AN APPLICATION OF ECONOMIC SURVEY METHODS

TO THE

FISH MARKETS OF SAN SALVADOR

by

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Contents

I. Introduction

This paper describes an economic survey of fish markets in the capitol city of El Salvador, Central America. The primary purpose of the survey was to test the effectiveness and feasibility of applying modern economic methods to fish markets in a developing country. The secondary purpose was twofold: one, to create an in-country capability for collecting and processing such data and, two, to use the data collected in an analysis of the efficiency of the fish marketing sector.

The lack of data in development planning is a well-known problem, and data that is available often is of low quality. Since data is costly to collect and process, a typical economic problem exists of allocating resources among competing ends. Yet very little is known about the technical processes and costs necessary for generating data of this type. Therefore, we designed and tested a survey in order to better understand these processes and costs, and to assess the quality of data produced. The survey reported on in this paper attempted to maximize data quality - in terms of statistical precision - subject to a set of budgetary, resource and environmental constraints.

Following a description of fish marketing in El Salvador, sections III-V, explain each phase of the survey, and Data Processing in VII. The costs of the survey, and their relationship to design and size of the survey, are presented in section VI. Finally, section VIII evaluates some practical aspects of conducting the survey.

II. The Setting

Much of the fresh fish consumed in El Salvador is caught by artisanal fishermen along the Pacific Coast of the country, and the majority of the artisanal catch is transported to and marketed in the capital city, San Salvador.[1] Each days' supply of fresh fish is brought from the coast to the largest public market in San Salvador, the "Mercado Central."[2] At the time of the study the wholesale fish market shared the basement of the central market with the wholesale meat (pork and beef) market. The transporters who bring the fish from the coast and the lakes begin to arrive at 5:00 A.M. The product is unloaded and delivered to the wholesaling agents where it is sorted and weighed. After placing the fish on ice, the wholesalers sell to retailers from various retail markets, beginning at 6:00 A.M. In the situation where they do not sell all of the fish purchased, they store the unsold fish on ice until the following morning. The retailers come from the eleven retail markets in the metropolitan area of San Salvador. In addition, there are street vendors who wander suburban neighborhoods with head baskets of fish and other goods.

Some wholesalers are vertically integrated, combining their wholesale activity with activities of primary buying and transporting. A few are completely integrated, extending their business from buying from the fishermen to retail sales.

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[1] Inland freshwater fish also are harvested and marketed in the city. Parkman and McCoy (1977) present an excellent description of the country-wide fish marketing system.

[2] At the time of the study a new, large wholesaling market complex was being completed in which all wholesaling of agricultural products in the city was to be located.

The physical area in the central market designated for fresh fish wholesaling is comprised of ten rows of concrete counters, each with sinks and running water. Each counter provides enough space and a sink for four wholesalers. Thus, approximately forty wholesalers could operate; however, a few of the operators are large enough to warrant a complete side of one counter by themselves. At the time of this study there were twenty-five regular wholesalers, leaving several vacant spaces.

The fresh fish retail sector of the central market has approximately fifty-eight vendors, the largest in the country. There also are ten other public markets in the metropolitan areas, none approaching the size of the central market in number of fresh fish vendors (the second largest has fifteen).

Each morning between 6 and 8 A.M. the retailers go to the basement of the central market to purchase their fish supplies. They return to their respective markets by means of hired truck, taxi, bus, or private vehicle. A few retailers receive fish delivered to their place of business by one of the central market wholesalers (although a retailer still may make the trip to the central market to expand his product mix). Most retailers purchase fish every day, though in one market (Miguelito) they purchase fish only every three days.

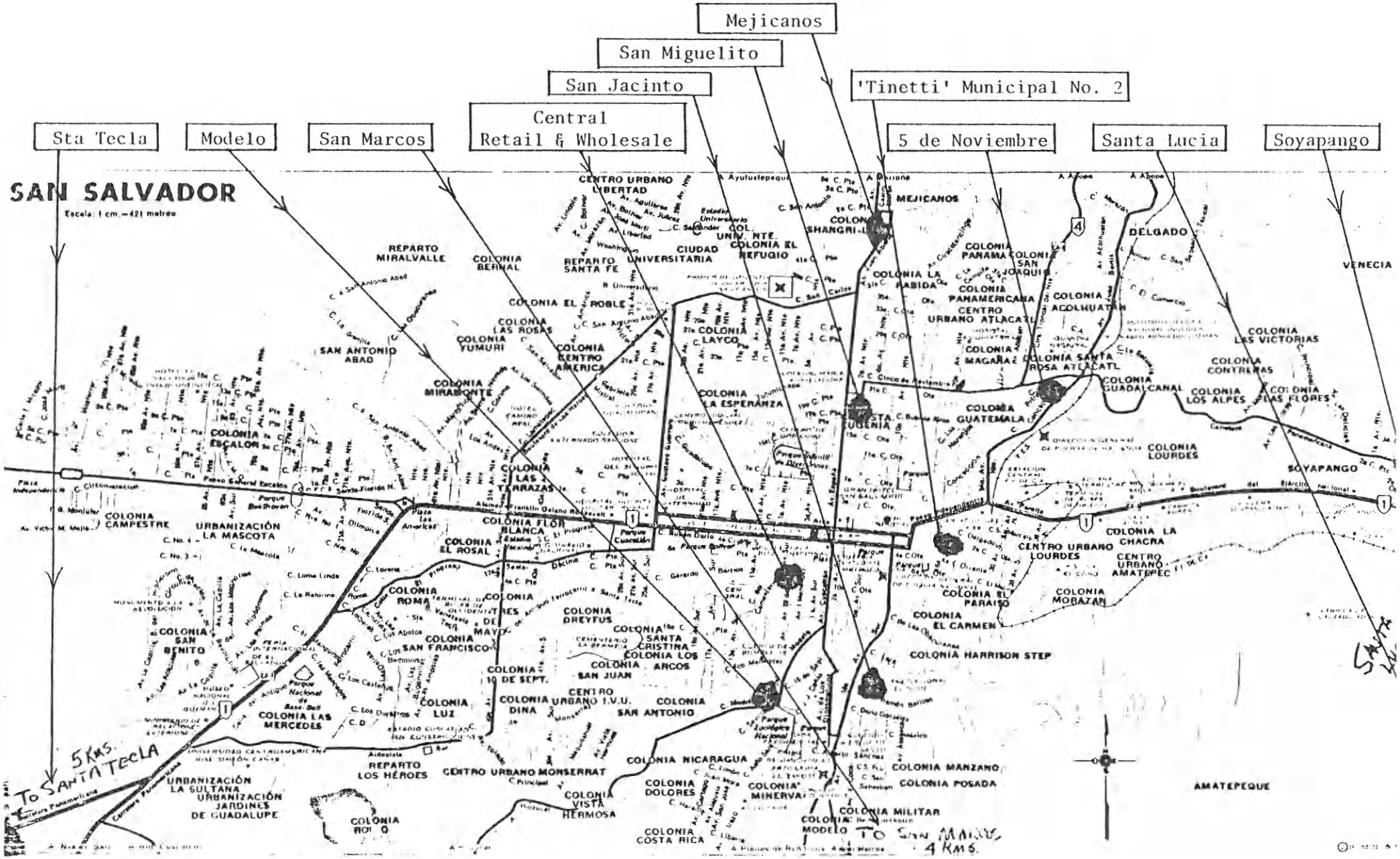
The total number of retailers operating in the twelve public markets numbered 136 at the time of the study. No estimate was made of the number of street vendors as the volume they handle is small.

