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OF
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A
MARKETING
STUDY**

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*Information contained herein is available to all without regard
to race, color, or national origin.*

Method Of Conducting A Marketing Study

E. W. McCoy and M. L. Hopkins¹

INTRODUCTION

MARKETING, IN GENERAL, includes those functional activities that occur between production and consumption. Included among these are storing, transporting, processing, and financing. A market channel is the route a product follows from producer to consumer: from producer to wholesaler to retailer to consumer. Market studies thus are diverse, ranging from a study of the cost of transportation to an overview of the entire marketing system. Before any marketing study should be undertaken, the problem area should be clearly identified.

A fish marketing study conducted in Central Luzon, Philippines, is used as an example to illustrate the important sections in a market study process.

The Objective

When the problem area is identified, the objective must be established. The objective is the basis for formulating methods to establish data for decisions. If current data are not available from secondary sources, then primary data sources must be used.

In marketing, three primary data sources are available: producers, sellers, and consumers. In a typical market situation, producers are many, diverse, and geographically separated. Sellers are fewer in number, relatively uniform, and geographically concentrated in centrally located market places. Consumers again are numerous, diverse, and geographically separated. The decision criteria are a matter of time and cost. Primary data from any or all sectors should allow establishment of the objectives. Producers and consumers will furnish estimates of home production or consumption from sources that bypassed the normal market chain.

Given no constraints on expenditures for data collection, all three primary data sources should be utilized. In an imperfect world, however, restrictions are almost always placed on expenditures. Thus, the market study must be conducted within given constraints imposed by expenditure, time, personnel, or other factors.

The following objectives were established in the example fish marketing study in the Philippines.

1. To determine consumption statistics for fish by species.
2. To determine seasonality of demand and supply.
3. To determine price-size relationships of demand.

Each objective must be clearly formulated. Existing consumption statistics may be available from secondary sources. Consumption statistics are necessary to indicate a base point for analysis. For example, if after a 5-year fisheries development program consumption is estimated at 20 kilograms

per capita, there is no basis for indicating whether an increase or decrease has occurred.

Seasonality of demand is high or stable when supply or natural production is low. Operators may be able to adjust production to permit harvest during the low supply and/or high demand period.

Quantity demanded is a function of price, *ceteris paribus*; however, the demand for 1 kilogram of 100-gram fish is not the same as the demand for a 1-kilogram fish. The smaller fish may sell for a lower or higher price per unit. Production of small fish may be more efficient and profitable even though larger fish command a higher market price.

The Data

Before collection of primary data can begin, the market researcher must clearly differentiate the form of data available from the form of data desired. For example, a market researcher may desire information in the tabular form as indicated in table 1. If the per capita consumption was known or could be estimated, then the total consumption could be derived for each province/state and for the area.

Determination of supply and demand on a seasonal basis could be derived from table 2. The example table is for an area and the species list is reduced to avoid continuation tables. Demand is a schedule of the amounts of fish the buyers are ready, willing, and able to take from the market at specified alternative prices. Buyers can never take more from the market than is available. When supply is not limited, however, buyers will not take additional quantities from the market unless the price is reduced, other things equal. In table 2 the per capita consumption figures would be based on given prices throughout the year. Demand then would vary depending on variations in consumer income, price of competing goods, customs, and tastes and preferences of consumers.

Supply is the alternative amounts of product producers are willing and able to place on the market at a given time for a given set of alternative prices. With a stable price level, supply would vary due to natural factors, cost changes, and other changes including new technology. The variation in supply of fish could be larger than variations in demand when most of the fish sold come from capture sources. Questions regarding enhancement of production could easily be resolved if table 2 could be derived.

The price-size relationship of supply and demand requires data for table 3. The table would include species and seasonality; however, differentiation between supply and demand components would be difficult unless a completed version of table 4 could be determined.

The task of the market researcher is to devise an instrument to elicit the proper information to meet the objectives. Commercial producers maintain records of production;

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TABLE 1. PER CAPITA CONSUMPTION OF FISH IN CENTRAL LUZON, PHILIPPINES, BY CLASS AND PROVINCE, 1977

Class	Consumption by province						
	Bataan	Bulacan	Nueva-Ecija	Pampanga	Tarlac	Zambales	Total
Marine	kg	kg	kg	kg	kg	kg	kg
1st	XX.X	XX.X	XX.X	XX.X	XX.X	XX.X	XX.X
2nd	XX.X	XX.X	XX.X	XX.X	XX.X	XX.X	XX.X
3rd	XX.X	XX.X	XX.X	XX.X	XX.X	XX.X	XX.X
Total	XXX.X	XXX.X	XXX.X	XXX.X	XXX.X	XXX.X	XXX.X
Freshwater							
1st	XX.X	XX.X	XX.X	XX.X	XX.X	XX.X	XX.X
2nd	XX.X	XX.X	XX.X	XX.X	XX.X	XX.X	XX.X
3rd	XX.X	XX.X	XX.X	XX.X	XX.X	XX.X	XX.X
Total	XXX.X	XXX.X	XXX.X	XXX.X	XXX.X	XXX.X	XXX.X
Crustaceans	XX.X	XX.X	XX.X	XX.X	XX.X	XX.X	XX.X
Other	XX.X	XX.X	XX.X	XX.X	XX.X	XX.X	XX.X
Total	XXX.X	XXX.X	XXX.X	XXX.X	XXX.X	XXX.X	XXX.X
Grand total	XXX.X	XXX.X	XXX.X	XXX.X	XXX.X	XXX.X	XXX.X

