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**The California Interindustry Fisheries (CIF) Model:
An Input-Output Analysis of California Fisheries
and Seafood Industries**

Volume II

Working Paper No. P-T-6

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A California Sea Grant College Program Working Paper

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An Input-Output Analysis of California Fisheries
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Preface:

During 1980-81, the California Sea Grant College Program and fishing industry trade organizations sponsored an economic study of California fisheries and seafood industries. The purpose of the study was to identify and examine economic activities that link California fisheries with each other and with the rest of the state economy. The study resulted in an "input-output" model of California fisheries which has been called the California Interindustry Fisheries (CIF) Model. The results of the study are summarized in The California Interindustry Fisheries (CIF) Model: An Economic Impact Calculator for California Fisheries, Volume I.

Volume II describes the CIF model in nontechnical language and explains how it can be used by government and industry decision-makers.

Chapter I describes input-output analysis and illustrates how it is used.

Chapter II describes the California Interindustry Fisheries (CIF) Model and how it was developed.

Chapter III contains the results of an input-output analysis using the CIF model and presents output, income, and employment multipliers for each of 19 fish harvesting sectors and 9 fish processing sectors.

Chapter IV provides guidelines for using the CIF model to forecast direct, indirect, and induced economic impacts of changes that affect California fisheries and seafood industries. The CIF model and related technical information are presented in Appendices.

The California Sea Grant Working Paper Series was established to make preliminary data, techniques, and reports under publication consideration available to government agencies, industries, fishermen, and the public. In a working paper, neither the research results presented nor the publication itself has undergone critical peer review according to the guidelines of the publications policy of the California Sea Grant College Program. This report is being made available to determine the CIF model's validity and potential applicability in determining the economic value of our fisheries resources.

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CHAPTER ONE

The Basics of I-O Analysis

General Background

Firms in every industry are linked through their purchases and sales with firms in other industries and with households. Inter-industry linkages and the impact of industrial activities on incomes, employment, and overall economic conditions are important but not always apparent. The purpose of an input-output model is to display direct and indirect economic linkages and measure impacts of changes or proposed changes in industrial activity. The CIF model is designed to show the economic linkages and impacts of California's fish harvesting and fish processing industries.

The theoretical foundation for input-output analysis rests with eighteenth century French economists but the technique was developed and refined during the 1950's by a Harvard University economist, Wassily Leontief, who won the 1962 Nobel Prize for his work on I-O analysis. Since then I-O models that describe economic linkages in national economic systems have been developed routinely by industrialized and developing countries; they are used to assess the impacts of economic policies and to identify "bottlenecks" in industrial development plans. Special-purpose State and regional I-O models like the one described here for California fisheries are also common; they are usually designed to show the economic impact of specific industries and are used by policy analysts to evaluate economic trade-offs.

The purpose of an I-O model determines which industrial activities and economic linkages are emphasized, but all I-O models are fundamentally the same. The basic approach is to collect as much purchase and sales information as possible from each industry, describe where each industry buys inputs and sells outputs, and evaluate how changes in one industry will work their way through the economic system. The best way to understand I-O analysis is to consider the interindustry linkages in a very simple economy.

An Illustration of I-O Analysis

Consider a simple regional economy with only three industrial activities which we can call Sector A, Sector B, and Sector C. Table 1 describes such an economy by showing the dollar value of transactions among the three industries and between each of them and households in the region.

Reading down the column for each sector shows the value of goods and services purchased by the sector listed above the columns from each of the sectors listed along the rows. Reading across the row for each sector shows the value of goods and services sold by the sector listed along the row to each of the sectors listed above the columns. Imports, exports, and transactions with households are also shown in the I-O model.

The shaded row, for example, shows that Sector B sold \$3 to firms in Sector A, \$9 to other firms in Sector B, and \$8 to Sector C. It also shows that Sector B sold \$4 to households and exported \$1; total sales by Sector B were \$25.

The shaded column for Sector B shows the firms in that sector purchased \$5 from firms in Sector A, \$9 from other firms in Sector B,

and \$4 from firms in Sector C. Sector B also purchased \$2 from outside the region (imports) and \$5 from households. In this model some of the \$5 paid to households is in the form of profits (payments to the households that own businesses) as well as wages, rents, etc.. As a result the total purchases for Sector B are shown here to equal total sales.

Table 1 is referred to as a Transactions Table and it is the foundation of I-O analysis. It is also a useful starting point for production and marketing studies since it identifies where industries buy and sell and where economic activities are "leaking" outside the region because of imports.

From the Transactions Table it is a simple step to develop what is called a Technical Coefficients Table. It shows the direct dollar purchases which are required from each row sector for each dollar sales by each column sector. Table 2 shows the technical coefficients derived from Table 1. The numbers in the shaded columns show that per \$1 of sales, Sector B directly purchases \$.20 from Sector A, \$.36 from Sector B, and \$.16 from Sector C. Based on the assumption that an n-fold increase in the output by a given sector requires an n-fold increase in the purchase of inputs by that sector, the technical coefficients permits the determination of indirect input-output requirements.

The third table shown, Table 3, is called an Interdependency Coefficients Table. It shows the amount of sales generated directly and indirectly in each row sector by each dollar of sales by the column sector. Note from the above illustration that the purchase of \$.16 by Sector B from Sector C would also call for an additional

production of \$.04 (.16 x .25) by Sector C as well as \$.05 (.16 x .33) by Sector B, and so on. There are many additional rounds of indirect economic impacts and these are what are reflected in Table 3. It shows, for instance, that the end result of \$1 sales by Sector B is not just a \$.16 increase in sales by Sector C, as shown in Table 2, but a \$.69 increase. Given the input-output relationships in our illustrative economy, Table 3 shows that each \$1 of sales by Sector A, B, and C respectively increases total regional economic production by \$3.29, \$3.45, and \$3.42.

The direct, indirect, and induced economic impacts of changes in industrial activity can be expressed simply through MULTIPLIERS. Output Multipliers and Income Multipliers can be developed directly from the Interdependency Coefficients Table 3 and additional employment statistics can be used to estimate Employment Multipliers. In each case there are two types of multipliers. Type I Multipliers which show the impact of interindustry transactions and Type II Multipliers which include those impacts and the effects of transactions with households. Because Type II Multipliers include an additional "round" of household spending, they are larger than Type I output, income and employment multipliers; both are normally presented with the results of an I-O analysis.

CHAPTER TWO

The CIF Model

An Overview

In most ways the CIF model is an enlarged version of the model in the illustration. The region under consideration is California and purchases and sales outside California are included in other value added and other final demand (Sector 65). The CIF model has 63 industrial sectors including 19 fish harvesting sectors, nine fish processing sectors, and 35 other industrial sectors which represent all nonfishery related industries in the state. An outline of the CIF model is presented in Table 4 and a list of the industrial sectors specified in the CIF model is shown in Table 5.

Sources of Data for the CIF Model

A 389-sector 1977 I-O model of the California economy was acquired from researchers involved in a project for the U.S. Forest Service; it included only four fishery related sectors (Fishing, Tuna canning, Other Fish canning, Other Fish packing). This model was updated to reflect 1980 transactions and the four fishery related sectors were replaced by the 19 fish harvesting and nine fish processing sectors. These were defined on the basis of interviews with industry representatives and state and federal fishery agency personnel. The nonfisheries sectors were then aggregated into 35 sectors using standard industrial classification (SIC) grouping procedures. (See Appendix B)

Detailed data about purchases and sales for each fish harvesting and fish processing sector were acquired from published sources, from

interviews with industry experts, and from an extensive mail survey of California fisheries and seafood industries. The Pacific Coast Federation of Fishermen's Associations (PCFFA) contributed to the study by administering a mail survey of fishing firms and by arranging interview with fishing industry experts for Sea Grant researchers. The California Seafood Institute (CSI) contributed by administering a mail survey of California fish processors, wholesalers, distributors, and restaurants and by arranging interviews for researchers to discuss survey results and market data with fish market experts.

At the final stage of data collection a two-day review session was attended by researchers and industry representatives at the offices of PCFFA. The purpose of the session was to summarize and evaluate the mail survey and interview results and compare them with published data and the subjective impressions of industry experts. In general the mail survey results from each sector were considered reasonable by researchers and industry representatives and unless otherwise specified, the transactions values and technical coefficients presented here were developed from mail survey data. Interview data and information from review sessions helped in the interpretation of mail survey data and ensured that it was used properly in developing the model.

The procedures for developing the CIF model are described in Appendix B which also contains copies of the survey instruments and itineraries used for data collection.

CHAPTER THREE

Results of the CIF Model

Intermediate Results

From survey results and extensive interviews with fishing industry representatives it was possible to develop tables which show the purchases and sales of fish and seafood by species group as well as by industrial sector. Tables 6, 7 and 8 were developed from catch statistics provided by fish harvesters and fish purchase data provided by fish processors. Table 6 shows the value of 1980 fish landings in California by species for each of the 19 harvesting sectors and Table 7 shows the value of 1980 fish purchases by species for each major fish buying group. Table 8 was derived from Tables 6 and 7 and shows the dollar transactions between each of the 19 fish harvesting sectors and each of the nine fish processing sectors.

Final Results

The CIF transactions table, technical coefficients table, and interdependency coefficients table are presented in Appendix C. However, most users will be more interested in the income, output, and employment multipliers that are presented for harvesting sectors in Tables 9a, 9b and 9c and for processing sectors in Tables 10a, 10b and 10c.

Interpretation of Results

Two issues should be emphasized before the multipliers are used to assess economic impacts: First, I-O multipliers reflect interdependencies associated primarily with the use of inputs by each sector. Primary producing sectors, such as fish harvesting sectors,

however, create economic activity not so much by purchasing inputs, but by providing essential raw materials to fish processors, restaurants, etc. In order to fully describe California fisheries, it was necessary to separate harvesting from processing industries in a way that isolates the impact of each harvesting sector as a purchaser of inputs. However, the overall impact of fish harvesting activities in California is more appropriately measured using the multipliers for fish processors shown in Tables 10a, 10b and 10c which reflect backward linkages of fish harvesters and fish processors. The selection and appropriate use of CIF multipliers depends on what circumstances and what issues are being evaluated and guidelines are provided in the following chapter.

CHAPTER FOUR

Instructions for Using the CIF Model

The CIF model shows direct, indirect, and induced changes in economic production, personal income, and employment per \$ million in sales by each sector. To forecast the economic impact of specific changes in biological, economic, political, or regulatory conditions, the user is required to estimate how the planned or expected change will directly affect sales in one or more industrial sectors. The procedure for using the CIF model has four basic steps:

Step 1 Estimate the expected change in direct sales for each relevant sector.

Step 2 Look up output, income, and employment entries for each relevant sector using the per \$ million sales columns in Tables 9 and 10 (Columns 3, 4).

Step 3 Multiply the expected change in sales for each sector (Step 1) by the appropriate entries obtained from Tables 9 and 10 (Step 2).

An Example

Suppose that increased fishing by the northern California salmon/albacore vessels was expected to increase albacore landings by 2,000 tons. At 1980 prices, this means an increase in direct sales by Sector 11 of \$3.5 million. If this is not expected to have any impact on the value of landings by any other California fishery, the sequence of steps for evaluating economic impacts is as follows:

Step 1 Determines direct impact
(+ \$3.5 million sales by Sector 11)

Step 2 Find appropriate entries in Tables 9a, 9b, 9c:

Type of Impact	Output (\$ million)	Income (\$ million)	Employment (# jobs)
Direct (D)	1.00000	.43754	76.90
Direct & Indirect (D & I)	1.71981	.64096	85.51

Step 3 Find economic impact by multiplying direct impact from Step 1 by entries in Step 2:^{*}

Estimated Impact of +\$3.5 sales in Sector 11

Type of Impact	Output (\$ million)	Income (\$ million)	Employment (# jobs)
Direct	3.5	1.5314	269
Direct & Indirect	6.0193	2.2434	299
Direct, Indirect & Induced	12.440	3.1140	344

* If there is more than one direct effect, perform Step 2 and 3 for each sector and add results.

INTERPRETATION

If direct, indirect, and induced economic impacts are considered, a 2000-ton increase in albacore landings by California salmon/albacore trollers generates:

\$12,440,000 in increased economic production in California

\$ 3,114,000 in increased personal income in California

344 new jobs in California

A Note of Caution: Garbage In - Garbage Out

The CIF calculator forecasts indirect and induced impacts on the basis of changes in sales that the user specifies in Step 1. If these changes in direct sales are inaccurate or incomplete, the CIF calculator will produce unreliable forecasts. Results from any specific application of the CIF calculator are only as dependable as the assumptions or estimates used in Step 1.

APPENDIX A

Mathematical Description of the CIF Model

The CIF model is a Leontief type static open input-output model. The estimated parameters in the CIF model are based upon survey data of 19 fish harvesting sectors and nine fish processing sectors. The balance of the model's parameters were estimated from secondary data. This appendix describes the CIF model in mathematical terms; the methods used to estimate the parameters of the model are presented in Appendix B. In combination, this appendix and Appendix B describe the technical aspects of what was discussed in general terms in the text.

The CIF model can be expressed in two balance equations which say essentially the same thing.

$$(1) \quad X_i = \sum_{j=1}^{63} X_{ij} + C_i + F_i \text{ for } i = 1, 2, \dots, 63$$

$$(2) \quad X_j = \sum_{i=1}^{63} X_{ij} + Y_j + M_j \text{ for } j = 1, 2, \dots, 63$$

Where $i = j$, $X_i = X_j$.

Definitions of terms in equations (1) and (2):

X_i is total output (sales) by each of 63 industries designated by the subscript i .

X_j is total inputs (purchases) by the same 63 industries designated by the subscript j . When subscripts i and j are used in combination, i represents the selling industry and j designates the

purchasing industry. X_{ij} therefore denotes the value of sales by industry i to industry j . When i and j refer to the same industry (i.e., $i = j$) $X_j = X_i$. That is, total inputs equal total outputs in each industry. (This is accomplished by assigning profits and losses to the household sector.) In the static Leontief model, X_{ij} includes only those sales which are "used up" in the current production period. Capital goods transactions are all included with F_i which is exogenous in the model. F_i also includes all government purchases except the endogenous government enterprises (sectors 61 and 62), and exports from California. C_i is California households' purchases from sector i . Y_j in equation (2) is income to California households received from sector j (where $j = 1, 2 \dots 63$ industrial sectors). M_j is all other inputs to each of the 63 sectors j , and includes, taxes, retained corporate profits and imports from outside California.

Equations (1) and (2) therefore account for all sales and all purchases in the California economy by each of the 63 industries, by California households and by all other buyers and sellers.

Analytical Properties of the CIF Model

Various levels of potential analytical capabilities can be obtained from the transactions described in equations (1) and (2).

Each application requires assumptions which introduce limitations concerning the accuracy of analytical predictions. The simplest applications, which we have made in the text discussion assumes:

- (1) that the interindustry input-output relationships are linear and homogeneous and;
- (2) that in applications involving "induced" effects, the household income payments are linear and homogeneous with respect to the output of the income-paying industry.

(3) that household consumption expenditures are linear and homogenous with respect to total household income. These are standard assumptions in regional input-output analysis and are accepted as being viable.

The simplest form of the model uses equations (1) and (2), and closes the model only to X_{ij} with respect to the first assumption (equation (3) below) and to X_{ij} , Y_j and C_i under assumptions (2) and (equation (4) below); then, equation (1) can be rewritten as:

$$(3) \quad X_i - \sum_{j=1}^{63} A_{ij} X_j = C_i + F_i$$

Where $A_{ij} = \frac{X_{ij}}{X_j}$ are the elements of a 63×63 Technical Coefficients, Matrix A.

In Matrix algebra notation, equation (3) can thus be stated as

$$(4) \quad X - AX = C + F$$

and solving for X,

$$(5) \quad X = (I - A)^{-1}(C + F)$$

Introducing the assumptions regarding household consumption C_i and household income, Y_j , equation (3) can be restated as:

$$(3a) \quad X_i = \sum_{j=1}^{64} A'_{ij} X_j + F_i$$

Where the 64th row and column of A'_{ij} is households income and expenditures respectively, defined as $A'_{64j} = \frac{Y_j}{X_j}$ and $A'_{64i} = \frac{C_i}{PI}$ where PI is total California personal income. In this case, the technical coefficients Matrix A is augmented to include households and is denoted as A' .

Then equation (4) can be rewritten as

$$(4a) X - A'X = F$$

and solving for X , equation (5) is rewritten as

$$(5a) X = (I - A)^{-1}F$$

Given the assumptions, a generalized solution for a unit change in the exogeneous terms (ie. in equation (5) the exogeneous terms are $C + F$, and in equation (5a) the exogeneous term is F) is given by $(I - A)^{-1}$ and $(I - A')^{-1}$ respectively.

Specifically, the row sums of each column of $(I - A)^{-1}$ are called Type I sector specific output multipliers; and the row sums of each column of $(I - A')^{-1}$ are called Type II sector specific output multipliers. These values were shown in text tables 9a and 10a respectively.

Using these two forms of generalized solutions $(I - A)^{-1}$ and $(I - A')^{-1}$, along with the assumption that sector specific income/output relationships and employment/output relationships are linear and homogeneous, the equations can be used to develop Type I and Type II income and employment multipliers. By multiplying both sides of equations (5) and (5a) respectively by a diagonal Matrix of income output ratios, $\frac{\hat{Y}_j}{X_j}$, we obtain

$$(6) \quad \frac{\hat{Y}}{X} X = \frac{\hat{Y}}{X} (I-A)^{-1} (C+F) = Y$$

and

$$(6a) \quad \frac{\hat{Y}}{X} X = \frac{\hat{Y}}{X} (I-A')^{-1} F = Y$$

In this case, the row sums of each column of the Matrices obtained by the operations $\frac{\hat{Y}}{X} (I - A)^{-1}$ and $\frac{\hat{Y}}{X} (I - A')^{-1}$ are, respectively, the total direct and indirect, and the total direct, indirect, and induced income changes per unit (dollar) change in the exogeneous terms ($C + F$, and F respectively). By dividing these sums by the direct $\frac{Y}{X}$ ratio, Type I and Type II income multipliers are obtained. This simply changes the base of the calculations from a unit change in the exogenous term, to a unit change in direct income. The effect is the same, ie. it derives the total direct, indirect (and induced) income changes from an given exogeneous direct income change. Type I and Type II income multipliers are shown in text tables 9b and 10b.

Similarly, by multiplying both sides of equations (5) and (5a) respectively by a diagonal matrix of employment/output ratios, $\frac{\hat{E}}{X}$, we obtain

$$(7) \quad \frac{\hat{E}}{X} X = \frac{\hat{E}}{X} (I-A)^{-1} (C+F) = E$$

and

$$(7a) \quad \frac{\hat{E}}{X} X = \frac{\hat{E}}{X} (I-A')^{-1} F = E$$

In this case, the row sums of each column of the matrices obtained by the operations $\frac{\hat{E}}{X} (I - A)^{-1}$ and $\frac{\hat{E}}{X} (I - A')^{-1}$ are, respectively, the total direct and indirect, and the total direct, indirect and induced employment changes per unit (dollar) change in the exogeneous terms ($C + F$, and F respectively).

As with income, these values can be recast to change the base from a unit of direct change in the exogeneous term to a unit change in direct employment by dividing the aforementioned row sums by the column heading direct ratio. This results in what are called Type I and Type II employment multipliers. These values are in text tables 9c and 10c.

APPENDIX B

Procedures for Estimating the CIF Model

I. Data Collection and Analysis

Input-output models require an enormous amount of economic data and the cost of acquiring primary data to estimate a model the size of the CIF model is prohibitive. As a result, primary data were collected to estimate only those transactions that involved fish harvesting and fish processing sectors; secondary sources were used to develop transaction figures for the nonfisheries sectors. Attachment B-1 is a schematic diagram of the procedures used to develop the CIF model.

Model Specifications

The aggregation of fishing and fish processing activities into industrial sectors was made with the cooperation of industry advisors and on the basis of interviews with staff from the National Marine Fisheries Service (NMFS) and California Division of Fish and Game (CF and G). The current version of the CIF model contains 28 fishery oriented sectors (19 fish harvesting sectors and nine fish processing sectors) and can be respecified to provide more detail or more accuracy as data become available.

A 1977 I-O model of the California economy was being developed during the spring of 1981 by Engineering-Economics Associates under a contract with the U.S. Forest Service. The CIF model was developed first with an updated 1972 model provided by Cal-Div-Of Water Resources and was then respecified using the Forest Service model when

it became available. That model contained four fishery related sectors (fishing, tuna canning, other fish canning, and other fish packaging) which were replaced by our own 28 fishery oriented sectors. The other industrial sectors in the Forest Service model were aggregated into 35 nonfishery sectors using Standard Industrial Classification (SIC) grouping procedures, then updated to 1980.

The current version of the CIF model contains 19 fish harvesting sectors, 9 fish processing sectors and 35 nonfishery sectors. An additional row and column displays transactions with California Households and there is an "Other" Column and an "Other" Row to account for purchases and sales outside California and other exogenous transactions.

Data Collection - Nonfishery Sectors

The 1977 I-O model of the California economy was derived from the U.S. Forest Service Project which updated the 1972 national I-O model prepared by the U.S. Department of Commerce Bureau of Economic Analysis based on data from the U.S. Bureau of Labor Statistics (BLS) and the U.S. Department of Commerce (DOC). The sectors specified in the 1977 model are listed in Attachment 2 and the procedure for updating the 1977 model to reflect 1980 conditions is described below. All aggregation and update routines used price, output, and employment data from BLS and DOC.

Data Collection - Fishery Sections

Data used to develop transaction figures for the fishery sectors were collected from both primary and secondary sources. There were three main sources: a mail survey of California fish harvesters and fish processors, interviews with industry experts, and a review of published data and government publications.

The Mail Survey

For the survey of fish harvesters, a pair of fleet lists (computer tapes) was obtained from NMFS and the U.S. Coast Guard; these were used to develop a list of all commercial fishing vessels greater than 5 GRT. Fleet lists for fisheries with vessels less than 5 GRT were obtained from cooperating industry trade organizations.

In total, the names and addresses of owners of 3,500 commercial fishing vessels were compiled and each of them was mailed a copy of the survey instrument shown as Attachment 3 along with a cover letter from the Pacific Coast Federation of Fishermen's Associations and a return envelope. A follow-up letter and duplicate survey instrument was mailed after one month. The response rate for the mail survey of fish-harvesters was 20% and 630 usable questionnaires were received back for processing. The current version of the CIF model is based on 557 completed questionnaires; the rest fell outside the 19 sectors listed and will need special treatment to be incorporated into the CIF model. [1]

For the mail survey of fish processors a list of all firms with California fish-buying licenses was obtained from California Fish and Game. This included many small bait shops, aquaculture farms, etc., as well as fish processors, wholesalers, restaurants, etc. Attempts to distinguish between firms in each sector on the basis of industry lists and firm names were unsuccessful so all 750 firms on the fish-buying list were sent initial and follow-up copies of the survey

[1] Approximately 73 usable questionnaires from fish harvesters were classified in an "other" category and were not processed. It has been determined that these are primarily rod and reel fishing vessels, hooker boats, squid light-broilers, but these could not be included in this version of the CIF model. (See Attachment 4)

instrument shown in Attachment 5, along with a cover letter from the California Seafood Institute. The decision to mail to all 750 firms lowered the response rate for the survey of fish processors. The 68 returned questionnaires represented 9% of the total number mailed, but responding firms accounted for approximately 40-60% of 1980 raw-fish purchases in California.

Interviews

While the mail surveys were underway, researchers conducted face-to-face interviews with industry experts representing each fishery section. Cooperating industry representatives identified two experts for each fish harvesting and fish processing sector and arranged interview sessions where researchers obtained additional purchase and sales data and other relevant information to supplement the mail survey and secondary data. The protocol used to conduct these interviews is outlined in Attachment 6.

Data Processing

A private surveying company, Copley International Corporation (CIC), was contracted to code, edit, and collate the returned questionnaires. The summary of procedures used by CIC is provided as Attachment 7.