III. Planning and Design of the Survey

A. Unit of Analysis and Population

The marketing firm was determined to be the unit of analysis for collecting the data. The ultimate objective for using the data is to

MAP OF SAN SALVADOR AND RELATIVE LOCATIONS OF PUBLIC MARKETS WITH FRESH FISH VENDORS (Feb. - May, 1977)



estimate and explain the costs and earnings associated with the marketing of fish. Not all firms were treated equally in the survey; those estimated handling a larger flow of fish (in value terms) were given more attention than those firms handling a smaller flow. As indicated above, the frame consisted of twenty-five wholesalers and 136 retailers, determined by a census of the city's public markets. Street vendors were not considered part of the population as they were assumed to handle an insignificant fraction of the total fish marketed.

B. Data Collected

The data collected were of two types. The first dealt with the economics and technical characteristics of the marketing firms: firm's size, operating methods, capital and labor inputs, entry and exit conditions, product mix, geographic considerations, overhead, inventory, services provided and problems of the industry. This information was gathered at both the wholesale and retail levels, and became known as the "intensive" data set. The second type concerned daily market transactions: quantities and prices of purchases and sales by species. This information was collected over a three month period (February 28 to May 8), and became known as the "extensive" data set.

C. Available Resources

The personnel available to conduct the survey consisted of a Peace Corps volunteer assigned to the Ministry of Agriculture, General Directorate of Natural Resources, and a newly-hired staff member. Each had previous experience with interviewing to collect economic data, but neither was intimately familiar with modern survey methods. At a later stage of the survey, a third staff member was added who conducted some interviews and regularly

drew samples. Only local public transport was used (funded by ICMRD). Personnel (one) was provided by the Information Service of the Directorate for coding and transcribing the data. In addition, office space and limited supplies were made available by the Ministry.

D. Time Period

The time period for the survey was dictated by two concerns: an interest in monitoring fish marketing activities during the Lenten season (where in this Catholic country, demand for fish increases as Easter approaches) and the length of time for which personnel could be available. By coincidence, the personnel could be made available during the Lenten season.

E. Collection Method

The personal interview method for collecting the data was deemed most appropriate for the setting. Other methods, such as self-enumeration, were ruled out as not feasible. Self-enumeration would have required time for recruiting and training of the wholesalers and retailers - time that was not readily available in this short-term survey. Also, we expected self-enumeration would meet with a great deal if resistance, resulting in little data collected. (In a long-term survey, where there is ample time to win the confidence of the participants, self-enumeration may indeed be the least costly method, however.)

F. Data Forms

Both types of data gathered required a distinct instrument for collecting the data. The intensive data were gathered by means of a personal interview of about 40 minutes in length. Separate questionnaires were developed for the wholesale and retail levels (see Appendix I). The questionnaires were modeled on a questionnaire used in a similar survey in Costa Rica. Even though the model questionnaire was also in Spanish,

local differences in uses of the language and colloquisms required substantial changes. Also, the marketing system in El Salvador was sufficiently different to require changes in the questionnaire.

The extensive data set did not require a questionnaire structured with questions; rather, a form was used which allowed the interviewer to quickly and accurately record the necessary data. This form is in Appendix II.

G. Sampling Procedure

Since random selection yields results superior to judgmental and other non-random methods, and sampling rather than taking a census is more economical a random sampling procedure was used in the survey. A simple, weighted sample was drawn from the Universe of 136 retailers (once for the intensive data and weekly for the extensive data). Since the number of wholesalers was small and the firms quite heterogeneous, we attempted to survey all of the fish wholesalers in the city.

H. Sampling Program Design

Designing a sampling program involves determining the sample size, calculating sampling weights, and selecting the respondent. These important steps are described below for the fish marketing survey.

Sample size: Three sample sizes had to be determined: one each for the intensive interviews of the wholesalers and the retailers, and for the weekly extensive interviews of the retailers. The objective in choosing a sample size was to minimize the variance of the estimated means subject to the resources available (Cochran, 1963). The primary resource constraint was the number of man-hours available for interviewing during market business hours. For the first two weeks there were two individuals available for interviewing, and in the third week a third person was added to the interview team. One person (the Peace Corps volunteer) was able to interview on

weekends as well as weekdays while the others were limited to weekdays only. Each was able to put in an eight-hour day, beginning as early as necessary (sometimes at 5:00 A.M.). On average the three people available were able to conduct nine intensive interviews per day (between the market business hours of 8:30 A.M. to 1:30 P.M.). Two weeks were allotted for the intensive information. Since each firm required at least two 20-minute interviews, we set out to interview the twenty-five wholesalers and thrity-six of the one hundred thirty one retailers.

Later, with two interviewers and a shorter questionnaire, approximately sixteen extensive interviews were conducted per day (from 11:30 A.M. to 1:30 P.M.). The extensive survey initially was projected to cover ten weeks with Easter week in the middle of the period, allowing monitoring of the fish marketing system during the increased activity expected throughout the Lenten season. For the first week of the extensive survey we set 100 interviews as our sample size goal. This estimate was based on personnel available, travel time between markets, our a priori estimate of the time required for contacting the respondent and interviewing him or her, and no information on the degree of cooperation we could receive. The strategy was to aim for a high number of interviews in the first week and to adjust the goal for the following weeks as we gained experience and could make better estimates.

Sampling weights: Our sample was weighted by flow values. To do so required that we begin with an estimate of fish sales for each market. At the beginning of the survey, the flow values were estimated by observation. Adjustments were made during the data collecting period as the data became available, allowing for more accurate estimates.

The flow estimate was obtained from informal conversation with the proprietors and observing what appeared to be the volume of each, with each firm being classified as large, medium or small. Small was defined as a firm having less than ¢50[3] a day in sales, medium ¢51-150, and large was greater than ¢150.

A production flow sum for each market was obtained by multiplying the number of firms in a category by the average size of that category. The flow values of the three categories summed gave the preliminary estimated flow value for that market. The aggregate of the markets in turn gave a flow value for the city. An example computation follows (representative data are given in Figure 1).

In this example we find that for a market consisting of six firms, ¢623 is our base. Doing the same for each market provides an aggregate for the city, which at the beginning of the survey was estimated to be $11,016 in daily sales (see Figure 2).

Respondent selection: In most cases the selected respondent was the owner of the marketing operation. In El Salvador, most fish marketing is conducted by women who are fully involved in their business (i.e., few if any are absentee owners) and are clearly the most knowledgeable, making them the best individuals to interview.

I. Authorization and Public Relations

In planning an economic survey of this type the cooperation of the group to be investigated cannot be taken for granted. The degree of cooperation actually received can largely determine the outcome of the survey. To increase the chance of success we sought to secure the most relaxed, honest cooperation possible under the circumstances.

[3] ¢1.00 = $0.40, or ¢2.50 = $1.00, where ¢ = colones.

