employed by NMFS in their analysis. The fact is that the producer surplus represents the value derived by fishermen and fish-processing businesses from the resources after deducting all the societal costs of producing these goods or services -- not "net profits". In many commercial fisheries, a producer surplus exists absent any financial profits. Misrepresentations that the NMFS benefit-cost analysis measures "profits" eclipsed the following facts:

- Benefit-cost analysis has long been recognized as the cornerstone of all Federal regulatory programs, including fisheries management. A premise behind biological management of the resources is the need to assure a future flow of the benefits to consumers and businesses from the resources. Regulatory actions which fail to maximize the benefits derived from a resource, destroy national wealth.
- All standard of living and quality of life measures of national wealth can be imputed from measures of the producer and consumer surplus which flow from a resource, product, or service.
- Actions which fail to maximize the producer surplus reduce the national standard of living, depress incomes and wages in this country, and make the United States less competitive in the global marketplace.

In short, a prerequisite to the revised analysis is an accurate understanding of the producer surplus and a precise articulation of the methodology employed.

LABOR IN THE TWO PROCESSING SECTORS ARE TREATED IN A DIFFERENT FASHION BECAUSE THEY ARE VERY DIFFERENT

The processing labor in the two sectors were treated in an asymmetric fashion because the two sectors are in fact asymmetric. Suggestions that offshore employees do not participate in the economic rents derived from the fishery are insupportable. While there may be some opportunity cost associated with the at-sea components of processing labor, such

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costs are likely to be minimal given the extremely high earning potential in the offshore industry.

Further, low wage manufacturing employees, paid on a fixed hourly basis, are routinely treated as a production cost. The fact is that shoreside plant processing employees are all paid fixed wages (albeit near minimum wage), do not share in the risks, and do not share in the rewards from the BSAI groundfish fishery. Under the fixed wage contract systems, increases in the value of the resource reside exclusively with the plant and are not passed on to the hourly employees. Because shoreside plant employees are not eligible to share in benefits of a successful trip, they were treated in an asymmetric fashion which is consistent with the definition of economic rent.

LEAKAGE OF NATIONAL BENEFITS TO FOREIGN ECONOMIES MUST BE CAPTURED IN THE REVISED ANALYSIS

The public nature of the BSAI fishery resources requires that the leakage of resource rents to foreign ownership and foreign nationals be excluded from consideration of net national benefits. While foreign rents are an appropriate measure of economic efficiency, they have no role in the allocation of public resources. It is precisely for this reason that in fisheries management, timber leasing, mineral leasing, and offshore oil leasing, determinations have been made that the benefits flowing to foreign interests have no role in the computations of either regional impacts or national benefits. An analysis which includes the producer surplus accruing to foreign business could result in allocations which maximize the value of the resource derived by foreign firms -- hardly a rational basis for the management of U.S. fishery resources.

There is extensive documentation that approximately 80 percent of the BSAI shoreside pollock processing industry is owned and controlled by offshore interests.¹ These plants also have substantial investment in catcher vessels. The resource rents flowing to foreign entities have no role in allocation deliberations and must be separately identified in the analysis, and deducted from all the computations of net national benefits.

¹See Alaska Legislative Research Agency Report, GAO report and AFTA comments.

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THE UPDATING OF PRODUCTION COSTS IS DESIRABLE

Production costs also represent a critical input to the enhanced analysis. The costs in NMFS's analysis were based on 1990 operations. At-sea processors have reported that there has been continuing improvement in their processing operations throughout 1991 and the 1992 A season². Given the Council's interest in updating the production cost estimates, AFTA is initiating a production cost census of all significant at-sea processors in the BSAI. A copy of the methodology and survey instrument will be provided to you shortly as part of a peer review process being conducted of the survey methodology. These data will be compiled and shared with the Council in late May. The complexity of this effort precludes the completion of this task prior to this time. These data will include detailed production costs and product revenues as well as information on crew share and payment systems, labor content, and industry capitalization.

Please note that when the analytical team revises the production costs for shoreside processing that all stationary mothership processors operating in the BSAI pollock fishery are considered to be "shoreside" processors, not at-sea processors under the definitions established. For this reason, the continued treatment of the costs associated with these floating "shoreside" processors as reflective of offshore operations is unacceptable.

THE UPDATING OF PRODUCT PRICES IS DESIRABLE

We support the development of refined and revised product prices. However, the wholesale prices for 1989 through 1991 at-sea products maintained by NMFS is not comparable to explant shoreside prices because the former exclude the marketing/distribution value added, while the latter includes these costs. The directly comparable price between the two sectors is the FOB price of product. FOB shoreside prices are contained in the processed products reports, while FOB prices need to be collected as part of the above mentioned census. These data will be tabulated and shared with the analytical Team in late May. Again the complexity of this task precludes these prices prior to that time.

²Unlike the major Japanese surimi producers, which have over 30 years of experience with surimi, our members were all relatively new entrants to the industry in 1990 and experienced substantial start-up problems.

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THE UPDATING OF PRODUCTION RATES AND PRODUCT MIXES IS DESIRABLE

Again AFTA supports the use of the most timely and reliable information on harvest and production. The key assumption to be updated is the amount of the various finished products produced from each pound of fish harvested. This computation captures both issues of discards and product recovery rate in one verifiable number. These data are readily available for both sectors by dividing processed products produced by each sector, by the harvest of the sectors. Should separate discards and product recovery rate ("PRR") be used, the fixed 20 percent PRR for shoreside plants is insupportable. Information presented at the April Council meeting clearly demonstrated that shoreside plants experienced a range of recovery rates (as do offshore operations) and that those rates are substantially below 20 percent. Furthermore, the discard rates reported by the shoreside fleet are highly suspect due to significant discrepancies between rates reported by observers and those reported by unobserved vessels. Finally, there is no information on discards by the shoreside plants.

The use of harvest to finished product ratios overcounts the true economic costs of discarded fish. In the event that discards are to be valued as a separate number, these fish must be valued in their alternative best use less the costs of producing this alternative product. Because discarded fish are undersized fish unsuitable for fillet or surimi processing in either at-sea or shoreside plants, they must be valued as meal, less the cost of producing meal.

THERE IS A CONSUMER SURPLUS ASSOCIATED WITH THE PRODUCT ENTERING THE DOMESTIC MARKET

A thorough cost-benefit analysis must take into consideration the value derived from the resources by the ultimate users -- the U.S. consumer. This concern is identified in NMFS's own guidelines documentation (An Economic Guide to Allocation of Fish Stocks Between Commercial and Recreational Fisheries, 1990) which concludes:

"Consumer surplus ... is not arbitrary and can not be assumed away. Nor can its role in benefit-cost analysis be overemphasized..."

Assumptions that the consumer surplus of exported surimi products can be dismissed, because these benefits accrue to non-U.S. consumers, are correct. However, about one-half of the offshore fleet's fillet production provides frozen pollock block fillets to domestic markets and this production makes up about one-half

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of the domestic pollock fillet market.³ The implication that the domestic supply of pollock fillets can be reduced by 10 to 20 percent without any associated loss to the U.S. consumer have yet to be supported. Further, there are a number of published elasticity studies of U.S. whitefish markets which provide a simplified framework for addressing the effect on consumers⁴. The use of these secondary sources may allow generalized calculations of the consumer surplus to be made. Because proposed reallocations represent a shift from domestic markets to foreign-consumed surimi, any consumer losses would compound the losses predicted by the existing analysis.