The mail surveys, interviews, and the review of secondary sources provided an extensive and sometimes conflicting data base for estimating interindustry transactions. After preliminary data analysis, a "data review session" was organized where researchers and government and industry representatives evaluated data from the three sources and reconciled conflicts. The two-day session was held at PCFFA offices in Sausalito and was funded with a supplemental grant

Figure B-1

Nine Basic Components of the CIF Transactions Table

	Purchases by 19 Fish Harvesting Sectors	Purchases by 9 Fish Processing Sectors	Purchases by The Remainder of 36 Sectors of The Economy	Other Final Demand
19 Fish Harvesting Sectors to all Sectors	19 x 19 Sales by 19 Fish Harvesters to 19 Fish Harvesters T-1	19 x 9 Sales by 19 Fish Harvesters to 9 Fish Processors T-2	19 x 36 Sales by 19 Fish Harvesters to 36 Remaining Sectors of The California Economy including Households T-3	Sales by 19 Fish Harvesters to all other buyers
9 Fish Processing Sectors Sales to all Sectors	9 x 19 Sales by 9 Fish Processing Sectors to 19 Fish Harvesting Sectors T-4	9 x 9 Sales by 9 Fish Processors to 9 Fish Processors T-5	9 x 36 Sales by 9 Fish Harvesters to 36 Remaining Sectors of the California buyers including Households T-6	Sales by 9 Fish Processors to all other buyers
36 Remaining Economic Sectors Sales to All Sectors	36 x 19 Purchased Inputs by 19 Fish Harvesters from 36 Remaining Sectors of the California Economy including Households T-7	36 x 9 Purchased Inputs by 9 Fish Processors from 36 Remaining Sectors of the California Economy including Households T-8	36 x 36 Interindustry Transactions Between the Remaining 36 Sectors of the California Economy including Households T-9	Sales by 36 Remaining Sectors of California Economic to all other buyers
Other Value Added	All other purchased inputs by 19 Fish Harvesters including Taxes and Imports	All other purchased inputs by 9 Fish Processors including Taxes and Imports	All other purchased inputs by 9 Fish Processors including Taxes and Imports	

from the National Marine Fisheries Service; the agenda for the review session is presented as Attachment 8.

The judgement of the researchers and the results of the data review session indicated that the mail survey data provided the most reliable transactions information for all but a few sectors. Computer programs for sorting and aggregating questionnaire data and converting "expense" estimates from the questionnaires into transactions figures for the CIF model are available from California Sea Grant or the Center for Marine Studies at San Diego State University. [2]

II. Constructing the Model

In constructing the CIF model, the transactions table (a 65 x 65 matrix) was viewed as a set of nine smaller sub-matrices, as shown in Figure B-1. The way the CIF model was specified, the output by each fish harvesting sector is shown to reach the ultimate consumer through one or more of the fish processing sectors. As a result T-1 (a 19 x 19 matrix) and T-3 (a 19 x 36 matrix) are assumed to be null matrices; that is all zeros. All direct sales by fish harvesters appear in T-2 (a 19 x 9 matrix) which shows California fish purchases by fish processors. The sale of California seafood to households and outside California is shown in T-6 (a 9 x 36 matrix) which shows sales by California fish processors.

The development of each of the nine sub-matrices took place as follows:

[2] Survey questions dealing with input costs were asked in familiar cost accounting expense categories to encourage respondents to provide as much detail as possible; these responses were then translated into input purchase data for the CIF model. Computer programs are available that translate raw survey data into input purchase/sales data and aggregate by sector to provide sample averages and totals which can be scaled up to full transactions estimates using Sector Control Totals.

T-1 Fish Harvesting Sector Sales to Other Fish Harvesting Sectors (19 x 19)

In the current version of the CIF Model, fish harvesting sectors are shown to make all direct fish sales to one or more of the fish processing sectors (See T-2). T-1 is therefore a 19 x 19 Null Matrix.

T-2 Fish Harvesting Sector Sales to Fish Processing Sectors (19 x 9)

This sub-matrix shows the major interindustry linkages between fish harvesters and fish processors and is assumed to be the first stage in the distribution of harvested fish to the ultimate consumer. Estimating each element of this 19 x 9 section of the model was a major component of the overall study. It involved the following steps.

Step (1) Survey 19 fish harvesting groups to estimate each group's purchases of the 13 species.

Step (2) Survey nine fish processing groups to estimate each group's purchases of the 13 species.

Step (3) Array information from Step (1) into a 19 x 13 "Make" Table (Harvester/Specie) according to the mean value species harvested from the sample survey responses on tons of fish purchased weighted by \$ value per ton from secondary data.

Step (4) Array information from Step (2) into a 13 x 9 "Use" Table (Specie/Processor) according to the mean value (specie purchase) from sample survey responses on tons of fish purchased weighted by \$ value per ton from secondary data.

Step (5) Expand the mean values in the "Make" Table to total specie landings based on NMFS data.

Step (6) Expand the mean value of specie purchases to the total species landings based on NMFS data.

Step (7) Derive harvester to processor transactions by assuming a constant proportion of species landed by harvester to a constant proportion of the specie purchased by the processor. (i.e. if the harvester (1) caught 40% of specie A and harvester (2) caught the other 60%, then each processor purchasing specie A was assumed to buy 40% from harvester (1) and 60% from harvester (2).

Mathematically the three stages of development of the T-2 Section are as follows:

(1) Q_{ik} = The mean quantity of the kth specie landed by the ith harvester based on the harvester survey responses where $i = 1, 2 \dots 19$ and $k = 1, 2 \dots 13$.

(2) Q_{kj} = The quantity of the kth specie purchased by the jth processor based on the processor survey responses.

(3) P_k = The average price per ton of specie k .

Transformation of Mean Quantity to Mean Dollar Values

(4) $X_{ik} = P_k Q_{ik}$ = Mean value of specie k landed by harvester i .

(5) $X_{kj} = P_k Q_{kj}$ = Mean value of specie k purchased by processor j .

Expansion of Mean Values by Specie Control Totals, C_k

(6) $X_{ik} = P_k Q_{ik} \cdot C_k$ For $k = 1, 2 \dots 13$, = "Make" Table

(7) $X_{kj} = P_k Q_{kj} \cdot C_k$ For $k = 1, 2 \dots 13$, = "Use" Table

Transformation of "Make" and "Use" Tables to Harvester Sales to Processors, X_{ij} .

(8) $X_{ij} = X_{ik} * X_{kj}$ For $i = 1, 2 \dots 19$ and $j = 1, 2 \dots 9$, and $k = 1, 2 \dots 13$.

T-3 Fish Harvesting Sector Sales to Nonfishery Sectors,
Households and outside California (19 x 36)

In the current version of the CIF model fish harvesting sectors are shown to make all direct sales to one or more of the fish processing sectors (See T-2). Therefore, T-3 is a 19 X 36 Null Matrix.

T-4 Fish Processing Sector Sales to Fish Harvesting Sectors
(9 x 19)

Estimates of bait purchases by lobsters/crabbers (Sectors 14, 15) from wholesaler, processors, distributors (Sectors 20-22) were obtained from the mail survey (See Section 9 of Attachment B-1) and from interviews with industry experts. The distribution of bait sales by various size wholesalers, processors and distributors was based on the distribution of sample sales for Sectors 20-22. With the exception of these bait sales T-4 is a null matrix; that is $X_{ij} = 0$ where $i = 20, 21, 22$ and $j = 14, 15$

T-5 Fish Processing Sector Sales to Other Fish Processing
Sectors (9 x 9)

Data for estimating sales among fish processing sectors (Sectors 20-28) were obtained from the mail survey (See Section 3) of Attachment B-2) and from interviews with industry experts.

Three additional assumptions were used to allocate intersectoral transactions in submatrix T-5; they are

- (1) Retail markets, seafood restaurants and other eating and drinking places (Sectors 25-27) purchase California fish from wholesalers, processors and distributors and brokers (Sectors 20-23) in proportion to the relative size of sample sales by

those sectors and do not buy directly from fish harvestors.

(2) California-based tuna canners (Sector 24) buy all their nonimported fish supplies directly from California fish harvestors.

(3) The California canned tuna market is supplied totally by California-based tuna canners (Sector 24).

T-6 Fish Processing Sector Sales to Nonfishery Sectors,

California Households and Outside California and other Final Demand

(9 x 37)

Data for estimating T-6 were obtained from the mail survey (See Section 3 of Attachment B-4) and from interviews with industry experts.

Three additional assumptions were used to allocate sector sales in T-6. They are:

(1) All sales by fish processors, wholesalers and distributors (Sectors 20 -22) that are not made to other fish processing sectors within California (Sectors 23-28) are sold outside California. That is $X_{ij} = 0$ where $i = 20...22$ and $j = 29...63$.

(2) Seafood restaurants (Sector 25) serve the same percentage of out-of-state consumers as other eating and drinking establishments in California (Sector 26).

(3) Seafood markets (Sector 27) sell the same percentage to out-of-state residents as other Retail Traders (Sector 57)

T-7 Fish Harvesting Sector Purchases From Nonfishery Sectors,

Households and From Outside California and Other Value Added

Data for estimating T-7 were obtained from the mail survey (See

Attachment B-4). Survey data were converted from standard accounting (expense) categories to input purchase distributions using the procedure described in Attachment B-5.

Secondary data from previous studies were used as a check against survey results but were only used in the estimating procedure for the tuna purse seiner sector (Sector 5).

Cost Distribution estimates from mail survey data were reviewed by industry and government representatives before they were used to develop T-7.

T-8 Fish Processing Sector Purchases From Nonfishery Sectors,
Households and From Outside California and other value added

Data for estimating T-8 were obtained from the mail survey (See Attachment B-5). Survey data were converted from accounting (expense) categories to input purchase described in Attachment B-5.

Secondary data from previous studies were used as a check against survey results but were only used in estimating procedures for tuna canners (Sector 25).

Transaction estimates for other eating and drinking establishments (Sector 26) and food and kindred processors were available from the 1977 I-O model updated to 1980. The update procedures are described in the following section (T-9).

T-9 Nonfishery Interindustry Transactions

The balance of the CIF model was developed using the 1972 476 sector National input-output model, updated to 1977 using the RAS Technique (Richard Stone) with 1977 economic census data developed specifically for this purpose in a project by the U.S. Forest Service. The Forest Service project also developed a state summary tape file

which included all final demand and value added components of the National Model disaggregated to the state level. This file also included state level employment by sector.

The 1977 California Model was derived from this information using the simple location quotient (SLQ) technique. The SLQ technique obtains balanced subnational models from National technical coefficients and ratios of the relative shares of subnational area employment to National employment.

The 1977 476 sector California input-output model was updated to 1980 using the following procedure.

(1) The 1977 California Transactions Table sectors were aggregated to 38 sectors to conform to sector definitions we judged most useful in the CIF context.

(2) The 38 sector 1977 transaction data were updated to 1980 for price and real production changes that occurred between 1977 and 1980.

(3) The four fish harvesting and processing activities were then deleted from the 1980 38 sector model so that it could be merged with the survey estimates of fish harvesting and processing without double counting, resulting in the 34 nonfishing sectors to be added to the 19 fish harvesters and nine fish processing sectors to arrive at the final transactions table.

The final step in the overall procedure involved merging the nine components to the single transactions table described in the text.

Standard row/column checks were performed on the merged components to make sure everything in the model balanced. Then the procedures described in Appendix A were performed to derive the analytical input-output tables from which the multipliers were obtained.

Mathematical Description of the Update Procedure

Definitions

(1) Sales by industry i to industry j , X_{ij} in 1977 (based upon the aggregated 1977 California I-O model) equals price in 1977 dollars of the i th good P_i^{77} times the quantity of the i th good sold to sector j in 1977, Q_{ij}^{77} .

Update Procedure

$$(2) \quad X_{ij}^{80} = \frac{P_i^{80}}{P_i^{77}} * \frac{Q_j^{80}}{Q_j^{77}} * (X_{ij}^{77})$$

For $i, j = 1, 2, \dots, 38$

where $\frac{P_i^{80}}{P_i^{77}}$ is a price index for commodity i with base year $P_i^{77} = 1.0$ and $\frac{Q_j^{80}}{Q_j^{77}}$ is a production index for commodity j with base year $Q_j^{77} = 1.0$.

The production index was based in part on California employment data and national productivity data. The following formula was used to derive a production index from these related data.

$$(3) \quad \frac{\text{Cal } Q_j^{80}}{\text{Cal } Q_j^{77}} = \left(\frac{NQ_j^{80}/NE_j^{80}}{NQ_j^{77}/NE_j^{77}} \right) * \frac{\text{Cal } E_j^{80}}{\text{Cal } E_j^{77}}$$

Which is to say, the California Production Index for Commodity j .

$\frac{\text{Cal } Q_j^{80}}{\text{Cal } Q_j^{77}}$, was approximated using an index of change in National

labor productivity, $\left(\frac{NQ_j^{80}/NE_j^{80}}{NQ_j^{77}/NE_j^{77}} \right)$, times an index of employment

change in California from 1977 to 1980 for sector j .

The components of the nonfishery sectors and the classifications used in the aggregation procedures are shown in Attachment 1.

Table 1.

**Illustrative Input-Output Transactions Table
(in Millions of Dollars)**

	Processing Sector			Exports	House- Holds	Total Sales
	Industry A	Industry B	Industry C			
Processing Sector						
Industry A	10	5	3	1	12	31
Industry B	3	9	8	1	4	25
Industry C	8	4	6	3	3	24
Payments Sector						
Imports	6	2	1	0	4	13
Households	4	5	6	0	4	19
Total Purchases	31	25	24	5	27	112

Table 2

**Illustrative Input-Output
Technical Coefficients Table**

	Industry A	Industry B	Industry C
Industry A	.32	.20	.13
Industry B	.10	.36	.33
Industry C	.26	.26	.25

Table 3

**Illustrative Input-Output
Interdependency Coefficients Table**

	Industry A	Industry B	Industry C
Industry A	1.82	.73	.64
Industry B	.69	2.03	1.01
Industry C	.78	.69	1.77
Total	3.29	3.45	3.42

TABLE 4
OUTLINE OF THE CALIFORNIA INDUSTRY FISHERIES (CIF) MODEL

	FISH HARVESTING SECTORS 1.....19	FISH PROCESSING SECTORS 20.....28	CALIFORNIA NON-FISHERY INDUSTRIES 29.....63	CALIFORNIA HOUSEHOLDS 64	EXPORT SALES 65	TOTAL SALES 66
<u>FISH HARVESTING SECTORS</u>						
1.						
•						
•						
•						
•						
19.						
<u>FISH PROCESSING SECTORS</u>						
20.						
•						
•						
•						
•						
28.						
<u>CALIFORNIA NON-FISHERY SECTORS</u>						
29.						
•						
•						
•						
•						
•						
63.						
<u>PURCHASES FROM CALIFORNIA HOUSEHOLDS</u>						
64.						
<u>PURCHASES FROM OUTSIDE CALIFORNIA</u>						
65.						
<u>TOTAL PURCHASES</u>						
66.						

TABLE 5 : LIST OF INDUSTRIAL SECTORS IN THE CIF MODELFISH HARVESTING SECTORS

<u>SECTOR #</u>	<u>SECTOR #</u>
1. Groundfish Trawlers, N.	11. Salmon/Albacore
2. Groundfish Trawlers, S.	12. Long-Liners
3. Shrimp Trawlers	13. Black Cod Pots
4. Tuna Purse-Seiners	14. Crab/Lobster, N.
5. Wetfish Seiners	15. Crab/Lobster, S.
6. Herring Gillnetters	16. Baitboats, Tuna
7. Other Gillnetters	17. Jigboats, Tuna
8. Small Salmon Trollers	18. Diveboats
9. Large Salmon Trollers	19. Harpoon, Billfish
10. Salmon/Crabbers	

FISH PROCESSING SECTORS

<u>SECTOR #</u>	<u>SECTOR #</u>
20. Fish Whsl., Proc., Dist., Sm.	25. Seafood Restaurants
21. Fish Whsl., Proc., Dist., Med.	26. Other Eat And Drink
22. Fish Whsl., Proc., Dist., Lg.	27. Seafood Markets
23. Fish Import/Export Brokers	28. Other Food and Kindred Products
24. Tuna Canners	

NON-FISHERY SECTORS

<u>SECTOR #</u>	<u>SECTOR #</u>
29. Forestry and Other Fishing	47. Textiles
30. Forestry/Fish Services	48. Apparel
31. Petfood	49. Paper
32. Animal and Marine Fats	50. Printing
33. Ship and Boat	51. Chemical
34. Motor Freight	52. Petroleum
35. Agricultural	53. Rubber and Plastics
36. Mining	54. Leather
37. Construction	55. Telephone and Public Utilities
38. Lumber	56. Wholesale Traders
39. Furniture	57. Retail Traders
40. Glass, Stone, Clay	58. Insurance
41. Metal	59. Finance
42. Non-Electric Machines	60. Services
43. Electric Equipment	61. Federal Government
44. Transportation Equipment	62. State and Local Governments
45. Instruments	63. Scrap Industries
46. Miscellaneous Mfg. Goods	

TABLE 6: 1980 California Landings by Species & Harvesting Sector (000\$)

SPECIES	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
CRUSTACEANS	10,876	101,695	2483,711	0,000	0,000	247,993	289,082	0,000	51,426	683,974
MOLLUSCS	0,000	0,000	0,000	0,000	2450,357	0,000	2524,509	0,000	0,000	0,000
FLATFISH	7067,739	640,177	177,163	0,000	0,000	31,421	341,933	1,612	0,010	0,446
WETFISH	0,000	0,000	0,000	0,000	15750,020	23425,070	0,000	0,000	63,657	401,754
SABLE/ROCK FISH	3373,356	979,892	0,000	0,000	0,000	18,986	295,938	9,771	70,592	22,357
SHARK/RAY/SKATE	6,116	1376,835	0,000	0,000	0,000	205,838	5219,191	1,949	1,559	0,000
SALMON	193,210	166,056	0,257	0,000	0,000	1116,614	143,112	1309,708	3674,715	1391,233
BILLFISH	0,000	129,446	0,000	0,000	0,000	28,479	455,394	2,662	243,934	0,000
TUNA	4,626	91,167	0,000	196667,594	1963,531	1028,826	1125,625	31,881	1320,277	381,080
COD	0,000	0,419	0,000	0,000	0,000	2,092	0,000	4,999	5,750	3,564
BASS	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
PERCH	0,000	0,000	0,000	0,000	0,000	0,000	1527,915	0,000	0,000	0,000
OTHER	0,000	1,596	0,000	0,000	0,000	0,000	0,180	0,000	0,010	0,000
TOTAL	10656,223	3487,283	2661,131	196667,594	20163,920	29105,319	11922,880	1362,582	5431,930	2084,410
SPECIES	11.	12.	13.	14.	15.	16.	17.	18.	19.	TOTAL CALIFORNIA
CRUSTACEANS	5,635	0,000	0,000	1966,152	1463,871	0,000	90,911	16,674	165,999	7578,000
MOLLUSKS	0,000	0,000	0,000	0,230	0,000	0,000	18,868	3939,646	7,379	8941,000
FLATFISH	0,001	0,000	197,010	166,503	11,275	0,000	0,000	64,618	0,092	8700,000
WETFISH	0,000	0,000	0,000	0,000	142,736	0,000	640,764	0,003	0,000	40433,000
SABLE/ROCK FISH	1,350	20,634	8610,683	29,537	3,037	40,281	162,263	0,000	23,320	13662,000
SHARK/RAY/SKATE	0,000	0,913	12,712	139,892	15,481	0,000	0,000	29,506	110,740	7121,000
SALMON	569,224	53,727	979,708	325,299	0,186	115,199	59,151	5,205	45,393	13148,000
BILLFISH	0,000	0,000	0,000	0,000	29,885	0,000	21,748	428,595	2166,858	3507,000
TUNA	2244,766	12,360	1,308	167,337	0,000	10430,910	2162,522	75,040	13,532	217723,000
COD	0,000	23,312	1,430	0,482	0,000	0,000	43,868	0,000	1,463	87,500
BASS	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
PERCH	0,000	0,000	0,000	0,000	9,085	0,000	0,000	0,000	0,000	1537,000
OTHER	0,000	0,000	0,001	0,001	0,000	0,000	0,014	3,199	0,000	5,000
TOTAL	2820,976	111,017	9802,921	2795,383	1675,557	10586,380	3209,109	4563,083	2554,776	322442,230

HARVESTING SECTOR

1. Groundfish Trawl N.
2. Groundfish Trawl S.
3. Shrimp Trawler
4. Tuna Purge-Seiner
5. Wetfish Seiner
6. Herring Gillnetter
7. Other Gillnetter
8. Salmon Troller/Small
9. Salmon Troller/Large
10. Salmon Troller/Crabber
11. Salmon/Albacore Troller
12. Long-Liners
13. Black Cod Pots
14. Crab/Lobster, Northern
15. Crab/Lobster, Southern
16. Baitboats
17. Jigboats
18. Diveboats Misc.
19. Harpoon-Billfish

TABLE 7 : PROCESSOR/SPECIES USE TABLE

California Fish Purchases by Species for Fish Processing Sectors (in Thousands of Dollars)
 (Includes only direct purchases from California Harvestors)

SPECIES	FISH PROCESSING SECTORS (by Number)						TOTAL PURCHASES
	20.	21.	22.	23.	24.	25-28*	
CRUSTACEANS	267.500	2352.200	4958.300	0.000	0.000	0.000	7578.000
MOLLUSKS	313.100	2753.200	5803.500	71.200	0.000	0.000	8941.000
FLATFISH	307.100	2700.500	5692.400	0.000	0.000	0.000	8700.000
JETFISH	0.000	0.000	0.000	19081.000	21352.000	0.000	40433.000
SABLE/ROCK FISH	445.600	3917.900	8258.500	1040.000	0.000	0.000	13662.000
SHARK/RAYS/SKATES	251.400	2210.400	4659.200	0.000	0.000	0.000	7121.000
SALMON	464.100	4081.200	8602.700	0.000	0.000	0.000	13148.000
BILLFISH	123.800	1088.600	2294.600	0.000	0.000	0.000	3507.000
TUNA	1.960	984.900	681.100	0.000	216053.094	0.000	217723.000
COD	3.090	27.160	57.250	0.000	0.000	0.000	87.500
BASS	0.700	6.200	13.100	0.000	0.000	0.000	20.000
PERCH	54.200	477.100	1005.700	0.000	0.000	0.000	1537.000
OTHER	0.200	1.500	8.300	0.000	0.000	0.000	5.000
TOTAL	2232.750	20600.859	42029.660	20192.199	237407.094	0.000	322462.500

FISH PROCESSING SECTORS

- | | |
|--|-------------------------------------|
| 20. Small Wholesalers, Processors, Distributors | 25. Seafood Restaurants |
| 21. Medium Wholesalers, Processors, Distributors | 26. Other Eat and Drink |
| 22. Large Wholesalers, Processors, Distributors | 27. Seafood Markets |
| 23. Import/Export Brokers | 28. Other Food and Kindred Products |
| 24. Tuna Canners | |

* NOTE: It is assumed for the CIF Model that Other Fish Processors (Sectors 25-28) buy all fish products from Wholesalers, Processors, Distributors and Import/Export Brokers (Sectors 20-23).

