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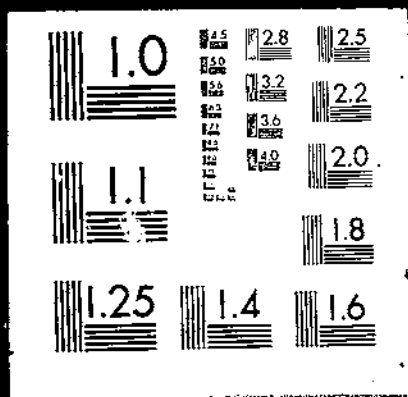
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ESTABLISHING A TROUT-MARKETING COOPERATIVE.

JAMES L. GOFF, ET AL

ECONOMICS, STATISTICS, AND COOPERATIVES SERVICE, WASHINGTON, DC.

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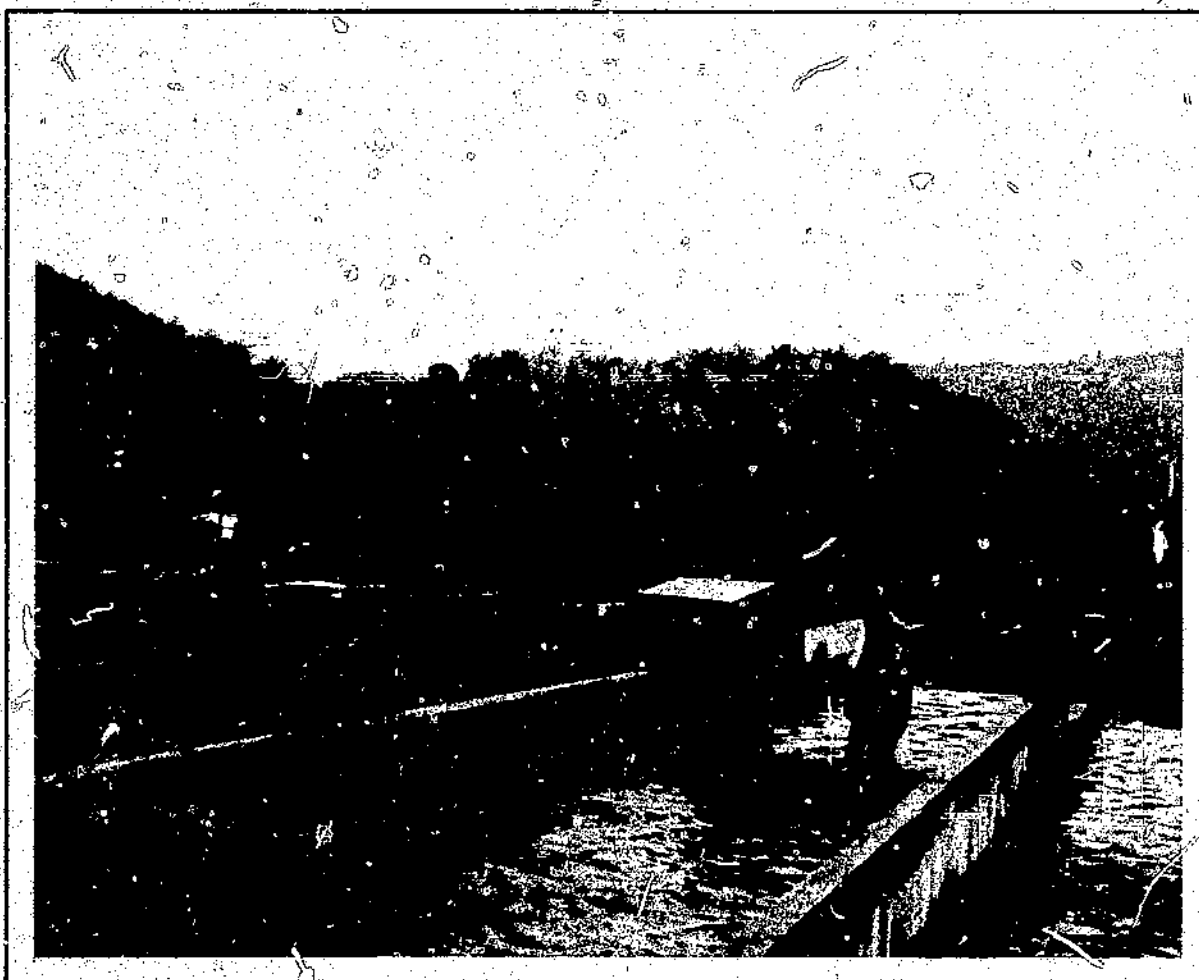
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Establishing a Trout-Marketing Cooperative

James L. Goff
Ralph W. Dutrow
Raymond Williams



United States
Department of
Agriculture

Economics,
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Cooperatives
Service

Farmer
Cooperative
Research
Report No. 12

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ESTABLISHING A TROUT-MARKETING COOPERATIVE by James L. Goff, Ralph W. Dutrow, and Raymond Williams. Cooperative Development Division in the Economics, Statistics, and Cooperatives Service of the U.S. Department of Agriculture. Farmer Cooperative Research Report No. 12.

ABSTRACT

To meet the volume requirements of new markets like restaurants and supermarkets, trout growers are considering forming a cooperative to process and market the fish. The growers say they would commit up to 1,260,519 pounds of trout to a cooperative. That volume will require the cooperative to raise \$329,500 for building, equipment, and initial operating capital, and to employ approximately 13 people on a full- or part-time basis. The cooperative's annual net income is projected at \$23,955 by the third year.

Keywords: Trout, eviscerating machine, method of haul, cost analysis, cash flow, production of trout, feed sales, trout marketing, trout processing.

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→ To meet the volume requirements of new markets like restaurants and supermarkets, trout growers in the Southern Appalachians are considering forming a cooperative to process and market the fish. The growers say they would commit up to 1,260,519 pounds of trout to a cooperative. That volume will require the cooperative to raise \$329,500 for building, equipment, and initial operating capital, and to employ approximately 13 people on a full- or part-time basis. The cooperative's annual net income is projected at \$23,955 by the third year.

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Job description	Transport refrigeration	

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Cooperative	North Carolina
Establishing	Seafood
Eviscerating machine	South Carolina
Feed sales	Tennessee
General manager	Volume

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PREFACE

In January 1978, the Southern Appalachian Trout Growers Association, Inc., requested that the Cooperative Development Division of the Economics, Statistics, and Cooperatives Service (ESCS) conduct a feasibility study for a proposed trout-marketing cooperative including possible establishment of a processing plant.

The division conducted the study, which included:

- a. A sample survey of 26 of the 75 potential members.
- b. A sample survey of 25 different potential market outlets.
- c. Estimates of the types of facilities and equipment needed at various levels of production.
- d. Estimates of capital requirements necessary to purchase equipment, to construct or lease facilities, and to operate the business.
- e. The preparation of a long-term financing program based on income and expenses, the financial inputs of members and creditors, and debt-service needs.

Field visits were made by ESCS staff who met with individual growers and groups of growers to observe their facilities and operations and to ascertain the need for and interest in forming a cooperative. Potential members, at their request, were advised on how to form a cooperative.

Market needs were determined from discussions with trout wholesalers and retailers in principal markets.

Trout growers, equipment and building suppliers, The Tennessee Valley Authority, the National Marine Fisheries Service, and State and Federal Government agencies from all over the country assisted ESCS in determining the equipment and facility needs that are discussed in the study; their assistance is appreciated. "Cost and Returns of Alternative Mountain Trout Processing Facilities" by J. E. Easley, Jr. (Economics Information Report No. 47, June 1976, Department of Economics and Business, North Carolina State University at Raleigh) was used as a basis for determining many of the labor requirements presented in this study. The authors also thank Karl Kauffmann, coordinator of the Southern Appalachian Trout Growers Association, for his assistance and cooperation in this study, especially in aiding them to identify growers, potential market outlets, and contacts concerning methods of hauling trout to the processing plant.

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HIGHLIGHTS

The demand for trout is strong, but the fish are available only in limited quantities. Individual producers in western North Carolina, eastern Tennessee, and northern Georgia cannot satisfy the large quantities that restaurants and supermarkets require. The producers' reliance on small local outlets for their trout has depressed the price and their returns. Few individual producers have processing facilities or freezer storage for the harvested trout.

A processing and marketing cooperative for trout would fill an existing gap. It could provide the market with a single agent capable of furnishing an adequate quantity and quality of trout. The cooperative could provide its members with a marketing agent, thereby increasing the demand for their trout by offering frozen fish (which individual growers cannot now offer) and relieving them of the problems of transportation and processing.

The co-op could also sell feed to producers. Present local supplies are erratic and quite expensive. The volume of feed needed by members indicates that the co-op could act as a central supplier and realize an operating margin of 10 percent.

A processing and marketing cooperative would be economically viable. It would employ about 13 people, mainly part-time, and its equipment needs would include an eviscerating machine and adequate freezer storage. The least expensive method of transporting the trout from the growing ponds to the processing plant is in tubs filled with ice in a diesel-powered refrigerated truck.

By following the recommendations in this study, the co-op members should:

1. Increase their sales by expanding their markets.
2. Decrease their individual labor requirements by having the co-op handle their marketing and feed procurement.
3. Increase their income by receipt of their share of the co-op's net margins, after adequate reserves have been accumulated.

RECOMMENDATIONS

A processing and marketing cooperative would enable producers to expand their market (by making large quantities available to institutional customers) and to offer a new product line (frozen fish) that individual producers are unable to finance. The favorable recommendations in this study are based on assumptions that all members will patronize the cooperative in the sale of trout and purchase of feed. Based upon our findings, it is feasible for a cooperative to operate successfully if the following conditions are met:

1. All stock purchases shown in the feasibility study will be made and the proceeds deposited in a stock escrow account before any equity capital or loan funds are disbursed.
2. A responsible accounting firm is employed before any loan funds are disbursed, before any construction is started, and before equipment is purchased. Receipts and disbursements should be monitored constantly and the necessary reports made to the lender.
3. The lender should act as an escrow agent to assure that construction and equipment purchases are as planned.
4. Competitive bidding should be required by the board of directors. Where possible, three or more bids should be submitted for each item included in the project.
5. A professional manager should be hired who has adequate experience in marketing seafood and he should have the necessary authority to market trout.
6. Marketing agreements should be signed by all members and strictly enforced.
7. Members should purchase feed through the cooperative.
8. The trout should be hauled to the processing plant by placing them directly in tubs of ice and allowing them to suffocate en route.
9. Operating statements should be completed monthly in years 1 and 2 and board meetings should be held for review of each when completed.
10. The net margins shown in the first 3 years of operation will be treated as additional retains or reserves to build a sound business and only a part of them, if realized, will be returned to members as dividends until the cooperative is in a sound financial condition.
11. The board of directors should establish a training program for board members, co-op members, and management of the cooperative so that all will have a better understanding of their responsibilities. Emphasis should be placed on quality, efficiency, and effective marketing. The Cooperative Development Division of the Economics, Statistics, and Cooperatives Service will provide assistance, if needed and requested.
12. The co-op should handle supplies on an order basis, pooling orders so that savings can be passed on to members. It should also pool-order fingerlings (up to about 3 inches long) and eyed (fertile) eggs from dependable breeders.

13. The co-op should offer a program of custom processing (for a fee) for trout that the members do not want to commit to the co-op for sale. This would offer the members an additional service while bringing income to the co-op. Freezing and storage space could also be offered (for a fee) when available.
14. The details of the operation, such as dress-out percentage and pounds of trout boned per worker, should be monitored closely.

Establishing A Trout-Marketing Cooperative

James L. Goff, Ralph W. Dutrow, and Raymond Williams ^{1/}

INTRODUCTION

This report describes the operating procedures necessary to establish a successful trout-marketing cooperative. The study assesses the production necessary to support a processing plant, the best method of hauling trout from the farm to the processing plant, the costs involved in operating a processing plant, machine-gutting versus hand-gutting costs, market research, and the development of a financing package.

The report was undertaken at the request of the Southern Appalachian Trout Growers Association (SATGA). The grower-members of this association were concerned with the best method for expanding sales of their trout because the growers had found that their individual volume was insufficient to break into new markets that require large quantities. The report concludes that, by forming a processing and marketing cooperative, growers will be able to offer uniformly high-quality trout in sufficient quantities throughout the year. This will allow them to substantially increase their market areas.

BACKGROUND INFORMATION

Data in this report are based on a survey we conducted of 26 producers. The results of the survey are shown in table 1. The distribution of the respondents by size of operation is shown in table 2.

Twenty-four of the twenty-six producers indicated that they would be willing to purchase stock in a cooperative. The remaining two individuals deferred their decision until more data are available. We projected the membership to be the 26 farms surveyed in western North Carolina, eastern Tennessee, and northern Georgia (see fig. 1).

Trout harvested in 1977 by these potential members ranged from 0 to 180,000 pounds and their trout-growing experience ranged up to 26 years, with an average of 6.9 years (table 1).

Growers expressed optimism in the trout industry. Twenty (77 percent) answered that they were planning a significant increase in their production in the near future.