TABLE 2. PER CAPITA DEMAND FOR AND SUPPLY OF FISH AT GIVEN PRICES, IN CENTRAL LUZON, PHILIPPINES, BY SPECIES AND MONTH, 1977

Species	Demand and supply, by month												
	1	2	3	4	5	6	7	8	9	10	11	12	Total
Marine													
Demand	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XXX
Supply	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XXX
Freshwater													
Demand	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XXX
Supply	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XXX
Crustaceans													
Demand	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XXX
Supply	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XXX
Other													
Demand	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XXX
Supply	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XXX
Total													
Demand	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXXX
Supply	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXXX

however, a considerable portion of the production is from small-scale fisheries, for which no records are available. Neither are records available to indicate the number of fishermen engaged in the industry. Brokers, who handle most of the catch, have detailed records on their transactions, but they may be unwilling to reveal the scope of business. Market sellers have precise estimates of the amount of their purchases over a short time period. Recall data would be less exact. The number of market sellers is difficult to ascertain on a long-term basis since the number varies by day of week and month of the year. Consumer estimates of purchases again are relatively precise over a short time period. Longer period estimates would be less accurate.

A further problem exists in utilizing data from producers or consumers. The persons interviewed would have to be a representative cross section of all producers or all consumers. Without prior knowledge regarding the population of producers or consumers, a relatively large number of interviews would have to be taken.

Hopkins,² in the study of marketing practices of artisanal fishermen, interviewed fishermen, fish pond owners, and fish market personnel. The study was conducted simultaneously with a NEDA-BFAR artisanal fisheries census, and a 5 percent sample of all fishermen was asked specific marketing questions. When a survey can serve a dual purpose, as in the example, more data can be collected at a lower cost.

²HOPKINS, M. L. AND E. W. MCCOY. 1976. Marketing of Fisheries Products by Municipal Fishermen in Panguil Bay, Philippines. Auburn Univ. (Ala.) Agr. Exp. Sta., International Center for Aquaculture, Res. and Dev. Ser. 11.

For a marketing study alone, when time and money are constraints, the logical data sources are brokers and wholesalers. Specific procedures must be followed to gain valid information from these sources. First, the personnel collecting data must be well-trained; second, the survey must be clearly separated from any revenue gathering aspects of government; and third, preliminary groundwork for conducting the survey must be established.

The other source for market data when time and money are constraints is sellers in the market place. Sellers are easy to locate, relatively easy to interview after an introduction, and are able to provide information regarding the majority of fish marketed.

The Questionnaire

A questionnaire is an instrument designed to record responses to specific questions. If the market researcher conducts every interview, then the questionnaire can be in short note form with ample space for recording responses. If different interviewers are used to gather information, then the questions must be clearly listed so each interviewer asks precisely the same questions.

TABLE 3. PRICE-QUANTITY RELATIONSHIP OF FISH IN CENTRAL LUZON, PHILIPPINES, BY SIZE GROUPING

Size — No./kg	Price/kg	Quantity available
10 or more	x.xx	xxx
5 - 9	x.xx	xxx
2 - 4	x.xx	xxx
1 or less	x.xx	xxx
Total	xx.xx	xxxx

TABLE 4. PER CAPITA DEMAND FOR AND SUPPLY OF FISH IN BATAAN PROVINCE, CENTRAL LUZON, PHILIPPINES, IN JANUARY, BY SPECIES AND SIZE

Class	10 or more/kg		5-9/kg		2-4/kg		1 or less/kg		Total
	Supply	Demand	Supply	Demand	Supply	Demand	Supply	Demand	
Marine									
1st	xx	xx	xx	xx	xx	xx	xx	xx	xxx
2nd	xx	xx	xx	xx	xx	xx	xx	xx	xxx
3rd	xx	xx	xx	xx	xx	xx	xx	xx	xxx
Freshwater									
1st	xx	xx	xx	xx	xx	xx	xx	xx	xxx
2nd	xx	xx	xx	xx	xx	xx	xx	xx	xxx
3rd	xx	xx	xx	xx	xx	xx	xx	xx	xxx
Crustaceans	xx	xx	xx	xx	xx	xx	xx	xx	xxx
Other	xx	xx	xx	xx	xx	xx	xx	xx	xxx
Total	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxxx

The questionnaire used in the Central Luzon, Philippines, market study (shown in Appendix III) was specifically designed to fulfill the objectives. The first three pages of the questionnaire are specific questions asked of the market sellers. The remaining pages are forms for recording sellers' responses. A brief summary of the questionnaire will indicate the expected use of each response.

The initial information is required to identify the sellers' location. Distance data are required to determine if supply and price vary by distance to the source of fish. Question 1 identifies the permanency of the seller, while question 2 is used to determine if the market has more sellers than provided spaces. Questions 3 and 4 are needed to expand the sample data to parameter estimates. Question 5 indicates the speed with which fish are sold, and question 16 later rechecks whether fish are rapidly sold. Generally, rapid sales indicate excess demand with respect to the available supply. Question 6 would indicate whether sellers resorted to services to increase sales. Until the market is saturated, sellers normally do not have to process the fish. If the sellers charge for the service, it may be provided only as an additional income source.