THE BALANCED AND COMPREHENSIVE SUPPLEMENTING OF THE PRODUCER SURPLUS WITH COMPUTATIONS OF SOCIAL AND ENVIRONMENTAL "EXTERNALITIES" WOULD ENHANCE THE BENEFIT-COST ANALYSIS

Conceptually, the benefit/cost methodology is fully capable of incorporating social or environmental externalities⁵ and we would welcome this more thorough approach. However, should the team expand the producer surplus, computations into a full benefit-cost analysis by incorporating externalities, we insist that a comprehensive approach be employed. The following are the types of social and environmental costs escaping the producer surplus computations which could be quantified and added to producer losses in order to generate a comprehensive benefit-cost analysis.

³Both Addendum A to the SEIS and pages 63, 65, and 81 of AFTA's comments dated June 20, 1991 produce comparable estimates of the anticipated domestic shortfall in fillets as a result of the proposed allocation.

⁴Page 83 of AFTA's comments dated June 20, 1991 provides examples of these publications.

⁵For a good example of a "traditional" net economic valuation of a natural resource which quantifies and integrates extensive social and environmental costs, see the net economic value computations and accompanying reports associated with the Minerals Management Service's Comprehensive Program for 1992-1997.

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- There are externalized environmental costs attributable to the pollution of Dutch Harbor, Iliuliuk, and Captains Bays. The increased effluent associated with point source effluent in the Dutch Harbor area imposes an environmental cost to society. The environmental costs of effluent and habitat degradation are well documented in the literature and can be monetized.
- The costs associated with the offshore employees losing their jobs is a social cost which escapes the producer surplus computations. There is a clear precedent for predicting that there are externalized social or "transaction" costs associated with workers displaced from the at-sea industry. Such costs can include the costs of retraining, unemployment payments or lost income, and the disruptional effects of a job loss.
- There are externalized natural resource damages associated with increased mortality to marine mammals. The revised SEIS estimates increased marine mammal interactions and mortality from increased effort in the near shore area. The incremental mortality to marine mammals identified in the SEIS can be valued using NOAA's natural resource damage assessment methodologies and incorporated in the benefit-cost computations as an environmental externality.
- The additional investments shoreside communities must make to accommodate shoreside processing plants and their employees are externalized public sector costs. For example, Dutch Harbor is facing a substantial round of municipal investment should explosive growth continue (i.e., water supply, housing, etc.). Such community infrastructure costs have long been recognized as an externality not captured in private costs and therefore need to be quantified and counted as incremental costs.

Changes in by-catch also represent an externality escaping the producer surplus. Changes in by-catch, and the associated net value of these changes, can be computed using the Council's by-catch model. On three occasions APTA has requested that the proposed action, including the creation of the "operational area" be analyzed with the by-catch model.

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**THE I/O ANALYSIS MUST HOLD TO THE SAME STANDARDS IMPOSED ON THE
BENEFIT-COST ANALYSIS AND ANY REVISIONS MUST BE MADE TO BOTH
MODELS**

Because the Council has stated its intention to weigh the benefit-cost results against regional effects, the same standards for statistical reliability and rigor must be applied to both methodologies. For example:

- It was suggested that the benefit-cost analysis be based on projected future conditions in the fishery -- yet the Input/Output ("I/O") analysis discarded 1990 and 1991 information and was based exclusively on an outdated 1989 baseline. Not only was this baseline dated, but it was known to include the effects of the Exxon Valdez incident on Kodiak, an extinct roe stripping fishery, and terminated Joint Venture fishing operations.
- It is suggested that linear returns to scale should not be assumed in the benefit-cost analysis -- yet the I/O model is based on more simplistic linear relationships. The I/O model combines linear business budgets with fixed purchasing patterns, constant linkages within the national economy, and constant wages in every job throughout each state.
- It is suggested that consistent sources of data were not always used in the benefit-cost analysis -- yet many of the inputs to the I/O model were estimates or based on one or two survey responses. Whatever data limitations exist in the benefit-cost analysis, they are exponentially more refined than many of those used in the I/O model.
- It is suggested that a 1991 one-year snapshot of the industry was an inappropriate basis for the benefit-cost analysis -- yet the I/O model was based on precisely such a one-year snapshot, albeit a two and a half year old snapshot.
- It is suggested that the benefit-cost model suffers from "black box syndrome" -- yet the I/O model was never documented and reviewers were denied access to the coefficients necessary to replicate model results. The benefit-cost model presented to the Council is exponentially better documented; provides a specific accounting of each model input and assumption; and uses

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the Monte Carlo technique to quantify levels of statistical uncertainty (and thus the level of confidence which can be placed in the results). The data driving the I/O model contain dramatically higher levels of variability than those in the benefit-cost model, with the results of the former model less stable.

Because the new analysis will ultimately weigh the distribution effects (estimated with I/O analysis) against the change in benefits (derived with the benefit-cost analysis) all revisions and enhancements to the benefit-cost analysis must be made to both methods of analysis.

THE INPUT/OUTPUT ANALYSIS RESULTS ARE INVALIDATED BY THOSE PRODUCED BY THE BENEFIT/COST ANALYSIS AND MUST BE REVISED

The I/O results served as the basis for many of the key SEIS conclusions which shaped the Council's action. Specifically, the I/O exercise concluded that there were no significant changes in the value of aggregate production or personal income flowing from the resources under alternative inshore/offshore allocations. NMFS's benefit-cost work contradicts this key finding by demonstrating that there is a dramatic reduction in the explant value of the product produced⁶. The substantial changes in the value of output predicted in the benefit-cost analysis invalidates the I/O modeling results which depict how relatively static employment and income would be distributed. Reductions in the aggregate value of output from the fishery of 10 to 20 percent, as demonstrated by the benefit-cost analysis, are inconsistent with I/O conclusions that there are no net losses in production, employment or income. For this reason, the I/O and benefit-cost analysis must be reconciled and updated.

The above referenced refinements are essential and AFTA will work with you to insure that the information you need to make such refinements is available. I will call you shortly to see how you are organizing the forthcoming work and how best to coordinate AFTA's submittal.

Sincerely,

Garry L. Brown for

H.A. Larkins
Executive Director

⁶This conclusion can be imputed from the report but is most evident in the intermediate computations within the model.

This analysis of CPUEs inside and outside the CVOA for domestic pollock fisheries in 1990 and 1991 was completed by Russ Nelson of the NMFS Observer Program for use in the Supplementary Analysis. It will be added into the document following the Council meeting as a part of Chapter 4 in Section 4.3.3.

Comparison of Catcher/Processor and Mothership Catch Rates Inside and Outside the Catcher Vessel Operational Area

The issue of differing catch rates for pollock and associated bycatches of halibut, herring and salmon inside and outside the Catcher Vessel Operational Area (CVOA) has been raised as part of the analysis of options considered under the Inshore/Offshore amendment for the Bering Sea/Aleutian Islands area. Observer data from 1990 and 1991 were reviewed to determine if differences occurred in 1990 and 1991.