TABLE 8: HARVESTER-PROCESSOR TRANSACTIONS

1980 Sales by Harvesting Sectors to Processing Sectors (in Thousands of Dollars)

DIRECT PURCHASE PROCESSING SECTORS (by Number)

HARVESTING SECTORS	20	21	22	23	24	25-28 *	TOTAL
1) GROUNDFISH TRAWLERS, N.	366.939	3226.593	6801.308	256.792	4.591	0.000	10456.223
2) GROUNDFISH TRAWLERS, S.	117.266	1031.41	2173.547	74.593	90.469	0.000	3487.285
3) SHRIMP TRAWLERS	93.917	826.012	1741.182	0.000	0.000	0.000	2661.131
4) TUNA PURSE-SEINERS	1.77	889.653	615.232	0.000	193161	0.000	196667.653
5) WETFISH SEINERS	85.826	763.423	1596.648	7452.208	10265.88	0.000	20163.915
6) HERRING GILLNETTERS	164.147	1448.028	3045.686	11056.12	13391.34	0.000	29105.321
7) OTHER GILLNETTERS	379.614	3343.38	7040.254	42.631	1117.002	0.000	11922.881
8) SMALL SALMON TROLLERS	46.945	412.969	870.286	.744	31.634	0.000	1362.58
9) LARGE SALMON TROLLERS	142.71	1260.821	2649.204	35.414	1343.779	0.000	5431.928
10) SALMON/CRABBERS	74.126	653.53	1375.137	191.296	590.32	0.000	2884.409
11) SALMON/ALBACORE	20.356	180.901	383.968	.103	2227.549	0.000	2820.977
12) LONG-LINERS	3.428	30.192	63.561	1.571	12.263	0.000	111.017
13) BLACK COD POTS	322.884	2030.992	5984.272	655.476	1.298	0.000	9802.922
14) CRAB/LOBSTER, N.	92.691	815.804	1710.583	2.23	164.055	0.000	2793.383
15) CRAB/LOBSTER, S.	54.3	475.714	1002.776	67.591	73.376	0.000	1675.557
16) BAITBOATS	3.474	94.495	132.354	3.066	10351	0.000	10586.389
17) JIGBOATS	13.587	129.076	258.224	319.137	2489.083	0.000	3209.109
18) DIVEBOATS	157.314	1383.483	2915.833	31.373	75.061	0.000	4563.084
19) HARPOON-BILLFISH	88.937	782.103	1648.472	1.034	13.429	0.000	2534.773
TOTAL	2232.051	20594.659	42016.547	20192.199	237407.085	0.000	322442.541

FISH PROCESSING SECTORS

- | | |
|--|-------------------------------------|
| 20. Small Wholesalers, Processors, Distributors | 25. Seafood Restaurants |
| 21. Medium Wholesalers, Processors, Distributors | 26. Other Eat and Drink |
| 22. Large Wholesalers, Processors, Distributors | 27. Seafood Markets |
| 23. Import/Export Brokers | 28. Other Food and Kindred Products |
| 24. Tuna Canners | |

It is assumed for the CIF Model that Other Fish Processors (25-28) buy all fish products from Wholesalers, Processors, Distributors and Import-Export Brokers (20-23).

TABLE 9a . DIRECT, INDIRECT AND INDUCED CALIFORNIA PRODUCTION
PER \$ SALES AND TYPE I & TYPE II OUTPUT
MULTIPLIERS FOR FISH HARVESTING SECTORS (IN \$)

#	SECTOR	CALIFORNIA \$ OUTPUT PER \$ OF EXVESSEL FISH SALES			CALIF. OUTPUT MULTIPLIERS	
		D	D+I	D+I+IN	TYPE I	TYPE II
		Col. 1	Col. 2	Col. 3	Col. 4	Col. 5
1	GROUNDFISH TRAWLERS, N	1.00000	1.70599	3.70070	1.70599	3.70070
2	GROUNDFISH TRAWLERS, S	1.00000	1.43814	3.69672	1.43814	3.69672
3	SHRIMP TRAWLERS	1.00000	1.50688	3.78667	1.50688	3.78667
4	TUNA PURSE-SEINERS	1.00000	1.51361	3.66256	1.51361	3.66256
5	WETFISH SEINERS	1.00000	1.63639	3.77111	1.63639	3.77111
6	HERRING GILLNETTERS	1.00000	1.41686	3.46268	1.41686	3.46268
7	OTHER GILLNETTERS	1.00000	1.57921	3.70386	1.57921	3.70386
8	SMALL SALMON TROLLERS	1.00000	1.75444	3.53162	1.75444	3.53162
9	LARGE SALMON TROLLERS	1.00000	1.56205	3.56410	1.56205	3.56410
10	SALMON/CRABBERS	1.00000	1.44542	3.54335	1.44542	3.54335
11	SALMON/ALBACORE	1.00000	1.71981	3.55432	1.71981	3.55432
12	LONG-LINERS	1.00000	1.89111	4.02240	1.89111	4.02240
13	BLACK COD POTS	1.00000	1.83778	3.53063	1.83778	3.53063
14	CRAB/LOBSTER, N	1.00000	1.95756	3.69648	1.95766	3.69648
15	CRAB/LOBSTER, S	1.00000	1.92803	3.54341	1.92803	3.54341
16	BAITBOATS, TUNA	1.00000	1.38374	3.53314	1.38374	3.53314
17	JIGBOATS, TUNA	1.00000	2.04611	3.75166	2.04611	3.75166
18	DIVEBOATS	1.00000	1.47159	3.91117	1.47159	3.91117
19	HARPOON, GILLFISH	1.00000	1.80203	3.53327	1.80203	3.53327

LEGEND:

D - DIRECT OUTPUT GENERATED PER \$ SALES
 I - INDIRECT OUTPUT GENERATED PER \$ SALES
 IN - INDUCED OUTPUT GENERATED PER \$ SALES

TYPE I MULTIPLIER = (D+I)/D, i.e. the direct and indirect output generated by \$1 additional sales, (in \$).

TYPE II MULTIPLIER = (D+I+IN)/D, i.e. the direct, indirect and induced output generated by \$1 additional sales, (in \$)

TABLE 7b DIRECT, INDIRECT AND INDUCED CALIFORNIA INCOME
PER \$ SALES AND TYPE I & TYPE II INCOME
MULTIPLIERS FOR FISH HARVESTING SECTORS (IN \$)

#	SECTOR	CALIFORNIA INCOME PER \$ OF EXVESSEL FISH SALES			CALIF. INCOME MULTIPLIERS	
		D	D+I	D+I+IN	TYPE I	TYPE II
		Col. 1	Col. 2	Col. 3	Col. 4	Col. 5
1	GROUNDFISH TRAWLERS, N	49294	.69693	0.96741	1.41383	1.96253
2	GROUNDFISH TRAWLERS, S	67580	.78913	1.09539	1.16770	1.62088
3	SHRIMP TRAWLERS	54918	.79654	1.10567	1.22699	1.70318
4	TUNA PURSE-SEINERS	61134	.75082	1.04222	1.22816	1.70481
5	WETFISH SEINERS	59010	.74585	1.03531	1.26394	1.75447
6	HERRING GILLNETTERS	58986	.71479	0.99220	1.21179	1.68209
7	OTHER GILLNETTERS	57328	.74233	1.03042	1.29488	1.79742
8	SMALL SALMON TROLLERS	38715	.62093	0.86191	1.60385	2.22630
9	LARGE SALMON TROLLERS	53656	.69950	0.97099	1.30368	1.80965
10	SALMON/CRABBERS	60276	.73300	1.01748	1.21607	1.68803
11	SALMON/ALBACORE	43754	.64095	0.88971	1.46490	2.03343
12	LONG-LINERS	54830	.74466	1.03366	1.35812	1.68521
13	BLACK COD POTS	34522	.59147	0.82102	1.71332	2.37826
14	CRAB/LOBSTER, N	38040	.64247	0.89181	1.68892	2.34440
15	CRAB/LOBSTER, S	29389	.56440	0.79345	1.98810	2.75967
16	BAITBOATS, TUNA	64666	.75099	1.04244	1.16133	1.61204
17	JIGBOATS, TUNA	28052	.59591	0.82718	2.12430	2.94875
18	DIVEBOATS	71380	.65237	1.19318	1.19583	1.64605
19	HARPOON, BILLFISH	37070	.60460	0.83925	1.63096	2.26395

LEGEND

D - DIRECT INCOME GENERATED PER \$ SALES
 I - INDIRECT INCOME GENERATED PER \$ SALES
 IN - INDUCED INCOME GENERATED PER \$ SALES

TYPE I MULTIPLIER = (D+I)/D, i.e. the direct and indirect income generated by \$1 additional direct income, (in \$).
 TYPE II MULTIPLIER = (D+I+IN)/D, i.e. the direct, indirect and induced income generated by \$1 additional direct income, (in \$)

TABLE 9c: DIRECT, INDIRECT AND INDUCED CALIFORNIA EMPLOYMENT
PER \$ MILLION SALES AND TYPE I & TYPE II EMPLOYMENT
MULTIPLIERS FOR FISH HARVESTING SECTORS (IN NUMBER OF JOBS)

SECTOR	#	TITLE	* OF JOBS CREATED IN CALIFORNIA PER \$ MILLION OF EXVESSEL FISH SALES			CALIF. EMPLOYMENT MULTIPLIERS	
			D Col. 1	D+I Col. 2	D+I+IN Col. 3	TYPE I Col. 4	TYPE II Col. 5
1	1	GROUNDFISH TRAWLERS, N	77.30	85.77	100.76	1.10962	1.30355
2	2	GROUNDFISH TRAWLERS, S	10.10	15.06	32.04	1.49179	3.17242
3	3	SHRIMP TRAWLERS	23.10	29.34	46.47	1.26999	2.01171
4	4	TUNA PURSE-SEINERS	6.00	11.86	28.01	1.97594	4.66770
5	5	WETFISH SEINERS	58.60	66.18	82.22	1.12927	1.40303
6	6	HERRING GILLNETTERS	28.10	33.25	48.62	1.18326	1.73042
7	7	OTHER GILLNETTERS	79.30	96.24	102.21	1.08754	1.28890
8	8	SMALL SALMON TROLLERS	362.50	372.29	385.65	1.02701	1.06386
9	9	LARGE SALMON TROLLERS	53.40	60.31	75.35	1.12935	1.41112
10	10	SALMON/CRABBERS	127.90	133.31	149.07	1.04228	1.16553
11	11	SALMON/ALbacore	76.00	84.51	98.30	1.11201	1.29342
12	12	LONG-LINERS	358.30	366.74	382.75	1.02355	1.06825
13	13	BLACK COD POTS	11.00	21.13	33.85	1.92047	3.07709
14	14	CRAB/LODSTER, N	34.20	55.18	79.00	1.20261	1.45759
15	15	CRAB/LODSTER, S	200.10	211.72	223.36	1.05309	1.11876
16	16	BAITBOATS, TUNA	44.40	48.85	65.01	1.10031	1.46413
17	17	JIGBOATS, TUNA	48.10	51.65	74.46	1.28145	1.54814
18	18	DIVEBOATS	180.50	186.09	204.43	1.03099	1.13257
19	19	HARPOON, BILLFISH	89.50	99.14	112.14	1.10768	1.25298

LEGEND

D - DIRECT EMPLOYMENT GENERATED PER MILLION \$ SALES
I - INDIRECT EMPLOYMENT GENERATED PER MILLION \$ SALES
IN - INDUCED EMPLOYMENT GENERATED PER MILLION \$ SALES

TYPE I MULTIPLIER = (D+I)/D, i.e. the direct and indirect employment generated by each additional direct job created.
TYPE II MULTIPLIER = (D+I+IN)/D, i.e. the direct, indirect and induced employment generated by each additional direct job created.

TABLE 10a: DIRECT, INDIRECT AND INDUCED CALIFORNIA PRODUCTION
 PER \$ SALES AND TYPE I & TYPE II OUTPUT
 MULTIPLIERS FOR FISH PROCESSING SECTORS (IN \$)

#	SECTOR	CALIFORNIA \$ OUTPUT PER \$ OF PROCESSED FISH SALES			CALIF. OUTPUT MULTIPLIERS	
		D	D+I	D+I+IN	TYPE I	TYPE II
		Col. 1	Col. 2	Col. 3	Col. 4	Col. 5
20	FISH WHSL, PROC, DIST, SM	1.00000	2.26487	4.13263	2.26487	4.13263
21	FISH WHSL, PROC, DIST, MED	1.00000	2.33640	3.98757	2.33640	3.98757
22	FISH WHSL, PROC, DIST, LG	1.00000	2.23159	4.10813	2.23159	4.10813
23	FISH IMP/EXP, BROKERS	1.00000	1.21727	1.76964	1.21727	1.76964
24	TUNA CANNERS	1.00000	1.98388	3.67403	1.98388	3.67403
25	SEAFOOD RESTAURANTS	1.00000	1.55783	3.38266	1.55783	3.38266
26	OTHER EAT & DRINK	1.00000	1.63165	2.78581	1.63165	2.78581
27	SEAFOOD MARKETS	1.00000	1.96610	3.15354	1.96610	3.15354
28	OTHER FOOD & KINDRED PROC	1.00000	2.26058	3.64215	2.26058	3.64215

LEGEND:

D - DIRECT OUTPUT GENERATED PER \$ SALES
 I - INDIRECT OUTPUT GENERATED PER \$ SALES
 IN - INDUCED OUTPUT GENERATED PER \$ SALES

TYPE I MULTIPLIER = (D+I)/D, i.e. the direct and indirect output generated by \$1 additional sales, (in \$)

TYPE II MULTIPLIER = (D+I+IN)/D, i.e. the direct, indirect and induced output generated by \$1 additional sales, (in \$).

TABLE 106: DIRECT, INDIRECT AND INDUCED CALIFORNIA INCOME
PER \$ SALES AND TYPE I & TYPE II INCOME
MULTIPLIERS FOR FISH PROCESSING SECTORS (IN \$)

#	TITLE	CALIFORNIA INCOME PER \$ OF PROCESSED FISH SALES			CALIF. INCOME MULTIPLIERS	
		D	D+I	D+I+IN	TYPE I	TYPE II
		Col. 1	Col. 2	Col. 3	Col. 4	Col. 5
20	FISH WHSL, PROC, DIST, SM	16624	65260	0.90587	3.92564	5.44919
21	FISH WHSL, PROC, DIST, MED	09922	57691	0.80082	5.81450	8.07112
22	FISH WHSL, PROC, DIST, LG	21579	65565	0.91011	3.03837	4.21757
33	FISH IMP/EXP, BROKERS	10170	19300	0.26790	1.89769	2.63419
24	TUNA CANNERS	16051	59054	0.81973	3.67915	5.10704
25	SEAFOOD RESTAURANTS	47057	63758	0.88502	1.35490	1.88074
26	OTHER EAT & DRINK	24878	40325	0.55976	1.62092	2.25000
27	SEAFOOD MARKETS	15277	41489	0.57591	2.71579	3.76990
28	OTHER FOOD & KINDRED PROC	19176	48271	0.57005	2.51725	3.49420

LEGEND:

D - DIRECT INCOME GENERATED PER \$ SALES
 I - INDIRECT INCOME GENERATED PER \$ SALES
 IN - INDUCED INCOME GENERATED PER \$ SALES

TYPE I MULTIPLIER - $(D+I)/D$, i.e. the direct and indirect income generated by \$1 additional direct income, (in \$).

TYPE II MULTIPLIER - $(D+I+IN)/D$, i.e. the direct, indirect and induced income generated by \$1 additional direct income, (in \$).

TABLE 10c: DIRECT, INDIRECT AND INDUCED CALIFORNIA EMPLOYMENT
PER \$ MILLION SALES AND TYPE I & TYPE II EMPLOYMENT
MULTIPLIERS FOR FISH PROCESSING SECTORS, (IN NUMBER OF JOBS)

SECTOR	#	# OF JOBS CREATED IN CALIFORNIA PER \$ MILLION OF PROCESSED FISH SALES			CALIF. EMPLOYMENT MULTIPLIERS	
		D	D+I	D+I+IN	TYPE I	TYPE II
		Col. 1	Col. 2	Col. 3	Col. 4	Col. 5
20	FISH WHSL, PROC, DIST, SM	16.50	60.24	74.27	3.65066	4.50140
21	FISH WHSL, PROC, DIST, MED	7.30	48.19	50.59	6.60082	8.30075
22	FISH WHSL, PROC, DIST, LG	12.10	55.42	69.52	4.58011	5.74566
23	FISH IMP/EXP, BROKERS	2.50	8.34	12.50	3.33795	4.99851
24	TUNA CANNERS	10.20	23.21	35.91	2.27545	3.52078
25	SEAFOOD RESTAURANTS	54.00	62.84	76.55	1.16364	1.41761
26	OTHER EAT & DRINK	54.20	64.50	73.17	1.19444	1.35508
27	SEAFOOD MARKETS	15.20	35.75	44.68	2.35200	2.93932
28	OTHER FOOD & KINDRED PROC	29.02	45.05	55.43	1.80926	2.22626

LEGEND:

D - DIRECT EMPLOYMENT GENERATED PER MILLION \$ SALES

I - INDIRECT EMPLOYMENT GENERATED PER MILLION \$ SALES

IN - INDUCED EMPLOYMENT GENERATED PER MILLION \$ SALES

TYPE I MULTIPLIER - $(D+I)/D$, i.e. the direct and indirect employment generated by each additional direct job created.

TYPE II MULTIPLIER - $(D+I+IN)/D$, i.e. the direct, indirect and induced employment generated by each additional direct job created.

APPENDIX C

THE CALIFORNIA INTER-INDUSTRY
FISHERIES (CIF) MODEL

includes

TRANSACTIONS TABLE
TECHNICAL COEFFICIENTS TABLE
LEONTIEFF (I-A) INVERSE TABLE (TYPE II)

ROW/COL	1	GROUND FISH TRAVERS.	N
	2	GROUND FISH TRAVERS.	S
	3	SHIMP TRAVERS.	
	4	TUNA PURSE-SEINE	
	5	WET FISH BEINERS	
	6	HERRING GILLNETTERS	
	7	OTHER GILLNETTERS	
	8	SMALL SALMON TROLLERS	
	9	LARGE SALMON TROLLERS	
	10	BALMORAL CRABBERS	
	11	BALMORAL/ADACORE	
	12	LONO-LINERS	
	13	BLACK COD POTS	
	14	CRAB/LLOBSTER. N	
	15	CRAB/LLOBSTER. S	
	16	BALMORAL. TUNA	
	17	JIGGERS. TUNA	
	18	DIVEBOATS	
	19	HARPOON. DILFISH	
	20	FISH WHSL. PROC. DIST. SH	
	21	FISH WHSL. PROC. DIST. MED	
	22	FISH WHSL. PROC. DIST. LG	
	23	FISH WHSL/EXP. SHRODERS	
	24	TUNA CANNERS	
	25	SEAFOOD RESTAURANTS	
	26	OTHER F. & DRINK	
	27	SEAFOOD MARKETS	
	28	OTHER FOOD & KINDRED PROC	
	29	FORESTRY & OTHER FISHING	
	30	FORESTRY/FISH SERVICES	
	31	PETFOOD	
	32	ANIMAL & MARINE FAIR	
	33	SHIP & BOAT	
	34	MAJOR FREIGHT	
	35	AGRICULTURE	
	36	MINING	
	37	CONSTRUCTION	
	38	LUMBER	
	39	FURNITURE	
	40	GLASS, STONE, CLAY	
	41	METAL	
	42	NON-ELECTRIC MACHINES	
	43	ELECTRIC EQUIPMENT	
	44	TRANSPORTATION EQUIP	
	45	INSTRUMENTS	
	46	MISC. MFGD. GOODS	
	47	TEXTILES	
	48	APPAREL	
	49	PAPER	
	50	PRINTING	
	51	CHEMICAL	
	52	PETROLEUM	
	53	RUBBER & PLASTIC	
	54	LEATHER	
	55	TELEPHONE/PUB. UTIL.	
	56	WHOLESALE TRADERS	
	57	RETAIL TRADERS	
	58	INSURANCE	
	59	FINANCE	
	60	SERVICES	
	61	FED GOVERNMENT	
	62	ST. N. LOC. GOVERNMENT	
	63	SCRAP MATERIALS	
	64	HOUSEHOLD	
	65	IMPORTS/EXPORTS	
	66	TOTALS	

Transactions Table (Rows 1-66, Columns 9-16)

ROW/COL	1	GROUNDFISH TRAILERS, N	14
C	2	SHRIMP TRAILERS, S	15
C	3	HERRING GILLNETTERS	0.00
C	4	TUNA PURSE SEINERS	0.00
C	5	MEIFISH SEINERS	0.00
C	6	HERRING GILLNETTERS	0.00
C	7	OTHER GILLNETTERS	0.00
C	8	SMALL GALION TROLLERS	0.00
C	9	LARGE GALION TROLLERS	0.00
C	10	SALMON/CRABBERS	0.00
C	11	BALLOON/ALbacore	0.00
C	12	LONG-LINERS	0.00
C	13	BLACK COD POTB	0.00
C	14	CHAR/LOBSTER, N	0.00
C	15	CRAB/L DIBSTER, E	0.00
C	16	BALTOURATE, TUNA	0.00
C	17	JIGBOATS, TUNA	0.00
C	18	DIVEBOATS	0.00
C	19	HARPOON, BILLFISH	0.00
C	20	FISH WHL, PROC, DIST, BM	0.00
C	21	FISH WHL, PROC, DIST, MED	0.00
C	22	FISH WHL, PROC, DIST, LQ	0.00
C	23	FISH IMP/EXP, BROKERS	0.00
C	24	TUNA CANNERS	0.00
C	25	SEAFOOD RESTAURANTS	0.00
C	26	OTHER EAT & DRINK	0.00
C	27	SEAFOOD MARKETS	0.00
C	28	OTHER FOOD & KINDRED PROD	0.00
C	29	FORESTRY & OTHER FISHING	0.00
C	30	FORESTRY/FISH SERVICES	0.00
C	31	PETFOOD	0.00
C	32	ANIMAL & MARINE FATS	0.00
C	33	SHIP & BOAT	0.00
C	34	MOTOR FREIGHT	0.00
C	35	AGRICULTURE	0.00
C	36	MINING	0.00
C	37	CONSTRUCTION	0.00
C	38	LUMBER	0.00
C	39	FURNITURE	0.00
C	40	GLASS, STONE, CLAY	0.00
C	41	METAL	0.00
C	42	NON-ELECTRIC MACHINES	0.00
C	43	ELECTRIC EQUIPMENT	0.00
C	44	TRANSPORTATION EQUIP	0.00
C	45	INSTRUMENTS	0.00
C	46	MISC MANU. GOODS	0.00
C	47	TEXTILES	0.00
C	48	APPAREL	0.00
C	49	PAPER	0.00
C	50	PRINTING	0.00
C	51	CHEMICAL	0.00
C	52	PETROLEUM	0.00
C	53	RUBBER & PLASTIC	0.00
C	54	LEATHER	0.00
C	55	TELEPHONE/PUB UTIL	0.00
C	56	WHOLESALE TRADERS	0.00
C	57	RETAIL TRADERS	0.00
C	58	INSURANCE	0.00
C	59	FINANCIAL	0.00
C	60	SERVICES	0.00
C	61	FED GOVERNMENT	0.00
C	62	SL & LOC GOVERNMENT	0.00
C	63	SCHIP MATERIAL	0.00
C	64	HOUSEHOLD	0.00
C	65	IMPORTS/EXPORTS	0.00
C	66	TOTALS	0.00