Questions 7 through 11 are recorded in table 1. Table 1 forms the basis for estimation of quantity seasonality. While the data on least and most sales are based on recall, no attempt is made to elicit recall of sales for every month of the year. Question 17 refers to demand. In effect it asks what time periods could the seller sell more fish if they were available. Again no attempt is made to ascertain how much more fish could be sold.

If the interviewers are properly trained and carefully and completely determine the responses to questions 7 through 11, then estimates can be made for objectives 1 and 2. Questions 12 through 17 are designed to gain information to meet the third objective. The responses are recorded in table 2. Answers recorded in table 1 serve as control values for table 2. For example, a seller may handle 50 kilograms of milkfish per day of which 20 kilograms are less than 100 grams per fish, 25 kilograms are from 100 to 200 grams, 10 kilograms are from 200 to 500 grams, and 5 kilograms are over 500 grams in size. The seller may have difficulty obtaining fish in the two larger size groups, especially during certain months of the year. Price paid by the seller for the fish is recorded by size of fish. Price paid is determined since price charged to consumers may vary according to time of day and other factors. Variation in price by month of year is next determined. Again, as in table 1, only the months of highest and lowest price are recorded. The amount of fish left over at the end of the day would indicate a supply surplus. With consistently large surplus the sellers would reduce orders if that option were available. If no fish were in excess, the sellers would increase orders until a slight surplus resulted. Sellers were queried regarding the amount and size of additional fish they could sell if the fish were available. To avoid double

counting of retail sales, the amount of sales to other retailers was established.

Question 18 attempts to determine the sellers' perspective of changes that have occurred in supply and demand over time. This covers not only species presently sold but also other species formerly sold. The expectation is that sellers will not have perfect recall of quantities or prices. However, sellers will have an opinion regarding whether prices and quantities have fluctuated upward or downward over the time period.

Question 19 is designed to establish the import statistics for fish on a province/state basis. Specific quantities of fish are produced within the province/state, and some of these are exported to other provinces/states or out of the area. Other fish are produced in other provinces/states and imported into the area. The net balance for the province/state and area can be estimated from data in table 4.

After a draft of the questionnaire is completed, a pretest is necessary to determine if seller response is in the form anticipated by the questionnaire designer. In the marketing questionnaire, the designer anticipated that all sellers were aware of first, second, and third class designations for fish. In pre-testing, however, it was revealed that sellers considered all of their fish as first class. The question was modified to ask the local name for the species sold. The question regarding the number of days fish were available was also added since the number of market days and number of days fish were available were not the same for smaller markets. Other changes were made to improve the flow of the questionnaire. The questionnaire included in the Appendix is the final instrument used.

The Manual

Following pretest and final adjustment of the questionnaire, an interviewer's manual should be prepared. The manual lists the step-by-step procedure for asking each question. It is important that each interviewer ask the questions precisely the same way every time. On question 5, for example, if the market has fish available from 4 a.m. to 9 a.m. and then from 4 p.m. to 7 p.m., the number of hours is 8. Gathering data on distance to market source by type also requires precise questioning. Table 4 is designed to reveal the source of fish to the market. Often the seller may not know the closest source, but the questionnaire editor is expected to ascertain the correct data to complete question 1 of the questionnaire. The manual of instruction for completing the survey is included in the Appendix.

THE SAMPLE DESIGN

After the market researcher has decided that sellers will be the source for demand and supply information, the sellers to be interviewed must be selected. Certain assumptions regarding the population of sellers must be made before the sample criteria can be established. The amount of advance knowledge

regarding the respondents will determine the number of assumptions necessary. Advance knowledge can also reduce the necessary sample size.

Market personnel in an area have general information regarding the number of markets and estimates of the maximum number of sellers in each market. With these estimates as a basis, the sample size can be established. The sampling must be dual, however. After the number of markets to be sampled is established, the number of sellers to interview in each market must be ascertained.

For sample sizes less than 1,000, more than 50 percent of the population must be sampled for valid parameter estimates. Thus, with an estimated 116 markets, at least 58 must be sampled for expansion purposes. For markets with 10 or fewer sellers, all must be interviewed. In the case of markets with more than 10 sellers, 10 or more must be interviewed depending on the number of interviewers assigned to the market. For large markets 10 percent of the sellers must be interviewed. In the Central Luzon, Philippines, market study, the total population of sellers was unknown before the survey, as was the expected number of sellers in each market. A sampling procedure was established for each market. The sampling procedure was designed to yield at least 10 percent of the sellers in at least 50 percent of the markets.

A randomization procedure was used in market selection. All markets within a province were listed in alphabetical order. A list of random numbers was assigned to the list of markets. The number of markets selected was a function of the number of interviewers and the amount of time available to complete the survey. Initially, the number of interviewers was set at 12 and the length of survey period was 3 weeks, excluding training and pretest. It was assumed that interviewers could complete 4 questionnaires per day, 5 days per week, or 60 interviews over the 3-week period. Twelve interviewers would be sufficient to complete 720 interviews during the scheduled length of time. Since the markets were geographically separated within the province and six provinces were included within the study area, time efficiency was a major control factor.