Figure 1

EXAMPLE:

MERCADO X

Firm No.	Category	Estimated Daily Sales (¢)
1	L	176
2	M	80
3	M	65
4	L	200
5	S	32
6	M	70
		623

In Category L

176
200
376

$\bar{X} = 188$

$\frac{376}{623} = 60\%$

Category M

80
65
70
215

$\bar{X} = 71.66$

$\frac{215}{623} = 35\%$

Category S

32

$\bar{X} = 32$

$\frac{32}{623} = 5\%$

Figure 2

Sub-sector	Market Name	Code	Estimated Daily Sales	Percent of City Total Sales
1	Central	02	¢4930	45%
2	San Miguelito	03	1950	18
3	Sta. Tecla	12	450	
	San Marcos	11	140	
			590	5
4	Tinetti	04	1025	
	Sta. Lucia	09	255	
			1280	12
5	San Jacinto	05	990	
	Modelo	06	365	
			1355	12
6	5 de Nov.	07	175	
	Soyapongo	10	236	
	Mejcano	08	500	
			911	8
Estimated city total sales			¢11,016	

An important step was to secure approval and support of the market administrators. While the survey was being conducted under the auspices of one governmental agency, another governmental agency was in charge of the public market systems. The proper channels were followed by taking a letter of request from the sponsoring agency (The Directorate of Natural Resources) to the head administrator of the markets. The administrator subsequently prepared letters of identification and introduction for the survey team that were shown to the administrators of the individual public markets. In addition, each administrator was asked to personally introduce the survey team to the proprietors in his market.

IV. Testing and Training

A. Testing

Following a few obvious revisions in the Costa Rica version, the intensive questionnaire was tested four times in actual interviews with marketing firms. The testing identified problems of poor phrasing, redundant questions, questions that received poor responses because they had no clear answer, and unnecessary questions.

Testing also demonstrated that a three-step interview process was most desirable, The first step was intended to be exploratory with the interviewer establishing rapport with the respondent and gathering general and immediately necessary data. After introducing himself and establishing his legitimacy, the interviewer explained the purpose and nature of the survey. The data collected in this first step included volume of fish bought and sold, costs, capital investment, prices and sources of supply. Step two was intended to probe deeper into those areas of the firm's operations that proprietors tended to be more sensitive about (credit, mark-ups). The third step was used to fill

any gaps in the information required, resolve ambiguities and to thank the proprietor for his/her cooperation.

B. Training

The host-country personnel assigned to the survey (excluding the data processing staff) were semi-experienced in interviewing. One member of the team had received training in economics and statistics. Still, training all participants was necessary to insure their ability to properly conduct the survey. The objective of the training was to have the interviewers (i) be well prepared, (ii) have a good presentation, and (iii) be able to explain throughly the reasons for the survey. The questionnaire testing process provided an opportunity to coach the interviewers, to work on rough spots in their presentations, and to get a feel for the interview and the instrument. Lansing and Morgan (1971) and a Spanish edition of a marketing research textbook by Boyd and Westfall (1973) were followed viz the do's and don'ts of interviewing.

In conjunction with point (iii) above, a list of reasons for the survey interview was prepared (see Appendix III). The reasons were discussed in detail with the interviewers so they could explain them with confidence and sincerity. In the end this preparation paid off significantly, allowing the survey to be conducted with a minimum number of objections to the interviews.

Initially, each interviewer was supervised during his first few attempts in order to identify and eliminate any apparent systematic errors.

V. Implementation of the Survey

A. Personnel

Of the personnel made available for the survey by the Directorate, one had university training in economics and statistics. One-half of his time was spent computing and drawing samples, performing general statistical work and writing the methodology report. The remainder of his time was used in data collection.

The other individual assigned to the project had a high-school eduction and was used for helping to test questionnaires and to collect data. The Peace Corps volunteer's time was distributed among all phases; design, training, sampling, writing and coordination of the other personnel over a sixteen week period.

It took 230 hours for coding and transcribing steps, which were performed by a trained member of the data processing department of the directorate.

B. Actual Sample Selection

After calculating the sample size and weights (see III.H above), the sample could be drawn.

Firm selection: We began with the size of sample to be drawn, (e.g. in the case of intensive retail questionnaire n = 36). We utilized a table of random numbers and devised a listing for our subsectors. Continuing to use our framework as illustrated, the numbers listed or assigned to each subsector corresponded to its percentage of market share and appeared as follows:

Subsector No.	Percent	No's. Assigned
1	45	1-45
2	18	46-63
3	5	64-68
4	12	69-80
5	12	81-92
6	8	93-100

Using our random number table we selected the first 36 numbers, with replacement. In this case, replacement because a particular subsector could be chosen more than once. For our example the results were as follows:

Subsector No.	No. Interviews
1	16
2	6
3	3
4	2
5	6
6	3

The individual firm within a subsector still remaind to be selected. It was achieved by repeating the same procedure within a given subsector treated much like the aggregate framework model. In this instance, however, the percentages of each category's share of the subsector was used in place of the percentages of a subsector's share of the aggregate.

Using another example, we have:

	Category L	Category M	Category S
Market share:	55%	35%	10%
# of firms:	5	8	6
% per	$\frac{55}{5} = 11$	$\frac{35}{8} = 4.38$	$\frac{10}{6} = 1.67$

The firm's share is used to determine the assignment of numbers to each firm, and is calculated by dividing the percentage in the category by the number of firms[4] (row 3 above). One problem arose with fractions, as only whole numbers are found in the random number table.

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[4] In the case of a subsector with more than one market, they were grouped together.

For example, in category M, it is not possible to give each .38 of a point. Instead, with the remainder 3, an extra point was assigned to each of 3 firms chosen at ransom giving these 3 firms a weight of five. In category S, with a remainder of 4, one extra point was assigned randomly to each of 4 firms, giving these 4 firms a weight of two. The final table, being readied for the random number selection would appear as follows:

Category L		Category M		Category S	
Firm No.	Assignment	Firm No.	Assignment	Firm No.	Assignment
L_1	1-11	M_1	56-59	S_1	91
L_2	12-22	M_2	60-63	S_2	92-93
L_3	23-33	M_3	64-68	S_3	94
L_4	34-44	M_4	69-72	S_4	95-96
L_5	45-55	M_5	72-76	S_5	97-98
		M_6	77-81	S_6	99-100
		M_7	82-85		
		M_8	86-90		

Suppose now that this particular subsector had been determined to have eight interviews assigned to it by the earlier sample. Thus, we would draw the eight numbers from our random number table - without replacement since a firm could be interviewed only once. A likely selection would appear as follows:

No. selected:	43	02	20	61	56	83	77	26
Corresponding firm:	L_4	L_1	L_2	M_2	M_1	M_7	M_6	L_3

Repeating the procedure would result in the selection of each individual firm to be interviewed.

In the case of a refusal which could not be overcome, a firm exhibiting similar characteristics as the one intended to be sampled is selected.

In the case of the weekly extensive survey the same format was followed, with the exception that replacement was used since a firm could be sampled

more than once in the course of a week.

Day selection: For the weekly extensive survey of prices and volumes, the distribution of the sample by days of the week had to be determined. We assigned a higher sampling weight to the days when more business is transacted. Estimates of weekday transactions were obtained from the proprietors when the initial observations were obtained. Our results were somewhat inconclusive in that there was a high variation in the opinions of the proprietors as to which days were best. Only Saturday and Sunday were repeatedly given as answers. Other answers were payday, all being equal, and various days of the week. Interviews on Saturday and Sunday were limited as the number of survey personnel available was reduced on those days (government employees do not work on weekends). Taking all of this into account, we drew up a table of percentages for each week, depending on our resources availabe, any events expected during the week that would conflict, and our estimation of which days the market would be most active. For example:

Week One	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
%	12	12	12	14	14	14	12

These percentages were multiplied by the number of samples which were indicated within a given subsector. Suppose, for example, a subsector was determined to have twenty interviews in a week. Monday, Tuesday, and Wednesday would yield 12% x 20 = 2.4 price/volume observations each, Thursday and Friday 2.8 each, Saturday 4.8, and Sunday 2.4. Since partial observations were impossible, rounding was necessary: 2 + 2 + 3 + 3 + 3 + 5 + 2 = 20.