Data from catcher/processors and motherships which fished in both the CVOA and outside the CVOA in the same quarter were used. In each case, the vessels had at least 30 hauls sampled in each of the areas. There were nine cases which met these requirements in 1990 and thirteen in 1991. There were additional instances in both years where vessels fished in both areas but the number of hauls taken in one of the two areas or both areas was too small to make a valid comparison. The average catch rate for pollock (kg/min. trawled) and bycatch rates (percent of total catch by weight) of halibut, herring, and salmon were estimated for each vessel by area and quarter.

The estimates for 1990 are shown in Table 1. Data from nine catcher/processors were compared by quarter. There were three comparisons in each of the first three quarters of the year. There were no comparisons available for the fourth quarter since the pollock fishery was closed. The data show that in 5 of the 6 comparisons during the first and third quarters, the average CPUE estimates for pollock were higher in the areas outside the CVOA than inside. In the second quarter, the average CPUE estimates for pollock were higher in the CVOA than outside. The bycatch rate estimates for herring and salmon were generally higher in the CVOA while there was no clear result for the bycatch of halibut.

Table 2 lists the 13 comparisons of data from 1991 where catcher/processors or motherships fished in both areas during a quarter. There were no data from the fourth quarter since the pollock fishery was closed. The majority of data came from observations made during the first quarter of 1991 (8 of 13). The average CPUE estimates for pollock inside the CVOA were greater than outside the area in only one of the thirteen cases. Halibut bycatch rate estimates were higher inside the CVOA in the first quarter but there were mixed results during the second and third quarters. Herring and salmon bycatch rate estimates were higher in the CVOA than outside the area in all cases where catches of herring and salmon were observed.

In general, the comparisons of catch rates in the CVOA and outside the area in 1990 and 1991 indicate that, except for the second quarter of 1990, the average CPUE of pollock was greater outside the CVOA and that the bycatch rates of herring and salmon were higher in the CVOA than outside the area. The data on halibut bycatch rates are mixed, indicating that in some cases the halibut bycatch rate was higher inside the area while at other times it was not.

Table 1 Individual vessel comparisons of pollock CPUE and bycatch of halibut, herring, and salmon by catcher/processors inside the catcher vessel operational area and outside the area, 1990

QUARTER	COMPARISON	IN/OUT	POLLOCK (KG/MIN)	HALIBUT (%)	HERRING (%)	SALMON (%)
FIRST	1	Inside	551	0.01	0.0	0.02
		Outside	1,011	0.02	0.0	0.0
	2	Inside	314	0.02	0.0	0.01
		Outside	1,000	0.0	0.0	0.0
	3	Inside	3,113	0.02	0.0	0.0
		Outside	1,931	0.0	0.0	0.0
SECOND	4	Inside	231	0.52	0.0	0.0
		Outside	120	0.05	0.0	0.0
	5	Inside	328	0.29	0.0	0.0
		Outside	100	1.24	0.01	0.0
	6	Inside	437	0.33	0.0	0.0
		Outside	193	0.15	0.0	0.0
THIRD	7	Inside	160	0.0	0.01	0.01
		Outside	170	0.10	0.01	0.0
	8	Inside	44	0.09	6.54	0.02
		Outside	105	0.36	0.01	0.0
	9	Inside	342	0.0	2.21	0.0
		Outside	438	0.05	0.18	0.0

Table 2 Individual vessel comparisons of pollock CPUE and bycatch of halibut, herring, and salmon by catcher/processors and motherships inside the catcher vessel operational area and outside the area, 1991

QUARTER	COMPARISON	IN/OUT	POLLOCK (KG/MIN)	HALIBUT (%)	HERRING (%)	SALMON (%)
FIRST	1	Inside	956	0.0	0.0	0.0
		Outside	1,229	0.0	0.0	0.0
	2	Inside	860	0.34	0.0	0.0
		Outside	581	0.0	0.0	0.0
	3	Inside	203	0.62	0.0	0.0
		Outside	710	0.24	0.0	0.0
	4	Inside	327	0.3	0.0	0.01
		Outside	363	0.0	0.0	0.0
5*	Inside	176	0.0	0.0	0.07	
	Outside	857	0.0	0.0	0.0	
6	Inside	247	0.29	0.0	0.01	
	Outside	699	0.04	0.0	0.0	
7	Inside	561	0.0	0.0	0.05	
	Outside	713	0.0	0.0	0.0	
8*	Inside	321	0.0	0.0	0.01	
	Outside	517	0.0	0.0	0.0	
SECOND	9	Inside	71	0.04	0.0	0.01
		Outside	75	0.56	0.0	0.0
THIRD	10	Inside	72	0.38	0.0	0.30
		Outside	121	0.22	0.0	0.01
	11	Inside	74	0.35	0.0	0.06
		Outside	87	0.16	0.0	0.0
	12	Inside	118	0.01	0.08	0.03
Outside		171	0.10	0.01	0.0	
13	Inside	77	0.13	0.05	0.18	
	Outside	105	0.36	0.01	0.0	

* Indicates data are from mothership observations. All other observations are from catcher/processors.

MEMO

JUNE 22, 1992

TO: NORTH PACIFIC FISHERY MANAGEMENT COUNCIL
FROM: JOE PLESHA
RE: COMMENTS ON INSHORE/OFFSHORE COST/BENEFIT ANALYSIS

This is to comment on the June 16, 1992 Cost/Benefit Analysis found in the Draft Supplementary Analysis of the Proposed Amendment 18 Inshore/Offshore allocation of pollock in the Bering Sea/Aleutian Islands. As was noted in the study, the results of the cost/benefit analysis are very sensitive to the data inputs that are used. There are some easily correctable errors in the analysis which, when more accurate data is used, reverse the results of the study.

A. PRODUCT RECOVERY RATES

1. **Surimi.** The Cost/Benefit Analysis uses a offshore surimi product recovery rate (PRR) modes of 18% (NMFS estimate) and 17.5% (industry reported).¹ NMFS own data indicates that for the 1992 "A" season, offshore PRRs are 12% on all primary products (which includes the offshore production of wholefish and H&G pollock.) If only bone-out fillets, mince and surimi are included, the offshore fleet achieves a primary product PRR of 11.5%.

The Cost/Benefit Analysis, therefore, overestimated the offshore fleet's primary PRR during the 1992 "A" season over 50%!

During the 1992 "A" season, NMFS for the first time estimated harvest using the "best blend" formula so that if observed harvest differed by 10% or more from the harvest as estimated by the NMFS established PRRs, then the observed harvest was used to determine the actual catch.

Determining offshore PRRs then is simply a matter of totalling the products produced² and dividing by the observed harvest.³ (To determine the PRR for surimi, bone-out fillets and mince, those primary products were totalled and divided by the observed harvest minus the round weight equivalent of the wholefish, H&G and bone-in fillet products.)⁴

¹ See June Cost/Benefit Analysis, Table 2.4, p. 2-8.