The 26 producers spent \$286,339 for feed in 1977, \$46,475 on equipment, and \$13,800 for eyed (fertile) eggs and indicated a desire for the co-op to investigate handling these items.

^{1/} Goff is an agricultural marketing specialist, Dutrow is an agricultural economist, and Williams is a senior cooperative development officer; all are with the Economics, Statistics, and Cooperatives Service of the U.S. Department of Agriculture.

Table 1--Results of trout-producer survey

Survey number	Experience	Trout production		Plan to expand		Feed purchased
		1977	1978	Yes	No	1977
	Years	-- Pounds --				Dollars
1	6.0	20,000	20,000		X	5,500
2	2.0	2,500	11,200	X		945
3	10.0	72,000	72,000		X	6,000
4	.2	<u>1/</u>	10,000	X		<u>1/</u>
5	7.0	28,300	26,300		X	<u>2/</u>
6	3.0	3,000	10,000	X		840
7	15.0	6,600	6,400		X	3,200
8	5.0	8,000	40,000	X		12,000
9	16.0	100,000	100,000	X		36,000
10	26.0	180,000	252,000	X		60,000
11	12.0	50,400	50,400		X	2,520
12	15.0	20,000	20,000	X		15,000
13	8.0	8,000	8,000		X	2,800
14	4.0	30,000	30,000	X		<u>2/</u>
15	14.0	51,000	51,000	X		26,000
16	1.0	<u>1/</u>	22,000	X		<u>1/</u>
17	1.0	<u>1/</u>	60,000	X		<u>1/</u>
18	7.0	3,000	3,000	X		<u>2/</u>
19	5.0	35,000	35,000	X		11,400
20	1.0	<u>1/</u>	25,000	X		500
21	<u>2/</u>	<u>2/</u>	<u>2/</u>	X		<u>2/</u>
22	10.0	120,000	150,000	X		97,554
23	6.0	10,000	10,000	X		480
24	2.0	8,000	5,000	X		3,500
25	3.0	12,500	24,000	X		2,100
26	<u>1/</u>	<u>1/</u>	<u>1/</u>	X		<u>1/</u>
Total	179.2	768,300	1,041,300	20	6	286,339
Average	6.9	<u>3/</u> 38,415	<u>3/</u> 43,388	--	--	--

-- = Not applicable.

1/ Members with less than 1 full year production.

2/ Members who for one reason or another did not answer the indicated questions--mostly new operations lacking records.

3/ Averages of the members showing production in the respective years.

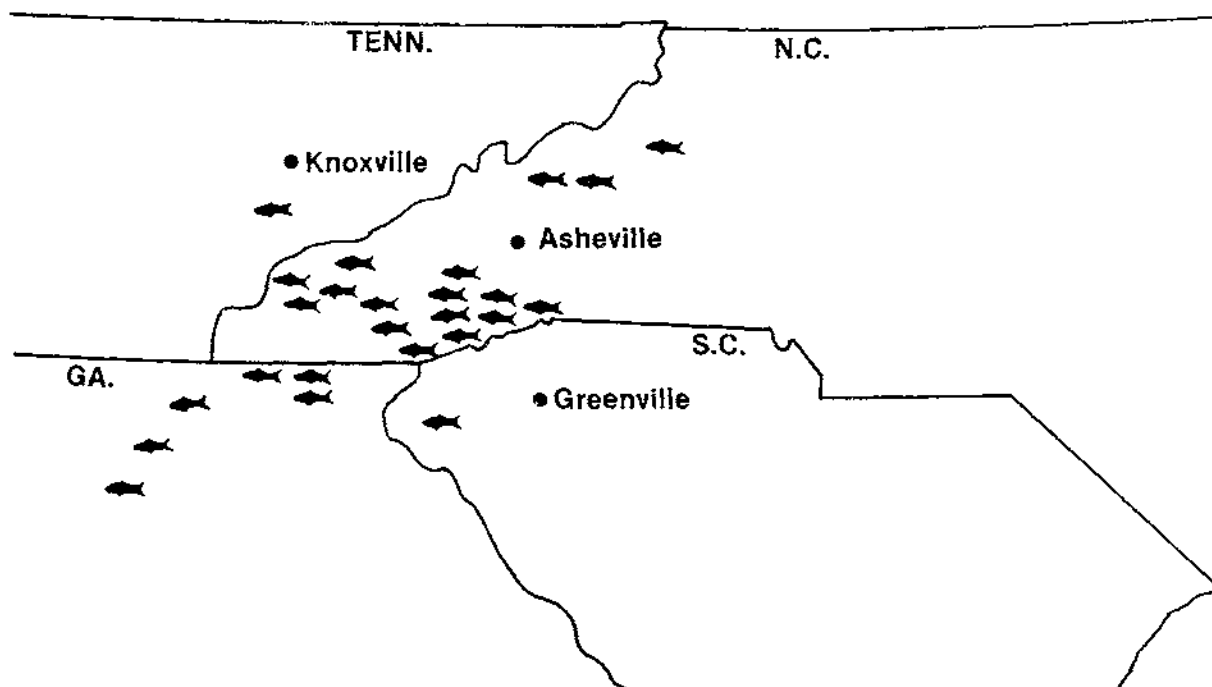
Table 2--Distribution of growers by size of operation, 1978

Number of growers	:	Trout produced	:	Total production
	:		:	
	:		Pounds	
4	:	5,000 and less		8,000
5	:	10,000-5,001		44,400
3	:	20,000-10,001		51,200
7	:	50,000-20,001		202,300
5	:	100,000-50,001		333,400
2	:	Over 100,000		402,000
Total	:			1,041,300

A market survey also was made. Data were collected from 25 different markets including retail, wholesale, and institutional outlets in North Carolina, South Carolina, and the Washington D.C. area. The 25 firms surveyed purchased a total of 409,700 pounds of fresh trout and 304,144 pounds of frozen trout in 1977. Of those surveyed, 53 percent are presently purchasing their trout from Idaho, 21 percent from North Carolina, 11 percent from Virginia, 5 percent from Colorado, and 5 percent from Japan.

The marketers' most common concern in the marketing of trout was low consumer demand at prevailing retail prices. The marketers felt that trout producers had not

Figure 1. Locations of Trout Producers Surveyed



been adequately involved in market promotion activities designed to encourage greater consumption of trout. Retailers in particular felt that a market promotion campaign, similar to campaigns of the milk and egg industries and including media advertisements as well as restaurant and supermarket displays, would stimulate consumer demand for trout. Many of those interviewed also were dissatisfied with the packaging used by Idaho processors, who virtually set the operating standards for the industry. An improved package could give SATGA a significant advantage over its competition.

Nearly all trout marketers said they would be willing to purchase trout from SATGA, assuming a dependable supply of a good quality product was available.

HAULING METHODS

There is no commonly accepted method of hauling trout to a processing plant. Four basic methods are currently used: live haul, live in very cold water (hypothermic), dead in salt water, and dead on ice.

Method 1--While still alive, the fish are hauled in freshwater tanks on a flatbed truck with aerators and other equipment; three tanks per truck and 500 to 800 pounds live weight per tank. Costs can be reduced by increasing the live weight per tank.

Method 2--The hypothermic method is presently used in California. The fish are placed in extremely cold water thereby decreasing their mobility, metabolism, and oxygen requirements. More live trout can thus be hauled in a given quantity of water.

Method 3--The trout are placed directly into tanks with a 27° F. saltwater solution, which kills the fish and prohibits their deterioration for several hours. The tanks can be very simple since there is no need for aerators and other equipment. The tanks, while still loaded with fish, can be removed from the truck, which can then return immediately to the production ponds for a new load of fish. The truck and driver are therefore used more efficiently.

Method 4--The fish are placed directly on ice in plastic tubs in a refrigerated truck. The fish suffocate while being chilled. This is the way most seafood is handled, but apparently has not been widely accepted in freshwater aquaculture.

Hauling the fish dead on ice (method 4) is the least expensive method, and (based on a study by the Cryovac Division of W. R. Grace and Co.) provides fish of a comparable quality as the other methods. There has been some question about possible bruising of trout with this method. The bruising might be prevented by having a portable electric kill tank on the truck to kill the trout before they are iced. This is not done by anyone at the present time. Estimated costs to install such a tank are \$300. This should be investigated further. One of the advantages of hauling fish on ice is that the same truck can be used for both farm pickup and customer delivery and can be driven by the same person. Also, when the truck is down for repairs, any refrigerated truck can be rented and used, since no special equipment is needed.

We calculated the equipment and plant needs for the volume of trout anticipated by SATGA the first year for each method shown in table 3. Tables 4 through 7 show the cash flows of each method of hauling for a cost comparison.

We also compared the costs of gasoline versus diesel trucks by method of haul. The estimated cost for a gas-powered six-wheel truck with a payload of approximately 14,000 pounds after the addition of a refrigeration unit is \$24,500 versus \$29,000 for a diesel of the same size. The increased initial cost of the diesel is recovered after approximately 65,000 miles (between 1 and 2 years of operation) because of lower

Table 3--Capital needs of four methods of hauling trout to processing plant

Item	Method 1--Live haul			Method 2--Hypothermic haul			Method 3--Saltwater			Method 4--Iced		
	Long-term capital	Equipment and trucks	Operating capital	Long-term capital	Equipment and trucks	Operating capital	Long-term capital	Equipment and trucks	Operating capital	Long-term capital	Equipment and trucks	Operating capital
	Dollars											
5 acres of land ^{3/}	12,000	--	--	12,000	--	--	--	--	--	--	--	--
3 acres of land ^{3/}	--	--	--	--	--	--	7,200	--	--	7,200	--	--
Boning tables, two	--	4,800	--	--	4,800	--	--	4,800	--	--	4,800	--
Building	41,250	--	--	41,250	--	--	41,250	--	--	41,250	--	--
Capital needed for supply purchases	--	--	50,000	--	--	50,000	--	--	50,000	--	--	50,000
Catch seines	--	--	100	--	--	100	--	--	100	--	--	100
Chill room	25,300	--	--	25,300	--	--	25,300	--	--	25,300	--	--
Electric killer ^{1/}	--	200	--	--	200	--	--	--	--	--	--	300
Eviscerating machine ^{2/}	40,574	--	--	40,574	--	--	40,574	--	--	40,574	--	--
Flatbed truck, diesel	--	18,500	--	--	18,500	--	--	18,500	--	--	--	--
Freezer	52,250	--	--	52,250	--	--	52,250	--	--	52,250	--	--
Freezer racks	--	172	--	--	172	--	--	172	--	--	172	--
Furnace	1,100	--	--	1,100	--	--	1,100	--	--	1,100	--	--
Fresh packaging material	--	--	5,309	--	--	5,309	--	--	5,309	--	--	5,309
Handtruck	--	317	--	--	317	--	--	317	--	--	317	--
Holding tanks	--	--	--	--	--	--	--	2,400	--	--	--	--
Ice machines, two	28,270	--	--	28,270	--	--	28,270	--	--	28,270	--	--
Knives	--	--	100	--	--	100	--	--	100	--	--	100
Miscellaneous	--	--	500	--	--	500	--	--	500	--	--	500
Office equipment	--	1,500	--	--	1,500	--	--	1,500	--	--	1,500	--
Packaging materials	--	--	17,683	--	--	17,683	--	--	17,683	--	--	17,683
Plastic hauling containers	--	--	--	--	--	--	--	--	--	--	--	3,184
Raceways	5,600	--	--	5,600	--	--	--	--	--	--	--	--
Rainsuits and parkas	--	--	120	--	--	120	--	--	120	--	--	120
Refrigerated truck, diesel	--	29,000	--	--	29,000	--	--	29,000	--	--	29,000	--
Scales	--	1,495	--	--	1,495	--	--	1,495	--	--	1,495	--
Sewage system	700	--	--	700	--	--	700	--	--	700	--	--
Transporting tanks	--	6,000	--	--	2,500	--	--	--	--	--	--	--
Vacuum packager	25,940	--	--	25,940	--	--	25,940	--	--	25,940	--	--
Ventilating equipment	400	--	--	400	--	--	400	--	--	400	--	--
Water heater	700	--	--	700	--	--	700	--	--	700	--	--
Total	234,084	61,984	73,812	234,084	58,484	73,812	223,684	58,184	73,812	223,684	37,284	76,996
Total by method of haul	--	--	369,880	--	--	366,380	--	--	355,680	--	--	337,964

-- = Not applicable.

^{1/} Suggested but not included in totals.^{2/} Cost of eviscerating machine and building cost based on data gathered during September 1978. These costs were updated before the final capital prepared.^{3/} Five acres of land are required for live haul methods to allow for adequate holding areas. Not so in dead haul methods.