In trying to program and organize a complete week it might be that a sample became very spread out, resulting in having to go to several markets for

a small number of interviews, which might be impossible given a time/ personnel constraint. In such instances, some shifting and grouping was performed to better coordinate and make for more efficient traveling. Each week, however, the sample would be drawn, and the deviations made by this juggling method would be recorded.

D. Interview Monitoring

Although interest and desire were high among the survey teams, on several occasions changes, new situations and various other adjustments were not always easily handled by the personnel. Thus, a close monitoring was necessary to ensure proper, consistent execution of the survey.

VI. Costs of the Survey

To evaluate a survey in terms of costs, Kish (1965) gives a general cost equation for surveys which focuses attention on the costs of certain key components. This formulation is more useful for evaluation than a total cost figure or an itemized accounting list of costs.

Our criteria for evaluation is the quality and quantity of information per dollar spend on the survey. The basic nature of our survey problem was to maximize statistical precision subject to a set of budgetary and resource constraints. This section reports on the trade-off between costs and statistical precision observed in the survey.

Kish's general cost equation for surveys is:

$$\text{Total Cost} = K + Kv + nc + ncv, \qquad (1)$$

Where K = Constant costs which do not change with either number of elements nor with type of design. Applied to the survey at hand, the construction of questionnaire and instruments, mimeographing, writing survey methodology reports, secretarial services, freight, photocopying and the cost of personnel to perform these tasks.

Kv = Variable costs in design but not sample elements. In the present survey, computation of sample estimates, drawing the samples and training of field workers are included in this category.

nc = Costs which are proportioned to sample size but do not vary with design. The actual making and recording of the interviews as well as coding and transcribing the data from this survey are categorized in this grouping.

ncv = Costs that are proportional to the number of sample elements that also vary with changes in design. Only transportation for implementation of this survey entered in this group.

In summing up the costs for this survey, the costs included in nc (costs that vary with sample size) have been broken down into per unit costs to examine the marginal costs for one additional piece of information. As the survey handled two types of information; extensive and intensive, the cateogry has been further broken down into per unit costs (c_1,c_2) for n_1 (extensive observations) and n_2, (intensive questionnaires). n_1 = 625 and n_2 = 47. c_1 = ¢3.27 and c_2 = ¢26.17.

Therefore, (1) becomes $TC = K + Kv + (n_1c_1 + n_2c_2) + ncv$. In this survey total costs incurred were ¢5,970, where:

$$K = ¢\ 875$$
$$K_v = ¢1,405$$
$$n_1c_1 = ¢1,230$$
$$n_2c_2 = ¢2,044$$
$$ncv = ¢\ 415$$

An interesting aid for assessment is to see how costs would vary with alternate designs in the survey. Design refers to two aspects of the survey: 1) the collection method and/or instrument and 2) the sampling method. Figure 3 presents a matrix showing some combinations of possible design changes. In discussing changes the sample size is assumed to remain the same.

The personal interview generally is more costly since each respondent is interviewed each time data are obtained and thus requiring more collectors per given quantity of data collected. The advantage of the personal interview, however, is more precise data and being able to obtain information on more complex issues. The observation method involves recording data by a collector who observes the activity. In this case the collector records his judegment of prices, weights, costs, etc. While observation can be useful where few variables are readily observed, the accuracy of the information obtained generally suffers. Self-enumeration involves sending or leaving a form for the respondent to fill out. The major problems with this method are the high non-response rate due to the participants inability or unwillingness to cooperate, and the information collected cannot be too complicated. The advantage of self-enumeration is its low cost.

Collection Method / Sampling Method	Personal Interview	Observation	Self-Enumeration
Random	X	2	3
Stratified	4	5	6
Quota	7	8	9
Systematic	10	11	12

Figure 3: Matrix of some alternative survey designs, The X indicates the combination used in this survey. The numbers are for reference and are not qualitative.

The costs of combination (2), a random sample with observation, would likely have been greater than combination (x) since the interviewer would have had to spend much more time at the site. Also, it is doubtful that data of the same precision could be gathered by observation.

Combination (3) could be a way to lower costs, given a universe where this is feasible. Although self-enumeration is a possibility in the future, at present it is not feasible due to the interviewees' lack of education, experience and confidence in such a method.

Combinations (4), (5) and (6) all involve a stratified random sample. A stratified sample will, for the general case increase precision, especially if the variance in some markets or divisible groups is much greater than others. Costs could go up, down or remain the same when compared to simple random smapling and a method. By properly allocating resources and taking the optimum sample for each stratum, it could turn out that less travel and time would be necessary for certain geographic areas as opposed to a sample taken by a simple random sampling. The opposite or a neutral effect could also occur. The effects of the other methods; personal interview, observation or self-enumeration, would be the same as mentioned previously with random sampling.

Combinations (7), (8) and (9) involve quota sampling. Quota sampling allows the interviewer some freedom in selecting the respondent and also an ability to cut costs. Depending on the structure of the sample, a quota sample can lead to very poor quality of information, with an inherent tendency to ambiguity and uncertainty as to exactly what is done (Kish, 1965). There is no easy method of estimating the precision of a quota sample (Lansing and Morgan, 1971). It is quite doubtful that there would be any gain from a quota sample when speaking of information per dollar spent. A quota sample-observation method combination would be even worse in terms of precision, and so could a self-enumeration, in that it would be very easy for ther interviewer to ask only the most agreeable proprietors repeatedly to fill out the form.

The last combinations in the matrix, (10), (11) and (12) concern systematic sampling. The application of systematic sampling is easier than either the random

or stratified, especially in the field and hence might possibly reduce costs. Precision would be lower than with the simple random method only when the variance of the systematic samples is greater than the population as a whole. It is difficult to give general advice about the situations in which systematic sampling is to be recommended; a knowledge of the structure of the population is necessary for its most effective use (Cochran, 1963). Should this knowledge be available, or can be obtained cheaply, a systematic sample might prove a way to gather more information per dollar with just as much precision.

VII. Data Processing

A survey of any magnitude can be made or lost by data processing. This can be of paramount importance in a developing country, where in many instances data processing has only recently come into focus. Computerized tabulation of data for general projects is just now being implemented in El Salvador.

The Directorate had assigned a high priority to our particular project, and one person was available on a part-time basis. The person was trained to code and transcribe data from the questionnaire to code sheets for keypunching. The first step was to devise a coding system. For us, this meant three coding systems as we had three data collection forms: the two intensive questionnaires and the extensive form (see Appendices I and II).

After deciding on our system any alterations were made in the data collection forms if needed to make them more compatible with the coding system. As was mentioned previously, we changed our extensive form for precisely this reason.

Since the coder was available only on a part-time basis, a substantial period of time was required to transcribe the data. The coder worked closely with the data collectors to know precisely what was to be recorded. Each week's information was checked for organization, completeness and clarity by the collectors before giving to the coder, who also kept accurate records of the coding process. Most problems encountered in this area were attributed to illegible recording, inconsistencies on the part of the data collectors or new categories that were not predicted ahead of time in designing the system.