² See 1992 Pacific cod and pollock products in metric tons, NMFS/Fisheries Management, data through 03/39/93, attached.

³ See 1992 Bering Sea & Aleutians Groundfish, NMFS/Fisheries Management, data through 03/29/92, attached.

⁴ See product Conversion Rates, NMFS/Fisheries Management, attached.

For the 1992 "A" season motherships had a total primary product recovery rate of 14.02%, which is significantly due to the large volume of wholefish produced by the fleet. Mothership PRR on fillets, surimi and mince was only 12.99%. (See chart below.)

<u>Mode</u>	<u>Product Form</u>	<u>mt of Product</u>
Mothership	Wholefish	844
Mothership	H & G, western cut	52
Mothership	H & G, eastern cut	63
Mothership	Roe	1,157
Mothership	Fillets, no skin or ribs	1,145
Mothership	Surimi	8,198
Mothership	Mince	1,171
Mothership	Fish meal	8,611
Mothership	Fish oil	45
NMFS BS&AI observed harvest (3/29/92) = (BS of 75,544) + (AI of 1,483) + (BS Discards of 4,797)		81,824
Total primary products (3/39/92) (Excludes roe, meal and oil.) =		11,473
PRR on tot. of all primary prod. =		14.02%
Production of fillets, surimi and mince =		10,514
Harvest going to fillets, surimi & mince (Subtracting NMFS PRR round weight equivalents for wholefish (100%), H & G western (65%) and H & G Eastern (56%) =		80,911
PRR on fillets, surimi and mince =		12.99%

Factory trawler's PRRs were much lower than mothership PRRs. For the 1992 "A" season factory trawlers had a total primary product recovery rate of 11.56%. Factory trawler PRR on bone-out fillets, surimi and mince was only 11.2%. (See chart below.)

<u>Mode</u>	<u>Product Form</u>	<u>mt of Product</u>
Factory Trawler	Wholefish	1
Factory Trawler	H & G with roe	5
Factory Trawler	H & G, western cut	250
Factory Trawler	H & G, eastern cut	970
Factory Trawler	Roe	11,801
Factory Trawler	Fillets, w/skin & ribs	166
Factory Trawler	Fillets, w/skin, no ribs	585
Factory Trawler	Fillets, w/ribs, no skin	99
Factory Trawler	Fillets, no skin or ribs	6,265
Factory Trawler	Surimi	30,595
Factory Trawler	Mince	5,205
Factory Trawler	Fish meal	8,611
Factory Trawler	Fish oil	45

NMFS BS&AI observed harvest (3/29/92) = 381,717
 (BS of 326,868) + (AI of 16,442) + (BS Discards
 of 38,162) + (AI discards of 265)

Total primary products (3/39/92)
 (Excludes roe, meal and oil.) = 44,141
PRR on tot. of all primary prod. = 11.56%

Production fillets w/o ribs, sur. & mince = 42,650
 Harvest going to fillets, w/o ribs, sur. & mince
 (Subtracting NMFS PRR round
 weight equivalents for wholefish (100%),
 H & G western (65%), H & G eastern (56%)
 H & G w/roe (80%), fillets w/skin & ribs (35%),
 and fillets s/ribs, no skin (30%) = 380,919
**PRR on fillets w/o ribs,
 surimi and mince = 11.20%**

When mothership and factory trawler harvest and production is combined, the offshore sector's PRR is 12% for all primary products and 11.51% for bone-out fillets, surimi and mince. (See chart below.)

Mothership and FT BS & AI total harvest (3/29/92) = 463,541

Mothership and FT total production
 of primary products (3/29/92) = 55,614

Mothership and FT PRR on all primary products = 12.00%

Mothership & FT production fillets w/o ribs, sur. & mince = 53,164
 Mothership & FT harvest going to filts. w/o ribs, sur. & min. : 461,829
**Mothership and FT PRR on fillets w/o ribs,
 surimi and mince = 11.51%**

The figures above include pollock discards as a harvest. In the event the Council does not believe that target species discards should be considered as a harvest when determining PRRs, if discards are ignored the total mothership and factory trawler PRR still is only 13.23% for all primary products and 12.7% for bone-out fillets, surimi and mince. (See charts below.)

**Mothership Pollock PRRs
(Not Including Discards as a Harvest)**

NMFS BS&AI observed harvest	
NOT including discards =	77,027
Non-discard PRR on tot. of all pri. prod. =	14.89%

Non-discard harvest of flts., sur. & min. =	76,114
Non-discard PRR on flts.,sur, & min. =	13.81%

**Factory Trawler Pollock PRRs
(Not Including Discards as a Harvest)**

NMFS BS&AI observed harvest	
NOT including discards =	343,290
Non-discard PRR on tot. of all pri. prod. =	12.86%

Non-discard harvest of flts., sur. & min. =	342,492
Non-discard PRR on flts.,sur, & min. =	12.45%

**Factory Trawler and Mothership Pollock PRRs
(Not Including Discards as a Harvest)**

NMFS BS&AI observed harvest	
NOT including discards =	420,317
Non-discard PRR on tot. of all pri. prod. =	13.23%

Non-discard harvest of flts., sur. & min. =	418,605
Non-discard PRR on flts.,sur, & min. =	12.70%

2. **Pollock Roe.** The Cost/Benefit analysis continues to credit the offshore sector with two and a half times the pollock roe recovery rate as the inshore sector.⁵ This is

⁵ See June Cost/Benefit Analysis, Table 2.3, p. 2-8.

largely due to the fact that 1991 data was used—a time which pollock roe stripping was partially legal under the regulations which allowed the factory trawlers to strip roe up to 10% of the roundweight equivalent of their production.

Shorebased processors in the Bering Sea process every pound of pollock roe brought to their plants. With Bogoslof closed, the only explanation for any significant difference in the roe recovery rate for the inshore and offshore sectors is roe stripping.

3. **Meal.** NMFS Cost/Benefit Analysis assumes that from 11% to 14.8% of the pollock delivered to shorebased processors was processed directly to meal without being processed into a primary finished product.⁶ It is uncertain how NMFS chose to use these numbers; however, they are in gross error.⁷ Actual pollock run directly to meal at shorebased facilities is less than 1%.⁸

B. COSTS

1. **Non-Labor Variable Costs.** The Cost/Benefit Analysis list the offshore fleets' non-labor variable costs for surimi as only \$0.10 per pound of finished product.⁹ (This variable costs information was provide by the American Factory Trawlers Association (AFTA) and was determined by NMFS "to be the best source of information on offshore costs"¹⁰ despite the fact that these variable costs don't even cover the costs of surimi additives and packing!)

Typically variable costs on a surimi factory trawler operating in the Bering Sea would be similar to the figures below:

Additives =	Water	Per lb. \$0.01
	Cryo-protectant	\$0.063
	Packaging	\$0.03
Other =	Fuel	\$0.05
	Freezing	\$0.01
	Offloading	\$0.01

⁶ See June Cost/Benefit Analysis, Table 2.3, p. 2-8. Note: The June Cost/Benefit Analysis also assumes that the inshore and offshore industries achieve a meal recovery rate of from 13.8% to 18%. By definition, meal must be 65% protein. The whole pollock fish is only 20% protein. Therefore, if every molecule of the fish is turned to meal, the maximum meal recovery rate is only 13% (65% x 20%).