Two administrative positions are required for a marketing study: a field supervisor and a team leader. The field supervisor would previsit each market area, establish the market location within the area, determine the number of sellers operating in the market, determine the sample size, and establish the procedure for collecting a random sample of market sellers. The team leader(s) would select the interviewers for each market, arrange for transport to each market, re-establish the count of sellers in each market, distribute questionnaires, spot-check interviews, and conduct interviews.

The Market Interviewers

A training program for interviewers is necessary to ensure that each person fully understands the nature of the study. One week of training should be planned to provide step-by-step coverage of the questionnaire. Thorough coverage of the manual, test interviews in a non-market sample area, reappraisal of the questionnaire after the test interviews, and an open forum question and answer period are necessary parts of the training program.

During the training period the interviewers must learn how to explain the purpose of the study, record the data, probe for information, and use various techniques to elicit responses to the questions. An extended training period is necessary if the questionnaire and manual are in English while all interviews are to be conducted in another language. The language transition requires complete understanding of the question, its purpose, and the general type of response expected. Question 16, for

example, was an estimate of oversupply. In the pretest period, all of the sellers responded yes to this question. In response to the follow-up question "What do you do with these fish?" the answer was "sell in the afternoon." In translation, question 16 had become "do you often have fish left over in the morning?" or the connotation of left over was lost. The question was modified to be "do you often have unsold fish?" On questions 14 and 15, some of the interviewers asked for selling price, while others asked the buying price. The training period allowed adjustment of these problem areas. Other problem areas would be expected to arise during the survey period and would be resolved as they arose.

Supervision of the interview process is as important as the interview. The interview forms should be checked daily to ensure that each interviewer is recording comparable information. The follow-up interviews will establish if the interviewers are probing sufficiently to gain the available data.

DATA HANDLING

After the interview forms are completed, editing must be performed to convert all survey information to a comparable format. Units of measurements given by sellers must be converted to the same unit. For example, low quantity sellers often purchase and sell fish by the piece. The interviewer must estimate the number of pieces to a kilogram. High volume sellers purchase by the tub. A tub has a standard measurement of approximately 35 kilograms. All of the various measures must be converted to kilograms for comparability of data.

Editing soon after the survey form is completed allows the interviewer to recall any data misrecorded on the questionnaire. The control totals can be checked to assure consistency of recording for all tables of the questionnaire.

The data could be hand-tabulated on prepared forms and summarized into final form. The punch card approach requires additional time in editing the data, but allows numerous methods of data compilation after the data cards are prepared. The code books and codes for transferring the data to punched form are listed in the Appendix. Essentially all answers on the questionnaire were converted to numeric form.

DATA ANALYSIS

When the sample data are statistically valid, i.e., the sample statistics are valid estimators of population parameters, the sample statistics can be expanded to the population. For example, the quantity of fish sold daily by the sampled sellers was representative of the quantity sold daily by all sellers. Expansion of quantity sold is determined by the following formulae:

$$Q_i = \sum X_{ij}$$

$$X_{ij} = M_j (S_{ij} \bar{X}_{ij})$$

Q_i = total quantity of fish sold

X_{ij} = quantity of fish of the i^{th} species sold in the j^{th} province/state

M_j = number of markets in the j^{th} province/state

S_{ij} = number of sellers of the i^{th} species in the j^{th} province

\bar{X}_{ij} = average quantity sold of the i^{th} species in the j^{th} province

Seasonality of demand was determined by the following method:

$$\max Q_m = \max \sum X_{ijm}$$

where

Q_m represents the maximum amount sold in the m^{th} month and Q_n represents the minimum amount sold in the n^{th} month.

Q_m and Q_n would represent the maximum and minimum values, respectively, in the X_{ijm} matrix. The matrix includes 9 species, 6 provinces/states, and 12 months.

While Q_n is an important value for the area, a subvalue Q_{jm} would be of more practical use for planning purposes.

Q_{jm} represents the maximum or minimum amount available in the j^{th} province/state during the m^{th} month.

While entire seasonal fluctuations cannot be determined, the seasonal highs and lows can be determined. In addition, by establishing when the sellers could sell additional fish the supply and demand aspects of seasonality can be determined.

Price-size Relationships of Demand

Quantity demanded, *ceteris paribus*, is a function of price. If all fish are uniform in size, a demand curve by province/state could be established. Since fish vary both by size and species, the demand curve is more complex.

$$Q_{kij} = A_{kij} - B_{kij}P_{kij}$$

where Q_{kij} is the quantity demand of the k^{th} size of the i^{th} species in the j^{th} province/state.

The equation is based on the assumption that quantity will move to the area with the highest price and that per capita demand is constant over all provinces/states.

Other Analyses

Other analyses that would be useful in planning purposes include the relationship of price and quantity with distance from source of supply, changes in species composition with movement away from the supply source, sellers' perception of price and quantity changes over time, relative species composition changes over time, and size composition of existing supply. Of particular interest would be the inter- and intra-area movement of fish.

PRESENTATION OF RESULTS

Tabular analysis is necessary to display the demand and supply relationships in concise format. However, a text presentation is necessary to indicate the significance of the results and to relate the findings to project goals. If the study is a baseline survey of marketing, the presentation would mention highlights of the findings and discuss shortfalls of supply or demand. If the study is designed to indicate market gaps that could be filled by freshwater production, then these gaps should be isolated for discussion. In addition, the method of freshwater production that could fill the gaps should be identified.