VIII. Evaluation of the Survey

A. Modifications in Implementation

The initial strategy described above worked well for the intensive interviews and we deviated little from it. The extensive interviews which were to go on for a ten-week period allowed us time to make adjustments where necessary to improve our methods.

The first week brought about only one change, which was that the survey would be reduced to nine weeks. This was a result of a set of intervening events which all but completely shut down the marketing system for four days.

During the second week we were able to launch successfully our survey; and at the end of this week we decided upon the following changes:

a) Set a limit to the number of times any single firm could be sampled within a week. This was brought about as a result of discussions and negotiations with the proprietors. It was difficult to explain to them why we would want to speak to one firm four times in a short period and not at all to another firm.

b) Eliminated one market from the survey. This was decided upon after the second week of failing to negotiate a compromise, and came about as a result of a strong coalition of proprietors within one market (Miguelito) not to cooperate with us.

c) We altered the time of going to the market to be more convenient for the proprietors.

d) A master chart was designed for keeping tabs of each attempted observation, result, and substitution in case of failure to get an observation. The chart contained:

1) Initial sample by firm, day and week

2) Completion or incompletion of our interview.

3) Reason for incompletion.

4) Substitution record, whether it was by day of week or by firm.

e) Flow values were recomputed, this time based on purchases from the data we were generating. Each firm was checked periodically to make sure it was in its proper category, using the best estimate of its average daily purchases.

f) Reduction of sample size. The first week of observation yielded only 62% of the target sample. This was due mainly to inexperience. We reduced the sample to 85 the second week. Subsequent weeks resulted in an increased percentage and we pushed the sample to 90. Twice the sample was reduced to 80 and once to 60 due to restrictions in personnel and a shutdown of the market for the celebration of Easter.

g) Computational work sheet. To simplify the flow value computation and shares of market, a work sheet was devised. It is shown in Appendix IV. It helped a great deal when drawing up a new sample each week.

h) Modified form. We redesigned our observation form to make it more complete, easier to fill out accurately, and less complicated for transcribing the data onto code sheets. The first form is in Appendix V, the modified form is in Appendix II.

Additional changes made during the course of the survey:

i) Days of the week. Experimenting, we found that not taking any observations on one day of the week added to our efficiency. Also, certain availability or unavailability of personnel would cause changes from week to week. We kept a complete table of our daily percentages; they can be found in Appendix VI.

j) Accuracy. We reached levels of achieving up to 95% of our sample. For five of the nine weeks we succeeded in getting over 90% of the sample. A chart showing the weekly sample and percentage of completion is in Appendix VII.

k) Time of observation. Late in the survey we tried going to the market early, before the vendors had even opened up for business and became busy. It was easier at times for them to speak with us since there were no clients, but the observations took longer because they were quite occupied preparing for the day. When we arrived near mid-day observing was difficult if the vendor had had a poor day as she did not feel

like discussing the matter. In the early morning, however, the vendor usually had a good attitude, becuase he/she still had hope of having a good day.

B. Public Relations

Without a proper public relations effort, we most likely would not have succeeded in collecting information at all. As it was, we still had to overcome a lot of objections, which we did through perserverence, time, honesty, communication and sincerity.

We implemented other techniques. One was emphasizing our long range goal of increasing fish consumption, or demand for fish, a goal the proprietors readily supported. To illustrate, we mimeographed and distributed recipes for preparing and eating fish. It is a common theory that one of the reasons why fish consumption per capita in Central American is so low is becuase people are relatively unaware of ways to prepare fish. After giving the proprietor the recipes he/she was asked to pass them on to his/her customers with the hope they would stimulate sales. This aided in breaking down some barriers that might arise between the proprietors and the interviewers.

Lastly, at the end of the survey a letter of thanks for participation, cooperation and endurance was written and distributed to all. Along with an expression of thanks, the letter contained an introduction to what the agency had planned for the future, explaining that on a less intensive basis the data collection process would be ongoing throughout the year.

C. Cooperation from Firms

It was truly and understandably difficult for any of the proprietors to completely believe that the data collected were going to be of direct benefit to him. To many, we were just out to see how much money they were making, so we could decide how much we wanted to take. Or, perhaps, we were setting up a large firm to try and monopolize the industry.

The cooperation we received was due to the cooperation of the Government of El Salvador, our public relations efforts previously outlined, and by becoming known and friendly with them through time. There is the belief that a majority of people gave us data not because they thought good would come to them as a result of it (which we claimed) but because they wished to do a favor for their friends. Thus, communication and time spend with the proprietors proved to be an extremely important aspect of the survey.

D. Time/Work Schedule

Another problem was the conflict of the markets engaging in greater amounts of transactions on Saturdays and Sundays and the government agency not operating on these days, nor prepared to allow their employees to exchange days. It might also be added that the employees were not interested in exchanging days, without an increased wage rate. This type of conflict seems to be one which needs to be worked out ahead of time with the personnel department of the agency, the employees, and their supervisor.

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LIST OF APPENDICES

GA-1

GUIA PARA ENTREVISTAS

FASE 1

MAYORISTA· MINORISTA

COMPRADORES INTERMEDIARIOS

ZONA: _____

FECHA: _____

HORA: _____

NUMERO: _____

ENTREVISTADOR: _____

_____

I- GENERAL:

1- Nombre del entrevistado _____

2- Nombre del propietario _____

3- Dirección y ubicación _____ _____ _____

4- Tipo de empresa _____minorista _____Mayorista_____

_____ Ambos _____.

5- Tipo de expendio _____puesto fijo _____tienda_____

super mercado _____ambulantes_____otro _____.

OBSERVACIONES:

II- Descripción:

1- Fachada del puesto _____

2- Tamaño M^2, dimensiones _____

3- Vende otros productos además de pescado? Si_____No _____

Cuáles? _____

4- EQUIPO

	#	EDAD	CAPACIDAD	VALOR ACTUAL	VALOR NUEVO	PROP/ALQ.
Báscula						
Registradora						
Congelador						
Regrigeradora						

III- DE FUNCIONAMIENTO:

1. Años de vender pescador. _____
2- Días laborables durante la semana. _____
3- Horas de operación. _____
4- Períodos más activos del día. _____
5- Días menos activos de la semana. _____
   Por qué? _____
6- Días más activos de la semana _____
7- Trabaja todo el año en la venta de pescado? Si____no_____
   si no, Cuándo cierra el negocio? _____
8- Qué clase de registros lleva en relación a las compras y las ventas _____
   mental o anota.

IV- Maneras de operaciones generales.

1- Cuántos días de la semana compra usted pescado? _____
   Por qué? _____

2- Adónde y de quién compra el pescado? _____

DONDE	QUIEN	REG/OCASION	OBSERVACIONES

3- Cuáles clases de pescado compra? _____

_____

4- Cuánto pescado de cada especie compró la semana pasada?

ESPECIE	UNIDAD DE MEDIDA	CANTIDAD EN PESO O VALOR

5- Cómo está el mercado estos días?

El precio:_____Alto_____Normal_____Bajo _____

Subiendo_____Bajando _____

La oferta:_____Abundancia_____Normal_____Bajo_____

La demanda de clientes: _____Lenta _____normal

_____Alto _____.

6- A quién le vende su producto? [illegible]

Mayorista: Se vende a: Reg/ ocas.