⁷ It is absurd to think that a shorebased processing facility would take on average one of every six loads of fish and run the product directly to meal.

⁸ During the 1992 "A" season, it appears that 0.029% of the deliveries of pollock were run directly to meal. See, 1992 Bering Sea & Aleutians Groundfish Discards, attached.

⁹ See June Cost/Benefit Analysis, Table 2.8, p. 2-12.

¹⁰ June Cost/Benefit Analysis, p. 2-11.

This does not include wear and tear on the vessel, its gear or processing equipment, lube and oil, annual maintenance on the vessel or its equipment, groceries, stores, costs of travel to the fishing grounds and office overhead (and in the case of motherships, the price of buying the fish). To claim that the offshore sector's non-labor variable costs for surimi is \$0.10 per pound is patently absurd.

- a. The OMB survey of the factory fleet used in the original SEIS showed non-labor variable costs three times higher than what NMFS now considers the "best information available."

The surimi factory trawler budget (attached) shows the costs and revenues of a typical factory ship. This budget was developed from the OMB survey and was used in the original SEIS. This shows a total variable costs of \$12,017,417. In order to make this comparable to the cost used in the current NMFS cost/benefit study, I deducted labor and the raw fish charge shown in the processing operation. This yields a total non-labor variable costs of \$5,803,159.

To compare the two methods of estimating costs I simply applied the variable costs NMFS used in this Cost/Benefit Analysis to the production shown in the OMB budget.

Product type	Production (lbs.)	Variable Costs (NMFS June C/B)	Costs
Surimi	11,332,821	\$0.10	\$1,132,282
Roe	428,686	\$1.06	\$515,887
Cod fillets	334,304	\$0.64	\$213,955
Meal	3,027,746	\$0.06	\$181,655
Total non-labor variable costs under NMFS c/b study =			\$2,043,789

The \$5,803,159 non-labor variable costs from the original OMB survey is 2.9 times greater than the \$2,043,789 figure that results from the AFTA information.

- b. In a sworn declaration to the court to show the harsh impact of the catcher vessel operational area on the factory fleet, Gary Brown has indicated that a factory trawlers' variable costs are about nine times what is shown in the Costs/Benefit Analysis.

Gary Brown has made sworn declaration to the court (attached) stating that at sea processing vessel costs are \$100,000 per day. Brown also says that a "vast majority" of the labor is paid on a share basis so the vessel costs for steaming is largely non-labor variable costs. (This would not include some important variable costs that accrue during fishing operations such as the wear and tear on the vessel, its fishing gear or processing equipment for the fishing activity of the boat, or the increased fuel usage, etc..)

Using the NMFS Cost/Benefit Analysis, a factory trawler would have to produce a million pounds of finished surimi a day (at \$0.10) to equal Brown's declaration of \$100,000 per

day in non-labor variable costs. That is about 453 mt of finished product per day. (A good factory trawler will produce 50 mt of surimi per day.) At a generous 15% recovery, that equals 3,020 metric tons of raw pollock per day per vessel! At this rate the entire Bering Sea pollock TAC would be used by 35 factory trawlers in twelve days. (Not including motherships.)

C. PRICES

The prices each sector received for its products was determined by annual product reports of the NMFS. These reports ask the company to fill out the average price it received for a product for each quarter of sales (regardless of when it was produced). In Trident's case the report is filled out a clerical worker who guesses at the average price for each quarter.¹¹ For Trident, this individual's "guess" for pollock surimi was quite accurate, only being off a few cents on a yearly average. One of the other shorebased processors, however, reportedly listed the 1991 first quarter price for its entire 1991 sales, grossly underestimating the actual price it received for its product.

Given the volatile market for surimi during the last two years it is nearly impossible to determine the relative value of each sectors product by surveying producers because during the up market, for example, if a shorebased processor sold a week after the factory ship, the report would show the shorebased product worth more than factory ship product (which is not the case).

The simplest way to determine the difference between prices received by shorebased processors and factory ships for surimi is to question the domestic buyers. The difference in the value of the commodity between shorebased and factory ship production is from five to fourteen cents. We understand this information is finally being requested of buyers and we expect it to be used in future runs of the cost/benefit model.

D. TREATMENT OF PROCESSING LABOR

The NMFS Cost/Benefit Analysis continues credit payments to process workers as an economic gain and payment to the same workers doing the same work (and perhaps at the same pay scale) as economic costs.¹² The Cost/Benefit Analysis recognized the dispute surrounding this issue, so it counted only half of the payments to process workers aboard factory trawlers as net economic benefits.

Payments to labor are to be considered as costs. Any deviation from this bears an enormous burden of showing that the labor is being habitually overpaid (paid more than their opportunity costs or more than is necessary to call forth that supply of labor). This is especially true in the case where there are so many extraneous factors (discomfort and dangers) which might explain higher labor costs for at sea process workers. In the Costs/Benefit Analysis, NMFS did not even try and justify its position. The Cost/Benefit Analysis did not show extremely limited turnover among process workers; artificial forces

¹¹ Note: This individual's comment to me was that it would take a month to fill out the form if they were required to ascertain exactly the average price for each product during each quarter. (And they still would not be able to determine when the actual production of that product occurred.)

¹² June Cost/Benefit Analysis, p. 2-5.

explaining the overpayment of labor; clandestine efforts on the part of employers to "get around" artificial forces that require them to over pay labor, etc..

In addition, the allocation will not eliminate the offshore sector of the industry. When employment in the offshore sector goes down, market forces will work to select out those who have the "least to lose;" those whose opportunity cost most closely approaches their compensation.

No less of an expert than Arnold C. Harberger, perhaps the world's leading authority on this issue, has stated that NMFS should consider payments to processing labor, whether inshore or inshore, as net national costs (see attachment). Despite this comment by a world recognized expert, NMFS treated the inshore and offshore sectors completely inequitably by claiming half of the wages paid to factory workers aboard a ship as a net national benefit and all of the compensation paid to the same workers on shore as a net national loss.

E. ALTERNATIVES SOURCES OF FISH

If your car is totalled in a collision, your "loss" is not what it will cost you to walk for the rest of your life. The loss is instead what it will cost to buy a replacement car.

The original Cost/Benefit Analysis noted that U.S. factory vessels were purchasing the right to harvest pollock in the Russian Exclusive Economic Zone. That analysis, however, failed to cap the offshore sector's losses at the cost of alternative supplies of pollock (the price of the replacement car) and instead assumes the fleet will do nothing to replace the reduced harvest (thereby assuming the owner of the wrecked car will walk for the rest of their life instead of buying a replacement car).

The new Cost/Benefit Analysis fails to even mention the alternative supplies of fish (the fact that there are other cars available to buy).

1992 BERING SEA & ALEUTIANS GROUND FISH DISCARDS
IN ROUND METRIC TONS

(Data is from Processor Weekly Production Reports through 03/29/92
except Bering Sea A season pollock, which blends observer reports.)