The market survey is one analytical tool in problem solving. The study is a means to an end and not the end in itself.

APPENDIX I

Designation of Training Personnel Duties

Duties

Project leader:

- Develop and pre-test questionnaire
- Conduct training of interviewers
- Designate criteria for selection of sample areas
- Check editing and coding of questionnaires
- Analyze data

Field supervisor:

- With project leader, select and pre-survey all sample areas
- Assign sample areas to team leaders
- Assign survey materials and vehicles to team leaders
- Check team members' editing and coding
- Assign municipality/city, questionnaire, and distance numbers for coding
- Arrange for facilities for editing and coding

Team leaders:

- Determine survey requirements in designated sample markets
- Determine count of wholesalers and retailers in designated markets
- Check team members' survey forms
- Arrange for survey editing
- Add municipality/city, questionnaire, and distance numbers to questionnaire forms
- Assign coding to team members
- Turn in completed questionnaires and code sheets to field supervisor

Team members:

- Survey selected sellers as assigned by team leader
- Edit questionnaires
- Code questionnaires
- Provide other assistance as required by team leaders

Advisors-coordinators:

- Provide liaison service with respective agencies
- Assist team members with data collection, coding, and editing
- Provide technical assistance to project director, field supervisor, and team leaders

APPENDIX 2

Manual of Instructions for Retailer Questionnaire Fish Marketing Survey

Introduction

This manual is designed as a self-teaching device. Each aspect of the questionnaire is covered in detail. After examining the questionnaire, read the manual closely. If you have any questions regarding a section of the questionnaire, please bring it to the attention of the entire group, others may have the same question.

The fish marketing survey is designed to determine the availability of fish in an area. Sellers may want to know why you are conducting the survey. One purpose is to determine the sellers' satisfaction with the marketing system, the market place, and their general opinion regarding the changes over the last 5 years. These points might be stressed in your approach to the sellers.

Your interviewees will be selected by the team leader. Remember also that the dealers are in the market to sell fish. Do not intrude on their business activities. If your selected

interviewee is busy, try to arrange for an interview at a less busy time.

The Questionnaire

The interviewer should fill in all items as completely as possible. Date the questionnaire and sign your name in the upper right hand corner. The date is necessary to determine whether the questionnaire was taken on the market day in a particular market. Fill in the name of the province/state, municipality/city, village, and name of market. Often the market name will be the municipality/city name. The village is important when multiple markets exist within a municipality/city. Do not fill in the distance estimates. These distance measurements will be provided to you during editing following data collection.

Question 1. How long have you sold fish? Determine the length of time the seller has been in business. If the seller has been in business less than 5 years, only a portion of table 3 can be completed; if less than 1 year, only the first column of table 3 can be completed.

Question 2. Type of stall. Question refers to the stall **not** the seller. The question is designed to determine if the market has adequate facilities for fish sales. Sellers selling from baskets on the ground would be temporary, while sellers selling from fixed constructed structures in the market would be permanent. Record this information from observation since it is not necessary to ask any questions.

Questions 3, 4, and 5. Answers to these questions will be provided by the team leader to all interviewers in the same market.

Question 6. Do you clean fish for buyers? A common response will be "sometimes"; attempt to determine the circumstances of when or why they clean fish for the buyer. If they clean the fish on request and charge a fee, check "yes" and record the amount of fee. If they clean fish only late in the day and charge no fee, record "yes" and note on questionnaire, "only late in day." Make similar notes for other circumstances.

(Questions 7-11 refer both to questions and to table 1.)

Question 7. Record under species in table 1 the common name of all species sold by the seller. Under form note the form of fish sold, i.e., fresh, dried, smoked, etc. Under kilograms or pieces per day, record the quantity purchased the day of the interview.

Question 9 specifies that you inquire if the seller handles other species at other times of the year. If "yes" list these species below those for sale during the day of the interview. List the form these fish are generally sold under. Since no quantity is presently available for sale by this seller, the column under kilograms or pieces would be zero.

Question 10 refers to fluctuations in supply of the product. For each of the species listed, determine the lowest and highest quantities sold per day. Then determine during which month(s) of the year the lowest and highest quantities were sold.

Question 11 is used to determine if there are any months when the seller cannot purchase the desired quantity of a species. List the months that an insufficient supply occurred. It is possible that the seller may mention a species that he never sells due to an insufficient supply. In that instance, list the species below those not presently for sale, place zeros in all columns except insufficient supply column. Write "all" in the insufficient supply column.

(Questions 12-17 refer both to questions and table 2. Table 1 will contain a listing of all species of fish sold by the seller. Table 2 is a further breakdown of these species into size categories.)

Question 12 is an inquiry regarding the quantity of each size that is sold. Table 1 contains the control total. A seller who separates milkfish into size groups may sell 50 kilograms of milkfish: 25 kilograms in the 10 or more to a kilo group, 15 kilograms in the 5 to 9 to a kilo group, and 10 kilograms in the 2 to 4 to a kilo group. Each species sold, including those not presently available, should be transferred to the appropriate size grouping in table 2.

Question 13 is a reiteration of question 11, but now refers to size of fish. It is possible and even likely that the seller will mention difficulty in receiving a species size that is not presently sold. In the difficulty column on table 2, list the months that the fish size is not available, if never available then write "all."