Table 4--Live haul, cash flow, year 1

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
								Dollars					
Cash received:													
Trout	: 39,188	42,170	73,482	136,175	132,038	125,425	128,425	127,304	84,665	65,910	82,134	50,536	1,087,452
Byproducts	: 220	236	412	763	740	703	720	713	474	369	460	283	6,093
Feed	: 19,381	19,381	43,607	58,142	58,142	58,142	53,297	58,142	38,762	24,226	33,916	19,381	484,519
Capital loan	: 234,500	--	--	--	--	--	--	--	--	--	--	--	234,500
Operating loan	: 74,000	--	--	--	--	--	--	--	--	--	--	--	74,000
Truck and equipment loan	: 62,000	--	--	--	--	--	--	--	--	--	--	--	62,000
Contingency loan	: 10,000	--	--	--	--	--	--	--	--	--	--	--	10,000
Total received	: 439,289	61,787	117,501	195,080	190,920	184,270	182,442	186,159	123,901	90,505	116,510	70,200	1,958,564
Cash outlay:													
Building	: 234,500	--	--	--	--	--	--	--	--	--	--	--	234,500
Equipment and truck	: 62,000	--	--	--	--	--	--	--	--	--	--	--	62,000
Operating capital	: 24,000	--	--	--	--	--	--	--	--	--	--	--	24,000
Cash disbursed--													
Trout	: 33,891	36,469	63,548	117,766	114,188	108,470	111,064	110,095	73,220	57,000	71,031	43,704	940,446
Feed	: 17,443	17,443	39,246	52,328	52,328	52,328	47,967	52,328	34,885	21,803	30,525	17,443	436,067
Loan payment	: 5,366	5,366	5,366	5,366	5,366	5,366	5,366	5,366	5,366	5,366	5,366	5,366	64,392
Labor	: 4,293	4,370	5,430	7,477	7,325	7,097	7,211	7,174	5,772	5,165	5,695	4,566	71,575
Electricity	: 1,839	1,839	1,839	1,839	1,839	1,839	1,839	1,839	1,839	1,839	1,839	1,839	22,068
Insurance	: 1,402	--	--	1,402	--	--	1,402	--	--	1,402	--	--	5,608
Packaging supplies	: 828	892	1,554	2,879	2,791	2,651	2,715	2,692	1,791	1,394	1,737	1,068	22,992
Telephone	: 500	200	200	200	200	200	200	200	200	200	200	200	2,700
Transportation	: 379	394	671	1,327	1,298	1,254	1,269	1,269	860	671	787	510	10,689
Legal fees and audit	: 200	200	200	200	200	200	200	200	200	200	200	200	2,400
Market promotion	: 196	211	367	681	660	627	642	637	423	330	411	253	5,438
Truck repairs	: 100	100	100	100	100	100	100	100	100	100	100	100	1,200
Maintenance	: 83	83	83	83	83	83	83	83	83	83	83	83	996
Office supplies	: 75	75	75	75	75	75	75	75	75	75	75	75	900
Property taxes	: --	--	--	--	--	--	--	--	--	--	--	--	6,058
Total outlay	: 387,095	67,642	118,679	191,723	186,453	180,290	180,133	182,058	124,814	95,628	118,049	81,465	1,914,029
Cash flow	: 52,194	-5,855	-1,178	3,357	4,467	3,980	2,309	4,101	-913	-5,123	-1,539	-11,265	44,535

-- = Not applicable.

Table 5--Hypothermic hauling, cash flow, year 1

[illegible]

-- = Not applicable.

Table 6--Saltwater hauling, cash flow, year 1

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Dollars													
Cash received:													
Trout	39,188	42,170	73,482	136,175	132,038	125,425	128,425	127,304	84,665	65,910	82,134	50,536	1,087,452
Byproducts	220	236	412	763	740	703	720	713	474	369	460	283	6,093
Feed	19,381	19,381	43,607	58,142	58,142	58,142	53,297	58,142	38,762	24,226	33,916	19,381	484,519
Capital loan	223,700	--	--	--	--	--	--	--	--	--	--	--	223,700
Operating loan	74,000	--	--	--	--	--	--	--	--	--	--	--	74,000
Trucks and equipment loan	58,500	--	--	--	--	--	--	--	--	--	--	--	58,500
Contingency loan	10,000	--	--	--	--	--	--	--	--	--	--	--	10,000
Total received	424,989	61,787	117,501	195,080	190,920	184,270	182,442	186,159	123,901	90,505	116,510	70,200	1,944,264
Cash outlay:													
Building	223,700	--	--	--	--	--	--	--	--	--	--	--	223,700
Equipment and truck	58,500	--	--	--	--	--	--	--	--	--	--	--	58,500
Operating capital	24,000	--	--	--	--	--	--	--	--	--	--	--	24,000
Cash disbursed--													
Trout	33,891	36,469	63,548	117,766	114,188	108,470	111,064	110,095	73,220	57,000	71,031	43,704	940,446
Feed	17,443	17,443	39,246	52,328	52,328	52,328	47,967	52,328	34,885	21,803	30,525	17,443	436,067
Loan payment	5,187	5,187	5,187	5,187	5,187	5,187	5,187	5,187	5,187	5,187	5,187	5,187	62,244
Labor	4,293	4,370	5,430	7,477	7,325	7,097	7,211	7,174	5,772	5,165	5,695	4,566	71,575
Electricity	1,839	1,839	1,839	1,839	1,839	1,839	1,839	1,839	1,839	1,839	1,839	1,839	22,068
Insurance	1,325	--	--	1,325	--	--	1,325	--	--	1,325	--	--	5,300
Packaging supplies	828	892	1,554	2,879	2,791	2,651	2,715	2,692	1,791	1,394	1,737	1,068	22,992
Telephone	500	200	200	200	200	200	200	200	200	200	200	200	2,700
Legal fees and audit	200	200	200	200	200	200	200	200	200	200	200	200	2,400
Market promotion	196	211	367	681	660	627	642	637	423	330	411	253	5,438
Transportation	161	161	248	555	555	541	541	541	380	307	321	234	4,545
Truck repairs	100	100	100	100	100	100	100	100	100	100	100	100	1,200
Maintenance	83	83	83	83	83	83	83	83	83	83	83	83	996
Office supplies	75	75	75	75	75	75	75	75	75	75	75	75	900
Property taxes	--	--	--	--	--	--	--	--	--	--	--	5,726	5,726
Total outlay	372,321	67,230	118,077	190,695	185,531	179,398	179,149	181,151	124,155	95,008	117,404	80,678	1,890,797
Cash flow	52,668	-5,443	-576	4,385	5,389	4,872	3,293	5,008	-254	-4,503	-894	-10,478	53,467

-- = Not applicable.

Table 7--Dead on ice hauling, cash flow, year 1

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Dollars													
Cash received:													
Trout	39,188	42,170	73,482	136,175	132,038	125,425	128,425	127,304	84,665	65,910	82,134	50,536	1,087,452
Byproducts	220	236	412	763	740	703	720	713	474	369	460	283	6,093
Feed	19,381	19,381	43,607	58,142	58,142	58,142	53,297	58,142	38,762	24,226	33,916	19,381	484,519
Capital loan	223,700	--	--	--	--	--	--	--	--	--	--	--	223,700
Operating loan	77,000	--	--	--	--	--	--	--	--	--	--	--	77,000
Trucks and equipment loan	37,500	--	--	--	--	--	--	--	--	--	--	--	37,500
Contingency loan	10,000	--	--	--	--	--	--	--	--	--	--	--	10,000
Total received	403,989	61,787	117,501	195,080	190,920	184,270	182,442	186,159	123,901	90,505	116,510	70,200	1,926,264
Cash outlay:													
Building	223,700	--	--	--	--	--	--	--	--	--	--	--	223,700
Equipment and truck	37,500	--	--	--	--	--	--	--	--	--	--	--	37,500
Operating capital	27,000	--	--	--	--	--	--	--	--	--	--	--	27,000
Cash disbursed--													
Trout	33,891	36,469	63,548	117,766	114,188	108,470	111,064	110,095	73,220	57,000	71,031	43,704	940,446
Feed	17,443	17,443	39,246	52,328	52,328	52,328	47,967	52,328	34,885	21,803	30,525	17,443	436,067
Loan payment	4,805	4,805	4,805	4,805	4,805	4,805	4,805	4,805	4,805	4,805	4,805	4,805	57,660
Labor	4,293	4,370	5,430	7,477	7,325	7,097	7,211	7,174	5,772	5,165	5,695	4,566	71,575
Electricity	1,839	1,839	1,839	1,839	1,839	1,839	1,839	1,839	1,839	1,839	1,839	1,839	22,068
Insurance	1,247	--	--	1,247	--	--	1,247	--	--	1,247	--	--	4,988
Packaging supplies	828	892	1,554	2,879	2,791	2,651	2,715	2,692	1,791	1,394	1,737	1,068	22,992
Telephone	500	200	200	200	200	200	200	200	200	200	200	200	2,700
Legal fees and audit	200	200	200	200	200	200	200	200	200	200	200	200	2,400
Market promotion	196	211	367	681	660	627	642	637	423	330	411	253	5,438
Transportation	161	161	248	555	555	541	541	541	380	307	321	234	4,545
Truck repairs	100	100	100	100	100	100	100	100	100	100	100	100	1,200
Maintenance	83	83	83	83	83	83	83	83	83	83	83	83	996
Office supplies	75	75	75	75	75	75	75	75	75	75	75	75	900
Property taxes	--	--	--	--	--	--	--	--	--	--	--	5,387	5,387
Total outlay	353,861	66,848	117,695	190,235	185,149	179,016	178,689	180,769	123,773	94,548	117,022	79,957	1,867,562
Cash flow	53,128	-5,061	-194	4,845	5,771	5,254	3,753	5,390	128	-4,043	-512	-9,757	58,702

-- = Not applicable.

fuel costs (tables 8, 9, and 10). For our comparison, a diesel truck was used throughout.

Tables 9 and 10 show a comparison of transportation cost in years 2 and 3 for hauling trout to the plant. Note that, in years 2 and 3, driver labor costs are included in the cost-per-mile figure. In year 1, driver expense is included in the total labor costs shown in the cash flow for the plant.

The cost differences over 3 years among the hauling methods are shown in table 11. Variable costs between methods, such as costs for electricity and those reflecting the different payment schedules on trout were held constant. This was done to facilitate the comparisons of the different methods. Hauling live costs \$116,181 more over 3 years than hauling iced.

OPERATING PROCEDURES AND REQUIREMENTS

The following sections describe how the cooperative will function. They outline the trout production and packaging methods and feed sales. Also included are the labor and capital requirements as well as how the cooperative will finance its operations the first 3 years.

Trout Production

Estimates of production and commitment to the co-op were taken directly from the 26 producer survey questionnaires. Table 12 shows estimated production by month and also pounds of trout the members felt they would commit to the co-op. Note that in the first year, 51 percent of the total production would be committed; in the second year, 53 percent; and in the third year, 56 percent. Producers are currently selling trout in markets that they, as individuals, have developed. The producers indicated that they want to continue to meet the requirements of those markets on an independent basis as they have in the past. The purpose of the co-op would be to provide a joint marketing program to expand into areas that individual growers had not been able to penetrate before. The co-op could sign contracts guaranteeing volumes sufficient to meet the needs of large markets. Individual producers cannot do that.

Trout sales by the co-op are projected to be 50 percent fresh and 50 percent frozen. Terms of sale recommended are net 10 days (payment due 10 days after deliveries). Allowing an additional 4 days for payments to be received in the mail would result in 50 percent of the receipts from each month's sales being received in the month sold and 50 percent being received in the following month. This pattern is followed in the cash flows for the 3 years. In order to correlate sales with purchases, payments to members are shown in the cash flows on a 2-week deferred basis. This will significantly reduce the amount of operating capital the co-op needs to borrow.