_____ Consumidor _____

_____ Hoteles _____

_____ Detallistas _____

_____ Restaurantes _____

_____ Ambulantes _____

_____ Toponeros _____

_____ Otros _____

Minorista: Se vende a: Reg/ocasiones

_____ Consumidor _____

_____ Hoteles _____

_____ Otros _____

V- Costos -A

1. Cuáles son sus costos por unidad de tiempo por cada insumo siguiente?

INSUMO	UNIDAD DE TIEMPO	CANTIDAD	COSTO	OBSERVACIONES
HIELO				
AGUA Y ELECTRIC.				
CAJONES				
PAPEL BLANCO				
PAPEL PERIODICO				
BOLSAS PLASTICAS				
TRANSPORTE				
ALQUILERES				
CARGADORES				
IMPUESTOS				
Int. SOBRE DEUDAS				
PAGO DE CAPITAL				
OTROS				

2- Dependientes familiares: _____
Número

VI- Consideraciones: A

1- Cuáles son sus problemas mayores o más frecuentes en sus negocios? _____

2- Que se necesita para estos problemas? _____

_____

3- Cuáles cambios ha visto usted en los últimos años en el mercado de pescado? ___ _____

le afectaron a usted?_____Cómo? _____

_____

4- Qué son los problemas mayores en la compra, venta global de pescado? _____

_____.

OBSERVACIONES;

G-16

GUIA PARA ENTREVISTAS

FASE 2

MAYORISTA MINORISTA

COMPRADORES INTERMEDIARIOS

VII. COMPRAS

1- Se abastece ud., por medio de un contrato verbal o escrito con algún proveedor del pescado? si____no____¿Quién es?_____

2- a) Como establece los precios de compra?

regatean ( )
fijo ( )
contrato ( )

b) Quién fija los precios de compra?

1) Corrientemente _____

2) Estación de escasez _____

3) Estación de abundancia _____

c) En que forma paga ud. el pescado?

1) Contado _____

2) Crédito _____ De quién? _____

3) Cambio de bienes

d) En su ultima compra, en que precio compró cada especie?

ESPECIE	UNIDAD DE MEDIDA	ULTIMA COMPRA PRECIO/CANTIDAD

Si compra al crédito

a) Cuántos días después de recibir el pescado, tiene que pagar? _____

b) Cuántas veces pueden obtener pescado sin pagar? _____

c) El precio del crédito es diferente al precio de contado?

_____

d) Que parte de sus compras son al crédito? _____

_____ Por qué? _____

VII- VENTAS.

A-MAYORISTA O MAYORISTA- MINORISTA

1- Cuáles son sus ventas promedio(peso o valor)

	EPOCA ABUNDANCIA	EPOCA ESCASEZ
DIARIAS		
SEMANALES		
MENSUALES		

1.5- Qué pescado es más popular entre sus clientes? _____

_____

2- Han aumentado sus ventas año con año? si___no___Por qué?

_____

3- Cómo se entrega el pescado: entero, filete, etc? Qué por ciento en cada forma? _____

4-a- Cómo establecen los precios de ventas? _____

_____

4-b- Es el mismo para todas las especies? _____

_____

5-A Da ud. crédito en sus ventas? si_____no_____

-B Cuántos días después de la compra, deberá ser pagada la cuenta? _____

-C Cuántas veces puede comprar pescado un cliente sin pa-- gar? _____

_____

-D Qué parte de sus ventas es al crédito? _____

6- Si también vende al por menor, qué parte de sus ventas son al por mayor? _____

7- Si ud. vende otros productos:

a) Qué parte es pescado de sus ventas totales? _____

_____

b) Qué parte de sus instalaciones son dedicadas para el pescado? _____

c) Por qué vende ud. otros productos con pescado? _____

_____

8- Si ud. no vende otros productos:
Por qué no se venden solo los otros productos? _____

_____

B- MINORISTA

1- Cuántas personas atiende al día? _____

2- Qué pescado es más popular entre sus clientes? _____

_____

3- Cuál fue el total de sus ventas ayer? _____

_____ Fue una cantidad : alta_____
PESO O VALOR

regular del normal _____baja_____

4- Qué promedios obtuvo de las ventas en:

una semana buena:_____y una [illegible] _____

5- Tiene clientes fijos? si____no____Cuántos? _____

6- Da ud. descuentos por ventas grandes? _____

Cuánto? _____

7-A- Hay veces cuando tiene que rebajar el precio de pescado si_____no_____Por qué? _____

_____

B- Alguna vez ha tenido que vender el pescado más barato - que lo que pagó por él? Si___ _no_____ Porqué y Cuántas veces? _____

_____

8-A- En que forma le pagan sus clientes?

Crédito_____Contado_____

B- Cuántos días después de la compra,deberá ser pagado la- cuenta? _____

C- Cuántas veces puede comprar pescado un cliente sin pagar? _____ _____

D- Qué parte de sus ventas son al crédito? _____

_____ _____

9 - Si ud. vende otros productos:

A- Qué parte es pescado de sus ventas totales? _____ _____

_____ _____

B- Qué parte de sus instalaciones son dedicadas para pesca do? ___ _____ _____

C- Porqué vende otros productos con pescado? _____

_____

D- Por qué no se vende otros productos solamente? _____

_____

IX- MARGENES

1- A que precio vende cada especie?

ESPECIE	UNIDAD DE MEDIDA	PRECIO HOY

2- Cómo establece ud. el precio de sus productos?

a) Precio de compra más una suma fija( )

b) Porcentaje fijo sobre precio de compra ( )

c) Según la competencia_____( )

d) Según los precios de otras plazas ____( )

e) Según la época_____( )

3- Si compra el producto a ₡ 1.20, Cuál es lo mínimo que - puede vender? _____

4- Varían sus márgenes durante el año? _____

_____Cuándo? _____

X CONSIDERACIONES TECNICAS:

1- Cuáles son sus pérdidas por descomposición? _____

_____

2- Qué hacen con las pérdidas? raloan y secan_____

botan_____otros _____

3- Por cuánto tiempo guarda varias especies de pescado?

Especie	en hielo	refrigeracion	congelación	nada

4- Cuánto dinero necesitó para comenzar en su negocio? _____

_____ Hace cuánto tiempo? _____ _____

erv.-

Appendix I-C.

GB-1

GUIA PARA ENTREVISTAS

FASE 1

TRANSPORTISTAS, MAYORISTA, COMPRADOR

DESDE EL PRODUCTOR.

ZONA: _____

FECHA: _____

HORA: _____

NUMERO: _____

ENTREVISTADOR _____

_____

I- GENERAL:

1- Nombre del entrevistado: _____

2- Nombre del propietario: _____

3- Dirección y ubicación: _____

4- Tiene el negocio otros puestos: _____
LUGAR Y NOMBRE

_____

5- Años de establecido _____

6- Años bajo el dueño actual: _____

II- DESCRIPCION.

1- Fachada del puesto: _____
Equipo, edificios, facilidades

_____
muebles, etc.

2- Tamaño , área, M^2 del puesto: _____

_____

EQUIPO	#	EDAD	CAPACIDAD	VALOR ACTUAL	VAL.NUEVO	PROP/ALQ.	OBSERV.
Báscula							
Registradora							
Congelador							
Regrigeradora							
Hielera							
Cámaras							
Frizer							
Chorro,cañería							
Canastas							
otros							

3- Equipo de transporte:

Camiones- Capacidad, marco, #, año: _____

_____

Carro : utilizado en el negocio, marco, #, año _____

_____

Embarcaciones de pesca: _____

Otros: _____

III- MANERAS DE OPERACIONES GENERAL.