ROW/COL	1 GROUND FISH TRAILERS, N	2 GROUND FISH TRAILERS, S	3 SHRIMP TRAILERS	4 TUNA PURSE SEINERS	5 MEDIUM SEINERS	6 HERRING GILLNETTERS	7 OTHER GILLNETTERS	8 SMALL SALMON TROLLERS	9 LARGE SALMON TROLLERS	10 BALMOR/CHARGERS	11 BALMOR/ALDACORE	12 LONG-LINEFB	13 BLACK COD FBG	14 CRAB/LODSTER, N	15 CRAB/LODSTER, S	16 BALDOATS, TUNA	17 JIGDOATS, TUNA	18 DIVEDOATS	19 HARPOON, BILLFISH	20 FISH WHSL, PROC, DIST, SN	21 FISH WHSL, PROC, DIST, MED	22 FISH WHSL, PROC, DIST, LG	23 FISH IMP/EXP, DRAMERS	24 TUNA CANNERS	25 SEAFOOD RESTAURANTS	26 OTHER EAT & DRINK	27 SEAFOOD MARKETS	28 OTHER FOOD & KINNED PROC	29 FORESTRY & OTHER FISHING	30 FORESTRY/FISH SERVICES	31 PETFOOD	32 ANIMAL & MARINE FAIR	33 BIPL & BOAT	34 MOTOR FREIGHT	35 AGRICULTURE	36 MINING	37 CONSTRUCTION	38 LUMBER	39 FURNITURE	40 GLASS, STONE, CLAY	41 METAL	42 NON-ELECTRIC MACHINES	43 ELECTRIC EQUIPMENT	44 TRANSPORTATION EQUIP	45 INSTRUMENTS	46 MISC. INFO GOODS	47 TEXTILES	48 APPAREL	49 PAPER	50 PRINTING	51 CHEMICAL	52 PETROLEUM	53 RUBBER & PLASTIC	54 LEATHER	55 TELEPHONE/PUB UTIL	56 WHOLESALE TRADERS	57 RETAIL TRADERS	58 INSURANCE	59 FINANCE	60 SERVICES	61 FED GOVERNMENT	62 ST & LOC. GOVERNMENT	63 SCRAP MATERIALS	64 RECYCLING	65 IMPORTS/EXPORTS	66 FINANCIAL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	8010	8011	8012	8013	8014	8015	8016	8017	8018	8019	8020	8021	8022	8023	8024	8025	8026	8027	8028	8029	8030	8031	8032	8033	8034	8035	8036	8037	8038	8039	8040	8041	8042	8043	8044	8045	8046	8047	8048	8049	8050	8051	8052	8053	8054	8055	8056	8057	8058	8059	8060	8061	8062	8063	8064	8065	8066	8067	8068	8069	8070	8071	8072	8073	8074	8075	8076	8077	8078	8079	8080	8081	8082	8083	8084	8085	8086	8087	8088	8089	8090	8091	8092	8093	8094	8095	8096	8097	8098	8099	80100	80101	80102	80103	80104	80105	80106	80107	80108	80109	80110	80111	80112	80113	80114	80115	80116	80117	80118	80119	80120	80121	80122	80123	80124	80125	80126	80127	80128	80129	80130	80131	80132	80133	80134	80135	80136	80137	80138	80139	80140	80141	80142	80143	80144	80145	80146	80147	80148	80149	80150	80151	80152	80153	80154	80155	80156	80157	80158	80159	80160	80161	80162	80163	80164	80165	80166	80167	80168	80169	80170	80171	80172	80173	80174	80175	80176	80177	80178	80179	80180	80181	80182	80183	80184	80185	80186	80187	80188	80189	80190	80191	80192	80193	80194	80195	80196	80197	80198	80199	80200	80201	80202	80203	80204	80205	80206	80207	80208	80209	80210	80211	80212	80213	80214	80215	80216	80217	80218	80219	80220	80221	80222	80223	80224	80225	80226	80227	80228	80229	80230	80231	80232	80233	80234	80235	80236	80237	80238	80239	80240	80241	80242	80243	80244	80245	80246	80247	80248	80249	80250	80251	80252	80253	80254	80255	80256	80257	80258	80259	80260	80261	80262	80263	80264	80265	80266	80267	80268	80269	80270	80271	80272	80273	80274	80275	80276	80277	80278	80279	80280	80281	80282	80283	80284	80285	80286	80287	80288	80289	80290	80291	80292	80293	80294	80295	80296	80297	80298	80299	80300	80301	80302	80303	80304	80305	80306	80307	80308	80309	80310	80311	80312	80313	80314	80315	80316	80317	80318	80319	80320	80321	80322	80323	80324	80325	80326	80327	80328	80329	80330	80331	80332	80333	80334	80335	80336	80337	80338	80339	80340	80341	80342	80

ROW/COL	Transactions Table (Rows 1-66, Columns 25-32)	29	30	31	32
C 1	CROWNFISH TRAILERS, N	0.00	0.00	0.00	0.00
C 2	GROUNDFISH TRAILERS, S	0.00	0.00	0.00	0.00
C 3	SIMP. TRAILERS	0.00	0.00	0.00	0.00
C 4	TUNA PURSE-SEINERS	0.00	0.00	0.00	0.00
C 5	WHIFISH SEINERS	0.00	0.00	0.00	0.00
C 6	HEMING GILLNETTERS	0.00	0.00	0.00	0.00
C 7	OTHER GILLNETTERS	0.00	0.00	0.00	0.00
C 8	SMALL SALMON TROLLERS	0.00	0.00	0.00	0.00
C 9	LARGE SALMON TROLLERS	0.00	0.00	0.00	0.00
C 10	BALMUN/CRABBERS	0.00	0.00	0.00	0.00
C 11	BALMUN/ALBACORE	0.00	0.00	0.00	0.00
C 12	LONG-LINERS	0.00	0.00	0.00	0.00
C 13	BLACK COD POTS	0.00	0.00	0.00	0.00
C 14	CRAB/LOBSTER, N	0.00	0.00	0.00	0.00
C 15	CRAB/LOBSTER, S	0.00	0.00	0.00	0.00
C 16	BAITBOATS, TUNA	0.00	0.00	0.00	0.00
C 17	JIGBOATS, TUNA	0.00	0.00	0.00	0.00
C 18	DIVEBOATS	0.00	0.00	0.00	0.00
C 19	HARPOON, BILLFISH	0.00	0.00	0.00	0.00
C 20	FISH WHSL, PROC. DIST. BM	0.87	1.74	0.51	-1.78
C 21	FISH WHSL, PROC. DIST. MED	7.73	17.35	3.90	19.96
C 22	FISH WHSL, PROC. DIST. LG	3.63	27.94	4.70	41.96
C 23	FISH IMP/EXP., BROKERS	0.00	0.00	0.00	0.00
C 24	TUNA CANNERS	0.00	0.00	0.00	0.00
C 25	SEAFOOD RESTAURANTS	0.00	0.00	0.00	0.00
C 26	OTHER EAT & DRINK	0.00	0.00	0.00	0.00
C 27	SEAFOOD MARKETS	0.00	0.00	0.00	0.00
C 28	OTHER FOOD & KINDRED PRDCT	0.00	0.00	0.00	0.00
C 29	FORESTRY & OTHER FISHING	11.40	0.00	0.41	1.16
C 30	FORESTRY/FISH SERVICES	0.00	0.00	3.88	0.00
C 31	PETFOOD	0.00	1.36	0.00	2.93
C 32	ANIMAL & MARINE FATS	0.00	1.10	0.00	29.85
C 33	SHIP & BOAT	0.00	0.00	0.00	0.00
C 34	MOTOR FREIGHT	165.24	0.28	0.00	2.04
C 35	AGRICULTURE	351.15	0.00	3162.87	0.00
C 36	MINTO	0.26	0.00	3.75	0.00
C 37	CONSTRUCTION	39.71	0.00	43.77	0.00
C 38	LUMBER	0.00	0.23	22.87	0.01
C 39	FURNITURE	0.00	0.44	1.49	0.04
C 40	Glass, Stone, Clay	13.81	0.00	361.94	0.00
C 41	METAL	5.78	9.63	1153.93	0.07
C 42	NON-ELECTRIC MACHINES	0.00	7.62	39.36	0.46
C 43	ELECTRIC EQUIPMENT	0.00	1.73	6.03	4.79
C 44	TRANSPORTATION EQUIP	0.00	0.19	1.73	0.08
C 45	INSTRUMENTS	0.00	0.42	6.64	2.65
C 46	MISC. INFO. GOODS	0.00	0.24	0.34	0.03
C 47	TEXTILES	0.00	0.61	20.87	0.25
C 48	APPAREL	0.00	2.42	0.00	1.35
C 49	PAPER	9.00	145.39	0.00	1.35
C 50	PAINTING	12.92	62.45	0.00	1.35
C 51	CHEMICAL	0.00	48.14	0.00	1.35
C 52	PETROLEUM	0.00	11.50	0.04	1.35
C 53	RUBBER & PLASTIC	0.00	51.74	0.00	1.35
C 54	LEATHER	0.00	0.01	0.00	1.35
C 55	TELEPHONE/PUB UTIL	10.16	284.83	0.20	1.35
C 56	WHOLESALE TRADERS	0.66	1001.97	0.02	1.35
C 57	RETAIL TRADERS	0.07	0.00	1475.98	0.18
C 58	INSURANCE	0.00	0.00	11.61	0.04
C 59	FINANCIAL	1.57	27.47	0.13	1.35
C 60	SERVICES	3.71	914.03	1.06	1.35
C 61	FED GOVERNMENT	3.06	742.21	0.37	1.35
C 62	FEDERAL GOVERNMENT	3.41	16.37	0.24	1.35
C 63	SCHIP MATERIALS	0.00	15.91	0.00	1.35
C 64	HORN-HANDLS	0.00	0.00	1.40	0.04
C 65	INPUT/OUTPUT APPRTS	37.77	7637.69	7.75	1.35
C 66	TOTAL IS	10.40	14506.14	1.17	1.35

Transactions Table (Rows 1-66; Columns 33-40)

ROW/COL	DESCRIPTION
1	GROUNDFISH TRAWLERS, N
2	GROUNDFISH TRAWLERS, S
3	SIMP FISH TRAWLERS
4	TUNA PURSE SEINERS;
5	WETFISH SEINERS
6	HEARING GILLNETTERS
7	OTHER GILLNETTERS
8	B SNAIL SALMON TROLLERS
9	LARGE SALMON TROLLERS
10	SALMONIC CRABBERS
11	SALMONIC DABCRORE
12	LONG-LINERS
13	BLACK COD POTS
14	CRAB/LDISTER, N
15	CRAB/LDISTER, S
16	DALIBATS, TUNA
17	JIGGERS, TUNA
18	DIVINGATS
19	HARPOON, DILFISH
20	FISH WHL, PROC, DIST, SM
21	FISH WHL, PROC, DIST, MED
22	FISH WHL, PROC, DIST, LO
23	FISH IMP/EXP, BROKERS
24	TUNA CANNERS
25	SEAFOOD RESTAURANTS
26	OTHER EAT & DRINK
27	SEAFOOD MARKETS
28	OTHER FOOD & KINDRED PR
29	FORESTRY & OTHER FIBRIN
30	FORESTRY/FISH SERVICES
31	PETFOOD
32	ANIMAL & MARINE FAIS
33	SHIP & BOAT
34	MOTOR FREIGHT
35	AGRICULTURE
36	MINING
37	CONSTRUCTION
38	LUMBER
39	FURNITURE
40	GLASS, STONE, CLAY
41	METAL
42	NON-ELECTRIC MACHINES
43	ELECTRIC EQUIPMENT
44	TRANSPORTATION EQUIP
45	INSTRUMENTS
46	MISC. MNFG. GOODS
47	TEXTILES
48	APPAREL
49	PAPER
50	PRINTING
51	CHEMICAL
52	PETROLEUM
53	RUBBER & PLASTIC
54	LEATHER
55	TELEPHONE/PUB UTIL
56	WHOLESALE TRADERS
57	RETAIL TRADERS
58	INSURANCE
59	FRAMING
60	SERVICES
61	FED GOVT/STATE/PROV
62	51-9 11N. GRV/PR/SH/41
63	SCHEP MATERIALS
64	HIGHWAY HIGH FG.
65	IMPORT/EXPORT C

Transactions Table (Rows 1-66, Columns 33-40)

Transactions Table (Rows 1-66, Columns 33-40)	
34	0.00
35	0.00
36	0.00
37	0.00
38	0.00
39	0.00
40	0.00
41	0.00
42	0.00
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321	0.00
322	0.00
323	0.00
324	0.00
325	0.00
326	0.00
327	0.00
328	0.00
329	0.00
330	0.00
331	0.00
332	0.00
333	0.00
334	0.00
335	0.00
336	0.00
337	0.00
338	0.00
339	0.00
340	0.00

Transactions Table (Rows 1-66, Columns 41-48)

ROW/COL	Transactions Table (Rows 1-66, Columns 49-56)
1	GROUND FISH TRAVERS, N
2	BLACK COD FISH TRAVERS, S
3	SHRIMP TRAVERS
4	TUNA PURSE SEINERS
5	WHITE FISH SEINERS
6	HEMING QUILNETTERS
7	OTHER QUILNETTERS
8	BHLL SALMON TROLLERS
9	LARGE SALMON TROLLERS
10	BAITDOGS, TUNA
11	SALMON/SALDACORE
12	LUNO-LINEPS
13	BLACK COD POTS
14	CRAB/LOBSTER, N
15	CRAB/LOBSTER, S
16	BAITDOGS, TUNA
17	JIGDOGS, TUNA
18	DIVEDOGS
19	HARPOON, BILLFISH
20	FISH WHBL. PROC. DIST. SH
21	FISH WHBL. PROC. DIST. MED
22	FISH WHBL. PROC. DIST. LG
23	FISH IMP/EXP. BROKERS
24	TUNA CANNERS
25	SEAFOOD RESTAURANTS
26	OTHER EAT & DRINK
27	SEAFOOD MARKETS
28	OTHER FOOD & KINDRED PROD
29	FORESTRY & OTHER FISHING
30	FORESTRY/FISH SERVICES
31	PETFOOD
32	ANIMAL L. MARINE FATS
33	SHIP & BOAT
34	MOTOR FREIGHT
35	AGRICULTURE
36	MINING
37	CONSTRUCTION
38	LUMBER
39	FURNITURE
40	GLASS, STONE, CLAY
41	METAL
42	NON-ELECTRIC MACHINES
43	ELECTRIC EQUIPMENT
44	TRANSPORTATION EQUIP
45	INSTRUMENTS
46	MISC. MFG. GOODS
47	TEXTILES
48	APPAREL
49	PAPER
50	PRINTING
51	CHEMICAL
52	PETROLEUM
53	RUBBER & PLASTIC
54	LEATHER
55	TELEPHONE/PUB UTIL
56	WHOLESALE TRADERS
57	RETAIL TRADERS
58	INSURANCE
59	FINANCE
60	SERVICES
61	FED GOVERNMENT
62	ST & LOC. GOVERNMENT
63	SCRAP MATERIALS
64	HOUSING
65	IMPROVEMENTS
66	TOTALS

Transactions Table (Rows 1-56, Columns 57-64)

ROW/COL	57	58	59	40	41
C 1	GROUND FISH TRAILERS, N	0.00	0.00	0.00	0.00
C 2	GROUND FISH TRAILERS, S	0.00	0.00	0.00	0.00
C 3	SHRIMP TRAILERS	0.00	0.00	0.00	0.00
C 4	TUNA PURSE-SEINERS	0.00	0.00	0.00	0.00
C 5	WET FISH SEINERS	0.00	0.00	0.00	0.00
C 6	HERRING GILLNETTERS	0.00	0.00	0.00	0.00
C 7	OTHER GILLNETTERS	0.00	0.00	0.00	0.00
C 8	BNA/L SALMON TRAILERS	0.00	0.00	0.00	0.00
C 9	LARGE SALMON TRAILERS	0.00	0.00	0.00	0.00
C 10	SALMON/CRABBERS	0.00	0.00	0.00	0.00
C 11	LONG-LINERS	0.00	0.00	0.00	0.00
C 12	DIVE BOATS	0.00	0.00	0.00	0.00
C 13	BLACK COD POTS	0.00	0.00	0.00	0.00
C 14	CRAB/LOBSTER, N	0.00	0.00	0.00	0.00
C 15	CRAB/LOBSTER, S	0.00	0.00	0.00	0.00
C 16	BAITBOATS, TUNA	0.00	0.00	0.00	0.00
C 17	JIGBOATS, TUNA	0.00	0.00	0.00	0.00
C 18	HARPOON, BILLFISH	0.00	0.00	0.00	0.00
C 19	FISH MSL. PROC. DISTR. SH	0.00	0.00	0.00	0.00
C 20	FISH MSL. PROC. DISTR. MED	0.00	0.00	0.00	0.00
C 21	FISH MSL. PROC. DISTR. MED	0.00	0.00	0.00	0.00
C 22	FISH MSL. PROC. DISTR. LG	0.00	0.00	0.00	0.00
C 23	FISH IMP/EXP. BROKERS	0.00	0.00	0.00	0.00
C 24	TUNA CHAMBERS	0.00	0.00	0.00	0.00
C 25	SEAFOOD RESTAURANTS	0.00	0.00	0.00	0.00
C 26	OTHER EAT & DRINK	154.15	281.03	320.07	1245.47
C 27	SEAFOOD MARKETS	0.00	0.00	0.00	20.64
C 28	OTHER FOOD & BEVERAGE	3.28	5.06	4.77	288.14
C 29	FORESTRY & OTHER FISHING	0.00	0.01	0.01	0.26
C 30	FORESTRY/FISH SERVICES	0.06	0.04	238.28	62.65
C 31	PERFUMERY	0.00	0.00	0.00	0.00
C 32	ANIMAL & MARINE FATS	0.00	0.00	0.01	0.14
C 33	SHIP & BOAT	0.01	0.03	0.00	0.00
C 34	MOTOR FREIGHT	89.03	21.41	90.97	427.03
C 35	AGRICULTURE	2.18	1.21	79.03	260.34
C 36	MINING	5.25	0.69	5.86	17.90
C 37	CONSTRUCTION	190.70	28.50	5046.92	1077.81
C 38	LUMBER	0.15	0.09	0.21	29.40
C 39	FURNITURE	0.18	0.10	0.34	5.52
C 40	GLASS, STONE, CLAY	4.91	0.45	0.76	144.38
C 41	METAL	10.69	1.29	9.60	290.54
C 42	NON-ELECTRIC MACHINES	5.59	0.07	5.36	218.95
C 43	ELECTRIC EQUIPMENT	11.43	4.38	24.74	432.08
C 44	TRANSPORTATION EQUIP	2.43	1.10	3.15	670.76
C 45	INSTRUMENTS	2.17	2.07	6.91	661.20
C 46	MISC. MFG. GOODS	36.48	9.41	34.41	307.47
C 47	TEXTILES	1.43	0.03	0.23	20.79
C 48	APPAREL	3.83	0.06	7.76	144.80
C 49	PAPER	176.34	36.47	97.19	249.97
C 50	PRINTING	927.24	154.00	536.35	919.86
C 51	CHEMICAL	17.79	1.13	27.81	876.91
C 52	PETROLEUM	733.03	111.43	863.47	2088.20
C 53	RUDDER & PLASTIC	48.11	4.45	79.54	447.12
C 54	LEATHER	0.79	0.60	0.88	33.71
C 55	TELEPHONE/PUB UTIL	917.75	499.61	935.92	2873.03
C 56	WHOLESALE TRADERS	211.11	49.61	204.07	1694.03
C 57	RETAIL TRADERS	66.94	31.93	111.24	314.99
C 58	INSURANCE	225.67	9975.73	1167.06	447.12
C 59	FINANCIAL	284.18	666.29	8937.44	7226.85
C 60	SERVICES	1392.79	1007.21	3200.32	12560.37
C 61	FED GOVERNMENT	192.62	77.62	703.31	127.67
C 62	ST. J LUG COVERS/HNL	115.11	10.72	136.07	5.38
C 63	SCRAP MATERIALS	0.00	0.00	0.00	0.00
C 64	TRANSPORT DS	16765.77	4101.36	7346.50	43364.34
C 65	IMPORTS/EXPORTS	1444.65	3494.77	62144.36	26716.69
C 66	TOTALS	4774.41	17703.71	114797.10	16704.67

Transactions Table (Rows 1-66, Columns 49-56)

ROW/COL	Transactions Table (Rows 1-66, Columns 49-67)					
	63	64	65	66	67	68
1	GRINDING ISH TRAWLERS, N	0.00	10.44	0.00	0.00	0.00
2	GRINDING ISH TRAWLERS, S	0.00	3.49	0.00	0.00	0.00
3	SHRIMP TRAWLERS	0.00	2.66	0.00	0.00	0.00
4	FISH PUMPS - BEIENS	1.77	198.44	0.00	0.00	0.00
5	WEFISH SEINERS	0.00	17.35	-2.81	0.00	0.00
6	WHITING GILLNETTERS	2.37	31.67	0.00	0.00	0.00
7	OTHER GILLNETTERS	0.00	11.71	0.21	0.00	0.00
8	SMALL SALMON TROLLERS	0.00	1.36	0.00	0.00	0.00
9	LARGE SALMON TROLLERS	0.01	9.44	0.00	0.00	0.00
10	SALMON CRADGERS	0.04	2.92	0.00	0.00	0.00
11	BAL MON/ALDACORE	0.02	2.84	0.00	0.00	0.00
12	LUMPO-LINERS	0.00	0.09	0.00	0.00	0.00
13	BLACK COD POTS	0.00	9.80	0.00	0.00	0.00
14	CRAB/LODSTER, N	0.00	2.80	0.00	0.00	0.00
15	CRAB/LODSTER, S	0.01	1.67	0.00	0.00	0.00
16	BAITBOATS, TUNA	0.00	10.44	0.14	0.00	0.00
17	JIGONATS, TUNA	0.04	3.23	0.00	0.00	0.00
18	DIVEDANTS	0.00	4.22	0.24	0.00	0.00
19	MARITOM, GILLFISH	0.00	2.53	0.00	0.00	0.00
20	FISH WHSL, PROC. DIGEST, SM	0.00	5.03	0.45	0.00	0.00
21	FISH WHSL, PROC. DIGEST, MED	0.00	51.21	-4.14	0.00	0.00
22	FISH WHSL, PROC. DIGEST, LG	3.37	70.18	0.00	0.00	0.00
23	FISH TRP/EXP. BROKERS	200.00	200.00	0.00	0.00	0.00
24	TUNA CANNERS	336.84	542.32	0.00	0.00	0.00
25	SEAFOOD RESTAURANTS	22.44	186.90	0.00	0.00	0.00
26	OTHER EAT & DRINK	4739.30	18766.14	0.00	0.00	0.00
27	SEAFOOD MARKETS	0.00	25.37	0.00	0.00	0.00
28	OTHER FOOD & KINDRED PROC	4781.75	22917.74	0.00	0.00	0.00
29	FORESTRY & OTHER FISHING	0.00	121.19	-17.47	0.00	0.00
30	FORESTRY/FISH SERVICES	49.48	1248.24	0.00	0.00	0.00
31	PETFOOD	166.39	626.76	0.00	0.00	0.00
32	ANIMAL & MARINE FAIRS	41.10	181.09	0.00	0.00	0.00
33	SHIP & BOAT	719.70	1372.41	0.00	0.00	0.00
34	MOTOR FREIGHT	492.04	6886.49	0.00	0.00	0.00
35	AGRICULTURE	4769.05	16865.08	0.00	0.00	0.00
36	MINING	3543.42	9391.74	0.00	0.00	0.00
37	CONSTRUCTION	36463.32	46046.41	0.00	0.00	0.00
38	LUMBER	136.23	4617.42	0.00	0.00	0.00
39	FURNITURE	518.21	1892.60	0.00	0.00	0.00
40	GLASS, STONE, CLAY	183.99	4560.33	0.00	0.00	0.00
41	METAL	6429.13	22703.60	0.00	0.00	0.00
42	NON-ELECTRIC MACHINES	7479.39	10846.87	0.00	0.00	0.00
43	ELECTRIC EQUIPMENT	22287.76	35095.47	0.00	0.00	0.00
44	TRANSPORTATION EQUIP	11756.30	19510.60	0.00	0.00	0.00
45	INSTRUMENTS	6324.79	8226.88	0.00	0.00	0.00
46	MISC. MFG. GOODS	519.48	10436.82	0.00	0.00	0.00
47	TEXTILES	35.24	1252.66	0.00	0.00	0.00
48	APPAREL	312.17	3714.40	0.00	0.00	0.00
49	PAPER	116.33	4567.93	0.00	0.00	0.00
50	PRINTING	1983.95	7882.88	0.00	0.00	0.00
51	CHEMICAL	1692.48	10436.82	0.00	0.00	0.00
52	PETROLEUM	412.45	26209.24	0.00	0.00	0.00
53	RUBBER & PLASTIC	564.86	4541.05	0.00	0.00	0.00
54	LEATHER	0.00	416.99	-3.04	0.00	0.00
55	TELEPHONE/MUD UTIL	12531.92	39631.84	0.00	0.00	0.00
56	WHOLESALE TRADES	13419.35	35739.90	0.00	0.00	0.00
57	RETAIL TRADES	91479.67	39731.89	0.00	0.00	0.00
58	INSURANCE	2881.89	17703.71	0.00	0.00	0.00
59	FINANCE	39275.41	114976.10	0.00	0.00	0.00
60	BUSINESSES	41252.90	10777.60	0.00	0.00	0.00
61	FED. GOVERNMENT	0.00	30777.67	-74.36	0.00	0.00
62	ST & LOC. GOVERNMENT	1141.51	4516.69	0.00	0.00	0.00
63	SCRAP MATERIAL	0.00	477.04	-754.61	0.00	0.00
64	HOSPITALITY	7399.50	29891.60	0.00	0.00	0.00
65	IMPORTS/EXPORTS	0.00	10734.60	0.00	0.00	0.00
66	TOTAL	111049.20	147017.90	0.00	0.00	0.00