To forecast the prices for trout over the next 3 years (shown in table 12) we took average prices from the producers' surveys and calculated the change in prices the last 2 years. The average 1977 price for trout in the round on the farm was \$1.18 per pound; in 1978 it was \$1.22, an increase of 3 percent over 1977. Successive 3-percent price increases would raise prices to \$1.25 per pound in 1979, \$1.29 per pound in 1980, and \$1.33 per pound in 1981. To assure itself an ample supply of trout for processing, the co-op will need to pay those prices to its members. Dressed trout prices changed only 2 percent from 1977 to 1978. The average dressed trout price the members received in 1978 was \$1.94 per pound. Successive 2-percent price increases

Table 8--Mileage and transportation costs, year 1

Item	Unit	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Trout committed to cooperative	Pounds	27,113	29,175	50,838	94,213	91,350	86,776	88,851	88,076	58,576	45,600	56,825	34,963	752,356
Trips to plant:														
Live haul 1/	Number	18	19	34	63	61	58	59	59	39	30	38	23	501
Live haul 2/	do.	11	12	21	39	38	36	37	37	25	20	24	15	325
Hypothermic 3/	do.	3	3	5	11	11	10	10	10	7	6	7	4	87
Saltwater or iced 4/	do.	3	3	5	10	10	9	9	9	6	5	6	4	79
Trips to market	do.	2	2	3	7	7	7	7	7	5	4	4	3	58
Mileage:														
To market 5/	Miles	900	900	1,350	3,150	3,150	3,150	3,150	3,150	2,250	1,800	1,800	1,350	26,100
To plant: 6/														
Live haul 1/	do.	2,016	2,128	3,808	7,056	6,832	6,496	6,608	6,608	4,368	3,360	4,256	2,576	56,112
Live haul 2/	do.	1,232	1,344	2,352	4,368	4,256	4,032	4,144	4,144	2,800	2,240	2,688	1,680	35,280
Hypothermic 3/	do.	336	336	560	1,232	1,232	1,120	1,120	1,120	784	672	784	448	9,744
Saltwater or iced 4/	do.	336	336	560	1,120	1,120	1,008	1,008	1,008	672	560	672	448	8,848
Total:														
Live haul 1/	do.	2,916	3,028	5,158	10,206	9,982	9,646	9,758	9,758	6,618	5,160	6,056	3,926	82,212
Live haul 2/	do.	2,132	2,244	3,702	7,518	7,406	7,182	7,294	7,294	5,050	4,040	4,488	3,030	61,380
Hypothermic 3/	do.	1,236	1,236	1,910	4,382	4,382	4,270	4,270	4,270	3,034	2,472	2,584	1,798	35,844
Saltwater or iced 4/	do.	1,236	1,236	1,910	4,270	4,270	4,158	4,158	4,158	2,922	2,360	2,472	1,798	34,948
Transportation fuel cost:														
Live haul: 1/														
Gas	Dollars	583	606	1,032	2,041	1,996	1,929	1,952	1,952	1,324	1,032	1,211	785	16,443
Diesel	do.	379	394	671	1,327	1,298	1,254	1,269	1,269	860	671	787	510	10,689
Live haul: 2/														
Gas	do.	426	449	740	1,504	1,481	1,436	1,459	1,459	1,010	808	898	606	12,276
Diesel	do.	277	292	481	977	963	934	948	948	657	525	583	394	7,979
Hypothermic: 3/														
Gas	do.	247	247	382	876	876	854	854	854	607	494	517	360	7,168
Diesel	do.	161	161	248	570	570	555	555	555	394	321	336	234	4,660
Saltwater or iced 4/														
Gas	do.	247	247	382	854	854	832	832	832	584	472	494	360	6,990
Diesel	do.	161	161	248	555	555	541	541	541	380	307	321	234	4,545

1/ 1,500 pounds per load.

2/ 2,400 pounds per load.

3/ 8,700 pounds per load.

4/ 9,600 pounds per load.

5/ 450 miles round trip.

6/ Average 112 miles round trip.

Table 9--Mileage and transportation costs, year 2

Item	Unit	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Trout committed to cooperative	Pounds	32,098	34,410	97,373	98,048	125,185	119,448	121,948	116,173	78,623	58,910	75,335	46,948	1,004,499
Trips to plant:														
Live haul 1/	Number	21	23	65	65	83	80	81	77	52	39	50	31	667
Live haul 2/	do.	13	14	40	41	52	50	51	48	33	25	31	20	418
Hypothermic 3/	do.	4	4	12	12	15	14	14	14	9	7	9	6	120
Saltwater or iced 4/	do.	4	4	11	11	13	13	13	13	9	7	8	5	111
Trips to market	do.	3	3	8	8	10	9	10	9	6	5	6	4	81
Mileage:														
To market 5/	Miles	1,350	1,350	3,600	3,600	4,500	4,050	4,500	4,050	2,700	2,250	2,700	1,800	36,450
To plant: 6/														
Live haul 1/	do.	2,352	2,576	7,280	7,280	9,296	8,960	9,072	8,624	5,824	4,368	5,600	3,472	74,704
Live haul 2/	do.	1,456	1,568	4,480	4,592	5,824	5,600	5,712	5,376	3,696	2,800	3,472	2,240	46,816
Hypothermic 3/	do.	448	448	1,344	1,344	1,680	1,568	1,568	1,568	1,008	784	1,008	672	13,440
Saltwater or iced 4/	do.	448	448	1,232	1,232	1,456	1,456	1,456	1,456	1,008	784	896	560	12,432
Total:														
Live haul 1/	do.	3,702	3,926	10,880	10,880	13,796	13,010	13,572	12,674	8,524	6,618	8,300	5,272	111,154
Live haul 2/	do.	2,806	2,918	8,080	8,192	10,324	9,650	10,212	9,426	6,396	5,050	6,172	4,040	83,266
Hypothermic 3/	do.	1,798	1,798	4,944	4,944	6,180	5,618	6,068	5,618	3,708	3,034	3,708	2,472	49,890
Saltwater or iced 4/	do.	1,798	1,798	4,832	4,832	5,956	5,506	5,956	5,506	3,708	3,034	3,596	2,360	48,882
Transportation fuel cost: 7/														
Live haul: 1/														
Gas	Dollars	1,851	1,963	5,440	5,440	6,898	6,505	6,786	6,337	4,262	3,309	4,150	2,636	55,577
Diesel	do.	1,407	1,492	4,134	4,134	5,242	4,944	5,157	4,816	3,239	2,515	3,154	2,003	42,237
Live haul: 2/														
Gas	do.	1,403	1,459	4,040	4,096	5,162	4,825	5,106	4,713	3,198	2,525	3,086	2,020	41,633
Diesel	do.	1,066	1,109	3,070	3,113	3,923	3,667	3,881	3,582	2,430	1,919	2,345	1,535	31,640
Hypothermic: 3/														
Gas	do.	899	899	2,472	2,472	3,090	2,809	3,034	2,809	1,854	1,517	1,854	1,236	24,945
Diesel	do.	683	683	1,879	1,879	2,348	2,135	2,306	2,135	1,409	1,153	1,409	939	18,958
Saltwater or iced: 4/														
Gas	do.	899	899	2,416	2,416	2,978	2,753	2,978	2,753	1,854	1,517	1,798	1,180	24,441
Diesel	do.	683	683	1,836	1,836	2,263	2,092	2,263	2,092	1,409	1,153	1,366	897	18,573

1/ 1,500 pounds per load.

2/ 2,400 pounds per load.

3/ 8,700 pounds per load.

4/ 9,600 pounds per load.

5/ 450 miles round trip.

6/ Average 112 miles round trip.

7/ Transportation costs, which includes driver's wages, were 50 cents per mile for gas and 38 cents per mile for diesel.

Table 10--Mileage and transportation costs, year 3

Item	Unit	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Trout committed to cooperative	:Pounds :	39,613	42,800	124,188	118,413	148,525	143,388	161,888	145,003	103,363	76,450	60,325	96,563	1,260,519
Trips to plant:														
Live haul <u>1/</u>	:Number :	26	29	83	79	99	96	108	97	69	51	40	64	841
Live haul <u>2/</u>	: do. :	17	18	52	49	62	60	67	60	43	32	25	40	525
Hypothermic <u>3/</u>	: do. :	5	5	15	14	17	17	19	17	12	9	7	11	148
Saltwater or iced <u>4/</u>	: do. :	5	5	13	13	16	15	17	16	11	8	7	10	136
Trips to market	: do. :	3	3	10	9	12	11	13	11	8	6	5	8	99
Mileage:														
To market <u>5/</u>	:Miles :	1,350	1,350	4,500	4,050	5,400	4,950	5,850	4,950	3,600	2,700	2,250	3,600	44,550
To plant: <u>6/</u>														
Live haul <u>1/</u>	: do. :	2,912	3,248	9,296	8,848	11,088	10,752	12,096	10,864	7,728	5,712	4,480	7,168	94,192
Live haul <u>2/</u>	: do. :	1,904	2,016	5,824	5,488	6,944	6,720	7,504	6,720	4,816	3,584	2,800	4,480	58,800
Hypothermic <u>3/</u>	: do. :	560	560	1,680	1,568	1,904	1,904	2,128	1,904	1,344	1,008	784	1,232	16,576
Saltwater or iced <u>4/</u>	: do. :	560	560	1,456	1,456	1,792	1,680	1,904	1,792	1,232	896	784	1,120	15,232
Total:														
Live haul <u>1/</u>	: do. :	4,262	4,598	13,796	12,898	16,488	15,702	17,946	15,814	11,328	8,412	6,730	10,768	138,742
Live haul <u>2/</u>	: do. :	3,254	3,366	10,324	9,538	12,344	11,670	13,354	11,670	8,416	6,284	5,050	8,080	103,350
Hypothermic <u>3/</u>	: do. :	1,910	1,910	6,180	5,618	7,304	6,854	7,978	6,854	4,944	3,708	3,034	4,832	61,126
Saltwater or iced <u>4/</u>	: do. :	1,910	1,910	5,956	5,506	7,192	6,630	7,754	6,742	4,832	3,596	3,034	4,720	59,782
Transportation fuel cost: <u>7/</u>														
Live haul: <u>1/</u>														
Gas	:Dollars:	2,131	2,299	6,898	6,449	8,244	7,851	8,973	7,907	5,664	4,206	3,365	5,384	69,371
Diesel	: do. :	1,620	1,747	5,242	4,901	6,265	5,967	6,819	6,009	4,305	3,197	2,557	4,092	52,721
Live haul: <u>2/</u>														
Gas	: do. :	1,627	1,683	5,162	4,769	6,172	5,835	6,677	5,835	4,208	3,142	2,525	4,040	51,675
Diesel	: do. :	1,237	1,279	3,923	3,624	4,691	4,435	5,075	4,435	3,198	2,388	1,919	3,070	39,274
Hypothermic: <u>3/</u>														
Gas	: do. :	955	955	3,090	2,809	3,652	3,427	3,989	3,427	2,472	1,854	1,517	2,416	30,563
Diesel	: do. :	726	726	2,348	2,135	2,776	2,605	3,032	2,605	1,879	1,409	1,153	1,836	23,230
Saltwater or iced <u>4/</u>														
Gas	: do. :	955	955	2,978	2,753	3,596	3,315	3,877	3,371	2,416	1,798	1,517	2,360	29,891
Diesel	: do. :	726	726	2,263	2,092	2,733	2,519	2,947	2,562	1,836	1,366	1,153	1,794	22,717

1/ 1,500 pounds per load.

2/ 2,400 pounds per load.

3/ 8,700 pounds per load.

4/ 9,600 pounds per load.

5/ 450 miles round trip.

6/ Average 112 miles round trip.

7/ Transportation costs, which includes driver's wages were 50 cents per mile for gas and 38 cents per mile for diesel.

Table 11--Total variable costs by hauling method

Item	Live haul <u>1</u> /	Live haul <u>2</u> /	Hypothermic	Salt water	Iced
			<u>Dollars</u>		
Year 1:					
Capital outlay	320,500	320,500	317,000	306,200	288,200
Loan repayment	64,392	64,392	63,492	62,244	57,660
Transportation	10,689	7,979	4,660	4,545	4,545
Property taxes	6,058	6,058	5,992	5,726	5,387
Insurance	5,608	5,608	5,548	5,300	4,988
Total	407,247	404,537	396,692	384,015	360,780
Year 2:					
Loan repayment	64,392	64,392	63,492	62,244	57,660
Transportation	42,237	31,640	18,958	18,573	18,573
Property taxes	6,058	6,058	5,992	5,726	5,387
Insurance	5,608	5,608	5,548	5,300	4,988
Total	118,295	107,698	93,990	91,843	86,608
Year 3:					
Loan repayment	64,392	64,392	63,492	62,244	57,660
Transportation	52,721	39,274	23,230	22,717	22,717
Property taxes	6,058	6,058	5,992	5,726	5,387
Insurance	5,608	5,608	5,548	5,300	4,988
Total	128,779	115,332	98,262	95,987	90,752
Total all years	654,321	627,567	588,944	571,845	538,140
Savings over:					
Live haul <u>1</u> /	--	26,754	65,377	82,476	116,181
Live haul <u>2</u> /	--	--	38,623	55,722	89,427
Hypothermic	--	--	--	17,099	50,804
Saltwater	--	--	--	--	33,705

-- = Not applicable.

1/ 1,500 pounds per load.2/ 2,400 pounds per load.