1- En cuáles localidades compra usted su producto? _____

_____de particulares_____de Cooperativa____ambos_____

A cuántos proveedores compra ud. en cada localidad? _____ __.

2- Cuántas veces por semana visita esas localidades? en verano

_____en invierno_____

3- a. Cuánto Producto de cada especie compró la semana pasada?

ESPECIE	UNIDAD DE MEDIDA	CANTIDAD

b- Compró una cantidad alta? _____ regular? _____

o baja del normal? _____.

4- Cómo está el marcado de pescado en estos días?_____

El precio ____alto ____escaso ____normal

La oferta? ___alta ___escasa ___normal

Las ventas ___altas ___lenta ___n

IV- COSTOS- A

1- Cuáles son sus costos por una unidad de tiempo para cada insumo siguiente?

INSUMOS	UNIDAD DE TIEMPO	CANTIDAD	COSTO	OBSERVACIONES
HIELO				
AGUA				
ELECTRICIDAD				
TRANSPORTE				
CARGADORES				
PATENTES				
IMPUESTOS				
RENTA				
PROP. Y EQUIPO				
OTROS				
MANTENIMIENTO a- COMBUSTIBLE				
b- ACEITE				
c- MANO DE OBRA MANTENIMIENTO				
d- LLANTAS				
e- BATERIAS				
f- FILTROS				
g- OTROS				
REPARACIONES a- MOTOR				
b- TRANSMISION				
c- CARROCERIA				
d- OTROS				

EMPLEADOS

TIPO DE EMPLEADO	TIEMPO COMPLETO O PARCIAL	SALARIO SEMANAL	TIPO DE LABOR

Dependientes familiares: _____

V- CONSIDERACIONES

1- Cuáles son sus problemas mayores? o más frecuentes en su negocio_____

_____

2- Qué se necesita para resolver esos problemas ? _____

_____

_____

3- Qué cambios ha vistos ud. en los últimos años en el mercado de pescado,?_____

Qué le afectó a ud?_____

4- Qué son los problemas mayores en el mercado de pescado?_____

_____

_____

OBSERVACIONES

GUIA PARA ENTREVISTAS G-85

FASE 2.

TRANSPORTISTA COMPRADORES

DEL PRODUCTOR

Zona:_____

Fecha: _____

Hora: _____

Número:_____ ___

Entrevistador: ____

_____

VI- COMPRAS

1- Se abastece ud., por medio de un contrato verbal o escrito con algún proveedor del pescado? si____no_____, Con quién? (es)es(son),? _____

Qué clase de contrato?_____

2- Cuánto tiempo puede esperar el producto antes de hacer un viaje? _____¿ Antes de ven-- derlo? _____.

3- ¿ Cuánto tiempo dura comunmente para cargar el vehículo?

_____

4. Como Establece los precios de compra
   a) regateo ( )
   b) fijos ( )
   c) contrato ( )

5- ¿Quién fija los precios de compra:

corrientemente? _____

en época de escasez?_____

en época de abundancia? _____ _____

6- En que forma paga ud. el pescado?

contado: _____

crédito; _____

cambio de bienes: _____

7-A Recibe ud. adelantos en efectivo o préstamos en las compras? _____

8-Con qué propósito y por cuanto tiempo? _____

8- A que precio compra dcada especie? _____

ESPECIE	UNIDAD DE COMPRA	ULT.COMPRA PRECIO CANTIDAD	SEMANA PASADA PRECIO

VII- VENTAS

1- Le vende ud. de manera regular a alguien? si_____no_____

¿ A quién, dónde y con qué frecuencia?_____

_____

2- Existe alguna clase de arreglo o contrato? _____

_____.

3- Han aumentado sus ventas año con año? si_____no_____

Por qué? _____

4- Es el mismo por todas las especies? _____

_____

5- Le paga el mismo precio a todos los compradores por la -- misma clase de pescado? si_____no_____Por qué? _____

_____

6- Cómo arregla los precios con el comprador?

( ) Regateo
( ) Fijo
( ) Contrato

7- En qué forma le pagan el pescado?

( ) contado
( ) crédito
( ) cambio de bienes.

8-A Si vende al crédito, ¿ Cuáles son las condiciones del crédito? _____
plazo para pagar, condiciones mínimas o máxi.

_____

etc. ...

8- Es el precio al crédito mayor que al contado? _____

_____

9- Le da ud. adelantos en efectivo o préstamos en las ventas?

_____

10- Hace ud. ventas condicionales? si___no____, ¿ Bajo cuáles condiciones? _____

_____

11- Ha vendido , o a veces vende,a precios menor que el costo? si_____no_____ ¿Por qué? _____

_____

¿ Cuántas veces ocurre así? _____

_____

VIII COSTOS-B

1- Pidió algún préstamo para su vehículo?_____

(A) Hace cuánto tiempo? _____

(B) Cómo son sus pagos mensuales? _____

(C) Hace ud. préstamos a otras personas en general?_____

si____no_____¿Bajo cuáles condiciones?_____

_____

2- Cuánto dinero necesitó para comenzar en su negocio?_____

_____Hace cuánto tiempo?_____

a) ¿Que parte de éste, dedicó a la adquisición del equipo?

_____

b) Que parte de éste dedicó a la adquisición del local?

_____

3- Tiene ud. otros gastos una o dos veces al año, tales como- pago de pólizas, Seguros contra incendios, seguro de vehículos, etc ; si los tiene, cuáles son?_____

_____

4- Paga ud. Seguro Social?_____

Cuándo y Cómo?

5- Paga ud. seguro de riesgos profesionales? _____

_____

Cuándo y Cómo?

6- Cuál es su capital de trabajo?(operaciones)_____

_____

7- Cuál es su inversión total en facilidades en tierra, equipo , vehículos? _____

IX MARGENES

1- A que precio vende : cada especie?

ESPECIE	UNIDAD DE MEDIDA	PRECIO HOY	PREC.SEM. PASADA

2- Cómo establece ud. el precio de sus productos?

(a) Precio de compra mas una suma fija( )

(b) Porcentaje fijo sobre precio de compra( )

(c) Según la competencia ( )

(d) Según los precios de otras plazas? ( )

(e) Según la época? ( )

3- Si compra el producto a @ 0.80 lb. cuál es el precio mínimo que puede vender? _____ _____

X CONSIDERACIONES TECNICAS

1- Cuáles son sus pérdidas por descomposición? _____ _____

_____ ___ Por qué se echa a perder? _____ por día o por semana _____ _____

2- Qué hacen con las pérdidas? __ Ralean y secan_____

botan_____ _otros_____

3- Cuáles son sus pérdidas por merma, etc,? _____

_____

4- Por cuánto tiempo guarda varias especies de pescado?