	SHORESIDE			MOTHERSHIP		CATCHER-PROC	
	TOTAL CATCH	AT-SEA DISC.	PLANT DISC.	TOTAL CATCH	DISC.	TOTAL CATCH	DISC.
BERING SEA							
Other Rockfish	6	2	4	3	3	91	84
Pacific Ocean Perch	30	0	27	0	0	1017	116
Other Red Rockfish	2	1	0	8	8	87	38
Pollock "A" Season	115913	1	3449	75544	4797	326868	38162
Sablefish (Fixed Gear)	8	0	0	0	0	21	0
Sablefish (Trawl)	3	0	0	0	0	11	1
ALEUTIAN ISLANDS							
Other Rockfish	0	0	0	0	0	159	79
Pacific Ocean Perch	0	0	0	4	4	2649	365
Sharpchin/Northern	0	0	0	2	2	134	83
Shortraker/Roughey	0	0	0	0	0	451	1
Pollock "A" Season	1440	0	0	1483	0	16422	265
Sablefish (Fixed Gear)	7	0	0	7	0	320	0
Sablefish (Trawl)	0	0	0	0	0	7	0
BERING SEA & ALEUTIANS							
Arrowtooth Flounder	61	29	7	69	69	2609	2499
Alaska Mackerel	51	45	6	475	116	25007	1328
Greenland Turbot	49	3	10	20	20	201	127
Other Flatfish	538	176	14	371	370	7737	7033
Other Species	277	80	122	114	114	5878	5630
Pacific Cod	9182	47	297	4769	740	45392	4776
Rock Sole	104	86	15	574	375	22656	12321
Squid	26	0	1	0	0	97	96
Yellowfin Sole	9	6	3	17	17	3267	3210
BOGOSLOF							
Pollock	1	0	1	0	0	63	63

TOTALS:	127707	476	3956	83460	6635	461144	76277

1) Because of blend, all shoreside sector discard for
Bering Sea 'A' season pollock is listed as plant discard.

NMFS/Fisheries Management
Juneau, Alaska

Prepared: 06/17/92
Data through: 03/29/92

1992 Pacific cod and Pollock Products in Metric Tons
(by FMP area, species, processor mode, and product type)
(Data as reported by Processors in Weekly Production Reports)

FMP	SPECIES	MODE	PRODUCT	METRIC TONS OF PRODUCT
BSA	110	PCOD	M 01	505
BSA	110	PCOD	M 03	9
BSA	110	PCOD	M 07	319
BSA	110	PCOD	M 08	575
BSA	110	PCOD	M 14	40
BSA	110	PCOD	M 22	32
BSA	110	PCOD	M 23	399
BSA	110	PCOD	M 31	114
BSA	110	PCOD	M 32	141
BSA	110	PCOD	M 34	27
BSA	110	PCOD	P 01	108
BSA	110	PCOD	P 07	4507
BSA	110	PCOD	P 08	11393
BSA	110	PCOD	P 14	528
BSA	110	PCOD	P 20	518
BSA	110	PCOD	P 21	2
BSA	110	PCOD	P 22	83
BSA	110	PCOD	P 23	1224
BSA	110	PCOD	P 30	20
BSA	110	PCOD	P 31	237
BSA	110	PCOD	P 32	283
BSA	110	PCOD	P 34	201
BSA	110	PCOD	P 35	25
BSA	110	PCOD	S 01	2386
BSA	110	PCOD	S 02	10
BSA	110	PCOD	S 03	7092
BSA	110	PCOD	S 04	1
BSA	110	PCOD	S 32	1
BSA	270	PLCK	M 01	844
BSA	270	PLCK	M 07	52
BSA	270	PLCK	M 08	39
BSA	270	PLCK	M 14	1157
BSA	270	PLCK	M 23	1145
BSA	270	PLCK	M 30	8198
BSA	270	PLCK	M 31	1171
BSA	270	PLCK	M 32	4351
BSA	270	PLCK	M 33	159
BSA	270	PLCK	P 01	1
BSA	270	PLCK	P 06	5
BSA	270	PLCK	P 07	250
BSA	270	PLCK	P 08	970
BSA	270	PLCK	P 10	0
BSA	270	PLCK	P 14	11801
BSA	270	PLCK	P 20	166
BSA	270	PLCK	P 21	585
BSA	270	PLCK	P 22	99
BSA	270	PLCK	P 23	6265
BSA	270	PLCK	P 30	30595
BSA	270	PLCK	P 31	5205
BSA	270	PLCK	P 32	8611
BSA	270	PLCK	P 33	45
BSA	270	PLCK	S 01	114142
BSA	270	PLCK	S 03	52
GOA	110	PCOD	M 01	868

29-JAN-92

Product Conversion Rates
(PRDTYP92 Table)

NMFS Alaska Region

Species Code	Product Code	Conversion Rate
193	03	.98
193	04	.87
193	06	.67
193	07	.61
193	08	.50
193	32	.17
270	03	.98
270	04	.80
270	06	.70
270	07	.65
270	08	.56
270	10	.50
270	14	.07
270	16	.15
270	20	.35
270	21	.30
270	22	.30
270	23	.22
270	30	.18
270	31	.34
270	32	.17
510	03	.98
510	04	.82
510	07	.71
510	21	.38
510	32	.22
511	03	.98
511	04	.82
511	07	.71
511	21	.38
511	32	.22
516	03	.98
516	04	.89
516	07	.78
516	32	.22
689	03	.98
689	04	.83
689	07	.72
689	21	.30
689	22	.30
689	23	.25
689	32	.17
700	03	.98
700	04	.90
700	08	.32
700	13	.32
700	32	.17
710	03	.98
710	04	.89

Western H/G
Eastern H/G

*At Sea Seminali
from Pollards*

ATTN: TEDDY

SPECIES CODE LIST

<u>SPECIES</u>	<u>CODE</u>	<u>SPECIES</u>	<u>CODE</u>
Sablefish (Blackcod)	710	Unspecified Demersal Rockfish	168
Arrowtooth Flounder	121	Bocaccio Rockfish	137
Flathead Sole	122	Canary Rockfish	148
Rock Sole	123	China Rockfish	149
Dover Sole	124	Copper Rockfish	138
Rex Sole	125	Qullback Rockfish	147
Butter Sole	126	Redstripe Rockfish	158
Yellowfin Sole	127	Rosethorn Rockfish	150
English Sole	128	Silvergray Rockfish	157
Starry Flounder	129	Tiger Rockfish	148
Petrale Sole	131	Yelloweye Rockfish	145
Sand Sole	132	Unspecified Pelagic Rockfish	169
Alaska Plaice	133	Black Rockfish	142
Greenland Turbot	134	Blue Rockfish	167
Pacific (Gray) Cod	110	Dusky Rockfish	154
Pollock (Whiting)	270	Widow Rockfish	156
		Yellowtail Rockfish	155
		Unspecified Slope Rockfish	144
Sculpin	160	Pacific Ocean Perch	141
Skate	700	Northern Rockfish	136
Greenling	190	Rougheye Rockfish	151
Atka Mackerel	193	Sharpchin Rockfish	166
Other Finfish		Shortraker Rockfish	152
Shark	689	Redbanded Rockfish	153
Eulachon	511		
Smelt	510		
Capelin	516		
Thornyhead Rockfish (Idiot)	143		