Table 12--Trout production and commitment, costs, and income to cooperative

Year and month	Volume		Dressed weight <u>1/</u>	Cost to co-op	Income to co-op
	Produced	Committed			
	----- Pounds -----			----- Dollars -----	
1979: <u>2/</u>					
January	53,983	27,113	19,792	33,891	39,188
February	58,233	29,175	21,298	36,469	42,170
March	138,633	50,838	37,112	63,548	73,482
April	173,033	94,213	68,775	117,766	136,175
May	177,683	91,350	66,686	114,188	132,038
June	170,428	86,776	63,346	108,470	125,425
July	167,578	88,851	64,861	111,064	128,425
August	169,698	88,076	64,295	110,095	127,304
September	124,268	58,576	42,760	73,220	84,665
October	69,743	45,600	33,288	57,000	65,910
November	109,833	56,825	41,482	71,031	82,134
December	61,483	34,963	25,523	43,704	50,536
Total	1,474,596	752,356	549,218	940,446	1,087,452
1980: <u>3/</u>					
January	70,117	32,098	23,432	41,406	47,333
February	74,617	34,410	25,119	44,389	50,740
March	194,717	97,373	71,082	125,611	143,586
April	187,467	98,048	71,572	126,482	144,575
May	225,817	125,185	91,385	161,489	184,598
June	219,037	119,448	87,197	154,088	176,138
July	219,887	121,948	89,022	157,313	179,824
August	221,107	116,173	84,806	149,863	171,308
September	170,277	78,623	57,395	101,424	115,938
October	99,227	58,910	43,004	75,994	86,868
November	139,217	75,335	54,995	97,182	111,090
December	87,117	46,948	34,272	60,563	69,229
Total	1,908,604	1,004,499	733,281	1,295,804	1,481,227
1981: <u>4/</u>					
January	81,225	39,613	28,917	52,685	59,569
February	85,850	42,800	31,244	56,924	64,363
March	226,675	124,188	90,657	165,170	186,753
April	204,825	118,413	86,441	157,489	178,068
May	250,000	148,525	108,423	197,538	223,351
June	247,995	143,388	104,673	190,706	215,626
July	269,945	161,888	118,178	215,311	243,447
August	264,165	145,003	105,852	192,854	218,055
September	205,935	103,363	75,455	137,473	155,437
October	145,110	76,450	55,809	101,679	114,967
November	132,350	60,325	44,037	80,232	90,716
December	148,225	96,563	70,491	128,429	145,211
Total	2,262,300	1,260,519	920,177	1,676,490	1,895,563

^{1/} Dressed weight is 73 percent of committed volume to co-op.

^{2/} Cost to co-op is \$1.25 per pound of committed volume; income is \$1.98 per pound of dressed weight.

^{3/} Cost to co-op is \$1.29 per pound of committed volume; income is \$2.02 per pound of dressed weight.

^{4/} Cost to co-op is \$1.33 per pound of committed volume; income is \$2.06 per pound of dressed weight.

would raise the price of boned trout to \$1.98 per pound in 1979, \$2.02 per pound in 1980, and \$2.06 per pound in 1981.

The spread between prices per pound in the round and prices per pound dressed at first seems very favorable. However, approximately 27 percent of the weight of a trout in the round is lost when it is gutted and the backbone removed. Table 13 shows the monthly income that can be realized from shrink weight sold as byproducts at approximately 3 cents per pound. The costs of an adequate waste storage area were built into the eviscerating machine cost. If the waste loss is greater than 27 percent, the price paid to members must be lowered to maintain the proper margins. Careful monitoring of dressing losses will be required so that producer prices can be adjusted if necessary.

Packaging

We assumed that 50 percent of production will be sold fresh. All trout will be wrapped in plastic but only the fresh will need fiber boxes at the rate of one box per 30 pounds of trout. The boxes cost 58 cents each. We also assumed that: 40 percent of production would go in 10-ounce packages costing \$102.20 per 1,000; 40 percent in 5-pound bags costing \$140 per 1,000; and the remaining 20 percent in 15-pound bags costing \$177 per 1,000. This results in an average bag size of 4.1 pounds costing \$132 per 1,000. See table 14 for a breakdown of packaging needs by month.

Feed

Many of those surveyed raised the question of whether the proposed co-op could sell feed to producers. The feed usually purchased by producers is erratic in both supply and quality and often very expensive. Some producers order railcar loads of feed and then resell the surplus to other producers. Small growers must often call two or three places to find feed. Our investigation showed that the co-op could profitably sell feed to producers, although we recommend that the co-op not sell feed on credit until the co-op is firmly established.

Responses on the producer surveys indicated that the potential members had purchased 1,077,400 pounds of feed in 1977 and produced 708,400 pounds of trout. To project feed demand into 1979 and through 1981, we multiplied the 1977 feed requirement by the ratio of each year's estimated fish production divided by the 1977 production. Monthly requirements were correlated directly to monthly production estimates. We estimate that producers will need 2,243,147 pounds of feed in 1979, 2,902,632 pounds in 1980, and 3,440,549 pounds in 1981.

The price of feed is very flexible and difficult to predict. To establish price forecasts, we determined that both the mean and mode (the most frequently occurring) costs were \$20 per hundredweight in 1978. We assumed an 8-percent inflation rate per year thereafter and projected retail prices of \$21.60 per hundredweight (cwt) in 1979, \$23.35 per cwt in 1980, and \$25.20 per cwt in 1981. Feed manufacturers recommend that their dealers take a 10- to 12-percent gross margin on the feed. We used the 10-percent figure as a basis in our study and computed feed costs to the retailer of \$19.44 per cwt in 1979, \$21 per cwt in 1980, and \$22.70 per cwt in 1981. These projections are shown in table 15. At those prices, feed sales provide gross margins of \$48,452 in 1979, \$68,213 in 1980, and \$86,014 in 1981. These margins help substantially to offset some of the costs of processing trout while adding little actual expense to the co-op. Additional storage is about all that is needed. Feed can be delivered in the refrigerated truck to the members at the time their trout are

Table 13--Income to cooperative from trout waste products

Year and month	Trout	Waste	Sales ^{1/}
	- - - Pounds - - -		Dollars
1979:			
January	27,113	7,381	220
February	29,175	7,877	236
March	50,838	13,726	412
April	94,213	25,438	763
May	91,350	24,665	740
June	86,776	23,430	703
July	88,851	23,990	720
August	88,076	23,781	713
September	58,576	15,816	474
October	45,600	12,312	369
November	56,825	15,343	460
December	34,963	9,440	283
Total	752,356	203,199	6,093
1980:			
January	32,098	8,666	260
February	34,410	9,291	279
March	97,373	26,291	789
April	98,048	26,473	794
May	125,185	33,800	1,014
June	119,448	32,251	968
July	121,948	32,926	988
August	116,173	31,367	941
September	78,623	21,228	637
October	58,910	15,906	477
November	75,335	20,340	610
December	46,948	12,676	380
Total	1,004,499	271,215	8,137
1981:			
January	39,613	10,696	321
February	42,800	11,556	347
March	124,188	33,531	1,006
April	118,413	31,972	959
May	148,525	40,102	1,203
June	143,388	38,715	1,161
July	161,888	43,710	1,311
August	145,003	39,151	1,175
September	103,363	27,908	837
October	76,450	20,642	619
November	60,325	16,288	489
December	96,563	26,072	782
Total	1,260,519	340,343	10,210

^{1/} 3 cents per pound.

Table 14--Packaging needs of proposed trout-marketing cooperative

Year and month	Dressed weight	Packages <u>1/</u>	Cost <u>2/</u>	Fresh sales	Boxes	Cost <u>3/</u>	Total packaging
	Pounds	Number	Dollars	Pounds	Number	-- Dollars --	
1979:							
January	19,792	4,827	637	9,896	330	191	828
February	21,298	5,195	686	10,649	355	206	892
March	37,112	9,052	1,195	18,556	619	359	1,554
April	68,775	16,774	2,214	34,388	1,146	665	2,879
May	66,686	16,265	2,147	33,343	1,111	644	2,791
June	63,346	15,450	2,039	31,673	1,056	612	2,651
July	64,861	15,820	2,088	32,431	1,081	627	2,715
August	64,295	15,682	2,070	32,148	1,072	622	2,692
September	42,760	10,429	1,377	21,380	713	414	1,791
October	33,288	8,119	1,072	16,644	555	322	1,394
November	41,482	10,118	1,336	20,741	691	401	1,737
December	25,523	6,225	822	12,762	425	246	1,068
Total	549,218	133,956	17,683	274,611	9,154	5,309	22,992
1980:							
January	23,432	5,715	815	11,716	391	246	1,061
February	25,119	6,127	873	12,560	419	264	1,137
March	71,082	17,337	2,472	35,541	1,185	747	3,219
April	71,572	17,457	2,489	35,786	1,193	752	3,241
May	91,385	22,289	3,178	45,693	1,523	959	4,137
June	87,197	21,268	3,032	43,599	1,453	915	3,947
July	89,022	21,713	3,095	44,511	1,484	935	4,030
August	84,806	20,684	2,949	42,403	1,413	890	3,839
September	57,395	13,999	1,996	28,698	957	603	2,599
October	43,004	10,489	1,495	21,502	717	452	1,947
November	54,995	13,413	1,912	27,498	917	578	2,490
December	34,272	8,359	1,192	17,136	571	360	1,552
Total	733,281	178,850	25,498	366,643	12,223	7,701	33,199
1981:							
January	28,917	7,053	1,086	14,459	482	304	1,390
February	31,244	7,520	1,173	15,622	521	328	1,501
March	90,657	22,111	3,404	45,329	1,511	952	4,356
April	86,441	21,083	3,246	43,221	1,441	908	4,154
May	108,423	26,445	4,071	54,212	1,807	1,138	5,209
June	104,673	25,530	3,931	52,337	1,745	1,099	5,030
July	118,178	28,824	4,438	59,089	1,970	1,241	5,679
August	105,852	25,818	3,975	52,926	1,764	1,111	5,086
September	75,455	18,404	2,833	37,728	1,258	793	3,626
October	55,809	13,612	2,096	27,905	930	586	2,682
November	44,037	10,741	1,654	22,019	734	462	2,116
December	70,491	17,193	2,647	35,246	1,175	740	3,387
Total	920,177	224,434	34,554	460,093	15,338	9,662	44,216

1/ 4.1 pounds per package.

2/ \$132 per 1,000 in 1979; thereafter, increased 8 percent per year for inflation; \$142.56 per 1,000 in 1980; \$153.96 per 1,000 in 1981.

3/ 58 cents each in 1979; thereafter, increased 8 percent per year for inflation; 63 cents in 1980; and 68 cents in 1981.

Table 15--Feed volume, cost, and sales for proposed trout-marketing cooperative

Year and month	Volume	Cost	Sales
	<u>Pounds</u>	<u>Dollars</u>	
1979: <u>1/</u>			
January	89,726	17,443	19,381
February	89,726	17,443	19,381
March	201,883	39,246	43,607
April	269,178	52,328	58,142
May	269,178	52,328	58,142
June	269,178	52,328	58,142
July	246,746	47,967	53,297
August	269,178	52,328	58,142
September	179,452	34,885	38,762
October	112,157	21,803	24,226
November	157,020	30,525	33,916
December	89,725	17,443	19,381
Total	2,243,147	436,067	484,519
1980: <u>2/</u>			
January	116,105	24,382	27,113
February	116,105	24,382	27,111
March	290,263	60,955	67,776
April	290,263	60,955	67,776
May	348,316	73,146	81,332
June	319,290	67,051	74,554
July	319,290	67,051	74,554
August	348,316	73,146	81,332
September	261,237	54,860	60,999
October	145,132	30,478	33,888
November	203,184	42,669	47,443
December	145,131	30,478	33,888
Total	2,902,632	609,553	677,766
1981: <u>3/</u>			
January	137,622	31,240	34,681
February	137,622	31,240	34,681
March	344,055	78,100	86,702
April	309,649	70,290	78,032
May	378,461	85,911	95,372
June	378,461	85,911	95,372
July	412,866	93,721	104,042
August	412,866	93,721	104,042
September	275,244	62,480	69,361
October	206,433	46,860	52,021
November	106,433	46,860	52,021
December	240,837	54,670	60,691
Total	3,440,549	781,004	867,018

1/ Cost at \$19.44 per cwt; sales at \$21.60 per cwt.

2/ Cost at \$21 per cwt; sales at \$23.35 per cwt.

3/ Cost at \$22.70 per cwt; sales at \$25.20 per cwt.

harvested. Employees at the processing plant can help load and unload feed during slack times.

We did not include any delivery charges in the cash flow for feed. As long as the co-op can haul feed to the farm on the same trip that the trout are picked up, we see this as an added benefit to the members. However, if the situation arises where special trips are required, adequate charges should be set. The estimated operating cost of use of the diesel truck is 38 cents per mile including driver's wages; therefore, delivery charges should be higher than that.

Labor Requirements

Labor costs are shown in table 16. Only two of the employees, the manager and assistant manager-driver, will be hired full-time. The remaining employees are needed only in direct relationship to plant volume. This will necessitate the manager's being very aware of day-to-day personnel needs. Since most of the production occurs during school vacation, high school or college students can provide part of the labor force. Labor costs of a bookkeeper are not shown but could be hired as needed. We feel that the manager will be able to perform this duty initially. The assistant manager-driver position, as we envision it, is very important. The employee would inspect the trout as they grow, take purchase orders as deliveries or pickups are made, and inform the manager of conditions in the field. This person could also help the manager with the bookkeeping.

We had to investigate the economic advantages or disadvantages of purchasing an eviscerating machine before we could establish our labor costs for a processing plant. Such machines cost about \$35,000 in 1978, not including shipping or accessories, such as electric motors, a vacuum pump, and waste storage. These items raised the cost to approximately \$41,430. The following procedure convinced us that such a purchase was justified.