ESPECIE	EN HIELO	REFRIGERACION	CONGELACION	NADA

5- Tiene planes para expender su negocio o para cerrar su negocio?_____

_____

OBSERVACIONES

ERV.-

NOMBRE: _____ (ENTREVISTADO) NUMERO: _____ ENTREVISTADOR: _____ FECHA: ___/___ (DIA — MES) HORA: _____ DIA: D L M M J V S

Especies de pescado que tiene para vender hoy	fecha de compra	cantidad y medida de compra	precio de compra	forma de venta	precio y medida de venta	Especies de pescado que tiene para vender hoy	fecha de compra	cantidad y medida de compra	precio de compra	forma de venta	precio y medida de venta
corvina gr med peq				L/E		camaron grande del rio del mar cabeza cola				entero	
mojarra de mar gr med peq				L/E		camaron mediano del rio del mar cabeza cola				entero	
mero gr med peq				L/E		camaron pequeño del rio del mar cabeza cola				entero	
pargo				L/E		tiburón				lonja	
robalo				L/E		morralla				entero	
pacuna				L/E		bagre del mar				entero	
boca colorada				L/E		bagre agua dulce				entero	
chimbera				L/E		jalva				entero	
ruco				L/E		puncha				entero	
macarela				L/E		guapote tigre				entero	
cuin				L/E		pescado revuelto				entero	
mojarra grande agua dulce				L/E		gorreon				entero	
mojarra mediana agua dulce				L/E							
mojarra pequeña agua dulce				L/E							

Cual fue el total de sus ventas ayer (o último dia de venta) _____ lbs _____ Fecha _____

Appendix II

Appendix III

Reasons for the Survey

1. Increase demand.
2. Measure the efficiency in the marketing system and compare one market to another.
3. Improve product quality.
4. Improve market quality/Sanitary conditions.
5. Diminish product losses.
6. Measure the seasonal increase in demand, so as to assist the production sector with adequately increasing supply.
7. Understand more about the activities and attitudes of
    a) consumer
    b) retailer
    c) wholesaler/transporter

Weekly Sample Computing Work Sheet

HOJA DE COMPUTACION; PROGRAMACION SEMANAL, COSECHACIONES EXTENSIVAS, PESCADO FRESCO

Semana No. 8

Fecha 25/4 hasta 1/5

Mercado Codigo	Puestos Total	Categoria A	Categoria M	Categoria B	Promedio $ Compra	Flujo	%	No. de Observ. PROGRAM.	No. de Observ. hechas
central	58					660090	100%		
02		10			297 41	297410	45%		
			34		95.10	3233.40	49%		
				14	28.10	393.40	6%		
Finca #1	12					640.20	100%		
04		1			187	187.1	29%		
			3		96.56	289.68	45%		
				8	20.44	163 52	26%		
Sn Jacinto	9					80.5	100%		
05		2			257	514	57%		
			3		94	282	31%		
				4	25	100	12%		
Modelo	5					338	100%		
06			3		94	282	83%		
				2	28	56	17%		
5 de Nov.	3					95.5	100%		
07				3	28 5	85,5	100%		

Mercado Codigo	Puestos Total	Categoria A	Categoria M	Categoria B	Promdeio $ Compra	Flujo	%	No. de Observ. program	No. de Observ. hechas
Mejicano	8					4417	100%		
08			4		75.42	301 76	68%		
				4	35.1	140 1	32%		
Sta. Lucia	3					300	100%		
09			3		100	300	100%		
Soyapan	8					238	100%		
10			1		63	63	26%		
				7	25	175	74%		
Sta. Lucia	7					308	100%		
12			3		64	192	62%		
				4	29	116	38%		
Sn Marcos	2					132	100%		
13			2		66	132	100%		

Appendix V

NOMBRE_____ FECHA_____ HORA_____ NUMERO_____ ENTREVISTADOR_____

Especies de pescado que tiene para vender hoy	fecha de compra	cantidad de compra	precio de compra	forma de venta	precio de venta	Especies de pescado que tiene para vender hoy	fecha de compra	cantidad de compra	precio de compra	forma de venta	precio de venta
corvina grande				lonja entero		camaron grande del rio del mar					
corvina mediana				lonja entero		camaron mediano del rio del mar					
corvina peq				lonja entero		camaron pequeño del rio del mar					
pargo				lonja entero		tiburón				lonja	
robalo				lonja entero		moralla					
pacuna				lonja entero		bagre del mar					
mero				lonja entero		bagre agua dulce					
toca colorada				lonja entero		jaiva					
chimbora				lonja entero		punche					
ruco				lonja entero		guapote tigre					
macarela				lonja entero		pescado revuelto					
cuin				lonja entero		gorreon					
mojarra grnade				lonja entero							
mojarra mediana				lonja entero							
mojarra peq				entero							

Cual fue el total de sus ventas ayer (o última dia de venta)$_____ lbs_____ Fecha_____

Appendix VI

Weighted Sample Percentage Values for Day of the Week

In Percent

Week	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
I	14	14	14	07	07	29	14
II	14	14	14	14	14	23	07
III	15	15	15	15	15	25	-
IV	-	18	18	~~0~~	18	28	18
V	25	25	25	-	~~00~~	-	-
VI	-	05	20	20	20	25	10
VII	18	-	19	19	19	25	-
VIII	-	18	17	18	17	20	20
IX	-	25	25	25	25	-	-

Appendix VII

PROGRAMACION GLOBAL .-

SEMANAS (WEEKS) / (MARKETS) MERCADOS	I				II				III				IV				V ++				VI				VII				VIII				IX		
	P		R		P		R		P		R		P		R		P		R		P		R		P		R		P		R		P		R	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	
A	39	39	33	53	48	57	35	55	48	57	44	55	51	57	44	52	17	49	17	49	54	68	52	72	55	61	47	56	52	65	48	63	38	63	30	
B	26	26	4	7	10 ↓	12	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
C	2	2	0	0	2	2	4	6	5	6	2	3	4	4	7	8	-	-	-	-	1	1	0	0	5	5	4	5	4	5	4	5	6	10	6	
D	9	9	7	11	6	7	7	11	12	14	9	11	9	10	10	12	-	-	-	-	3	4	3	4	7	8	9	11	10	12	9	12	4	7	4	
E	15	15	11	18	18	21	14	22	13	15	12	15	16	18	12	14	6	17	6	17	13	16	12	17	14	16	14	17	10	13	11	15	10	17	10	
F	9	9	7	11	1	1	2	3	7	8	13	16	10	11	12	14	12	34	12	34	9	11	5	7	9	10	9	11	4	5	4	5	2	3	2	
T O T A L E S	100	100	62	100	85	100	64	100	85	100	80	100	90	100	85	100	35	100	35	100	80	100	72	100	90	100	83	100	80	100	76	100	60	100	52	1
Percent Realized Porcentaje Realizado $\frac{R}{P} \times 100$:	62 %				75.30 %				94.11 %				94.44 %				100 %				90 %				92.22 %				95 %				86.66 %			

A = Mercado Central
B = Mercado San Miguelito
C = Mercado Santa Tecla
Mercado San Marcos
D = Mercado Tinetti - Mercado Sta. Lucía
E = Mercado San Jacinto
Mercado Modelo
rCh

F = Mercado 5 de Noviembre
Mercado de Mejicanos
Mercado de Soyapango

P = Programado (Scheduled)
R = Realizado (Realized)

↓ =Se programaron 10; pero se tuvo problemas con las vendedoras, y únicamente se realizaron 2.

++ =Pocas entrevistas por la Semana Santa, se hizo todo lo que se pudo aleatoriamente.

↓ 10 were drawn as the sample, but problems were incurred with the proprietors

++ Fewer interviews for Easter Week, but all possible were drawn randomly.