DELIVERY CONDITION CODES

1	Wholefish/food fish		
2	Whole bait	20	Fillets with skin and ribs
3	Bled only	21	Fillets with skin, no ribs
4	Gutted only	22	Fillets with ribs, no skin
5	Headed and Gutted	23	Fillets, no skin or ribs
6	Headed and Gutted, with roe		
7	H & G, Western cut	30	Surimi
8	H & G, Eastern cut	31	Mincod fish
9	H & G, with pectoral girdle	32	Fish meal
10	H & G, tail removed	33	Fish oil
11	Kirimi		
12	Salted and spilt	97	Other - specify
13	"Wings"	98	Discarded at sea
14	Roe only	99	Landed discard
15	Pectoral girdle only		
16	Heads		
17	Cheeks or chins		

Product Name:	Round Wt	Finished Wt	PRR	Price	Total Value
Pollock Surimi Off	82,480,905.4	11,332,821	13.74%	\$1.0300	\$11,672,806
Pollock Roe Off	9,258,871.3	428,686	4.63%	\$3.8000	\$1,623,008
P. Cod Fillets Off	1,633,939.6	394,304	20.46%	\$1.8500	\$618,462
Meal By-Product Off	3,027,746	3,027,746	100.00%	\$0.3400	\$1,029,434
Totals	96,401,062	15,123,557			\$14,949,708

Product Name:	Quantity	Price	Total Value
Pollock Surimi Off	82,480,905.4	\$0.050	\$4,124,025
Pollock Roe Off	9,258,871.3	\$0.062	\$574,050
P. Cod Fillets Off	1,633,939.6	\$0.125	\$204,079
Totals	96,373,316.3		\$4,902,154

Identity:	Surimi Factory-Trawler, Processing
Market Value:	\$25,000,000

Variable Expenses	Surimi	Total
Net Costs Raw Product	\$3,906,554	
Manufacturing Labor	\$1,964,583	
Direct Materials	\$728,548	
Manufacturing Overhead	\$2,873,000	
Fish Taxes		
Total Variable Expenses	\$9,470,658	\$9,470,658

Variable Expenses	Per Unit	Total	With PFI Adjustment
Vessel/Engine Repair	\$0.0037	\$345,481	\$0.0039484
Gear Repair/Replacement	\$0.0053	\$494,879	\$0.0055125
Fuel & Lubricants	\$0.0094	\$877,709	\$0.0097769
Food & Supplies	\$0.0009	\$84,036	\$0.0009361
Ice & Bait	\$0.0000	\$0	\$0.0000000
Dues & Fees	\$0.0001	\$9,337	\$0.0001040
Transportation	\$0.0006	\$46,667	\$0.0006201
Miscellaneous	\$0.0037	\$345,481	\$0.0039484
Crew Shares (% Gross)	2.30%	\$343,151	
Total Variable Expenses		\$2,546,761	

Fixed Expenses	wPFI adj
Admin Salaries	\$464,887
Maint & Repairs	\$330,517
Utilities	\$0
Telephone	\$0
Insurance	\$279,419
Bus/Prop Taxes	\$12,192
Admin Supplies	\$474,219
Misc Admin (technician)	\$88,773
Interest Expense	\$911,600
Depreciation	\$1,162,303
Total Fixed Expenses	\$3,693,244

Total Expenses (incl raw product)	NET INCOME (catch and process) incl depr	NET INCOME (catch and process) excluding depr
\$13,163,900	\$1,765,808	\$2,948,111

Total Expenses	NET INCOME (investing)
\$9,908,554	\$665,600

Fixed Expenses	wPFI adj
Insurance	\$230,624
Mortgage	\$52,238
Interest Expense	\$948,155
Licenses	\$0
Miscellaneous	\$123,309
Total Fixed Expenses	\$1,353,793

Processing

Contributing

(included in variable costs)

2 Catcher Vessel Operational Area and the closed Bogoslof Shelf
3 fishery¹, at-sea processing vessels will be forced to travel 250
to 300 miles to less productive grounds.

5 9. The imposition of a Catcher Vessel Operational Area
6 will add about one day of steaming time to the beginning and end
7 of many trips during the B Pollock Season. With at-sea processing
8 vessel costs averaging over \$100,000 per day, and each vessel
9 scheduled to make four round trips, many of the at-sea processing
10 vessels displaced from the Catcher Vessel Operational Area will
11 incur increased costs of \$500,000 to \$1,000,000 during the 1992 B
12 Pollock Season. With an estimated 35 at-sea processing vessels
13 predicted to operate full time in the B Pollock Season, fleet-
14 wide costs can be expected to accrue at a rate of \$1,000,000 to
15 \$2,000,000 per week. Total losses in June, July, and early August
16 of 1992 will certainly exceed \$10 million and could reach \$25
17 million due to the imposition of additional transit time alone.
18 These losses will be in addition to the \$67 million reduction
19 described above.

20 Lower Catch Rates

21 10. The Catcher Vessel Operational Area represents well
22 under one tenth of the U.S. Exclusive Economic Zone in the Bering
23 Sea, yet this area accounted for 55 percent of the pollock catch

24
25 ¹ An alternative to the Catcher Vessel Operational Area
26 would be the Bogoslof Shelf fishery. This fishery is closed for
1992 (and beyond) due to excessive harvesting of this resource by
foreign vessels operating outside the United State Exclusive
Economic Zone.

DECLARATION OF GARRY BROWN IN SUPPORT
OF MOTION FOR EXPEDITED REVIEW - 4

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1 "lose this flexibility. They will also be expected to more severe
2 weather, isolated from search, rescue, and medical assistance,
3 unable to quickly access repair facilities, and inaccessible by
4 routine air transportation.

5 Adverse Impact on Crew Members

6 17. In addition to the above described economic effects
7 on vessel operators, the crews of the at-sea processing fleet can
8 be anticipated to bear an additional hardship and share in the
9 economic losses. Like most segments of the fishing industry, the
10 vast majority of at-sea processing vessels compensate their
11 fishing and processing crews on a lay basis. Under the lay
12 system, each crew member's compensation for a trip is computed as
13 a "share" of the value of the vessel's production. Because the
14 Catcher Vessel Operational Area will result in the fleet operating
15 longer to produce a product of lesser value, the work force will
16 be required to spend additional days at sea, for the same or
17 perhaps less compensation.

18 18. In 1990, there were an estimated 3,160 at-sea
19 processing workers at sea at any one time during the pollock
20 season, and this number has increased modestly since then.
21 Assuming eight additional days of transit time per crew position
22 in the B Pollock Season, and 3,160 crew positions, the Catcher
23 Vessel Operational Area will require the crews to spend an
24 additional 25,280 person-days at sea for the same or lower
25 compensation.