Questions 14 and 15 refer to the price of fish that the dealer sells. In table 2, price refers to the current amount the seller pays for the fish, not the amount the fish are sold for to consumers. The lowest price paid during the year is listed next with the month(s) of lowest price.

Question 16 refers to an oversupply of a fish; left over means fish that were not sold and does not refer to normal carryover from morning to evening marketing periods. For species left over, check the size and species in table 2.

If "no portion" ask the seller to estimate by species and size the additional quantities that could be sold. In the difficulty column the sizes and species by month of low supply are listed. In question 16 the seller is asked to estimate how much more fish he could sell if the supply restraint was removed. The species and sizes checked in questions 13 and 16 should be consistent.

Question 17 is covered in the resale column on table 2. If sales are made to other sellers, list the quantity sold in the resale column.

Question 18 refers to table 3. The question is designed to determine the sellers' subjective evaluation of the trends in quantity and price of fish available. Ask the question for each species of fish sold during the year including those not presently available. The seller is only required to recall quantity and price in relative terms.

The daily average sales over the last week only establish whether day of interview sales are normal. Price paid establishes the same factor for price. Weekly sales and price last year are to be given relative to sales and price now. Answers like "half as much" or "twice as much" are perfectly acceptable. Again for price and quantity, changes 5 years ago relative to now are desired. Do not expect the sellers to have perfect recall of either quantity or price. They should, however, have some perception of whether they previously sold more or less at a higher or lower price.

Question 19 is used for table 4 (this table has a dual purpose). It will establish the amount of product imported into a province and identify the source of the fish. In addition it will establish a list of wholesalers or brokers who can be interviewed to determine export figures.

List all species identified in table 1, including those not presently available for sale. Write the name and address of the dealer who provided the fish. List the quantity of the species provided by the dealer. It is possible that more than one dealer will provide the same species of fish. It is even more likely that the same dealer will provide many different species to the same seller. The source of fish means the type of dealer, i.e., retailer, wholesaler, broker, fish farmer, fisherman, or other. The location of supply refers to where the fish were purchased by the dealer. If the seller does not know the location of supply, then list the location of the dealer. Transportation means how did the dealer get the fish to the seller. What means of transportation was used?

The length of the questionnaire is somewhat determined by the number of species sold by a seller. Stress the importance of accurate data to the sellers. Speed in collecting information is not as important as comprehensive collection of the data.

APPENDIX 3

Fish Marketing Survey District III, Central Luzon Retailer Questionnaire

Date _____

Interviewer _____

Province/state _____

Municipality/city _____

Village _____

Name of market _____

Distance to capital _____

Distance to market source by type

Type

Source

(place)

Distance

Marine

Brackishwater

Freshwater

1. How long have you sold fish? _____

2. What type of stall do you use? (check)

Permanent _____

Temporary _____

Retailer questionnaire continued

3. How many days per week is the market open? _____
 4. How many days per week is fish available in the market? _____
 5. How many hours per day are fish available? _____
 6. Do you clean fish for the buyers? _____ If yes, how? (check)

Scaled _____	Beheaded and gutted _____
Beheaded _____	Sliced _____
Gutted _____	Other (specify) _____
- Is there a charge for this service? _____ How much? _____

(For questions 7-11, fill in Table 1)

7. What type(s) of fish do you sell? In what form do you sell them?
8. About how many kg of fish do you sell per day during this time of year? (If by piece or filet, interviewer estimates number of pieces per kilo or number of kilos per filet.)
9. Does the type of fish you sell vary by time of year? _____
10. Does the quantity you sell of each species vary by time of year? _____
If yes, what and when is the least amount of each species sold? (when the species is available). What and when is the most amount of each species sold?
11. Can you always get the quantity of each species of fish you want to sell? _____ If no, when and what species can you not get enough of?

(For questions 12-17, fill in Table 2)

12. What sizes of fish do you sell?
13. Do you have any problems getting the sizes of fish you want to sell? _____ If yes, when, what species, and what sizes do you have difficulty in receiving?
14. Does the price you pay for fish vary by species and size? _____
If yes, list price in the table.
15. Does the price you pay for fish vary by time of year? _____
If yes, list the price and time for both lowest and highest price in the table.
16. Do you often have fish left over at the end of the day? _____ If yes, which fish? (Check species and size on table) What do you do with these fish?
If no, could you sell more fish if they were available? _____ If yes, what species and sizes would you prefer to have?
About how many more kilos of each species can you sell per day?