1. We assumed that the average person could gut 720 pounds of trout per day.
2. We divided each year's committed poundage by 720 to determine the number of worker days needed per year.
3. We multiplied the figure in number 2 above by the daily wage for an 8-hour day. In the first year, the hourly wage base was \$3.30 per hour plus 10 percent for benefits rounded off to \$3.60 per hour times an 8-hour day which equals \$28.80 wages per day. This figure was increased 8 percent per year in the second and third years for inflation. This step gives the annual labor costs for hand gutting.
4. To estimate machine costs, we used 8,000 pounds per day machine capacity divided into the annual production to get days of operation per year.
5. Step 4's answer was multiplied by 2 since two people are needed to operate the machine to get the number of worker days.
6. Number of worker days was multiplied by the same labor costs as in step 3 for each of the succeeding years.

Table 16--Labor requirements for proposed trout-marketing cooperative

Year and month	Volume committed	Work days per month required					Wages					Total
		Production 1/	Boners and	Processing plant	Assistant manager-	Manager	Boners and gutters,	Processing plant,	Assistant mgr.-driver,6/	Manager, 6/		
			gutters 2/	workers 3/	driver		\$28.80 per day	\$28.80 per day	\$64.64 per day	\$73.84 per day		
	Pounds			Days								
1979:												
January	27,113	3.4	28.2	17.0	21.7	21.7	812	476	1,403	1,602	4,293	
February	29,175	3.6	29.9	18.0	21.7	21.7	861	504	1,403	1,602	4,370	
March	50,838	6.4	53.1	32.0	21.7	21.7	1,529	896	1,403	1,602	5,430	
April	94,213	11.8	97.9	59.0	21.7	21.7	2,820	1,652	1,403	1,602	7,477	
May	91,350	11.4	94.6	57.0	21.7	21.7	2,724	1,596	1,403	1,602	7,325	
June	86,776	10.8	89.6	54.0	21.7	21.7	2,580	1,512	1,403	1,602	7,097	
July	88,851	11.1	92.1	55.5	21.7	21.7	2,652	1,554	1,403	1,602	7,211	
August	88,076	11.0	91.3	55.0	21.7	21.7	2,629	1,540	1,403	1,602	7,174	
September	58,576	7.0	60.6	36.5	21.7	21.7	1,745	1,022	1,403	1,602	5,772	
October	45,600	5.7	47.3	28.5	21.7	21.7	1,362	798	1,403	1,602	5,165	
November	56,825	7.1	58.9	35.5	21.7	21.7	1,696	994	1,403	1,602	5,695	
December	34,963	4.4	35.9	20.8	21.3	21.3	1,034	582	1,377	1,573	4,566	
Total 4/	752,356	93.7	779.4	468.8	260.0	260.0	22,444	13,126	16,810	19,195	71,575	
1980:												
January	32,098	4.0	33.2	20.5	21.7	21.7	1,033	605	1,515	1,731	4,884	
February	34,410	4.3	35.7	21.5	21.7	21.7	1,110	650	1,515	1,731	5,006	
March	97,373	12.2	101.3	61.0	21.7	21.7	3,150	1,845	1,515	1,731	8,241	
April	98,048	12.3	102.1	61.5	21.7	21.7	3,175	1,860	1,515	1,731	8,281	
May	125,185	15.6	129.5	78.0	21.7	21.7	4,027	2,359	1,515	1,731	9,632	
June	119,448	14.9	123.7	74.5	21.7	21.7	3,847	2,253	1,515	1,731	9,346	
July	121,948	15.2	126.2	76.0	21.7	21.7	3,925	2,298	1,515	1,731	9,469	
August	116,173	14.5	120.4	72.5	21.7	21.7	3,744	2,192	1,515	1,731	9,182	
September	78,623	9.8	81.3	49.0	21.7	21.7	2,528	1,482	1,515	1,731	7,256	
October	58,910	7.4	61.4	37.0	21.7	21.7	1,910	1,119	1,515	1,731	6,275	
November	75,335	9.4	78.0	47.0	21.7	21.7	2,426	1,421	1,515	1,731	7,093	
December	46,948	5.9	49.0	29.5	21.3	21.3	1,524	892	1,487	1,699	5,602	
Total	1,004,499	125.5	1,041.8	628.0	260.0	260.0	5/32,399	5/18,976	5/18,152	5/20,740	5/90,267	
1981:												
January	39,613	5.0	41.5	25.0	21.7	21.7	1,394	817	1,636	1,869	5,716	
February	42,800	5.4	44.8	27.0	21.7	21.7	1,505	882	1,636	1,869	5,892	
March	124,188	15.5	128.7	77.5	21.7	21.7	4,323	2,531	1,636	1,869	10,359	
April	118,413	14.8	122.8	74.0	21.7	21.7	4,125	2,417	1,636	1,869	10,047	
May	148,525	18.6	154.4	93.0	21.7	21.7	5,186	3,037	1,636	1,869	11,728	
June	143,388	17.9	148.6	89.5	21.7	21.7	4,991	2,923	1,636	1,869	11,419	
July	161,888	20.2	167.7	101.0	21.7	21.7	5,633	3,299	1,636	1,869	12,437	
August	145,003	18.1	150.2	90.5	21.7	21.7	5,045	2,956	1,636	1,869	11,506	
September	103,363	12.9	107.1	64.5	21.7	21.7	3,597	2,107	1,636	1,869	9,209	
October	76,450	9.6	79.7	48.0	21.7	21.7	2,677	1,568	1,636	1,869	7,750	
November	60,325	7.5	62.3	37.5	21.7	21.7	2,093	1,225	1,636	1,869	6,823	
December	96,563	12.1	100.4	60.5	21.3	21.3	3,372	1,976	1,606	1,835	8,789	
Total	1,260,519	157.6	1,308.2	788.0	260.0	260.0	5/43,941	5/25,738	5/19,602	5/22,394	5/111,675	

1/ 8,000 pounds per day.2/ Two gutters and 6.3 boners needed per day.3/ Two graders, one packer, and two sorters-stackers needed per day.4/ Totals include base pay plus benefits.5/ Wages are increased 8 percent per year due to inflation.6/ Work days per year were divided by 12 and difference made up in December wages.

The results of these calculations are as follows:

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>
		<u>Dollars</u>	
Hand labor costs	30,096	43,385	58,816
Machine labor costs	5,414	7,837	10,614
Savings	24,682	35,548	48,202
Accumulated labor savings	0	60,230	108,432

The initial cost of the machine is recovered in labor savings in less than 2 years and almost three times the initial cost is saved in 3 years.

The remainder of employee needs per day of plant operation are based upon the following: 1,260 pounds of trout per person deboning or 6.3 people, two graders, one person on the packaging machine, and two people sorting and stacking.

The manager's and assistant manager-driver's wages per month were derived by dividing the number of working days per year by 12 to get equal number of days worked per month and then this was multiplied by the daily wage to get the monthly expense.

Capital Requirements

Table 17 lists the equipment needed to operate a trout-processing plant. Costs shown were obtained during the period August through December 1978.

Chill room is used for fresh trout sales and provides storage for 10,000 pounds. The short shelf life of fresh trout makes a larger chill room unnecessary.

The cost of the eviscerating machine includes delivery, setup, waste storage, and additional equipment needed in conjunction with it. A more detailed cost analysis of this machine was included in the "Labor Requirements" section, earlier.

The freezer indicated has a capacity of 70,000 pounds of dressed trout; that should provide ample storage for the first few years of operation. Freezer racks should be used in the freezer for storage of small quantities of trout.

A furnace, a sewage system, ventilating equipment, a water heater, and office equipment are all basic plant needs.

A grading machine capable of sorting the trout into 15 different weight classes should be used. This machine takes the place of three workers.

Two ice machines are needed to provide the amount of ice required for processing the quantity of trout projected.

SATGA has not yet chosen a plant location. Therefore, the land and building costs are based upon averages in the Asheville, N.C., area. The plant, on 3 acres of land, (which would appear to be adequate since there is no need for holding areas for live trout) should include a feed storage area.

Individuals who might be involved with the cooperative expressed an interest in a vacuum packaging process. The plastic wrap would increase the length of time that trout could be displayed. The process shown was developed by Cryovac Division and is assumed for all trout processed whether frozen or fresh.

Table 17--Facility, equipment, and capital needs of proposed trout-marketing cooperative

Item	Long-term capital	Equipment and trucks	Miscellaneous supplies	Operating capital
	<u>Dollars</u>			
Long-term capital investments:				
Building	43,000	--	--	--
Chill room	25,300	--	--	--
Eviscerating machine	41,430	--	--	--
Freezer	52,250	--	--	--
Furnace	1,100	--	--	--
Grading machine	19,400	--	--	--
Ice machines, two	28,270	--	--	--
Land, 3 acres	7,200	--	--	--
Sewage system	700	--	--	--
Vacuum packager	25,940	--	120	--
Ventilating equipment	400	--	--	--
Water heater	700	--	--	--
Equipment and trucks:				
Boning tables, two	--	4,800	--	--
Electric killer	--	1/300	--	--
Freezer racks	--	172	--	--
Handtrucks	--	317	--	--
Office equipment	--	1,500	--	--
Refrigeration truck, diesel	--	29,000	--	--
Scales	--	1,495	--	--
Miscellaneous supplies:				
Catch seines	--	--	100	--
Boning knives	--	--	100	--
Miscellaneous	--	--	500	--
Plastic hauling containers	--	--	3,180	--
Startup capital <u>2/</u>	--	--	--	27,000
Total	245,690	37,284	4,000	27,000

-- = Not applicable.

1/ Not included in total.

2/ Initial capital needed to purchase feed, trout, and labor.

The electric killer indicated would fit on the back of the truck and would enable the driver to kill the trout before transporting them. This is not currently being done anywhere and therefore needs more investigation before adoption. For this reason we have not included this expenditure in the total cost package.

The refrigerated diesel truck will be used to pick up trout at the farm, deliver processed trout to the market, and deliver feed to the farm. Cost analysis of gas versus diesel fuel is shown in tables 8, 9, and 10.

Scales are the electronic printing type capable of imprinting the weight and price of the packaged trout. Handtrucks are needed for moving feed and boxed trout in the plant. A forklift could be used for that but the additional expenditure is not warranted at this time.

Miscellaneous costs are included for incidentals not mentioned above. Operating capital is cash needed by the co-op to purchase feed and trout and to pay labor expenses until the co-op's income matches its expenses.

Plastic hauling containers are used in the refrigerated truck. Trout should be placed in these containers live or after they have been killed by electric shock. The containers hold approximately 30 pounds of trout plus ice and can be stacked so the trout in the bottom containers are not bruised.

Financing

Total capital requirements, including a \$15,000 contingency loan, for this project are \$329,500 (table 18). We suggest that \$85,000 be raised by the members. The remaining \$244,500 would be borrowed. The rates and terms of the loan projected would be 10 percent interest with monthly payments of \$2,325 over 20 years.

If all recommendations and procedures mentioned above are followed, the cash flow tables (19, 20, and 21) should indicate a reasonable approximation of the co-op's actual operations. The operating statements and balance sheet derived from these cash flows are shown on tables 22 and 23. Depreciation for the equipment is shown on table 24. These indicate that a successful marketing-processing cooperative could be established and operated in the Asheville, N.C., area.

Table 18--Capital requirements of proposed trout-marketing cooperative

Item	Total cost	Equity capital	Loan
		<u>Dollars 1/</u>	
Long-term capital	246,000	1,500	2/244,500
Equipment and trucks	37,500	37,500	--
Operating capital	27,000	27,000	--
Contingency loan	15,000	15,000	--
Miscellaneous capital	4,000	4,000	--
Total	329,500	85,000	244,500

-- = Not applicable.

1/ Amounts are rounded to next \$500.

2/ Long-term capital with a 20-year repayment plan with monthly payments of \$2,325.

Table 19--Cash flow of proposed trout-marketing cooperative, 1979 ^{1/}

Item	Startup	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
	<u>Dollars</u>							
Cash received:								
Trout	--	64,213	127,864	105,984	75,288	74,022	66,335	513,706
Byproducts	--	720	713	474	369	460	283	3,019
Feed	--	53,297	58,142	38,762	24,226	33,916	19,381	227,724
Capital loan	244,500	--	--	--	--	--	--	244,500
Membership stock	85,000	--	--	--	--	--	--	85,000
Total received	329,500	118,230	186,719	145,220	99,883	108,398	85,999	1,073,949
Cash outlay:								
Long-term capital	245,690	--	--	--	--	--	--	245,690
Equipment and trucks	37,284	--	--	--	--	--	--	37,284
Architect fees	3,800	--	--	--	--	--	--	3,800
Cash disbursed:								
Trout	--	55,532	110,579	91,658	65,110	64,015	57,368	444,262
Feed	--	47,967	52,328	34,885	21,803	30,525	17,443	204,951
Labor	--	7,211	7,174	5,772	5,165	5,695	4,566	35,583
Packaging supplies	--	2,715	2,692	1,791	1,394	1,737	1,068	11,397
Loan payment	--	2,325	2,325	2,325	2,325	2,325	2,325	13,950
Insurance	--	2,315	--	--	2,315	--	--	4,630
Electricity	--	1,839	1,839	1,839	1,839	1,839	1,839	11,034
Market promotion	--	642	637	423	330	411	253	2,696
Transportation	--	541	541	380	307	321	234	2,324
Telephone	--	500	200	200	200	200	200	1,500
Legal fees	--	200	200	200	200	200	200	1,200
Truck repairs	--	100	100	100	100	100	100	600
Maintenance	--	83	83	83	83	83	83	498
Office supplies	--	75	75	75	75	75	75	450
Property taxes	--	--	--	--	--	--	2,325	2,325
Miscellaneous supplies	4,000	--	--	--	--	--	--	4,000
Total outlay	290,774	122,045	178,773	139,731	101,246	107,526	88,079	1,028,174
Cash flow	38,726	-3,815	7,946	5,489	-1,363	872	-2,080	45,775
Accumulated cash flow	--	34,911	42,857	48,346	46,983	47,855	45,775	--

-- = Not applicable.