Technical Coefficients Table (Rows 1-66, Columns 1-8)

ITEM NO.	DESCRIPTION	QUANTITY	UNIT PRICE	AMOUNT
1	CHARTERED FREIGHT FORWARDER	14		
2	SHIP/BOAT REPAIRS	1		
3	SHIP/BOAT MAINTENANCE	1		
4	SHIP/BOAT INSURANCE	1		
5	SHIP/BOAT FUEL & LUBRICANTS	1		
6	DRIVING/CONTAINERS	1		
7	SHIP/GILLETTERY	6		
8	SHIP/HUMAN TRAILERS	1		
9	SHIP/HUMAN TRAILERS	1		
10	SHIP/HUMAN TRAILERS	1		
11	SHIP/HUMAN TRAILERS	1		
12	LIVE-LIVING	1		
13	SHIP/CLIP PINS	1		
14	SHIP/OYSTERS	1		
15	SHIP/HUMMER	1		
16	SHIP/HUMMER	1		
17	SHIP/HUMMER	1		
18	SHIP/HUMMER	1		
19	HARVEST, BILLFISH	1		
20	FISH WHL, PRIC, DIS, SHD	1		
21	FISH WHL, PRIC, DIS, SHD	1		
22	FISH WHL, PRIC, DIS, SHD	1		
23	FISH WHL, PRIC, DIS, SHD	1		
24	FISH WHL, PRIC, DIS, SHD	1		
25	FISH WHL, PRIC, DIS, SHD	1		
26	FISH WHL, PRIC, DIS, SHD	1		
27	SEAFOD MARKETS	1		
28	SHIP IN FDO & KINRED PROD	1		
29	FOODSTUFF & OTHER FISHING	1		
30	FISHERY/FISH SERVICES	1		
31	SHIP FOOD	1		
32	ANIMAL & MARINE FAIRS	1		
33	SHIP & BOAT	1		
34	MATOR FREIGHT	1		
35	AGRICULTURE	1		
36	MILKING	1		
37	CONSTRUCTION	1		
38	LUMBER	1		
39	INDUSTRY	1		
40	GLASS, STONE, CLAY	1		
41	SHLV	1		
42	IND. ELECTRIC MACHINES	1		
43	ELECTRIC EQUIPMENT	1		
44	TRANSPORTATION EQUIP	1		
45	INSEC. MATER COCINA	1		
46	TEXTILES	1		
47	APPAREL	1		
48	PAPER	1		
49	PRINTING	1		
50	CHEMICAL	1		
51	WHITE ELE TRADERS	1		
52	WHITE ELE TRADERS	1		
53	HUMMER & PLASTIC	1		
54	LIAHUA	1		
55	FINANCIAL SERVICES	1		
56	SHIP/PINNE/PUB UTIL	1		
57	WHITE ELE TRADERS	1		
58	HUMMER & PLASTIC	1		
59	FINANCIAL SERVICES	1		
60	SHIP/PINNE/PUB UTIL	1		
61	FED GOVERNMENT	1		
62	S. GOVERNMENT	1		
63	S. GOVERNMENT	1		
64	S. GOVERNMENT	1		
65	EXPORTS/IMPORTS	1		

Technical Coefficients Table (Rows 1-66, Columns 9-16)

Technical Coefficients Table (Rows 1-66, Columns 17-24)

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
1	LEATHERGOODS	1	PC	\$100.00	\$100.00
2	CLOTHING	1	PC	\$100.00	\$100.00
3	SHOES	1	PC	\$100.00	\$100.00
4	HAIR PRODUCTS	1	PC	\$100.00	\$100.00
5	WASHING CLOTHES	1	PC	\$100.00	\$100.00
6	OTHER CLOTHES	1	PC	\$100.00	\$100.00
7	SMALL SALMON TIN LIDS	1	PC	\$100.00	\$100.00
8	HARVEST APPAREL	1	PC	\$100.00	\$100.00
9	FAUX SALTWATER TROLLERS	1	PC	\$100.00	\$100.00
10	SALMING CRABHURFS	1	PC	\$100.00	\$100.00
11	SALMON AL BACORE	1	PC	\$100.00	\$100.00
12	LONG-LINED	1	PC	\$100.00	\$100.00
13	BLACK COD POTS	1	PC	\$100.00	\$100.00
14	CRAB/LОСTER, N	1	PC	\$100.00	\$100.00
15	CHARLINGTON, S	1	PC	\$100.00	\$100.00
16	BAL BOATS, TUNA	1	PC	\$100.00	\$100.00
17	JIBBOATS, TUNA	1	PC	\$100.00	\$100.00
18	FLUVERJANS	1	PC	\$100.00	\$100.00
19	MARPOON, BILLFBH	1	PC	\$100.00	\$100.00
20	FISH WHSL, PROC, DRYT, SH	1	PC	\$100.00	\$100.00
21	FISH WHSL, PROC, DRYT, MED	1	PC	\$100.00	\$100.00
22	FISH WHSL, PROC, DRYT, LG	1	PC	\$100.00	\$100.00
23	OTHER FOOD & MINDRED PRDC	1	PC	\$100.00	\$100.00
24	FORESTRY & OTHER FISHING	1	PC	\$100.00	\$100.00
25	FORESTRY/FISH SERVICES	1	PC	\$100.00	\$100.00
26	PETFOOD	1	PC	\$100.00	\$100.00
27	ANIMAL & MARINE FAIS	1	PC	\$100.00	\$100.00
28	SEAFOOD MARKETS	1	PC	\$100.00	\$100.00
29	OTHER FOOD & MINDRED PRDC	1	PC	\$100.00	\$100.00
30	ADRIC TIME	1	PC	\$100.00	\$100.00
31	MINING	1	PC	\$100.00	\$100.00
32	CONSTRUCTION	1	PC	\$100.00	\$100.00
33	LUMBER	1	PC	\$100.00	\$100.00
34	FURNITURE	1	PC	\$100.00	\$100.00
35	GIASS, STONE, CLAY	1	PC	\$100.00	\$100.00
36	RETAIL	1	PC	\$100.00	\$100.00
37	MUL ELECTRIC MACHINES	1	PC	\$100.00	\$100.00
38	TRANSPORTATION EQUIP	1	PC	\$100.00	\$100.00
39	INSTRUMENTS	1	PC	\$100.00	\$100.00
40	MUSIC, MFG, GOODS	1	PC	\$100.00	\$100.00
41	TEXTILES	1	PC	\$100.00	\$100.00
42	APPAREL	1	PC	\$100.00	\$100.00
43	PARCH	1	PC	\$100.00	\$100.00
44	PLASTIC	1	PC	\$100.00	\$100.00
45	CHIMICAL	1	PC	\$100.00	\$100.00
46	LEATHER/LEATHER UTIL	1	PC	\$100.00	\$100.00
47	MAKESALE TRADERS	1	PC	\$100.00	\$100.00
48	HELI. TRADERS	1	PC	\$100.00	\$100.00
49	INSURANCE	1	PC	\$100.00	\$100.00
50	FINANCIAL	1	PC	\$100.00	\$100.00
51	TELEPHONE/TELE UTIL	1	PC	\$100.00	\$100.00
52	PT INDELM	1	PC	\$100.00	\$100.00
53	RUBBER & PLASTIC	1	PC	\$100.00	\$100.00
54	APPAREL	1	PC	\$100.00	\$100.00
55	PHARMING	1	PC	\$100.00	\$100.00
56	FED GOVERNMENT	1	PC	\$100.00	\$100.00
57	STATE & LOCAL GOVERNMENT	1	PC	\$100.00	\$100.00
58	STRUCTURAL MATERIALS	1	PC	\$100.00	\$100.00
59	HARVING INDUS	1	PC	\$100.00	\$100.00
60	SHIPPING/EXPORTS	1	PC	\$100.00	\$100.00

Technical Coefficients Table (Rows 1-66, Columns 25-32)

Technical Coefficients Table (Rows 1-66, Columns 33-40)

ITEM	DESCRIPTION	QUANTITY	UNIT	NET WEIGHT	NET VALUE	NET UNIT PRICE
1	CLOTH-WEAVE FABRIC LINE, 14 YD LENGTH	1	YD	0.00000000	0.00000000	0.00000000
2	GLASS-WEAVE FABRIC LINE, 4 YD LENGTH	1	YD	0.00000000	0.00000000	0.00000000
3	GLASS-WEAVE FABRIC LINE, 10 YD LENGTH	1	YD	0.00000000	0.00000000	0.00000000
4	LEATHER PLATE BACK SEAT	1	PC	0.00000000	0.00000000	0.00000000
5	WINTER COAT LINERS	1	PC	0.00000000	0.00000000	0.00000000
6	WINTER COAT POTS	1	PC	0.00000000	0.00000000	0.00000000
7	BLACK & GOLD LINERS	1	PC	0.00000000	0.00000000	0.00000000
8	SPONGE WASHING TOWEL	1	PC	0.00000000	0.00000000	0.00000000
9	LARGE SALMON TROLLERS	1	PC	0.00000000	0.00000000	0.00000000
10	SALMON CRABBERS	1	PC	0.00000000	0.00000000	0.00000000
11	SALT MACHIA BACOME	1	PC	0.00000000	0.00000000	0.00000000
12	LINEN LINERS	1	PC	0.00000000	0.00000000	0.00000000
13	BLACK COAT POTS	1	PC	0.00000000	0.00000000	0.00000000
14	CHATHAMSTON, N	1	PC	0.00000000	0.00000000	0.00000000
15	CHATHAMSTON, S	1	PC	0.00000000	0.00000000	0.00000000
16	DAIYBOATS, TUNA	1	PC	0.00000000	0.00000000	0.00000000
17	JAGHOBIS, TUNA	1	PC	0.00000000	0.00000000	0.00000000
18	DIVE BOATS	1	PC	0.00000000	0.00000000	0.00000000
19	HARPOON, BILLFISH	1	PC	0.00000000	0.00000000	0.00000000
20	FISH WHSL, PROC, DIST, SH	1	PC	0.00000000	0.00000000	0.00000000
21	FISH WHSL, PROC, DIST, MED	1	PC	0.00000000	0.00000000	0.00000000
22	FISH WHSL, PROC, DIST, LD	1	PC	0.00000000	0.00000000	0.00000000
23	FISH IMP/EXP, IMPORTS	1	PC	0.00000000	0.00000000	0.00000000
24	TUNA CARRIERS	1	PC	0.00000000	0.00000000	0.00000000
25	SEAFOOD RESTAURANTS	1	PC	0.00000000	0.00000000	0.00000000
26	OTHER EAT & DRINK	1	PC	0.00000000	0.00000000	0.00000000
27	SEAFOOD MARKETS	1	PC	0.00000000	0.00000000	0.00000000
28	OTHER FOOD & KINDRED PROC	1	PC	0.00000000	0.00000000	0.00000000
29	FORESTRY & OTHER FISHING	1	PC	0.00000000	0.00000000	0.00000000
30	FORESTRY/FISH SERVICES	1	PC	0.00000000	0.00000000	0.00000000
31	PET FOOD	1	PC	0.00000000	0.00000000	0.00000000
32	ANIMAL & MARINE, FAIR	1	PC	0.00000000	0.00000000	0.00000000
33	SHIP & BOAT	1	PC	0.00000000	0.00000000	0.00000000
34	MOTOR FREIGHT	1	PC	0.00000000	0.00000000	0.00000000
35	AGRICULTURE	1	PC	0.00000000	0.00000000	0.00000000
36	MINING	1	PC	0.00000000	0.00000000	0.00000000
37	CONSTRUCTION	1	PC	0.00000000	0.00000000	0.00000000
38	LOGGING	1	PC	0.00000000	0.00000000	0.00000000
39	FURNITURE	1	PC	0.00000000	0.00000000	0.00000000
40	GLASS, STONE, CLAY	1	PC	0.00000000	0.00000000	0.00000000
41	MATERIAL	1	PC	0.00000000	0.00000000	0.00000000
42	NON-ELECTRIC MACHINES	1	PC	0.00000000	0.00000000	0.00000000
43	ELECTRIC EQUIPMENT	1	PC	0.00000000	0.00000000	0.00000000
44	INSTRUMENTS	1	PC	0.00000000	0.00000000	0.00000000
45	TRANSPORTATION EQUIP	1	PC	0.00000000	0.00000000	0.00000000
46	MISC. MFNG. PRODUCTS	1	PC	0.00000000	0.00000000	0.00000000
47	TEXTILES	1	PC	0.00000000	0.00000000	0.00000000
48	APPAREL	1	PC	0.00000000	0.00000000	0.00000000
49	PAPER	1	PC	0.00000000	0.00000000	0.00000000
50	PRINTING	1	PC	0.00000000	0.00000000	0.00000000
51	CHEMICAL	1	PC	0.00000000	0.00000000	0.00000000
52	PETROLEUM	1	PC	0.00000000	0.00000000	0.00000000
53	RUBBER & PLASTIC	1	PC	0.00000000	0.00000000	0.00000000
54	LEATHER	1	PC	0.00000000	0.00000000	0.00000000
55	TELEPHONE/PUB UTIL	1	PC	0.00000000	0.00000000	0.00000000
56	WHITE STATE TRADES	1	PC	0.00000000	0.00000000	0.00000000
57	RETAIL TRADERS	1	PC	0.00000000	0.00000000	0.00000000
58	INSURANCE	1	PC	0.00000000	0.00000000	0.00000000
59	FINANCIAL	1	PC	0.00000000	0.00000000	0.00000000
60	SEVICES	1	PC	0.00000000	0.00000000	0.00000000
61	FED GOVERNMENT	1	PC	0.00000000	0.00000000	0.00000000
62	STATE & LOCAL GOVERNMENT	1	PC	0.00000000	0.00000000	0.00000000
63	SCRAP MATERIALS	1	PC	0.00000000	0.00000000	0.00000000
64	TRADELINKS	1	PC	0.00000000	0.00000000	0.00000000
65	INT'L TRADE EXPORTS	1	PC	0.00000000	0.00000000	0.00000000

Technical Coefficients Table (Rows 1-66, Columns 41-48)

Technical Coefficients Table (Rows 1-66, Columns 49-56)

Technical Coefficients Table (Rows 1-66, Columns 57-64)

HHS/COL	ITEM	DESCRIPTION	UNIT	QTY	UOM	ITEM NO.	ITEM NAME
1	GROUT/COATING THINNERS	LT	LBS	0	000000000	0	000000000
2	GRUNTS/ISH TUNA LHS.	E	LBS	0	000000000	0	000000000
3	SURFCLN. THAW HS	E	LBS	0	000000000	0	000000000
4	TUNA PURSE-SL HNSRS	E	LBS	0	000000000	0	000000000
5	WE/FISH SETTERS	E	LBS	0	000000000	0	000000000
6	WIRING/OIL/NUTTERS	E	LBS	0	000000000	0	000000000
7	OTHER WIRE/NUTTERS	E	LBS	0	000000000	0	000000000
8	SMALL SALMON TROLLERS	E	LBS	0	000000000	0	000000000
9	LARGE SALMON TROLLERS	E	LBS	0	000000000	0	000000000
10	BALHORN/CRABERS	E	LBS	0	000000000	0	000000000
11	SALMON/ALBACORE	E	LBS	0	000000000	0	000000000
12	LONG-LINERS	E	LBS	0	000000000	0	000000000
13	BLACK COD/POTS	E	LBS	0	000000000	0	000000000
14	CRAB/LOBSTER, N	E	LBS	0	000000000	0	000000000
15	CRAB/LOBSTER, S	E	LBS	0	000000000	0	000000000
16	BATIDATE, TUNA	E	LBS	0	000000000	0	000000000
17	JIGDRAFT, TUNA	E	LBS	0	000000000	0	000000000
18	DIVERBOATS	E	LBS	0	000000000	0	000000000
19	HARPOON, BILLFISH	E	LBS	0	000000000	0	000000000
20	FISH WHSL, PROC, DIBT, SH	E	LBS	0	000000000	0	000000000
21	FISH MSL, PROC, DIGIT, MED	E	LBS	0	000000000	0	000000000
22	FISH WHSL, PROC, DIBT, LG	E	LBS	0	000000000	0	000000000
23	FISH IMP/EXP. BROKERS	E	LBS	0	000000000	0	000000000
24	FISH CARRIERS	E	LBS	0	000000000	0	000000000
25	SEAFOOD RESTAURANTS	E	LBS	0	000000000	0	000000000
26	OTHER EAT & DRINK	E	LBS	0	000000000	0	000000000
27	SEAFOOD MARKETS	E	LBS	0	000000000	0	000000000
28	OTHER FOOD & KINDRED PROC	E	LBS	0	000000000	0	000000000
29	FISHERBY & OTHER FISHING	E	LBS	0	000000000	0	000000000
30	PETFOOD	E	LBS	0	000000000	0	000000000
31	PETFOOD/FISH SERVICES	E	LBS	0	000000000	0	000000000
32	ANIMAL & MARINE FAIRS	E	LBS	0	000000000	0	000000000
33	SHIP & BOAT	E	LBS	0	000000000	0	000000000
34	MOTOR FREIGHT	E	LBS	0	000000000	0	000000000
35	AGRICULTURE	E	LBS	0	000000000	0	000000000
36	MINING	E	LBS	0	000000000	0	000000000
37	CONSTRUCTION	E	LBS	0	000000000	0	000000000
38	LUMBER	E	LBS	0	000000000	0	000000000
39	FURNITURE	E	LBS	0	000000000	0	000000000
40	GLASS, STONE, CLAY	E	LBS	0	000000000	0	000000000
41	METAL	E	LBS	0	000000000	0	000000000
42	NON-ELECTRIC MACHINES	E	LBS	0	000000000	0	000000000
43	ELECTRIC EQUIPMENT	E	LBS	0	000000000	0	000000000
44	TRANSPORTATION EQUIP	E	LBS	0	000000000	0	000000000
45	INSTRUMENTS	E	LBS	0	000000000	0	000000000
46	MISC. MFGD GOODS	E	LBS	0	000000000	0	000000000
47	TEXTILES	E	LBS	0	000000000	0	000000000
48	APPAREL	E	LBS	0	000000000	0	000000000
49	PAPER	E	LBS	0	000000000	0	000000000
50	PRINTING	E	LBS	0	000000000	0	000000000
51	CHEMICAL	E	LBS	0	000000000	0	000000000
52	PETROLEUM	E	LBS	0	000000000	0	000000000
53	RUBBER & PLASTIC	E	LBS	0	000000000	0	000000000
54	LEATHER	E	LBS	0	000000000	0	000000000
55	TELEPHONE/PLUG UTIL	E	LBS	0	000000000	0	000000000
56	WHOLESALE TRADERS	E	LBS	0	000000000	0	000000000
57	RETAIL TRADERS	E	LBS	0	000000000	0	000000000
58	INSURANCE	E	LBS	0	000000000	0	000000000
59	FINANCE	E	LBS	0	000000000	0	000000000
60	SERVICES	E	LBS	0	000000000	0	000000000
61	FED GOVERNMENT	E	LBS	0	000000000	0	000000000
62	ST & LOC GOVERNMENT	E	LBS	0	000000000	0	000000000
63	SCRAP MATERIALS	E	LBS	0	000000000	0	000000000
64	HOUSEHOLD	E	LBS	0	000000000	0	000000000
65	IMPORT EXPORTS	E	LBS	0	000000000	0	000000000

Leontief (I-A) Inverse Table (Rows 1-64; Columns 1-8)

Leontief (I-A) Inverse Table (Rows 1-64, Columns 9-16)

Leontief (I-A) Inverse Table (Rows 1-64, Columns 17-24)

Leontief (I-A) Inverse Table (Rows 1-64, Columns 25-32)