Species	Size	Kilograms
---------	------	-----------

17. Do you sell any fish to other retailers or ambulant vendors? _____ If yes, how many retailers and vendors do you sell to? _____ How many kilos of fish do you sell to other dealers? (list by size and species on table).
18. Considering only the species and sizes of fish you sell, can you tell me of any changes that have occurred during the last 5 years (ask specific headings in table 3).
19. Where do you get your fish? (list by species in table 4 — be specific).
20. What charges do you have to pay to sell fish here? (list charges by type).
 - a.
 - b.
21. Are there any changes or improvements you would like to see made in the market? (list down)

Table 2. Species Code (Key to Previous Table)

Number per kilo										
≥10										
No. or kg										
Difficulty										
Price										
Lowest price										
Time										
Highest price										
Time										
Left over										
Resale										
5-9										
No. or kg										
Difficulty										
Price										
Lowest price										
Time										
Highest price										
Time										
Left over										
Resale										
2-4										
No. or kg										
Difficulty										
Price										
Lowest price										
Time										
Highest price										
Time										
Left over										
Resale										
1 or less										
No. or kg										
Difficulty										
Price										
Lowest price										
Time										
Highest price										
Time										
Left over										
Resale										

Table 3. Sales Change Over Time

Species ¹ code	Kilos sold last week daily av.	Price paid per kilo	Weekly sales last year daily av.	Average price paid per kilo last year	Weekly sales 5 years ago daily av.	Average price paid per kilo 5 years ago

¹Key numbers to species sold by vendor.

Table 4. Source of Fish

Species ¹ code	Dealer	Quantity	Source	Location	Transportation

¹Key number to species sold by vendor.

APPENDIX 4
Retailer Code Book
Card 1

Question no.	Item	Code	IBM column
--	Card number Questionnaire no.	1 actual	1 2-3-4
--	Province Bataan — 1 Bulacan — 2 Nueva Ecija — 3	Pampanga — 4 Tarlac — 5 Zambales — 6	
--	Municipality/city — interviewers to code		6-7
--	Distance to capital	actual in kilometers	8-9-10
--	Distance to nearest marine source	actual in kilometers	11-12-13
--	Location within province/state within area outside area	-1 -2 -3	14
	Distance to nearest brackishwater source — actual		15-16-17
	Location within province/state within area outside area	-1 -2 -3	18
	Distance to nearest freshwater source — actual		19-20-21
	Location within province/state within area outside area	-1 -2 -3	22
1	Length of time in business — actual years		23-24
2	Type of stall permanent temporary	-1 -2	25
3	Days per week market is open — actual		26
4	Days per week fish are available — actual		27
5	Hours per day fish are available — actual		28-29
6	Clean fish for buyer yes no sometimes	-1 -2 -3	30
	How cleaned — not cleaned -0 beheaded and gutted -4 scaled -1 sliced -5 beheaded -2 other -6 gutted -3		31
9	Does type of fish sales vary by time of year?	yes—1 no —2	32
10	Does quantity vary?	yes—1 no —2	33
11	Can you get quantity?	yes—1 no —2	34
13	Problems getting size you want?	yes—1 no —2	35
14	Does price vary by species and size?	yes—1 no —2	36
15	Does price vary by time of year?	yes—1 no —2	37

Retailer code book continued

16	Do you often have fish left over?		yes—1	38
	a) Could you sell more fish if available?		no —2	
			yes—1	39
			no —2	
	If yes, species code (see sheet)			40
	size ≥ 10 —1	1 or less	—4	41
	5-9—2			
	2-4—3			
	number of kilos — actual			
	Species	see attachment		42-43-44
	size	see above		45
	number kilos	actual		46
	Species	see attachment		47-48-49
	size	see above		50
	number kilos	actual		51
	Species	see attachment		52-53-54
	size	see above		55
	number kilos	actual		56
17	Sell to retailers or ambulent venders?		yes—1	57-58-59
			no —2	60
	If yes: How many venders?	actual		61-62
20	Charges for selling fish here (see attachment)			63
				64
				65

(Card 2 table 1)

Item	Code	Column
Card number	2	1
Questionnaire number	actual	2-3-4
Province		5
	Bataan — 1	Pampanga — 4
	Bulacan — 2	Tarlac — 5
	Nueva Ecija — 3	Zambales — 6
Species code	see attachment	
kg/day	actual	7-8-9
least kg/day	actual	10-11-12
months (no more than 2)	see attachment	13-14
		15-16
most kg/day	actual	17-18-19
months (no more than 2)	see attachment	20-21
		22-23
insufficient supply months	see attachment	24-25
(no more than 2)		26-27
Species code	see attachment	28
kg/day	actual	29-30-31
least kg/day	actual	32-33-34
months (no more than 2)	see attachment	35-36
		37-38
most kg/day	actual	39-40-41
months (no more than 2)	see attachment	42-43
		44-45
insufficient supply months	see attachment	46-47
(no more than 2)		48-49
Species code	see attachment	50
kg/day	actual	51-52-53
least kg/day	actual	54-55-56
months (no more than 2)	see attachment	57-58
		59-60
most kg/day	actual	61-62-63
months (no more than 2)	see attachment	64-65
		66-67
insufficient supply months	see attachment	68-69
(no more than 2)		70-71
Repeat card 2 for additional species sold		

(Card 3 table 2)

Item			Code	Column
Card number			3	1
Questionnaire number			actual	2-3-4
Province	Bataan — 1	Pampanga — 4		5
	Bulacan — 2	Tarlac — 5		
	Nueva Ecija — 3	Zambales — 6		
Size	≥ 10 — 1	2-4 — 3		6
	5-9 — 2	1 or less — 4		
Species code			see attachment	7
kilos			actual	8-9-10
difficulty month			see attachment	11-12
				13-14
price/kg			actual (1 decimal)	15-16-17
lowest price/kg			actual (1 decimal)	18-19-20
time (month)			see attachment	21-22
				23-24
highest price/kg			actual (1 decimal)	25-26-27
month			see attachment	28-29
				30-31
left over			yes — 1	32
			no — 2	
resale (kg)			actual	33-34-35-36
size			see above	37
Species code			see attachment	38
kilos			actual	39-40-41
difficulty month			see attachment	42-43
				44-45
price/kg			actual (1 decimal)	46-47-48
lowest price/kg			actual (1 decimal)	49-50-51
time (month)				52-53
				54-55
highest price/kg			actual (1 decimal)	56-57-58
month			see attachment	59-60
				61-62
left over			yes — 1	63
			no — 2	
resale (kg)			actual	64-65-66-67