26 19. The additional effect of the anticipated decline in

May 12, 1992

Mr. Richard Lauber
Chairman
North Pacific Fishery Management Council
605 West 4th Avenue
P.O. Box 103136
Anchorage, Alaska 99510

Dear Mr. Lauber:

I have been asked by the Pacific Seafood Processors Association to examine certain documents and to comment on a) key features of these documents and b) what in my opinion is the most appropriate way to look at the problem of social choice, as between using shorebased ships and factory ships to harvest the pollock resource of the North Pacific Ocean.

I have here not entered into a detailed critique of the documents in question, but instead have chosen to concentrate on what to me appear to be key strategic factors.

Characterization of Compensation to Labor

The first of these factors is the approach taken to the costing of labor inputs in the NMFS study "Cost-Benefit Analysis of Pollock and Cod Quota Allocation". That study correctly considers as labor cost all hourly and similar wages actually paid. It deviates from this practice, however, when it deals with compensation paid on a share basis. It is my opinion that share-based compensation to labor should in principle be valued in the same way as hourly wages. In the normal workings of an ordinary marketplace, both will tend to reflect the true, relevant opportunity cost of the labor in question. This occurs because employers have no real incentive to pay workers systematically "too much" i.e. more than is necessary to elicit the labor services in question, taking into account all relevant dimensions, such as location, training, intensity, and risk involved in such services.

Share contracts are common in many lines of activity. They might in some cases overcompensate the workers for the labor they provide, just as the wages paid by business firms may in some cases "overpay" workers for the specific characteristics of the labor performed.

In any of these cases of overpayment it is the cost/benefit analyst who asserts that labor is being overpaid who bears the burden of proof. Market processes will not normally lead to such a result, but instead will lead to a result in which labor is paid the reward that is necessary to elicit marginal increments in labor supply.

In the case of the North Pacific offshore pollock fishing industry, it is known that labor turnover is quite high. This is clear and direct evidence that the activity is not providing important elements of economic rent to incremental labor. The type of evidence that we ordinarily look for is waiting lists for jobs, where there are several times as many people on the waiting list as there are actually at work. We look for an absence of advertising or other effort by employers to attract labor. We look for a "force", which explains why the wage being paid is above the natural, economic market-clearing level (like minimum wages or union agreements). We look for overt or clandestine efforts on the part of employers to "get around" this artificial "force" by "shading" the wage in whatever way they can.

As far as I have been able to examine the available evidence, and listening to those who are knowledgeable on conditions in the relevant labor market, none of these items of evidence characterizes the labor market in question.

I conclude that the sharing arrangement has arrived at a share percentage which reflects supply and demand in the labor market.

There is another point of considerable importance. We are not here talking about the elimination of either onshore or offshore processing of pollock. We are talking instead about changing the percentages of the catch that correspond to these two sectors.

Correct cost/benefit procedures demand that under such circumstances, any downward adjustment of labor should be concentrated on existing workers with the highest supply price, and any upward adjustment should call into employment the incremental workers with the lowest supply price. This is what markets do — when employment goes down, market forces work to select out those who have the "least to lose". When employment goes up, market forces tend to select out those who have the "most to gain".

At the limit, where labor is pretty homogeneous, all with pretty much the same tastes, we have the case of an infinitely elastic supply curve. Here no rents are created by increasing employment, nor are any rents lost by reducing it.

The more likely case for the Alaska fishing industry is that the relevant supply curve of labor to the industry is upward sloping. Some workers are "wedded" if not shackled to the industry, in that they have little interest in working elsewhere. But some workers clearly must be on the borderline of indifference with respect to other alternatives, else how can we explain that twenty percent or so of the crew is newly recruited for the average trip?

What I am saying is that if the offshore fishery fleet were to reduce its levels of activity and employment, market forces and pressures would lead to the loss of workers who on the whole were roughly indifferent, at the prevailing market terms, between the fishing fleet and other alternatives. It would not typically lead to the loss of jobs by those enjoying significant economic rents from their employment.

On the Economies of "Olympic" Allocations

It is of the nature of first-come—first-served allocations of common property resources that typically all producer rents end up being dissipated through "rent-seeking". With a separate allocation for the shorebased and offshore fleets, the conclusion is basically the same.

Mr. Richard Lauber
May 12, 1992
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Shorebased units will likely expand their power and capacity to compete away their rents; offshore units would do the same to compete away their rents.

The simplistic, end-result equilibrium for a single allocation is for one of the two types of capacity (not even necessarily the most efficient) to compete the other out of business. (It is slightly more complicated with an upward-sloping supply curve for the shorebased fleet, based on costs increasing with distance from shore).

The corresponding end-result equilibrium for a dual allocation is for a zero-rent equilibrium to be generated for each type of capacity.

I perceive the existing situation, and the one analyzed in the NMFS Study, to be but a point on the trajectory by which such a zero-rent equilibrium is approached.

I do not feel that it is of much interest to have a momentary snapshot of such a point. What can we make of such information? Suppose that the long-run equilibrium for offshore units is to have costs of 500 and benefits of 500 per unit, while that for the onshore boats is to have costs of 700 and benefits of 700 per boat.

Does it help to know that today, on its way to a 500—500 equilibrium, the offshore fleet exhibits (momentarily) benefits of 600 and costs of 400 per unit, while onshore boats, on their way to a 700—700 situation, now have benefits of 850 and costs of 600? What would we want to do with such information? What would we make of it?

I feel we should be more interested in how to identify and achieve the highest net benefit, and "helping the market" find its way to that equilibrium. It will not go there naturally, we know, so long as the familiar "fishing problem" of common property resources prevails. But rather than intervene on the current state in such a way as to produce a wasteful solution for each of the two types of operation, why not try first to find out what the efficient solution is (or is likely to look like), and then attempt to use the regulatory instruments at one's disposal to nudge the actual resource allocation in the long-run-desirable direction? At the very least, any specific proposal should be scrutinized to see how it contributes to (or interferes with) an expeditious approach to an end result that meets sensible efficiency criteria.

Sincerely,



Arnold C. Harberger

Arnold C. Harberger

Member, National Academy of Sciences
Fellow, American Academy of Arts and Sciences
Fellow, Econometric Society
Vice President, American Economic Association 1992
President, Western Economic Association 1989-90

Courses in Cost/Benefit Analysis Offered At:

University of Chicago	1962-1990
UCLA	1983 to date
Harvard University	1971-1972
Princeton University	1973-1974
University of Paris	1983

The World Bank
Inter-American Development Bank
Asian Development Bank
Caribbean Development Bank
Agency for International Development (USA)
Ministry of Finance, Spain
Ministry of Public-Works, Spain

Consultation on Cost/Benefit Analysis:

The World Bank
Inter-American Development Bank
Department of Industry and Trade, Canada
Ministry of Finance, Canada
Ministry of Science, Technology and Industry, Canada
Bechtel International
National Electricity Enterprise, Chile
Federal Electricity Commission, Mexico
Crown Investment Corporation, Canada
Commonwealth Edison
Natural Electricity Institute, Honduras
Natural Planning Commission, India

Recognized by the World Bank as one of five "Pioneers in Development" for work done on Cost/Benefit analysis in the 1960s. Pioneers in Development, vol. 2., 1987.

Book on Project Evaluation (first published in 1972) has been published by five different publishing houses and has been continually in print. Current publisher: University of Chicago.