^{1/} See "Schematic of Cash Flow Data" for explanation of how figures were derived.

Table 20--Cash flow of proposed trout-marketing cooperative, 1980 1/

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
							Dollars						
Cash received:													
Trout	48,935	49,036	97,163	144,081	164,585	180,367	177,981	175,566	143,623	101,403	98,979	90,162	1,471,881
Byproducts	260	279	789	794	1,014	968	988	941	637	477	610	380	8,137
Feed	27,113	27,111	67,776	67,776	81,332	74,554	74,554	81,332	60,999	33,888	47,443	33,888	677,766
Total received	76,308	76,426	165,728	212,651	246,931	255,889	253,523	257,839	205,259	135,768	147,032	124,430	2,157,784
Cash disbursed:													
Trout	42,555	42,898	85,000	126,046	143,986	157,789	155,700	153,588	125,644	88,708	86,588	78,872	1,287,374
Feed	24,382	24,382	60,955	60,955	73,146	67,051	67,051	73,146	54,860	30,478	42,669	30,478	609,553
Labor	4,884	5,006	8,241	8,281	9,632	9,346	9,469	9,182	7,256	6,275	7,093	5,602	90,267
Loan payment	2,325	2,325	2,325	2,325	2,325	2,325	2,325	2,325	2,325	2,325	2,325	2,325	27,900
Insurance	2,315	--	--	2,315	--	--	2,315	--	--	2,315	--	--	9,260
Electricity	1,986	1,986	1,986	1,986	1,986	1,986	1,986	1,986	1,986	1,986	1,986	1,986	23,832
Packaging supplies	1,061	1,137	3,219	3,241	4,137	3,947	4,030	3,839	2,599	1,947	2,490	1,552	33,199
Transportation	683	683	1,836	1,836	2,263	2,092	2,263	2,092	1,409	1,153	1,366	897	18,573
Market promotion	237	254	718	723	923	881	899	857	580	434	555	346	7,407
Telephone	216	216	216	216	216	216	216	216	216	216	216	216	2,592
Legal fees	216	216	216	216	216	216	216	216	216	216	216	216	2,592
Truck repairs	200	200	200	200	200	200	200	200	200	200	200	200	2,400
Maintenance	125	125	125	125	125	125	125	125	125	125	125	125	1,500
Office supplies	81	81	81	81	81	81	81	81	81	81	81	81	972
Property taxes	--	--	--	--	--	--	--	--	--	--	--	4,649	4,649
Total disbursed	81,266	79,509	165,118	208,546	239,236	246,255	246,876	247,853	197,497	136,459	145,910	127,545	2,122,070
Cash flow	-4,958	-3,083	610	4,105	7,695	9,634	6,647	9,986	7,762	-691	1,122	-3,115	35,714
Cash reserve	45,775	--	--	--	--	--	--	--	--	--	--	--	--
Accumulated cash flow	40,817	37,734	38,344	42,449	50,144	59,778	66,425	76,411	84,173	83,482	84,604	81,489	--

-- = Not applicable.

-- = Not applicable.
1/ See "Schematic of Cash Flow Data" for explanation of how figures were derived.

Table 21--Cash flow of proposed trout-marketing cooperative, 1981 1/

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
							Dollars						
Cash received:													
Trout	64,399	61,966	125,558	182,410	200,710	219,488	229,537	230,751	186,746	135,202	102,841	117,963	1,857,571
Byproducts	321	347	1,006	959	1,203	1,161	1,311	1,175	837	619	489	782	10,210
Feed	34,681	34,681	86,702	78,032	95,372	95,372	104,042	104,042	69,361	52,021	52,021	60,691	867,018
Total received	99,401	96,994	213,266	261,401	297,285	316,021	334,890	335,968	256,944	187,842	155,351	179,436	2,734,799
Cash disbursed:													
Trout	56,624	54,805	111,047	161,329	177,514	194,122	203,008	204,083	165,163	119,576	90,956	104,330	1,642,557
Feed	31,240	31,240	78,100	70,290	85,911	85,911	93,721	93,721	62,480	46,860	46,860	54,670	781,004
Labor	5,716	5,892	10,359	10,047	11,728	11,419	12,437	11,506	9,209	7,750	6,823	8,789	111,675
Loan payment	2,325	2,325	2,325	2,325	2,325	2,325	2,325	2,325	2,325	2,325	2,325	2,325	27,900
Insurance	2,315	--	--	2,315	--	--	2,315	--	--	2,315	--	--	9,260
Electricity	2,145	2,145	2,145	2,145	2,145	2,145	2,145	2,145	2,145	2,145	2,145	2,145	25,740
Packaging supplies	1,390	1,501	4,356	4,154	5,209	5,030	5,679	5,086	3,626	2,682	2,116	3,387	44,216
Transportation	726	726	2,263	2,092	2,733	2,519	2,947	2,562	1,836	1,366	1,153	1,794	22,717
Market promotion	298	322	934	890	1,117	1,078	1,217	1,090	777	575	454	726	9,478
Truck repairs	250	250	250	250	250	250	250	250	250	250	250	250	3,000
Telephone	233	233	233	233	233	233	233	233	233	233	233	233	2,796
Legal fees	233	233	233	233	233	233	233	233	233	233	233	233	2,796
Maintenance	188	188	188	188	188	188	188	188	188	188	188	188	2,256
Office supplies	87	87	87	87	87	87	87	87	87	87	87	87	1,044
Property taxes	--	--	--	--	--	--	--	--	--	--	--	4,649	4,649
Total disbursed	103,770	99,947	212,520	256,578	289,673	305,540	326,785	323,509	248,552	186,585	153,823	183,806	2,691,088
Cash flow	-4,369	-2,953	746	4,823	7,612	10,481	8,105	12,459	8,392	1,257	1,528	-4,370	43,711
Cash reserve	81,489	--	--	--	--	--	--	--	--	--	--	--	--
Accumulated cash flow	77,120	74,167	74,913	79,736	87,348	97,829	105,934	118,393	126,785	128,042	129,570	125,200	--

-- = Not applicable.

1/ See "Schematic of Cash Flow Data" for explanation of how figures were derived.

SCHEMATIC OF CASH FLOW DATA

Cash Received

Sale of trout	Refer to table 12.
Sale of waste products	Refer to table 13.
Sale of feed	Refer to table 15.
Membership stock	\$85,000 to be assessed against each member based on per pound of live weight of anticipated shipments to the co-op in the first 12 months.
Equipment loan	Refer to tables 17 and 18.

Capital Outlay

Refer to table 18

Cash Disbursed

Cost of trout	Refer to table 12.										
Cost of feed	Refer to table 15.										
Labor	Refer to table 16.										
Transportation	Refer to tables 8, 9, and 10.										
Market promotion	0.5 percent of retail trout sales per month.										
Property taxes	\$1.89 per \$100 of real estate value.										
Legal fees and audit	Estimated \$200 per month and 8 percent inflation per year.										
Insurance	\$1.75 per \$100 of investment plus 8 percent inflation per year.										
Electric	<table><tbody><tr><td>Freezer needs</td><td>\$810 per month</td></tr><tr><td>Chill room</td><td>185 per month</td></tr><tr><td>Ice machine</td><td>584 per month</td></tr><tr><td>Remainder of plant</td><td>260 per month</td></tr><tr><td></td><td><u>\$1,839 per month</u></td></tr></tbody></table>	Freezer needs	\$810 per month	Chill room	185 per month	Ice machine	584 per month	Remainder of plant	260 per month		<u>\$1,839 per month</u>
Freezer needs	\$810 per month										
Chill room	185 per month										
Ice machine	584 per month										
Remainder of plant	260 per month										
	<u>\$1,839 per month</u>										
	With everything operating full-time plus 8 percent inflation per year.										
Telephone	Estimate a \$300 installation charge and an average bill of \$200 per month usage. Add 8 percent inflation per year.										
Truck repairs	Estimated \$100 per month first year due to warranty. \$200 per month second year, \$250 per month third year.										

Table 22--Operating statement of proposed trout-marketing cooperative, December 31

Item	1979	1980	1981
		<u>Dollars</u>	
Sales	769,717	2,167,130	2,772,791
Cost of sales	671,065	1,905,357	2,457,494
Total gross margin	98,652	261,773	315,297
Expenses:			
Labor	35,583	90,267	111,675
Packaging material	11,397	33,199	44,216
Electricity	11,034	23,832	25,740
Insurance	4,630	9,260	9,260
Operating supplies	4,000	--	--
Architect fee	3,800	--	--
Market promotion	2,696	7,407	9,478
Property taxes	2,325	4,649	4,649
Transportation	2,324	18,573	22,717
Telephone	1,500	2,592	2,796
Legal fees	1,200	2,592	2,796
Truck repairs	600	2,400	3,000
Maintenance	498	1,500	2,256
Office supplies	450	972	1,044
Subtotal	82,037	197,243	239,627
Interest	12,134	24,056	23,610
Depreciation	14,053	28,105	28,105
Total expenses	108,224	249,404	291,342
Net income	-9,572	12,369	23,955

-- = Not applicable.

Table 23--Balance sheet of proposed trout-marketing cooperative, December 31

Item	1979	1980	1981
		<u>Dollars</u>	
Assets:			
Current--			
Cash on hand	45,775	35,714	43,711
Cash in bank	--	45,775	81,489
Accounts receivable	25,268	34,614	72,606
Total current	71,043	116,103	197,806
Fixed--			
Land, buildings, and equipment	282,974	282,974	282,974
Reserve for depreciation	-14,053	-42,158	-70,263
Net fixed	268,921	240,816	212,711
Total assets	339,964	356,919	410,517
Liabilities:			
Current (accounts payable)--			
Trout purchases	21,852	30,282	64,215
Long-term loan, 20 years	3,844	4,290	4,782
Total current	25,696	34,572	68,997
Term (20-year loan)	238,840	234,550	229,768
Member equity (common stock)--			
Net savings	85,000	85,000	85,000
	-9,572	2,797	26,752
Total member equity	75,428	87,797	111,752
Total liabilities	339,964	356,919	410,517

-- = Not applicable.

Table 24--Depreciation schedule of proposed trout-marketing cooperative

Assets	Life expectancy	Initial cost	Annual depreciation
	<u>Years</u>	- - <u>Dollars</u> - -	
Building	20	43,000	2,150
Freezer	10	52,250	5,225
Eviscerating machine	10	41,430	4,143
Ice machines	10	28,270	2,827
Vacuum packager	10	25,940	2,594
Chill room	10	25,300	2,530
Grading machine	10	19,400	1,940
Refrigerated unit for truck	10	10,500	1,050
Furnace	10	1,100	110
Water heater	10	700	70
Sewage system	10	700	70
Ventilating equipment	10	400	40
Diesel truck	5	18,500	3,700
Boning tables	5	4,800	960
Office equipment	5	1,500	300
Scales	5	1,495	299
Handtrucks	5	317	63
Freezer racks	5	172	34
Land, 3 acres	--	7,200	--
Total	--	282,974	28,105

-- = Not applicable.

APPENDICES

UNITED STATES DEPARTMENT OF AGRICULTURE
Economics, Statistics, and Cooperatives Service
Cooperative Development Division
Washington, D.C.

OMB Number 40-R-3954
Approval expires March 31, 1981

This survey is authorized by law (7 U.S.C. 451-457, 1621-1627).
While you are not required to respond, your help is needed to provide data for a new cooperative.