(Card 4 table 3)

Item			Code	Column
Card number			4	1
Questionnaire			actual	2-3-4
Province	Bataan — 1	Pampanga — 4		5
	Bulacan — 2	Tarlac — 5		
	Nueva Ecija — 3	Zambales — 6		
Species code			see attachment	6
kg sold last week	kg/day		actual	7-8-9-10
price paid/kg	P/kg		actual (1 decimal)	11-12-13
sales last year	kg/day		actual	14-15-16-17
price last year	P/kg		actual (1 decimal)	18-19-20
sales 5 years ago	kg/day		actual	21-22-23-24
price 5 years ago	P/kg		actual (1 decimal)	25-26-27
Species code			see attachment	28
kg sold last week	kg/day		actual	29-30-31-32
price paid/kg	P/kg		actual (1 decimal)	33-34-35
sales last year	kg/day		actual	36-37-38-39
price last year	P/kg		actual (1 decimal)	40-41-42
sales 5 years ago	kg/day		actual	43-44-45-46
price 5 years ago	P/kg		actual (1 decimal)	47-48-49
Species code			see attachment	50
kg sold last week	kg/day		actual	51-52-53-54
price paid/kg	P/kg		actual (1 decimal)	55-56-57
sales last year	kg/day		actual	58-59-60-61
price last year	P/kg		actual (1 decimal)	62-63-64
sales 5 years ago	kg/day		actual	65-66-67-68
price 5 years ago	P/kg		actual (1 decimal)	69-70-71

(Card 5 table 4)

Item		Code	Column
Card number		5	1
Questionnaire number		actual	2-3-4
Province/state	Code as on previous cards		5
Species code		see attachments	6
kilos		actual	7-8-9-10
source	retailer -1	fisherman -4	11
	wholesaler -2	fish farmer -5	
	broker -3	other -6	
location	within province/state -1		12
	within area -2		
	outside area -3		
transportation		see attachment	13
Species code		see attachment	14
kilos		actual	15-16-17-18
source	retailer -1	fisherman -4	19
	wholesaler -2	fish farmer -5	
	broker -3	other -6	
location	within province/state -1		20
	within area -2		
	outside area -3		
transportation		see attachment	21
Species code		actual	22
kilos		actual	23-24-25-26
source	retailer -1	fisherman -4	27
	wholesaler -2	fish farmer -5	
	broker -3	other -6	
location	within province/state -1		28
	within area -2		
	outside area -3		
transportation		see attachment	29
Species code		see attachment	30
kilos		actual	31-32-33-34
source	retailer -1	fisherman -4	35
	wholesaler -2	fish farmer -5	
	broker -3	other -6	
location	within province/state -1		36
	within area -2		
	outside area -3		
transportation		see attachment	37
Species code		see attachment	38
kilos		actual	39-40-41-42
source	retailer -1	fisherman -4	43
	wholesaler -2	fish farmer -5	
	broker -3	other -6	
location	within province/state -1		44
	within area -2		
	outside area -3		
transportation		see attachment	45
Species code		see attachment	46
kilos		actual	47-48-49-50
source	retailer -1	fisherman -4	51
	wholesaler -2	fish farmer -5	
	broker -3	other -6	
location	within province/state -1		52
	within area -2		
	outside area 3		
transportation		see attachment	53
Species code		see attachment	54
kilos		actual	55-56-57-58
source	retailer -1	fisherman -4	59
	wholesaler -2	fish farmer -5	
	broker -3	other -6	

Card 5 table 4 continued

location	within province/state —1		
	within area —2		60
	outside area —3		
transportation		see attachment	61
Species code		see attachment	62
kilos		actual	63-64-65-66
source	retailer —1	fisherman —4	67
	wholesaler —2	fish farmer —5	
	broker —3	other —6	
location	within province/state —1		68
	within area —2		
	outside area —3		
transportation		see attachment	69
Species code		see attachment	70
kilos		actual	71-72-73-74
source	retailer —1	fisherman —4	75
	wholesaler —2	fish farmer —5	
	broker —3	other —6	
location	within province/state —1		76
	within area —2		
	outside area —3		
transportation		see attachment	77

Species code

1st class marine	— 1
2nd class marine	— 2
3rd class marine	— 3
1st class freshwater	— 4
2nd class freshwater	— 5
3rd class freshwater	— 6
Crustaceans	— 7
Dried	— 8
Other, including smoked	— 9

Months code

January — 1	July — 7
February — 2	August — 8
March — 3	September — 9
April — 4	October — 10
May — 5	November — 11
June — 6	December — 12

Transportation code

Jeepney —1	Bus —3	Other —5
Truck —2	Train —4	

Charges code

Cash ticket — 1	License — 3
Rent on stall — 2	Other — 4