ITEM NO.	ITEM NAME	ITEM DESC	ITEM UNIT	ITEM QTY	ITEM PRICE	ITEM AMOUNT	ITEM TAX	ITEM TOTAL
1	GOLD LEAF LINED LUNCH BOX	LUNCH BOX	EA	1	0.05954677	0.05954677	0	0.05954677
2	SCHOOL LUNCH TRAY LUNCH BOX	LUNCH BOX	EA	1	0.01345303	0.01345303	0	0.01345303
3	SHREWD TRAVELER'S	TRAVELER'S	EA	1	0.00352243	0.00352243	0	0.00352243
4	TRAVEL PURSE - SEE NERFS	PURSE	EA	1	0.01038449	0.01038449	0	0.01038449
5	W/L FISH STEINERS	FISH STEINERS	EA	1	0.01128991	0.01128991	0	0.01128991
6	DETERING GILL NETTERS	GILL NETTERS	EA	1	0.00252678	0.00252678	0	0.00252678
7	OTHER GILL NETTERS	GILL NETTERS	EA	1	0.0021131	0.0021131	0	0.0021131
8	SOMI L SAN PON TROLLERS	TROLLERS	EA	1	0.00055099	0.00055099	0	0.00055099
9	LARGE SAN PON TROLLERS	TROLLERS	EA	1	0.00198525	0.00198525	0	0.00198525
10	SMALL SAN PON TROLLERS	TROLLERS	EA	1	0.00162959	0.00162959	0	0.00162959
11	SMALL SAN PON CRABBERS	CRABBERS	EA	1	0.00029377	0.00029377	0	0.00029377
12	LARGE SAN PON CRABBERS	CRABBERS	EA	1	0.00047577	0.00047577	0	0.00047577
13	BALI K CLOU POIS	CLOU POIS	EA	1	0.04157573	0.04157573	0	0.04157573
14	GRANULATED SUGAR	SUGAR	KG	1	0.01258582	0.01258582	0	0.01258582
15	GRANULATED SUGAR	SUGAR	KG	1	0.00055231	0.00055231	0	0.00055231
16	WALFISHES, TUNA	WALFISHES, TUNA	KG	1	0.00034187	0.00034187	0	0.00034187
17	DIVE BOATS	DIVE BOATS	EA	1	0.00129466	0.00129466	0	0.00129466
18	FISH WHSL. PROC. DIST. SH	FISH WHSL. PROC. DIST. SH	KG	1	0.0001994	0.0001994	0	0.0001994
19	FISH WHSL. PROC. DIST. MED	FISH WHSL. PROC. DIST. MED	KG	1	0.0001994	0.0001994	0	0.0001994
20	HARPOON, BILLFISH	BILLFISH	EA	1	0.01649970	0.01649970	0	0.01649970
21	FISH WHSL. PROC. DIST. 1.0	FISH WHSL. PROC. DIST. 1.0	KG	1	0.01945149	0.01945149	0	0.01945149
22	FISH WHSL. PROC. DIST. EXP. BROKERS	FISH WHSL. PROC. DIST. EXP. BROKERS	KG	1	0.00000000	0.00000000	0	0.00000000
23	FURA CANNERS	CANNERS	KG	1	0.00000000	0.00000000	0	0.00000000
24	SEAFOOD RESTAURANTS	RESTAURANTS	KG	1	0.00000000	0.00000000	0	0.00000000
25	OTHER EAT & DRINK	EAT & DRINK	KG	1	0.00358955	0.00358955	0	0.00358955
26	SEASIDE MARKET	SEASIDE MARKET	KG	1	0.00000000	0.00000000	0	0.00000000
27	OUTH FLD & KINRED PROG	OUTH FLD & KINRED PROG	KG	1	0.00308806	0.00308806	0	0.00308806
28	FORESTHY & OTHER FISHING	FORESTHY & OTHER FISHING	KG	1	0.00022239	0.00022239	0	0.00022239
29	FORESTHY & HS SERVICES	FORESTHY & HS SERVICES	KG	1	0.00047141	0.00047141	0	0.00047141
30	PELICAN	PELICAN	KG	1	0.00002777	0.00002777	0	0.00002777
31	AQUATIC FAUNA	AQUATIC FAUNA	KG	1	0.00044110	0.00044110	0	0.00044110
32	SHIP & BOAT	SHIP & BOAT	KG	1	0.00033039	0.00033039	0	0.00033039
33	AUTOM. FREIGHT	AUTOM. FREIGHT	KG	1	0.01379500	0.01379500	0	0.01379500
34	AGRICULTURE	AGRICULTURE	KG	1	0.00350771	0.00350771	0	0.00350771
35	MINING	MINING	KG	1	0.00682317	0.00682317	0	0.00682317
36	CONSTRUCTION	CONSTRUCTION	KG	1	0.00637653	0.00637653	0	0.00637653
37	LEATHER	LEATHER	KG	1	0.01292444	0.01292444	0	0.01292444
38	FURNITURE	FURNITURE	KG	1	0.00008806	0.00008806	0	0.00008806
39	CLAY ASHS, STONE, CLAY	CLAY ASHS, STONE, CLAY	KG	1	0.00091971	0.00091971	0	0.00091971
40	PLATEL	PLATEL	KG	1	0.04215399	0.04215399	0	0.04215399
41	IND. ELECTRIC MACHINES	ELECTRIC MACHINES	KG	1	0.00248174	0.00248174	0	0.00248174
42	TRANSPORTATION EQUIP	TRANSPORTATION EQUIP	KG	1	0.00293396	0.00293396	0	0.00293396
43	INSTRUMENTS	INSTRUMENTS	KG	1	0.00220264	0.00220264	0	0.00220264
44	MECH. MFG. GOODS	MFG. MFG. GOODS	KG	1	0.00102341	0.00102341	0	0.00102341
45	TELETEST	TELETEST	KG	1	0.0021411	0.0021411	0	0.0021411
46	APPAREL	APPAREL	KG	1	0.00812331	0.00812331	0	0.00812331
47	PHITING	PHITING	KG	1	0.07617998	0.07617998	0	0.07617998
48	CHEMICAL	CHEMICAL	KG	1	0.00402290	0.00402290	0	0.00402290
49	PERFORUM	PERFORUM	KG	1	0.02637403	0.02637403	0	0.02637403
50	PLASTIC	PLASTIC	KG	1	0.00171258	0.00171258	0	0.00171258
51	LEATHER	LEATHER	KG	1	0.00043461	0.00043461	0	0.00043461
52	FINANCIAL	FINANCIAL	KG	1	0.02997354	0.02997354	0	0.02997354
53	TELEPHONE PUB. UTLS	TELEPHONE PUB. UTLS	KG	1	0.04366351	0.04366351	0	0.04366351
54	IND. ESAL. TRADENS	IND. ESAL. TRADENS	KG	1	0.01265891	0.01265891	0	0.01265891
55	RETAIL TRADENS	RETAIL TRADENS	KG	1	0.00783077	0.00783077	0	0.00783077
56	INSURANCE	INSURANCE	KG	1	0.01785762	0.01785762	0	0.01785762
57	SAVINGS	SAVINGS	KG	1	0.04985944	0.04985944	0	0.04985944
58	SERVICES	SERVICES	KG	1	0.04643780	0.04643780	0	0.04643780
59	FISH GROWTH ANT	FISH GROWTH ANT	KG	1	0.02299754	0.02299754	0	0.02299754
60	ST. & LUC GROWTH ANT	ST. & LUC GROWTH ANT	KG	1	0.00124647	0.00124647	0	0.00124647
61	SCARAB HAIR RIBBONS	SCARAB HAIR RIBBONS	KG	1	0.00105646	0.00105646	0	0.00105646
62	TELEPHONE PUB. UTLS	TELEPHONE PUB. UTLS	KG	1	0.00438140	0.00438140	0	0.00438140
63	TELEPHONE PUB. UTLS	TELEPHONE PUB. UTLS	KG	1	0.00463377	0.00463377	0	0.00463377
64	HAIR RIBBONS	HAIR RIBBONS	KG	1	1.55781212	1.55781212	0	1.55781212
65	31	31	31	31	0.00002424	0.00002424	0	0.00002424
66	32	32	32	32	0.00000716	0.00000716	0	0.00000716
67	33	33	33	33	0.00000773	0.00000773	0	0.00000773
68	34	34	34	34	0.00000619	0.00000619	0	0.00000619
69	35	35	35	35	0.00000535	0.00000535	0	0.00000535
70	36	36	36	36	0.00000564	0.00000564	0	0.00000564
71	37	37	37	37	0.00000900	0.00000900	0	0.00000900
72	38	38	38	38	0.00001151	0.00001151	0	0.00001151
73	39	39	39	39	0.00002878	0.00002878	0	0.00002878
74	40	40	40	40	0.00001717	0.00001717	0	0.00001717
75	41	41	41	41	0.00003495	0.00003495	0	0.00003495
76	42	42	42	42	0.00003495	0.00003495	0	0.00003495
77	43	43	43	43	0.00003495	0.00003495	0	0.00003495
78	44	44	44	44	0.00003495	0.00003495	0	0.00003495
79	45	45	45	45	0.00003495	0.00003495	0	0.00003495
80	46	46	46	46	0.00003495	0.00003495	0	0.00003495
81	47	47	47	47	0.00003495	0.00003495	0	0.00003495
82	48	48	48	48	0.00003495	0.00003495	0	0.00003495
83	49	49	49	49	0.00003495	0.00003495	0	0.00003495
84	50	50	50	50	0.00003495	0.00003495	0	0.00003495
85	51	51	51	51	0.00003495	0.00003495	0	0.00003495
86	52	52	52	52	0.00003495	0.00003495	0	0.00003495
87	53	53	53	53	0.00003495	0.00003495	0	0.00003495
88	54	54	54	54	0.00003495	0.00003495	0	0.00003495
89	55	55	55	55	0.00003495	0.00003495	0	0.00003495
90	56	56	56	56	0.00003495	0.00003495	0	0.00003495
91	57	57	57	57	0.00003495	0.00003495	0	0.00003495
92	58	58	58	58	0.00003495	0.00003495	0	0.00003495
93	59	59	59	59	0.00003495	0.00003495	0	0.00003495
94	60	60	60	60	0.00003495	0.00003495	0	0.00003495
95	61	61	61	61	0.00003495	0.00003495	0	0.00003495
96	62	62	62	62	0.00003495	0.00003495	0	0.00003495
97	63	63	63	63	0.00003495	0.00003495	0	0.00003495
98	64	64	64	64	0.00003495	0.00003495	0	0.00003495
99	65	65	65	65	0.00003495	0.00003495	0	0.00003495
100	66	66	66	66	0.00003495	0.00003495	0	0.00003495
101	67	67	67	67	0.00003495	0.00003495	0	0.00003495
102	68	68	68	68	0.00003495	0.00003495	0	0.00003495
103	69	69	69	69	0.00003495	0.00003495	0	0.00003495
104	70	70	70	70	0.00003495	0.00003495	0	0.00003495
105	71	71	71	71	0.00003495	0.00003495	0	0.00003495
106	72	72	72	72	0.00003495	0.00003495	0	0.00003495
107	73	73	73	73	0.00003495	0.00003495	0	0.00003495
108	74	74	74	74	0.00003495	0.00003495	0	0.00003495
109	75	75	75	75	0.00003495	0.00003495	0	0.00003495
110	76	76	76	76	0.00003495	0.00003495	0	0.00003495
111	77	77	77	77	0.00003495	0.00003495	0	0.00003495
112	78	78	78	78	0.00003495	0.00003495	0	0.00003495
113	79	79	79	79	0.00003495	0.00003495	0	0.00003495
114	80	80	80	80	0.00003495	0.00003495	0	0.00003495
115	81	81	81	81	0.00003495	0.00003495	0	0.00003495
116	82	82	82	82	0.00003495	0.00003495	0	0.00003495
117	83	83	83	83	0.00003495	0.00003495	0	0.00003495
118	84	84	84	84	0.00003495	0.00003495	0	0.00003495
119	85	85	85	85	0.00003495	0.00003495	0	0.00003495
120	86	86	86	86	0.00003495	0.00003495	0	0.00003495
121	87	87	87	87	0.00003495	0.00003495	0	0.00003495
122	88	88	88	88	0.00003495	0.00003495	0	0.00003495
123	89	89	89	89	0.00003495	0.00003495	0	0.00003495
124	90	90	90	90	0.00003495	0.00003495	0	0.00003495
125	91	91	91	91	0.00003495	0.00003495	0	0.00003495
126	92	92	92	92	0.00003495	0.00003495	0	0.00003495
127	93	93	93	93	0.00003495	0.00003495	0	0.00003495
128	94	94	94	94	0.00003495	0.00003495	0	0.00003495
129	95	95	95	95	0.00003495	0.00003495	0	0.00003495
130	96	96	96	96	0.00003495	0.00003495	0	0.00003495

Leontief (I-A) Inverse Table (Rows 1-64, Columns 33-40)

ROW/COL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40					
1	GRINDING FISH TAILERS.	II																																											
2	CRUSHING FISH TAILERS.	5																																											
3	SHIMP TRAMERS																																												
4	TUNA PURSE SEINERS																																												
5	NET FISH SETTERS																																												
6	HEARING GILLNETTERS																																												
7	OTTER GILLNETTERS																																												
8	SMALL SALMON TROLLERS																																												
9	LARGE SALMON TROLLERS																																												
10	BAI MONO/CHABBIERS																																												
11	BAI IKANI/ALVACHE																																												
12	LOHO-LI LIHERS																																												
13	BLACK COD POTS																																												
14	CRAB/LOBSTER, N																																												
15	CRAB/LOBSTER, S																																												
16	DAI BOATS																																												
17	JIGBOATS, TUNA																																												
18	DIVE BOATS																																												
19	HARPOON, BILLFISH																																												
20	FISH MACH. PROC. DIST. BM																																												
21	FISH WHL. PROC. D.BT. MED																																												
22	FISH WHL. PROC. D.BT. LG																																												
23	FISH IMP/EXP. BROKERS																																												
24	TUNA CANNERS																																												
25	SEAFOOD RESTAURANTS																																												
26	OTHER EAT & DRINK																																												
27	SEAFOOD MARKETS																																												
28	OLIVER FOOD & KINNED PROD																																												
29	FORESTRY & OTHER FISHING																																												
30	MINING																																												
31	PETFOOD																																												
32	ANIMAL & MARINE FARMS																																												
33	SHIP & BOAT																																												
34	MOTOR FREIGHT																																												
35	AGRICULTURE																																												
36	MINING																																												
37	CONSTRUCTION																																												
38	LUMBER																																												
39	FURNITURE																																												
40	GLASS, STONE, CLAY																																												
41	MEtal																																												
42	NON-ELECTRIC MACHINES																																												
43	TRANSPORTATION EQUIP																																												
44	INSTRUMENTS																																												
45	MISC. MFG. GOODS																																												
46	TEXTILES																																												
47	APPAREL																																												
48	PRINTING																																												
49	CHEMICAL																																												
50	PETROLEUM																																												
51	RUBBER & PLASTIC																																												
52	LEATHER																																												
53	INSURANCE																																												
54	FINANCE																																												

Leontief (I-A) Inverse Table (Rows 1-64, Columns 41-48)

ITEM/CODE	DESCRIPTION	QTY	UNIT	UNIT PRICE	AMOUNT
1 GRANDISH TROLLERS, N	0 000603276	0	0000000484	0.00000543	0 00000003276
2 CRIMSONISH TROLLERS, S	0 000600126	0	0000000887	0.00000125	0 0000000222
3 SHINING TROLLERS, S	0 000000120	0	0000000770	0.00000124	0 0000000071
4 TUNA PURPLE, SEI LERS	0 000000558	0	0000000440	0.00000124	0 000000057
5 HET/FISH SEI LERS	0 000000093	0	000000064	0.00000114	0 000000063
6 HERRING GILLNETTERS	0 000001177	0	000000122	0.00000177	0 000000048
7 OTTER GILLNETTERS	0 000000410	0	000000287	0.00000201	0 000000091
8 SMALL SALMON TROLLERS	0 000000051	0	000000035	0.00000062	0 0000000210
9 LARGE SALMON TROLLERS	0 00000134	0	000000106	0.00000064	0 0000000216
10 SALMUN/CHUBBERS	0 00000080	0	000000058	0.00000078	0 0000000279
11 SALMUN/AL.BACORE	0 000000223	0	000000016	0.00000028	0 000000041
12 LONG-LINERS	0 00000004	0	0000000303	0.00000093	0 000000012
13 BLACK COD POTS	0 000000348	0	0000000240	0.00000062	0 000000002
14 CRAB/LDISTER, N	0 00000100	0	000000056	0.00000122	0 000000028
15 CRAB/LDISTER, S	0 00000058	0	000000040	0.00000071	0 0000000127
16 CRAB/LOBSTERS	0 00000080	0	000000059	0.00000078	0 0000000108
17 JIGGERS, TUNA	0 00000013	0	000000001	0.00000011	0 0000000019
18 DIVIDERS	0 00000170	0	000000117	0.00000208	0 000000019
19 HARPOON, BILLFISH	0 00000094	0	000000046	0.00000117	0 000000003
20 FISH WHSL, PROC, DIBT, SH	0 00000197	0	000000137	0.0000024	0 000000003
21 FISH WHSL, PROC, DIBT, MED	0 00000209	0	000000122	0.00000287	0 000000004
22 FISH WHSL, PROC, DIST, LG	0 00000326	0	0000002317	0.00004109	0 000000005
23 FISH IMP/EXP, BROKERS	0 00000000	0	000000000	0.00000000	0 000000008
24 TUNA CANNERS	0 00000000	0	000000000	0.00000000	0 000000007
25 SEAFOOD RESTAURANTS	0 00000000	0	000000000	0.00000000	0 000000000
26 OTHER EAT & DRINK	0 01816176	0	01247868	0.02231983	0 000000000
27 SEAFOOD MARKETS	0 00000000	0	000000000	0.00000000	0 000000000
28 OTHER FOOD & KINDRED PROD	0 00000000	0	000000000	0.00000000	0 000000000
29 FORESTRY & OTHER FISHING	0 00000000	0	000000000	0.00000000	0 000000000
30 FORESTRY/FISH SERVICES	0 00000000	0	000000000	0.00000000	0 000000000
31 PETFOOD	0 00000000	0	000000000	0.00000000	0 000000000
32 ANIMAL & MARINE FAIS	0 00000000	0	000000000	0.00000000	0 000000000
33 SHIP & BOAT	0 00000000	0	000000000	0.00000000	0 000000000
34 MOTOR FREIGHT	0 00000000	0	000000000	0.00000000	0 000000000
35 AGRICULTURE	0 00000000	0	000000000	0.00000000	0 000000000
36 HIND	0 00000000	0	000000000	0.00000000	0 000000000
37 CONSTRUCTION	0 00000000	0	000000000	0.00000000	0 000000000
38 LUMBER	0 00000000	0	000000000	0.00000000	0 000000000
39 FURNITURE	0 00000000	0	000000000	0.00000000	0 000000000
40 GLASS, STONE, CLAY	0 00000000	0	000000000	0.00000000	0 000000000
41 PET.	0 00000000	0	000000000	0.00000000	0 000000000
42 NON-ELECTRIC MACHINES	1 18946265	0	15437049	0.04531598	0 000000000
43 ELECTRIC EQUIPMENT	0 00000000	0	000000000	0.00000000	0 000000000
44 TRANSPORTATION EQUIP	0 03494924	0	000000000	0.00000000	0 000000000
45 INSTRUMENTS	0 00000000	0	000000000	0.00000000	0 000000000
46 MISCELLANEOUS GOODS	0 00000000	0	000000000	0.00000000	0 000000000
47 TEXTILES	0 00000000	0	000000000	0.00000000	0 000000000
48 APPAREL	0 00000000	0	000000000	0.00000000	0 000000000
49 PAPER	0 00000000	0	000000000	0.00000000	0 000000000
50 PHINTINO	0 00000000	0	000000000	0.00000000	0 000000000
51 CHINTICAL	0 00000000	0	000000000	0.00000000	0 000000000
52 PETRONELUM	0 00000000	0	000000000	0.00000000	0 000000000
53 RUBBER & PLASTIC	0 00000000	0	000000000	0.00000000	0 000000000
54 FATHER	0 00000000	0	000000000	0.00000000	0 000000000
55 TELEPHONE/PUB UTIL	0 00000000	0	000000000	0.00000000	0 000000000
56 WHOLESALE TRADERS	0 00000000	0	000000000	0.00000000	0 000000000
57 RETAIL TRADERS	0 00000000	0	000000000	0.00000000	0 000000000
58 INSURANCE	0 00000000	0	000000000	0.00000000	0 000000000
59 FINANCIAL	0 00000000	0	000000000	0.00000000	0 000000000
60 SERVICES	0 00000000	0	000000000	0.00000000	0 000000000
61 FISH GOVERNMENT	0 00000000	0	000000000	0.00000000	0 000000000
62 B/L LDC GOVERNMENT	0 00000000	0	000000000	0.00000000	0 000000000
63 SCRAP MATERIALS	0 00000000	0	000000000	0.00000000	0 000000000
64 OUTPUT MULTPLIERS	1 70875226	1	637860498	1.813135002	1 71392103

Leontief (I-A) Inverse Table (Rows 1-64, Columns 49-56)

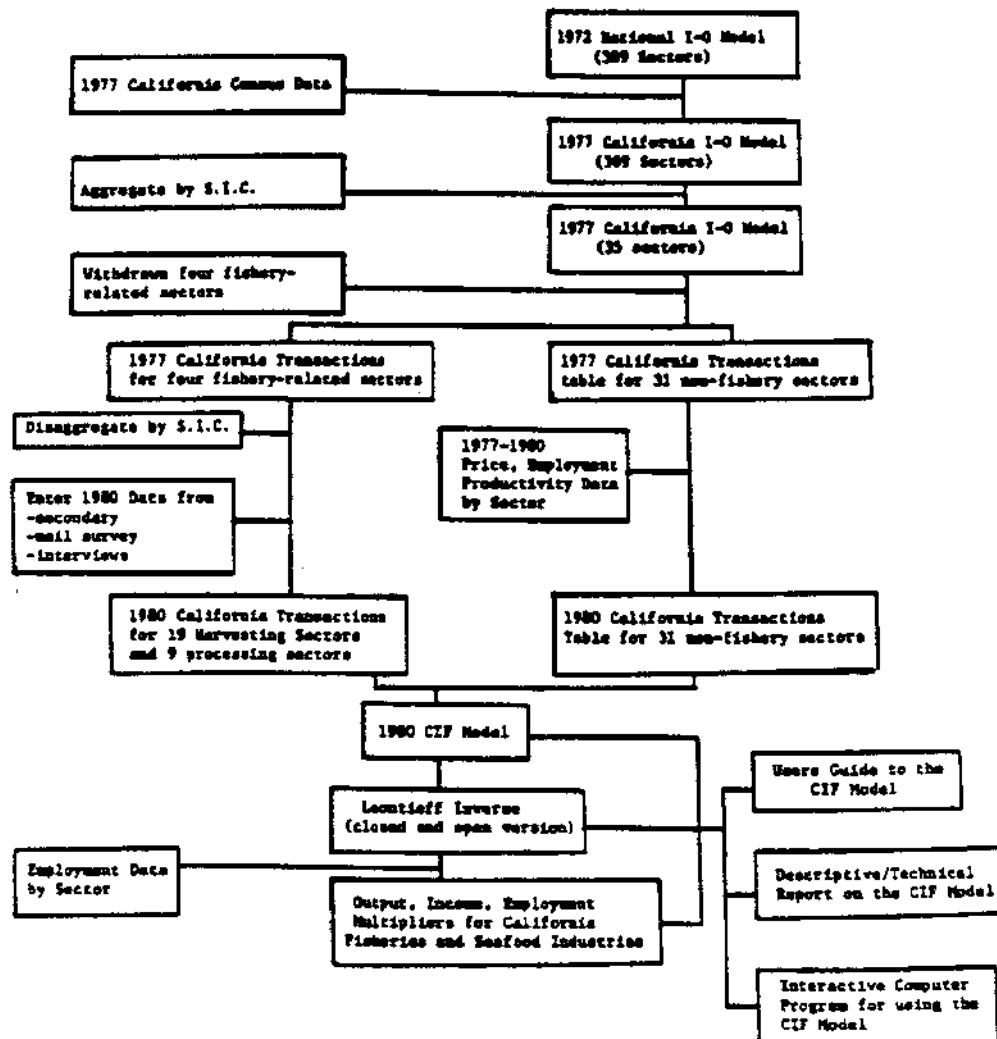
Row #	Column 49	Column 50	Column 51	Column 52	Column 53	Column 54	Column 55	Column 56
1	GRINDING, GEAR, GRINDERS	14	0.000003777	0.000004887	0.000006753	0.000002352	0.00001324	0.000002534
2	GRINDING, GEAR, GRINDERS	15	0.000001120	0.000001120	0.000002424	0.00000423	0.00000138	0.00000431
3	SALT, SALT FLAKES	16	0.00000125	0.00000125	0.00000264	0.00000339	0.00000110	0.00000110
4	TURPS, PURPLE-SH. INKERS	17	0.000000355	0.000000371	0.00000111	0.00000037	0.00000063	0.00000063
5	WH. FISH, SCALERS	18	0.00000078	0.00000089	0.00000115	0.00000118	0.000001312	0.00000101
6	FISHING, GILL NETTERS	19	0.00000045	0.00000045	0.00000218	0.00000234	0.000000593	0.00000114
7	GILLNETH, GILLNETERS	20	0.00000119	0.00000189	0.00000504	0.00000278	0.00000260	0.00000193
8	SMALL SALMON TROLLERS	21	0.00000024	0.00000048	0.00000062	0.00000110	0.00000032	0.00000044
9	LARGE SALMON TROLLERS	22	0.00000074	0.00000147	0.00000190	0.00000229	0.00000156	0.00000055
10	SALT MDR/CRABBERS	23	0.00000028	0.00000056	0.00000072	0.00000111	0.00000037	0.00000168
11	SALMON/ALBACORE	24	0.00000034	0.00000076	0.00000098	0.00000115	0.00000051	0.00000051
12	L.DNG-L. LINEPS	25	0.00000011	0.00000022	0.00000029	0.0000004	0.00000114	0.00000025
13	BL ACK COD PORS	26	0.00000002	0.00000004	0.00000003	0.00000011	0.00000012	0.00000004
14	CHAY/L. LOBSTER, N.	27	0.00000016	0.00000032	0.00000048	0.00000166	0.00000221	0.00000032
15	CRAB/LODSTEN, B.	28	0.00000049	0.00000095	0.00000123	0.00000119	0.00000264	0.00000055
16	BAT BOATS, TUNA	29	0.00000028	0.00000056	0.00000072	0.00000111	0.00000037	0.00000037
17	JEGUATS, TUNA	30	0.00000007	0.00000015	0.00000019	0.0000003	0.00000014	0.00000010
18	DIVEBOATS	31	0.00000082	0.00000162	0.00000209	0.00000332	0.00000198	0.00000056
19	HAMPHIN, B. EELFISH	32	0.00000046	0.00000091	0.00000118	0.00000118	0.00000312	0.00000185
20	FISH WHSL, PROC. DIST. SM	33	0.00000093	0.00000190	0.00000229	0.00000337	0.00000224	0.00000179
21	FISH WHSL, PROC. DIS. L. MED	34	0.000000935	0.000001936	0.000002390	0.00000380	0.00000267	0.00000175
22	FISH WHSL, PROC. DIST. LG	35	0.000001637	0.00000202	0.000004238	0.00000647	0.00001269	0.00000217
23	FISH IMP/EXP. BROKERS	36	0.00000000	0.00000000	0.00000000	0.00000000	0.00000121	0.00000210
24	TUNA CANNERS	37	0.00000000	0.00000000	0.00000000	0.00000000	0.00000119	0.00000185
25	SEAFOOD RESTAURANTS	38	0.00000000	0.00000000	0.00000000	0.00000000	0.00000062	0.00000103
26	OTHER EAT & DRINKS	39	0.00000000	0.00000000	0.00000000	0.00000000	0.00000064	0.00000164
27	SALV/OD MARKETS	40	0.00000000	0.00000000	0.00000000	0.00000000	0.00000017	0.00000064
28	OTHER FOOD & KINDRED PROC	41	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
29	FURNITRY & OTHER FISHING	42	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
30	FDRSTRY/FISH SERVICES	43	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
31	PE-FOOD	44	0.00742441	0.01720944	0.01536524	0.020301715	0.01029840	0.00879233
32	ANIMAL & MARINE FATS	45	0.00000000	0.00000000	0.00000000	0.00000000	0.01032922	0.01984419
33	SHIP & BOAT	46	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
34	MOTOR FREIGHT	47	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
35	AIRCULTURE	48	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
36	HINING	49	0.01157492	0.03683379	0.03131330	0.16079367	0.01430799	0.00095255
37	CONSTRUCTION	50	0.01428831	0.01288240	0.017432410	0.01770417	0.01425567	0.00000182
38	LONER	51	0.06206875	0.0441606	0.0441606	0.01804419	0.0041864	0.000004928
39	FURNITURE	52	0.000211300	0.00114950	0.00244649	0.00006394	0.00094213	0.000001452
40	GLASS, STONE, CLAY	53	0.00323271	0.00216590	0.01180264	0.00231829	0.0102065	0.00000256
41	METAL	54	0.1687531	0.03993800	0.04124136	0.01005004	0.03039584	0.000001317
42	NON-ELECTRIC MACHINES	55	0.005952520	0.00403392	0.00684816	0.00444041	0.0125316	0.000001317
43	ELECTRIC EQUIPMENT	56	0.00351689	0.0063411	0.00502091	0.00216904	0.00618987	0.000001317
44	TRANSPORTATION EQUIP	57	0.000211300	0.00168726	0.00294618	0.00089343	0.0025714	0.00000256
45	INSTRUMENTS	58	0.00195633	0.00313228	0.00309228	0.00705888	0.00196413	0.000001317
46	MISC. MFG. GOODS	59	0.00178643	0.00395573	0.00394221	0.00526062	0.00359882	0.000001317
47	TEXTILES	60	0.00320795	0.00080916	0.0049447	0.0017481	0.00233953	0.000001317
48	APPAREL	61	0.00642988	0.00642988	0.0062335	0.0010468	0.0063501	0.000001317
49	PAPER	62	1.17324843	0.063139781	0.01027204	0.03505730	0.01329125	0.000001317
50	PRINTING	63	0.009636581	1.07354173	0.03819133	0.03666460	0.0147985	0.000001317
51	CHEMICAL	64	0.04850710	0.02319857	1.15457982	0.01193136	0.1921772	0.000001317
52	PT.ROLEUM	65	0.05658479	0.02836409	0.12600536	1.13079279	0.04376632	0.000001317
53	RUBBER & PLASTIC	66	0.02291469	0.00521484	0.03259521	0.00171467	1.0541507	0.000001317
54	LEATHER	67	0.00013634	0.0018519	0.0018123	0.00003226	0.00161041	0.000001317
55	TELEPHONE/PUB UTIL	68	0.05109193	0.06531684	0.04846033	0.033297670	0.04978952	0.000001317
56	WHOLESALE TRADERS	69	0.001561043	0.03540016	0.04284174	0.01019637	0.06891170	0.000001317
57	RETAIL TRADERS	70	0.00180620	0.00559774	0.00268265	0.00113468	0.019887	0.000001317
58	INSURANCE	71	0.00936240	0.01042437	0.00803748	0.00304441	0.0067602	0.000001317
59	FINANCE	72	0.04465399	0.08103438	0.0710101	0.04136752	0.04684959	0.000001317
60	SERVICES	73	0.00540335	0.01035194	0.01438374	0.02128022	0.06328213	0.000001317
61	FED GOVERNMENT	74	0.00444041	0.01561043	0.03087473	0.00196768	0.0422163	0.000001317
62	ST. L. LOC. GOVERNMENT	75	0.0044457	0.00173232	0.00527984	0.00213002	0.02694648	0.000001317
63	SCARF, MATERIALS, ETC.	76	0.00489352	0.00992403	0.00523329	0.00223227	0.00223227	0.000001317