Date _____
Name of Interviewer _____
Name of Interviewee _____

SURVEY INFORMATION SOUTHERN APPALACHIAN TROUT GROWERS ASSOCIATION

1. Name of member _____
2. Address _____
3. Address of trout operation, if different from above _____
4. How long have you been trout farming? _____
5. Annual production per pond _____
6. Describe your facilities for harvesting and loading trout _____

7. Pounds of trout harvest (estimated balance of 1978)

	<u>1977</u>	<u>1978</u>		<u>1977</u>	<u>1978</u>
Jan.	_____	_____	July	_____	_____
Feb.	_____	_____	Aug.	_____	_____
Mar.	_____	_____	Sep.	_____	_____
Apr.	_____	_____	Oct.	_____	_____
May	_____	_____	Nov.	_____	_____
June	_____	_____	Dec.	_____	_____

8. Present method of marketing trout: a) Wholesale ☐; b) Retail ☐; c) Catch out ponds ☐; d) Live sales to catch-out ponds ☐; e) Other _____ (specify)
9. Distance(s) to: a) Wholesale _____; b) Retail _____; c) Catch-out ponds (avg. distance) _____; d) Other _____ (specify).
10. Describe present arrangement and cost for transporting trout to market. _____

11. Price received per pound by method of sale:

	<u>1977</u>	<u>1978</u>	<u>How Processed</u>
Wholesale	_____	_____	_____
Retail	_____	_____	_____
Catch-out ponds	_____	_____	_____
Sales to catch-out ponds	_____	_____	_____

11. Continued

	<u>1977</u>	<u>1978</u>	<u>How Processed</u>
Other	_____	_____	_____
	_____	_____	_____

12. Breakdown of wholesale price structure, f.o.b. farm:

	<u>0-99</u>	<u>100-249</u>	<u>Pounds</u> <u>250-999</u>	<u>1,000-4,999</u>	<u>5,000 & Over</u>
<u>1977</u>					
Wholesale:					
Live fish	_____	_____	_____	_____	_____
Fish in the round	_____	_____	_____	_____	_____
Dressed	_____	_____	_____	_____	_____
Retail:					
Live	_____	_____	_____	_____	_____
Dressed	_____	_____	_____	_____	_____
<u>1978</u>					
Wholesale:					
Live fish	_____	_____	_____	_____	_____
Fish in the round	_____	_____	_____	_____	_____
Dressed	_____	_____	_____	_____	_____
Retail:					
Live	_____	_____	_____	_____	_____
Dressed	_____	_____	_____	_____	_____

13. Wholesale price when sold per 1,000 count, f.o.b. farm:

	<u>1977</u>	<u>1978</u>		<u>1977</u>	<u>1978</u>
2 - 3"	_____	_____	7 - 8"	_____	_____
3 - 4"	_____	_____	8 - 9"	_____	_____
4 - 5"	_____	_____	9 - 10"	_____	_____
5 - 6"	_____	_____	10 - 11"	_____	_____
6 - 7"	_____	_____			

14. How soon are you paid after sales: Wholesale _____; Retail _____

15. Do you plan to expand your operation (more ponds, other facilities, etc.):

Yes ☐; No ☐. If yes, explain _____

16. Estimated production:

	<u>1979</u>	<u>1980</u>	<u>1981</u>		<u>1979</u>	<u>1980</u>	<u>1981</u>
Jan.	_____	_____	_____	July	_____	_____	_____
Feb.	_____	_____	_____	Aug.	_____	_____	_____
Mar.	_____	_____	_____	Sep.	_____	_____	_____
Apr.	_____	_____	_____	Oct.	_____	_____	_____
May	_____	_____	_____	Nov.	_____	_____	_____
June	_____	_____	_____	Dec.	_____	_____	_____

17. Number of pounds of trout you are willing to sell through the cooperative:

	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>		<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>
Jan.	_____	_____	_____	_____	July	_____	_____	_____	_____
Feb.	_____	_____	_____	_____	Aug.	_____	_____	_____	_____
Mar.	_____	_____	_____	_____	Sep.	_____	_____	_____	_____
Apr.	_____	_____	_____	_____	Oct.	_____	_____	_____	_____
May	_____	_____	_____	_____	Nov.	_____	_____	_____	_____
June	_____	_____	_____	_____	Dec.	_____	_____	_____	_____
Total	_____	_____	_____	_____	Total	_____	_____	_____	_____

18. Supplies purchased in 1977:

	<u>Quantity</u>	<u>Unit Cost</u>	<u>Total Cost</u>
Gasoline	_____	_____	_____
Equipment	_____	_____	_____
Feed	_____	_____	_____
Fingerlings	_____	_____	_____
Ice	_____	_____	_____
Other _____	_____	_____	_____
_____	_____	_____	_____

19. Indicate supplies or services you may want the cooperatives to handle:

Gasoline	<input type="checkbox"/>	Hospitalization	<input type="checkbox"/>
Equipment	<input type="checkbox"/>	Other:	
Feed	<input type="checkbox"/>	_____	<input type="checkbox"/>
Fingerlings	<input type="checkbox"/>	_____	<input type="checkbox"/>
Ice	<input type="checkbox"/>	_____	<input type="checkbox"/>
Freezer	<input type="checkbox"/>	_____	<input type="checkbox"/>

20. Member support of cooperative:

Are you willing to purchase stock in the cooperative in proportion to your use?

Yes ☐ No ☐

21. Number of miles from your farm to Forest City _____; driving time _____

22. Number of miles from your farm to Asheville _____; driving time _____

23. Number of miles from your farm to Waynesville _____; driving time _____

24. If necessary, can you gut your fish: Yes ☐; No ☐; what other processing do you do _____

25. Can you harvest or grade your fish the night before pickup? Yes ☐ No ☐

26. Average harvest load _____; time required to load _____

27. Disease losses:

	<u>1977</u>	<u>1978</u>
Pounds of fish	_____	_____
Number of fingerlings	_____	_____

UNITED STATES DEPARTMENT OF AGRICULTURE
Economics, Statistics & Cooperatives Service
Cooperative Development Division
Washington, D.C. 20250

OMB Number 40-R-3954

Approval Expires March 31, 1981

This survey is authorized by law (7 U.S.C. 451-457, 1621-1627).
While you are not required to respond, your help is needed to provide data for a new cooperative.

Date _____

Name of Interviewer _____

Name of Interviewee _____

MARKET INFORMATION FOR TROUT PURCHASES
SOUTHERN APPALACHIAN TROUT GROWERS ASSOCIATION

1. Name of firm purchasing fish _____
Phone number _____
2. Address (delivery point) _____
3. Type of firm: Retailer _____, Wholesaler _____, Broker _____, Restaurant _____, Other _____
4. Pounds of trout delivered by specific locations:

	<u>Pounds</u>	<u>Location</u>
a)	_____	_____
b)	_____	_____
c)	_____	_____

5. Types, amount, price and source of trout purchased:

	<u>Amount</u>		<u>Highest Price Paid</u>		<u>Lowest Price Paid</u>		<u>Weighted Avg. Price per Year</u>		<u>State of Origin</u>	
	<u>Fresh</u>	<u>Frozen</u>	<u>Fresh</u>	<u>Frozen</u>	<u>Fresh</u>	<u>Frozen</u>	<u>Fresh</u>	<u>Frozen</u>	<u>Fresh</u>	<u>Frozen</u>
	<u>Pounds</u>		<u>Cents/Pounds</u>		<u>Cents/Pounds</u>		<u>Cents/Pounds</u>			
1977	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
1978	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

6. Monthly demand by type of processing:

	<u>Round</u>	<u>Dressed</u>	<u>Boned</u>	<u>Boned & Stuffed</u>
Jan.	_____	_____	_____	_____
Feb.	_____	_____	_____	_____
Mar.	_____	_____	_____	_____
Apr.	_____	_____	_____	_____
May	_____	_____	_____	_____
June	_____	_____	_____	_____
July	_____	_____	_____	_____
Aug.	_____	_____	_____	_____
Sep.	_____	_____	_____	_____
Oct.	_____	_____	_____	_____

6. Monthly demand by type of processing--CONTINUED

	<u>Round</u>	<u>Dressed</u>	<u>Boned</u>	<u>Boned & Stuffed</u>
Nov.	_____	_____	_____	_____
Dec.	_____	_____	_____	_____

7. Method of transport from supplier:

<u>Type of Carrier</u>	<u>Percent of Volume</u>
Own trucks <input type="checkbox"/>	_____
Common carrier <input type="checkbox"/>	_____
Supplier's own trucks <input type="checkbox"/>	_____
Other <input type="checkbox"/>	_____

If fish are shipped by common carrier, is payment: F.O.B. ☐, or point of delivery ☐.

Estimated cost per pound _____.

8. Size and type of container preferred _____; number of deliveries per month _____; average number of pounds per delivery _____.

9. What ratio of ice to fish is desirable for shipping _____.

10. When is price established: Prior to shipment ☐; upon receipt ☐; upon sale ☐; other ☐ (specify).

11. Time interval between placing order and when it is delivered _____.

Is this a significant consideration in choosing your supplier? Yes ☐ No ☐

12. Major problems in handling trout: Quality ☐; timeliness of delivery ☐; type of container ☐; other ☐ (specify).

13. Time elapse between delivery and payment to supplier _____.

14. Project the demand for trout over the next five year. Demand will:

- ☐ Increase _____ %
☐ Decrease _____ %
☐ Remain the same

15. What do you feel will be the trend in frozen sales of trout over the next five years? Demand will:

- ☐ Increase _____ %
☐ Decrease _____ %
☐ Remain the same

16. Would your firm be interested in purchasing trout from the Appalachian Trout Growers Association with the understanding that a high quality and dependable supply is made available at competitive prices?

Yes ☐ No ☐

17. If your answer to item 16 is yes, what is your expected annual demand?

Fresh _____ Frozen _____

Cooperative General Manager's Job Description

The most vital decision a cooperative board of directors makes is in its choice of a manager and its relationship with the manager in delegating job responsibilities.

Success takes a lot of help. The board is the single most important source of help to a good manager. Boards of directors set policy. Managers implement or carry out policy decisions set by the board.

The manager has specific responsibility in planning, organizing, directing, coordinating, and controlling the operations of the cooperative. In order for the board of directors to function effectively, it must agree on specific jobs that the manager must do from a short, day-to-day basis to a long-range implementation of policy.

By following a set plan or job description, both the board and the manager have guidelines to measure the duties and performance of the manager.

The cooperative's membership have delegated to the board of directors the responsibility of conducting all business operations. The board, in turn, expects a manager to carry on the day-to-day business within the policy guidelines set. The board looks to the manager to have an effective operation that produces set net earnings, to maintain members' savings, to provide assistance and leadership for the board of directors, and to develop growth in sales and volume. The manager is responsible to the board of directors.

In order to attain this objective, the following specific manager's duties are outlined.

Planning

1. Make policy recommendations to the board in all areas of management.
2. Analyze potential and make recommendations for each commodity or service that the cooperative will handle.
3. Prepare capital requirement budgets to enable the board to arrange for enough finances for the organization.
4. Develop a program of manager and personnel assistance needs with job description for each specific area of employment.

Organizing Work

1. Submit monthly reports and other special reports as needed, provide general information and recommendations to the board of directors, assist the board in formulating policies which provide all available facts and information which can be useful in making board policy.
2. Set performance standards in conformance with job description outlines, general employee policies, objectives and goals established.
3. Select employees according to job requirements stated in outline and on their potential for development.
4. Develop employees for advancement so that they will be able to advance within the organization and to serve as a temporary manager if the need arises.

5. Chair membership meetings in confirmation with the board of directors.
6. Promote membership through publicity and other means including personal contact.

Directing the Business of the Cooperative

1. Carry out board policy.
2. Carry sales/production promotions on all products if planned in budget.
3. Assign representatives, sales goals, duties, and responsibilities of each employee.
4. Direct and supervise all employees.
5. Train employees and develop their skills if required to improve their performance.
6. Develop production, promotion, and technical expertise among employees. Assist them in becoming proficient in their work areas.
7. Hold employee meetings to give pertinent information, get employee advice and develop group interest and enthusiasm for various current programs of importance to the group.
8. Encourage self-development of employees and assist in encouraging self-development by personal interest.
9. Create and maintain an atmosphere in which employees willingly produce at maximum capacity.
10. Provide good housekeeping throughout entire facility.
11. Provide for adequate maintenance for all equipment and facilities.
12. Enforce facility regulations and develop safe work habits for employees.
13. Enforce the policies of your cooperative as set down by the board.
14. Direct the day-to-day activities and establish procedures to carry them out by delegating all responsibilities within established regulations.

Coordination

1. Arrange for assistance from the board and utilize group when required.
2. Constantly strive for self-development by:
 - a. Attending manager, staff, and other management training-type meetings.
 - b. Attend community and promotional meetings when possible.

- c. Keep up to date on new trends in management, financing, and marketing.
3. Carry on community relations activities.
4. Develop to the utmost a sound working relationship with other cooperatives and within the business community whenever feasible.
5. Personally and officially represent your cooperative by participating in community affairs.
6. Develop the image of the cooperative as an economic institution in the job community.

Fiscal Controls

1. Make yearly operating, financial, and budget projections for board of directors and submit to the board showing periodic breakdowns. Make operating reports and budget estimates and compare to the same period in prior years.
2. Maintain desirable gross margins.
3. Maintain desirable expense ratios.
4. Maintain desirable inventory controls.
5. Appraise and evaluate each employee annually based upon his performance of the job fulfillment or his job description.
6. Replace employees who cannot measure up to job requirements and/or who willfully violate company policies.
7. Assist the board in selecting complete audit services which include provision for a spot audit at the discretion of the board or the audit services. The auditor reports to the board.
8. Make monthly and/or periodic reports to lenders in accordance with agreements.
9. Arrange for board to review/receive insurance coverage annually.

END
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