Leontief (I-A) Inverse Table (Rows 1-64, Columns 57-63)

1	GROUNDFISH TRAVERS, 2 CRIMPED FISH TRAVERS, 3 SHRIMP TRAVERS, 4 TUNA PURSE SEINERS, 5 MEDIUM SEAING, 6 HERRING CILNETTING, 7 OTHER CILNETTING, 8 SMALL SALMON TROLLERS, 9 LARGE SALMON TROLLERS, 10 SALMON/CRABBERS, 11 SALMON/ALbacore, 12 LONG-LINERS, 13 BLACK COD FOTS, 14 CRAB/LOBSTER, N, 15 CRAB/LOBSTER, S, 16 BALLOATS, TUNA, 17 JIGBOATS, TUNA, 18 DIVEROATS, 19 HARPON, BILLFISH, 20 FISH WHSL, PROC. DIST. BM, 21 FISH WHSL, PROC. DIST. MED, 22 BALLOATS, TUNA, 23 FISH IMP/EXP. BROKERS, 24 TUNA CANNERS, 25 SEAFOOD RESTAURANTS, 26 OTHER EAT & DRINK, 27 SEAFOOD MARKETS, 28 OTHER FOOD & MINDRED PROC, 29 FORESTRY & OTHER FISHING, 30 FORESTRY/FISH SERVICES, 31 PETFOOD, 32 ANIMAL & MARINE FATB, 33 SHIP & BOAT, 34 MOTOR FREIGHT, 35 AGRICULTURE, 36 MINING, 37 CONSTRUCTION, 38 LUMBER, 39 FURNITURE, 40 GLASS, STONE, CLAY, 41 METAL, 42 MACH-ELECTRIC MACHINES, 43 ELECTRIC EQUIPMENT, 44 TRANSPORTATION EQUIP, 45 INSTRUMENTS, 46 MISC. MFG. Goods, 47 TEXTILES, 48 APPAREL, 49 PAPER, 50 PRINTING, 51 CHEMICAL, 52 PETROLEUM, 53 RUBBER & PLASTIC, 54 LEATHER, 55 TELEPHONE/PUB UTIL, 56 MHN ESAL TRADERS, 57 RETAIL TRADERS, 58 INSURANCE, 59 FINANCE, 60 SERVICES, 61 FED GOVERNMENT, 62 ST. LOC GOVERNMENT, 63 SCRAP MATERIALS, 64 OUTPUT INPUT TRADERS								

ATTACHMENT I

THE OVERALL PROCEDURE FOR DEVELOPING THE CIF MODEL



ATTACHMENT 2

Industry Classification of the 1977 Input-Output Table¹

The titles in bold face represent the groupings of industries used for the summary version of the 1972 tables.

No.	Industry number and title	Related Census SIC codes (1972 edition)	No.	Industry number and title	Related Census SIC codes (1972 edition)
	AGRICULTURE, FORESTRY, AND FISHERIES				
	1. Livestock and livestock products				
1	1.01 Dairy farm products	0241, pt. 0191, pt. 0239, pt. 0291	34	9.032 Industrial sand	1446
1	1.02 Poultry and eggs	023 (excl. 0234 and pt. 0291), pt. 0191, pt. 0219, pt. 0291	35	9.040 Gypsum	1452
1	1.03 Meat animals and miscellaneous livestock	021, pt. 0191, 027, pt. 0219, pt. 0239, pt. 0291	36	9.050 Fire clay	1453
4	2.01 Cotton 2. Other agricultural products	0131, pt. 0191, pt. 0219, pt. 0291	37	9.060 Fuller's earth	1454
5	2.02 Feed, feed grains, and grain meals	pt. 011, pt. 0191, pt. 0219, pt. 0190	38	9.070 Kaolin and ball clay	1455
6	2.03 Tobacco	0132, pt. 0191, pt. 0219, pt. 0239, pt. 0291	39	9.080 Clay, ceramic, and refractory materials, n.e.c.	1459
7	2.04 Fruits and tree nuts	pt. 017, pt. 0191, pt. 0219, pt. 0239, pt. 0291	40	9.090 Nonmetallic minerals (except fuel minerals)	1461
8	2.05 Vegetables, sugar, and miscellaneous crops	0134, pt. 0161, pt. 0119, pt. 0139, pt. 0191, pt. 0239, pt. 0291, 0193	41	9.100 Gypsum	1462
9	2.06 Oil-bearing crops	0116, pt. 0119, pt. 0119, pt. 0173, pt. 0219, pt. 0239, pt. 0291	42	9.110 Talc, mica, and pyrophyllite	1496
10	2.07 Forest, greenhouse, and nursery products	pt. 018, pt. 0191, pt. 0219, pt. 0239, pt. 0291	43	9.120 Mica, nonmetallic minerals, n.e.c.	1499
	3. Forestry and fishery products				
11	3.00 Forestry and fisheries products	061-4, 091, 097	44	10. Chemical and fertilizer mineral mining	
12	4. Agricultural, forestry, and fisheries services	0234, 07 (excl. 074), 091, 092	45	Barium	1472
	MINING		46	Fluorite	1473
	5. Iron and ferrous metal mining		47	Potash, soda, and borax minerals	1474
13	5.01 Iron ores	1011	48	Phosphate rock	1475
14	5.02 Ferrous metal ores except tantalum	1041	49	Rock salt	1476
	6. Nonferrous metal ore mining		50	Sulfur	1477
15	6.01 Copper ore mining	1021	51	Chemical and fertilizer mineral mining, n.e.c.	1479
16	6.021 Lead and zinc ores mining	1011			
17	6.022 Gold ores mining	1041			
18	6.023 Silver ores mining	1044			
19	6.024 Bauxite and other aluminum ores mining	1031			
20	6.025 Metal mining, n.e.c.	1081			
21	6.026 Ferromanganese mining	1091			
22	6.027 Uranium-tantalum-titanium ores mining	1084			
23	6.028 Metal ores mining, not elsewhere classified	1099			
	7. Coal mining				
24	7.01 Anthracite and anthracite mining services	111	52	Meat packing plants	2011
25	7.02 Bituminous coal, lignite, and mining services	121	53	Sausage and other prepared meats	2012
	8. Crude petroleum and natural gas		54	Poultry canning plants	2016
26	8.011 Crude petroleum	3111	55	Creamery butter	2017
27	8.012 Natural gas	3111-1	56	Cheese, natural and processed	2021
28	8.02 Natural gas liquids	3121	57	Condensed and evaporated milk	2022
	9. Stone and clay mining and quarrying		58	Frozen cream and frozen desserts	2024
29	9.010 Dimension stone	2411	59	Frozen fruits and vegetables	2025
30	9.021 Crushed and broken limestone	2422	60	Dehydrated food products	2026
31	9.022 Crushed and broken granite	1422	61	Petition, soups, and similar soups	2027
32	9.023 Crushed and broken shale, etc.	1429	62	Fresh or frozen, packed fruits	2028
33	9.031 Construction sand and gravel	3142	63	Frozen fruits and vegetables	2029
			64	Frozen fruits and vegetables, n.e.c.	2030
			65	Cakes, prepared	2041
			66	Canned specialties	2042
			67	Canned fruits and vegetables	2043
			68	Dehydrated food products	2044
			69	Petition, soups, and similar soups	2045
			70	Fresh or frozen, packed fruits	2046
			71	Fresh fruits and vegetables	2047
			72	Fresh or frozen, packed fruits	2048
			73	Fresh or frozen, packed vegetables	2049
			74	Frozen fruits and vegetables	2050
			75	Frozen fruits and vegetables, n.e.c.	2051
			76	Fruit and other fruit juice products	2052
			77	Fruit preparations	2053
			78	Blended and prepared flavor	2054
			79	Dog, cat, and other pet food	2055
			80	Prepared foods, n.e.c.	2056
			81	Rice milling	2057
			82	Wheat flour milling	2058
			83	Bread cake and related products	2059
			84	Cookies and crackers	2060
			85	Sugar	2061
			86	Candy	2062
			87	Confectionery products	2063
			88	Cheese and other products	2064
			89	Cheese gum	2065
			90	Milk	2066
			91	Wines, brandy, and brandy spirits	2067
			92	Distilled liquor, except brandy	2068
			93	Bottled and canned soft drinks	2069
			94	Flavored extracts and sirups, n.e.c.	2070
			95	Confectionery, confection	2071
			96	Soft drinks	2072

See footnote at end.

Industry Classification of the 1977 Input-Output Table¹ —Continued

No.	Industry number and title	Related Commerce SIC codes (1972 edition)	No.	Industry number and title	Related Commerce SIC codes (1972 edition)
14	14.2050 Vegetable oil mills, n.e.c.	270	176	26.1000 Newspapers	271
15	14.2050 Animal and marine oil and oils	271	177	26.0000 Periodicals	272
16	14.2050 Refined cotton	272	178	26.0000 Book publishing	273
17	14.2050 Shaving and reading oils	273	179	26.0000 Book printing	274
18	14.2050 Manufactured ice	274	180	26.0000 Miscellaneous publishing	275-276
19	14.3100 Mineral and sponge	275	181	26.0000 Commercial printing	276
20	14.3200 Food preparation, n.e.c.	276	182	26.0000 Lithographic platemaking and service	276
21	15.0100 Cigarettes	277	183	26.0000 Mail-order business forms	276
22	15.0100 Cigars	278	184	26.0000 Photochemicals and related products	276
23	15.0100 Cigar and smoking tobacco	279	185	26.0000 Greeting card publishing	276
24	15.0200 Tobacco processing and refining	280	186	26.0000 Engraving and plate printing	276
25	16. Standard and narrow fabrics, pure and blend with		187	26.0000 Bookbinding and related work	276
26	16.0100 Broadloom fabric mills and fabric finishing plants		188	26.0000 Typewriting	276
27	16.0200 Narrow fabric mills	281-2. 283-2	189	26.0000 Photogravure	276
28	16.0200 Yarn mills and spinning of textiles, n.e.c.	282	190	26.0000 Electrotyping and stereotyping	276
29	16.0200 Thread mills	283			
30	17. Miscellaneous textile goods and fiber coverings	284			
31	17.0100 Floor coverings	285	191	27. Chemicals and related chemical products	284 (and 286, 288, 289)
32	17.0100 Fall cover, n.e.c.	286	192	27.0000 Industrial inorganic and organic chemicals	285-286
33	17.0200 Linen goods	287	193	27.0000 Nitrogenous and phosphatic fertilizers	285
34	17.0400 Padding and protective filling	288	194	27.0000 Fertilizers, mixing only	285
35	17.0400 Protected textile items	289	195	27.0000 Agricultural chemicals, n.e.c.	285
36	17.0400 Coated fabrics, not rubberized	290	196	27.0000 Oils and waxes	285
37	17.0700 Tire cord and fabric	291	197	27.0000 Explosives	285
38	17.0700 Cordage and twine	292	198	27.0000 Printing ink	285
39	17.0700 Nonwoven fabrics	293	199	27.0000 Carbon black	285
40	17.1000 Textile goods, n.e.c.	294	200	27.0000 Chemical preparations, n.e.c.	285
41	18. Apparel				
42	18.0100 Women's hosiery, except socks	295	201	28. Plastic and synthetic materials	286
43	18.0100 Hosiery, n.e.c.	296	202	28.0000 Synthetic rubber	286
44	18.0200 Knit underwear mills	297	203	28.0000 Calcium lime-made fibers	286
45	18.0200 Knit underwear mills	298	204	28.0000 Organic fiber, noncellulosic	286
46	18.0300 Knitting mills, n.e.c.	299			
47	18.0300 Knit fabric mills	300	205	29. Drugs, cleaning and water preparations	286
48	18.0400 Apparel made from purchased materials	301-4. 308-4	206	29.0000 Drugs	286
49	19. Miscellaneous fabricated textile products		207	29.0000 Soap and other detergents	286
50	19.0100 Curtains and draperies	302	208	29.0000 Polishes and maintenance goods	286
51	19.0200 Household furnishings, n.e.c.	303	209	29.0000 Surfaces active agents	286
52	19.0201 Textile bags	304			
53	19.0202 Garment products	305	210	30. Paints and allied products	286
54	19.0202 Plaiting and stitching	306			
55	19.0204 Automobile and apparel trimmings	307	211	31. Petroleum refining and related industries	286
56	19.0204 Sewing machine embroidery	308	212	31.0000 Petroleum refining and miscellaneous products of petroleum and coal	286
57	19.0204 Fabricated textile products, n.e.c.	309	213	31.0000 Petrolatum, mineral and blastic	286
58	32. Leather and wood products, except furniture				
59	32.0100 Lumber mills and logging contractors	310	214	32. Rubber and miscellaneous plastic products	286
60	32.0100 Sawmills and planing mills, general	311	215	32.0000 Tires and tubes, etc.	286
61	32.0200 Hardwood dimension and flooring mills	312	216	32.0000 Rubber and plastic footwear	286
62	32.0400 Special product mills, n.e.c.	313	217	32.0000 Vulcanized rubber products	286
63	32.0500 Millwork	314	218	32.0000 Miscellaneous plastic products	286
64	32.0600 Wood butcher cabinets	315	219	32.0000 Rubber and plastic hose and belting	286
65	32.0600 Veneer and plywood	316			
66	32.0700 Structural wood members, n.e.c.	317	320	33. Leather tanning and finishing	286
67	32.0700 Preservative wood buildings	318			
68	32.0800 Wood preserving	319	321	34. Furniture and other lumber products	286
69	32.0800 Wood pallets and blocks	320	322	34.0000 Furniture cut stock	286
70	32.0902 Particleboard	321	323	34.0000 Sheet, except rubber	286
71	32.0902 Particulboard	322	324	34.0000 House slippers	286
72	32.0902 Wood products, n.e.c.	323	325	34.0000 Leather gloves and mittens	286
73	32.0902 Wood products	324	326	34.0000 Luggage	286
74	32.0902 Wood products	325	327	34.0000 Women's handbags and purses	286
75	32.0902 Wood products	326	328	34.0000 Personal leather goods	286
76	32.0902 Wood products	327	329	34.0000 Leather goods, n.e.c.	286
77	32. Wood furniture				
78	32.0000 Household furniture	328-2. 346-2	330	35. Glass and stone products	286, 287, 288
79	32.0000 Household furniture, n.e.c.	329	331	35.0000 Glass and glass products, except containers	286, 287, 288
80	32.0000 Wood TV and radio cabinets	330	332	35.0000 Glass containers	286, 287, 288
81	32.0000 *preserved household furniture	331			
82	32.0000 Metal household furniture	332	333	36. Stone and other products	286
83	32.0000 Machinery and bedsprings	333	334	36.0000 Common, hydraulic	286
84	32.0000 Other furniture and fixtures	334	335	36.0000 Brick and structural clay tile	286
85	32.0000 Public building furniture	335	336	36.0000 Ceramic wall and floor tile	286
86	32.0000 Wood partitions and fixtures	336	337	36.0000 Clay refractories	286
87	32.0000 Metal partitions and fixtures	337	338	36.0000 Structural clay products, n.e.c.	286
88	32.0000 Blinds, shades and drapery hardware	338	339	36.0000 Vitreous plumbing fixtures	286
89	32.0000 Furniture and fixtures	339	340	36.0000 Vitreous glass and utensils	286
90	32.0000 Furnaces and fixtures	340	341	36.0000 Glassware, electrical supplies	286
91	32.0000 Building paper and board	341	342	36.0000 Pottery products, n.e.c.	286
92	32.0000 Building paper and board	342	343	36.0000 Concrete block and brick	286
93	32.0000 Printed and coated pulp goods	343	344	36.0000 Concrete products, n.e.c.	286
94	32.0000 Stationery products	344	345	36.0000 Ready-mixed concrete	286
95	32.0000 Printed and coated pulp goods	345	346	36.0000 Lime	286
96	32.0000 Converted paper products, n.e.c.	346	347	36.0000 Gypsum products	286
97	32.0000 Paperboard containers and boxes	347	348	36.0000 Clay stone and stone products	286
98	32.0000 Paperboard containers and boxes	348	349	36.0000 Abrasive products	286
99	32.0000 Paperboard containers and boxes	349	350	36.0000 Asbestos products	286
100	32.0000 Paperboard containers and boxes	350	351	36.0000 Gaskets, packing and sealing devices	286
101	32.0000 Paperboard containers and boxes	351	352	36.0000 Minerals, ground or crushed	286
102	32.0000 Mineral wool	352	353	36.0000 Mineral wool	286
103	32.0000 Ceramic refractories	353	354	36.0000 Nonmetallic mineral products, n.e.c.	286
104	32.0000 Ceramic refractories	354			

See footnotes at end

¹ Primary tree and wood manufacturing
27.0000 Black forest and saw mills
27.0000 Electrical/tubular products

Industry Classification of the 1977 Input-Output Table¹ —Continued

No.	Industry number and title	Related CORUP SIC codes (1973 edition)	No.	Industry number and title	Related CORUP SIC codes (1973 edition)
236	37 0102 Steel wire and related products	2614	104	30 1000 Miscellaneous machinery, except electrical	2602
237	37 0104 Cold finishing of steel shapes	2616	105	30 1001 Carburetors, compressors, valves, etc.	2603
238	37 0126 Steel pipe and tubes	2617	106	30 1002 Machinery, except electrical, n.e.c.	
239	37 0200 Iron and steel foundries	2620	107	30 1003 Optical, measuring, and computing machines	2671
240	37 0200 Iron and steel forgings	2620	108	30 1004 Electronic data processing equipment	2674
241	37 0401 Metal heat treating	2620	109	30 1005 Calculating and accounting machines	2672
242	37 0402 Primary metal products, n.e.c.	2620	110	30 1006 Typewriters	2673
	40 Primary metal product manufacturing		109	30 1007 Scale and balances	2678
243	38 0100 Primary copper	2621	110	30 1008 Office automation, n.e.c.	2678
244	38 0200 Primary lead	2622			
245	38 0300 Primary zinc	2623			
246	38 0400 Primary aluminum	2624			
247	38 0400 Primary nonferrous metals, n.e.c.	2624			
248	38 0500 Secondary nonferrous metals	2625			
249	38 0700 Copper rolling and drawing	2626			
250	38 0800 Aluminum rolling and drawing	2627			
251	38 0900 Nonferrous rolling and drawing, n.e.c.	2628			
252	38 1000 Nonferrous wire drawing and insulated	2629			
253	38 1100 Aluminum casting	2630			
254	38 1200 Brass, bronze, and copper castings	2630			
255	38 1300 Nonferrous castings, n.e.c.	2630			
256	38 1400 Nonferrous forgings	2630			
	40 Metal castings				
277	39 0100 Metal cans	2611			
278	39 0200 Metal barrels, drums, and pails	2612			
	40 Metal containers				
	40 Heating, plumbing, and fabricated structural metal products				
279	40 0100 Metal sanitary ware	2621			
280	40 0200 Plumbing fixture fittings and trim	2622			
281	40 0300 Heating equipment, except electric	2623			
282	40 0400 Fabricated structural metal	2624			
283	40 0500 Metal doors, hash, and trim	2625			
284	40 0600 Fabricated plate work (boiler shop)	2626			
285	40 0700 Sheet metal work	2626			
286	40 0800 Architectural metal work	2626			
287	40 0900 Prefabricated metal buildings	2626			
288	40 0900 Miscellaneous metal work	2626			
	41 Screw machine products and stampings				
289	41 0100 Screw machine products and bolts, nuts, rivets, and washers	2627			
290	41 0200 Automatic stamping	2628			
291	41 0202 Crowns and closures	2628			
292	41 0300 Metal stampings, n.e.c.	2629			
	41 Other fabricated metal products				
293	42 0100 Cutters	2621			
294	42 0200 Hand and edge tools, n.e.c.	2622			
295	42 0202 Hand saws and saw blades	2623			
296	42 0300 Hardware, n.e.c.	2625			
297	42 0401 Plating and polishing	2626			
298	42 0402 Metal coating and allied services	2627			
299	42 0500 Miscellaneous fabricated wire products	2628			
300	42 0700 Steel springs, except wire	2628			
301	42 0800 Pipe valves and pipe fittings	2629			
302	42 1000 Metal foil and leaf	2629			
303	42 1100 Fabricated metal products, n.e.c.	2629			
	43 Engines and turbines				
304	43 0100 Steam engines and turbines	2631			
305	43 0200 Internal combustion engines, n.e.c.	2631			
	44 Farm and garden machinery				
306	44 0001 Farm machinery and equipment	2623			
307	44 0002 Lawn and garden equipment	2624			
	45 Construction and mining machinery				
308	45 0100 Construction machinery and equipment	2621			
309	45 0200 Mining machinery, except oilfield	2622			
310	45 0300 Oilfield machinery	2623			
	46 Material handling machinery and equipment				
311	46 0100 Elevators and hoisting machinery	2626			
312	46 0200 Conveyors and transporting equipment	2626			
313	46 0300 Hoists, cranes, and monorails	2626			
314	46 0400 Industrial trucks and tractors	2627			
	47 Metalworking machinery and equipment				
315	47 0100 Machine tools, metal-cutting types	2621			
316	47 0200 Machine tools, metal-forming types	2622			
317	47 0300 Special dies and tools and machine tool accessories	2624			
318	47 0401 Power driven hand tools	2627			
319	47 0402 Rolling mill machinery	2627			
320	47 0403 Metalworking machinery, n.e.c.	2627			
	48 Special industry machinery and equipment				
321	48 0100 Food products machinery	2621			
322	48 0200 Textile machinery	2622			
323	48 0300 Woodworking machinery	2623			
324	48 0400 Paper industries machinery	2623			
325	48 0500 Printing trades machinery	2623			
326	48 0600 Special industry machinery, n.e.c.	2626			
	49 General industrial machinery and equipment				
327	49 0100 Pumps and compressors	2621	1001	40 Miscellaneous manufacturing, except electrical	2611
328	49 0200 Ball and roller bearings	2622	1002	40 1001 Carburetors, compressors, valves, etc.	2615
329	49 0300 Bins and tanks	2624	1003	40 1002 Machinery, except electrical, n.e.c.	2616
330	49 0400 Industrial patterns	2624	104	40 1003 Optical, measuring, and computing machines	2671
331	49 0500 Power transmission equipment	2624	105	40 1004 Electronic data processing equipment	2674
332	49 0600 Industrial furnaces and ovens	2625	106	40 1005 Calculating and accounting machines	2672
333	49 0700 General industrial machinery, n.e.c.	2626	107	40 1006 Typewriters	2673
	40 Electrical machinery and equipment		108	40 1007 Scales and balances	2678
	40 1008 Office automation, n.e.c.		109	40 1009 Data processing equipment	2678

See footnotes at end

Industry Classification of the 1977 Input-Output Table¹ —Continued

No.	Industry number and title	Related Census SOC codes (1972 edition)	No.	Industry number and title	Related Census SOC codes (1972 edition)			
407	54.000 Sporting and athletic goods, n.e.c.	200	408	77.000 Educational services	43			
408	44.000 Tools and mechanical pencils	201	409	77.000 Nonprofit organizations	14, 36, 392			
409	44.000 Lead pencils and art pencils	202	410	77.000 Residential care	8, 341			
410	44.000 Marketing devices	203	411	77.000 Personal services	8331, 8332, 8333			
411	54.000 Carbon paper and related ribbons	204	412	77.000 Social services, n.e.c.	8379			
412	54.000 Artificial trees and flowers	205	413	77.000 Government enterprises				
413	54.000 Buttons	206	414	78.000 Federal Government enterprises	4311			
414	54.000 Needles, pins, and buttons	207	415	78.000 U.S. Postal Service	PC, 401			
415	54.000 Boxes and brackets	208	416	78.000 Federal electric utilities	PC, 413			
416	54.000 Hard surface floor coverings	209	417	78.000 Commodity Credit Corporation	4307			
417	54.000 Balsa crafts and models	210	418	78.000 Other Federal Government enterprises				
418	54.000 Signs and advertising displays	211	419	79.000 State and local government enterprises				
419	54.000 Manufacturing, reselling, n.e.c.	212	420	79.000 Local government transportation	PA, 41			
TRANSPORTATION, COMMUNICATION, AND UTILITIES								
420	55 Transportation and warehousing	41, 416, 54, 470	421	79.000 State and local electric utilities	PA, 413			
421	55.000 Railroads and related services	41	422	79.000 Other State and local government enterprises	several			
422	Local, suburban, and interurban highway passenger transportation	42, 470	423	COMMERCIAL INDUSTRIES				
423	Upper freight transportation and warehousing	43	424	80.000 Nonimportable imports				
424	Water transportation	44	425	81.000 Scrap, used, and secondhand goods				
425	Air transportation	45	426	82.000 Government industry				
426	Pipe lines, except natural gas	46	427	82.000 Government industry				
427	55.000 Transportation services	47 (cont. 474 and 54,	428	83.000 Base of the world industry				
COMMUNICATIONS, COMPUTER, RADIO, AND TV								
428	56.000 Communications, except radio and TV	4750)	429	83.000 Base of the world industry				
429	56.000 Communications, except radio and TV	48 (cont. 480)	430	84.000 Household industry				
430	57 Radio and TV broadcasting	49	431	84.000 Household industry				
ELECTRIC, GAS, WATER, AND SANITARY SERVICES								
431	58 Electric, gas, water, and sanitary services	50	432	85.000 Inventory valuation adjustment				
432	58.000 Electric services (utilities)	51, 54, 55	433	VALUE ADDED AND FINAL DEMAND				
433	58.000 Gas production and distribution (utilities)	52, 54, 55	434	86. Value added, real				
434	58.000 Water supply and sanitary services	53-7, 58, 7200, 882	435	86. Employee compensation				
WHOLESALE AND RETAIL TRADE			436	86. Interest-bearing rates				
435	59 Wholesale trade	58, 59 (real, intermediate value add.,	437	86. Property-type income				
436	59.000 Retail trade	59-7, 59, 7200, 882	438	87. Personal consumption expenditures				
FINANCE, INSURANCE, AND REAL ESTATE			439	91.000 Personal consumption expenditures				
437	60 Finance and insurance	60	440	91.000 Personal consumption expenditures				
438	60.000 Credit agencies	61 (cont. pt. 610, 67	441	92. Gross private domestic fixed investment				
439	60.000 Security and commodity brokers	62	442	92.000 Gross private domestic fixed investment				
440	60.000 Insurance carriers	63	443	93. Change in business inventories				
441	60.000 Insurance agents and brokers	64	444	93.000 Change in business inventories				
SERVICES			445	94. Exports				
442	61 Real estate and rental	65-6, pt. 1321	446	94. Imports				
443	61.000 Owner-occupied dwellings	66-6, pt. 1321	447	95. Federal Government purchases, national defense				
444	61.000 Real estate	67	448	96.000 Federal Government purchases, national defense				
BUSINESS SERVICES			449	97. Federal Government purchases, nonmilitary				
445	62 Haircut and laundry, personal and repair services (other than	67 (cont. 67-6, 70-4,	450	98. State and local government purchases, education				
446	62.000 Hotels and lodging places	70-4	451	98.000 State and local government purchases, education				
447	62.000 Personal and repair services, except hair salon and beauty and barber shops	70-4	452	99. State and local government purchases, other				
448	62.000 Beauty and barber shops	70-4	453	99.000 State and local government purchases, other				
MISCELLANEOUS BUSINESS SERVICES			454	OTHER SYMBOLS				
449	63 Business services	70-4 (cont. 70-6, 70-7,	455	T.I.C. Total intermediate use				
450	63.000 Miscellaneous business services	70-7	456	T.F.D. Total final demand				
451	63.000 Advertising	71	457	T.D.O. Total domestic output				
452	63.000 Miscellaneous professional services	71	458	Imports				
453	64 Cleaning and dressing places	71	459	T.I.I. Total intermediate inputs				
454	64.000 Laundry and cleaning places	71	460	V.A. Value added				
455	65 Automobile repair and services	71	461	T.I.O. Total industry output				
ADMISSIONS			462					
456	66 Admissions	71	463					
457	66.000 Medical services	71	464					
458	66.000 Amusement and recreation services	71	465					
459	67 Health, educational, and social services and nonprofit organizations	801-3, 8041	466					
460	67.000 Doctors and dentists	804	467					
461	67.000 Hospitals	804, 8041, 807-5	468					
462	67.000 Other medical and health services		469					

1. The 1977 Input-Output table is based on the conversion of the official 1972 BEA "base" and "make" tables to an industry by industry table and then updating this to 1977 using a RAS technique. This work was completed under contract for the U.S. Forest Service.

3. In the 1913 RFC agreement, as

4. In the 1972 SIC, government enterprise activities are generally classified with the similar private activity. In I-O activities of enterprises are classified in groups 78 and 79 and the corresponding SIC's are shown except for 78-0400 and 79-0300, each of which includes a number of SIC's and several activities for which no comparable SIC exists.

ATTACHMENT 3

QUESTIONNAIRE INSTRUCTIONS

This questionnaire asks for information about the economics of your business and we urge you to provide as much detail as possible. Questions refer to business operations during 1980; but if you prefer to give information about other years, please specify which year you are using.

We have assumed that your business falls into one of the industrial sectors listed in Question 1 below. If you operate more than one business in one or more of these sectors, please telephone collect to Dr. Dennis M. King at 714/265-6335 or Dr. Kenneth L. Shellhammer at 714/239-0888 for additional instructions. Also, if you have any questions at all about the questionnaire or the overall study please do not hesitate to telephone collect to either Dr. King or Dr. Shellhammer.

QUESTIONNAIRE FOR SEAFOOD PROCESSORS/DISTRIBUTORS

- 1) What is the primary nature of your business?
(CHECK ONE ONLY:)

- Distributor, Wholesaler, Processor
 Broker, Import/Export Business
 Restaurant -- Seafood Specialty House
 Restaurant -- Other (with California Fish and Game, Fish License)
 Seafood Markets (specializing in fresh, semi-processed, or processed fish)
 Non-Seafood Markets (supermarket chains, small variety stores, etc.)
 Canners (tuna, salmon, sport-fish, etc.)
 Other Businesses, specify by circling (smokers, specialty packers, bait shops, worm farms, fish farms, other)

- 2) For what year are you supplying the data? _____

- 3) SALES: Please indicate in the first column below what percentage of your sales were made to each of the types of customer listed. In the second column, indicate what percentage of those sales were made to California-based firms or California residents.

Type of Customer	Percent of Total Sales	California-Based Firms or Individuals
Consumers	%	%
Hospitals	%	%
Military Institutions	%	%
Prisons	%	%
Other Institutions (specify: _____)	%	%
Retail Fish Markets	%	%
Other Retail Markets	%	%
Fish Restaurants	%	%
Other Restaurants	%	%
Other Handlers (distributors, wholesalers, processors, brokers)	%	%

- 4) PURCHASES: Please list below what quantity of each raw fish species you purchased during 1980 and the cost (in dollars) of those purchases. In the last column, indicate what percentage was purchased from firms outside California.

<u>Species Type</u>	<u>Total Amount (\$) Purchased in 1980</u>	<u>Percent (%) Purchased Outside California</u>
Crustaceans (shrimp, crab, lobster)	_____	_____
Mollusks (clams, abalone, squid, oyster)	_____	_____
Flatfish (sole, flounder, halibut)	_____	_____
Wetfish (anchovy, sardine, herring)	_____	_____
Sablefish, Hake, Rockfish	_____	_____
Sharks, Rays, Skates	_____	_____
Salmon (King, Silver, Pink)	_____	_____
Billfish (swordfish, marlin, etc.)	_____	_____
Tuna	_____	_____
Other, circle which species (cod, bass, croaker, perch, etc.)	_____	_____

- 5) EXPENSES: Please list below what proportion of your total 1980 expenses was made up by each of the items shown. You may report either actual dollar amounts (\$) or percentage of your total 1980 costs (%), but please indicate which measure you are using. In the last column, indicate what proportion was paid to firms outside California. Note: If any individual "Other" type of expense exceeded 3% of your total expenses, please be sure to break it out.

<u>Type of Expenditure</u>	<u>Amount (\$ or Percent of Total Cost)</u>	<u>Percent (%) Spent Outside California</u>
<u>A. Material Costs</u>		
Raw Fish Purchased (Total from Question 3)	_____	_____
Other Goods Purchased (specify):	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

5) EXPENSES (continued)

<u>Type of Expenditure</u>	<u>Amount or Percent of Total Cost</u>	<u>Percent (%) Spent Outside California</u>
B. Expenses		
Operating Expenses		
Office Supplies	_____	_____
Freight Charges	_____	_____
Utilities	_____	_____
Telephone	_____	_____
Auto/Truck Expense	_____	_____
Professional Services (e.g., legal, advertising, account- ing, etc.)	_____	_____
Other Services (secretarial, janitorial, etc.)	_____	_____
Repairs and Maintenance	_____	_____
Building Depreciation	_____	_____
Building Rental/Lease	_____	_____
Equipment Depreciation	_____	_____
Equipment Rental/Lease	_____	_____
Other (specify):		
_____	_____	_____
_____	_____	_____
_____	_____	_____
Payroll Expenses		
Salaries and Wages	_____	_____
Payroll Taxes	_____	_____
Employee Benefits (health and welfare, insurance, pension)	_____	_____
Other, e.g., commissions, education, etc. (specify):		
_____	_____	_____
_____	_____	_____
_____	_____	_____
Financial Expenses		
Insurance	_____	_____
Licenses and Fees	_____	_____

5) EXPENSES (continued)

Type of Expenditure	Amount (\$ of Percent of Total Cost	Percent (%) Spent Outside California
Financial Expenses (cont'd)		
Taxes		
Federal	_____	_____
State	_____	_____
Local	_____	_____
Dividends and Return to Ownership/ Management	_____	_____
Finance Charges	_____	_____
Bad Debts	_____	_____
Other (specify): _____ _____ _____	_____	_____
Miscellaneous Expenses		
Dues and Subscriptions	_____	_____
Conventions, Travel, and Entertainment	_____	_____
Other (specify): _____ _____ _____	_____	_____

ATTACHMENT 4

SECTOR TITLE	SAMPLE #	SAMPLE REC USE	REVENUE / VESSEL	EMPLOY / VESSEL	REVENUE / EMPLOY
Groundfish Trawlers, N	24	22	1,707,949	77,634	4,12,939
Groundfish Trawlers, S	3	3	1,782,247	594,082	6,99,014
Shrimp Trawlers	5	5	340,089	108,018	2-3,43,207
Tuna Purse-seiners	6	6	14,951,696	2,491,949	14-14,144,130
Wetfish Setters	32	32	145,100	145,100	7-10,17,059
Herring Oilinettters	9	9	640,144	71,127	2,35,544
Other Oilinettters	32	28	1,413,071	50,467	4,12,617
Small Salmon Trollers	98	98	340,662	5,517	2,2,759
Large Salmon Trollers	97	94	4,167,182	46,822	2-3,18,729
Salmon/Crabbers	37	37	867,881	23,456	3,7,819
Salmon/Albacore	96	94	2,472,102	26,299	2,13,150
Long-Liners	8	7	87,917	12,360	4-5,2,791
Black Cod Pots	6	5	395,360	319,112	3-4,91,175
Crab/Lobster, N	14	13	838,890	64,930	3-4,18,437
Crab/Lobster, S	21	21	367,329	17,492	3-4,4,998
Baitboats, Tuna	16	16	2,520,630	157,539	7,22,506
Jigboats, Tuna	24	24	998,442	41,602	2,20,601
Diveboats	9	9	88,654	11,082	2,9,541
Harpoon, Billfish	35	35	781,693	22,334	2,11,167
	578	557			

ATTACHMENT 5

QUESTIONNAIRE INSTRUCTIONS

This questionnaire asks for information about your catches and expenses. The questions are self-explanatory and answers which supply the greatest detail possible would be appreciated.

If you own or operate more than one vessel and they are similar, you may pool information. If they are not similar, please telephone collect to Dr. Dennis King at 714/265-6335 or Dr. Kenneth Shellhammer at 714/239-0888 to ask for additional questionnaires. If you have any questions at all about the questionnaire or the overall study, please do not hesitate to telephone collect to Dr. King or Dr. Shellhammer at the above numbers. Your prompt responses will help a great deal.

Please indicate the number of vessels for which you are supplying data below. _____

QUESTIONNAIRE FOR SEAFOOD HARVESTERS

- 1) Did you fish full time or part time during 1980?

CHECK ONE ONLY:

- Full time
 Part time
 No fishing

- 2) Did you fish full time or part time during 1979?

CHECK ONE ONLY:

- Full time
 Part time
 No fishing

If you did not fish at all during either 1979 or 1980, please leave the remaining questions blank and return the questionnaire to us.

If you fished in 1979 but not in 1980, please complete the questionnaire using your 1979 figures.

If you fished in both 1979 and 1980, we request that you give us your 1980 figures. We realize that 1980 was not a normal fishing year and will adjust the data provided to account for this fact. Please assist us in making the proper adjustments by explaining how 1979 and/or 1980 differed from previous years when you operated the same business.

- 3) What size vessel do you operate? (Note each if more than one.)

tons feet in length

tons feet in length

tons feet in length

tons feet in length

- 4) What was your principal gear? (check one only)

Seine Pots/traps

Trawl Scuba

Troll Other (Specify: _____)

Gillnet

- 5) What was your secondary gear? (check one only)

Seine Pots/traps

Trawl Scuba

Troll Other (Specify: _____)

Gillnet No secondary gear

STATISTICAL ENTRY CODEOFFICE USE ONLY

1) _____

2) _____

3) _____

4) _____

5) _____

6) _____

7) _____

8) _____

9) _____

10) _____

11) _____

12) _____

13) _____

- 6) In which of the following areas is your vessel's home port located?
(Check one only)

Eureka area Santa Barbara area
 San Francisco area Los Angeles area,
 Monterey area San Diego area

- 7) LANDINGS: List below your 1980 landings in California and outside of California for each species you caught. You may record in pounds or tons, but please indicate which measure you are using.

<u>Species Number</u>	<u>Species Type</u>	<u>Amount Landed in California</u>	<u>Amount Landed Outside of California</u>
1	Crustaceans (shrimp, crab, lobster)	lbs/tons	lbs/tons
2	Mollusks (clams, abalone, squid, oyster)	lbs/tons	lbs/tons
3	Flatfish (sole, flounder, halibut)	lbs/tons	lbs/tons
4	Wetfish (anchovy, sardine, herring)	lbs/tons	lbs/tons
5	Sablefish, Hake, Rockfish	lbs/tons	lbs/tons
6	Sharks, Rays, Skates	lbs/tons	lbs/tons
7	Salmon (King, Silver, Pink)	lbs/tons	lbs/tons
8	Billfish (swordfish, marlin, etc.)	lbs/tons	lbs/tons
9	Tuna	lbs/tons	lbs/tons
	Other (cod, croaker, bass, perch, etc.), specify:		
10		lbs/tons	lbs/tons
11		lbs/tons	lbs/tons
12		lbs/tons	lbs/tons

- 8) SALES: List below the amount of your 1980 sales, by species, to each of the types of purchaser shown. Again please indicate whether you are recording pounds, tons, or dollars of total sales. You may use the species numbers shown in Question 7 for the first column response.

<u>Species Number</u>	<u>Calif. Brokers</u>	<u>Distributors/Processors</u>	<u>California Restaurants</u>	<u>Other California Purchasers</u>	<u>Sold Calif.</u>	<u>Total 1980 Sales</u>
						lbs/tons/\$
						lbs/tons/\$
						lbs/tons/\$
						lbs/tons/\$
						lbs/tons/\$
						lbs/tons/\$
						lbs/tons/\$

STATISTICAL ENTRY CODEOFFICE USE ONLY

14) _____

15) _____

16) _____

17) _____

18) _____

19) _____

20) _____

21) _____

22) _____

23) _____

24) _____

25) _____

26) _____

27) _____

28) _____

29) _____

30) _____

31) _____

32) _____

33) _____

34) _____

35) _____

36) _____

37) _____

38) _____

39) _____

40) _____

- 9) EXPENSES: List your 1980 costs for each of the categories shown below. Use dollar figures or percentage of total costs, but please indicate which you are using. In the right-hand column, please show how much of the amount stated was spent outside California, if any.

Expenses	<u>Total Spent</u> \$ / %	<u>Spent Outside of California</u> \$ / %
Gasoline		
Diesel Fuel		
Repairs/Maintenance		
Supplies/Provisions:		
Specify: _____ _____		
Dockage		
Capital Expenses (vessel or equipment):		
From Manufacturers		
From Wholesalers		
From Retailers		
Interest		
Depreciation		
Specify Any Major Capital Expenditure (by type):		
Insurance		
Other Expenses:		
Specify: _____ _____		
Taxes		
Federal		
State and Local		
Crewshares and Wages		
Total 1980 Expenses		

REMINDER: THIS IS AN ANONYMOUS QUESTIONNAIRE. PLEASE DO
NOT SIGN.

STATISTICAL ENTRY CODE

OFFICE USE ONLY

- 41) _____
 42) _____
 43) _____
 44) _____
 45) _____
 46) _____
 47) _____
 48) _____
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 70) _____
 71) _____
 72) _____

ATTACHMENT 6

PROTOCOL FOR INTERVIEW SESSIONS
WITH FISH HARVESTING SECTOR EXPERTS1. Fleet Characteristics

- a. Number of vessels; seasonal/annual fluctuations
- b. Vessel age; mean and distribution
- c. Vessel size; mean and distribution
- d. Crew size; mean and distribution

How do operating procedures and input/output relationships change with a through d?

2. Primary/Secondary Gear

- a. What types of gear are used; how often; why
- b. Significance of gear changes between seasons; between years
- c. Impacts of biological, technical, economic, political changes within seasons, between years

3. Fishing Intensity

- a. How many full-time/part-time fishermen
- b. Average number annual and seasonal fishing days
- c. Relationship of costs/catches to fishing time
- d. Changes in target species affect crew size, cost, etc.

4. Fish Abundance/Availability/Catchability

- a. 1980 vs previous years and outlook
- b. Impact of 4 on 2 and 3, etc.
- c. Distance of fishing areas for primary, secondary species

5. Fish Markets

- a. Ex-vessel market size; number of buyers/sellers; alternative markets
- b. Volume landings; distribution throughout season, seasonal price fluctuations
- c. Stability of ex-vessel prices for primary and secondary species; effect of pricing on fishing activities
- d. 1980 vs earlier years and outlook

6. Federal and State Regulations

- a. Impacts on fishing activities, prices, cost of fishing
- b. Special circumstances during 1980
- c. Stability of regulations and expected changes for 1980 conditions

AGENDA FOR FISHERMEN REVIEW OF INPUT-OUTPUT DATA

Conducted at Headquarters of
Pacific Coast Federation of Fishermen's Association
Sausalito, CA

April 28 and 29, 1981

TUESDAY APRIL 28, 1981

- 10:00 - 11:00 a.m. King/Shellhammer
- a. Outline I-O model of California fisheries
 - b. Discuss methods of data collection, data analysis and uses of I-O model
 - c. Demonstrate use of I-O model using fishery sector of CBARC model
 - d. Outline information required from reviewers and intended users
- 11:00 - 12:00 Noon LUNCH
- 12:00 - 1:30 p.m.
- 1:30 - 3:00 p.m. Review and discussion of each Harvesting Sector Including:
 - Size and condition of fleets
 - Location of major fleets
 - Primary and secondary gear
 - Primary and secondary target species
 - Market conditions and prices
 - Political and regulatory setting
 - Special industry problems
- 3:00 - 4:30 p.m. Review of Primary Data (Mail Survey)
 - Assessment of output/market distribution
 - Assessment of input/cost distribution
 - Criteria for resectoring harvestors
 - 1980 vs past years
 - 1980 vs future years

WEDNESDAY APRIL 29, 1981

- 9:00 - 11:00 a.m. Review of Secondary Data (Published Work)

AGENDA (Continued) Page 2

- Individual reviewers evaluate and rank relevance of published cost and earnings reports with regard to differences in:
 - Operating costs
 - Target species
 - Fishing and sea conditions
 - Market and price conditions
 - Political and regulatory conditions

11:00 - 12:00 Noon

Review of Fish Processing Sectors

- Sector definitions
- Size, location and condition of exvessel markets

12:00 - 1:00 p.m.

Estimate distributions of sales by species/by sector to various categories of fish buyers

1:00 - 2:00 p.m.

LUNCH

2:00 - 3:00 p.m.

Clean up.