

BIBLIOGRAPHY

DATOC, ANALICE S. APRIL 2012, Supply Chain Analysis of Dried Fish Enterprise in Rosario, La Union. Benguet State University, La Trinidad, Benguet.

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ABSTRACT

This study was conducted to identify kinds of dried fish products produced and traded in Rosario, La Union, identify key players, their roles and functions, identify products, information and payment flow in the supply chains, draw specific supply chain maps, identify problems, issues and external influences in the supply chain.

The study was conducted through survey questionnaires and followed by an interview to validate their answers. The dried fish products were sold to wholesalers, retailers and direct consumers. Dried fish that are produced and traded in the area were espada, danggit, dalagbaybay, dilis, tamban and bisugo.

Not all the products sold in the area are produce in the area, other dried fish were imported from Bataan, Palawan and Cebu. Some of the produced were brought to different provinces like Pangasinan, Dagupan, Baguio City, Ilocos Norte, Ilocos Sur, Manila and other areas of La Union. Production problem encountered are the seasonality of raw materials and laborious and marketing problems encountered by the respondents are



weather condition which results to lack of supply of raw materials, difficulty in drying the products and sometimes the lifespan of the product shortens due to moist that occurs.

Quality of dried fish produced in the area should be maintained in order to sustain the trademark of the area as the “Dried Fish Capital of the North” and like Cebu which is known of its variety of quality dried fish products. Continuous product innovation should be done to reduce the saltiness of the product because people now are conscious on safe and healthy foods.



RESULTS AND DISCUSSION

Dried Fish Enterprises in Rosario, La Union

Apart from Cebu there are still a few other places in the Philippines where dried fish industry can be found. One of these places is the town of Rosario particularly in barangay Santo Tomas and Damortis. Damortis is known as the “dried fish capital market of the north” and being associated to Tabo-an market of Cebu. There are a variety of fresh and dried fish, fresh shellfish and crustaceans available. The most common dried fish produced in the area were “Espada”, “Danggit”, “Dalag baybay”, “Dilis”, “Tamban” and “Bisugo”. The products are packed in newspapers or paper bags and wrapped plastic to reduce the odor. It is carefully packed to be more enticing to the customers. Some are formed like a flower, a wind vane, or just contained in a transparent plastic bag. The fish whether fresh or dried are delivered not only in the market area of the place but are also delivered in other municipalities and provinces and cities like Baguio City, Urdaneta City and San Fernando City, La Union or even to private and government offices where they sell it either in cash or installment.

Table 1. Dried fish enterprise in Rosario, La Union

PRODUCTS	FREQUENCY	PERCENTAGE
Espada	18	94.7
Labahita	6	31.6
Dilis	6	31.6
Tamban	8	42.1
Dalagbaybay	14	73.7
Bisugo	11	57.9
Danggit	12	63.1
Igat	4	21



Table 2. Supply chain actors

CHAIN ACTORS	FREQUENCY	PERCENTAGE
Fishermen	11	12
Processors	19	21
Wholesaler- retailer	18	20
Retailer	6	7
Consumers	36	40
TOTAL	90	100

Actors in the Supply Chain of Dried Fish

The actors in the supply chain include the fishermen, processors, traders and consumers. These actors served as respondents of the study. Table 2 shows twelve percent of the respondents were fishermen, 21% were dried fish processors, 20% were wholesaler-retailer and 7% retailer of dried fish which may either be a retailer or wholesaler and 40% were consumers, totaling to 90 respondents.

Role and Functions of Supply Chain Actors

Intermediary adds value to the marketing of the product by bringing in specialization, marketing knowledge, capacity to segment the market, and selling skills that allow the marketer to implement marketing strategies effectively (Sharma, 2004). Table 3 and Figure 1 shows the actors or intermediaries in marketing, their roles and functions in the supply chain.

Fishermen. Fishermen refers to individuals who catch fish in the sea/ocean whether for own consumption or for selling purposes. Fishermen deliver their catch to processors



and or to the fish wholesalers and retailers to the wet market. They negotiate to prospect buyers and select channels to market their product.

Processors. Processors refer to individuals who processed fish into dried, fermented or canned. They determine the quantity to be processed and deliver them to outlets or do their own retailing of their products. Processors are also in charge in the selection of outlets and prospect wholesalers.

Traders. Trader refers to someone who buys and sell dried fish from the processors and sell to consumers. They are the ones who display the products and influence the choice of the buyers. Traders sometimes determine the quantity to be produced by the processors based on demand.

Consumers. Consumer refers to the end users of the product. In this study, consumers are coming from different places because they are usually drop-by buyers who want to buy those products in the area. They choose preferred product to be bought.

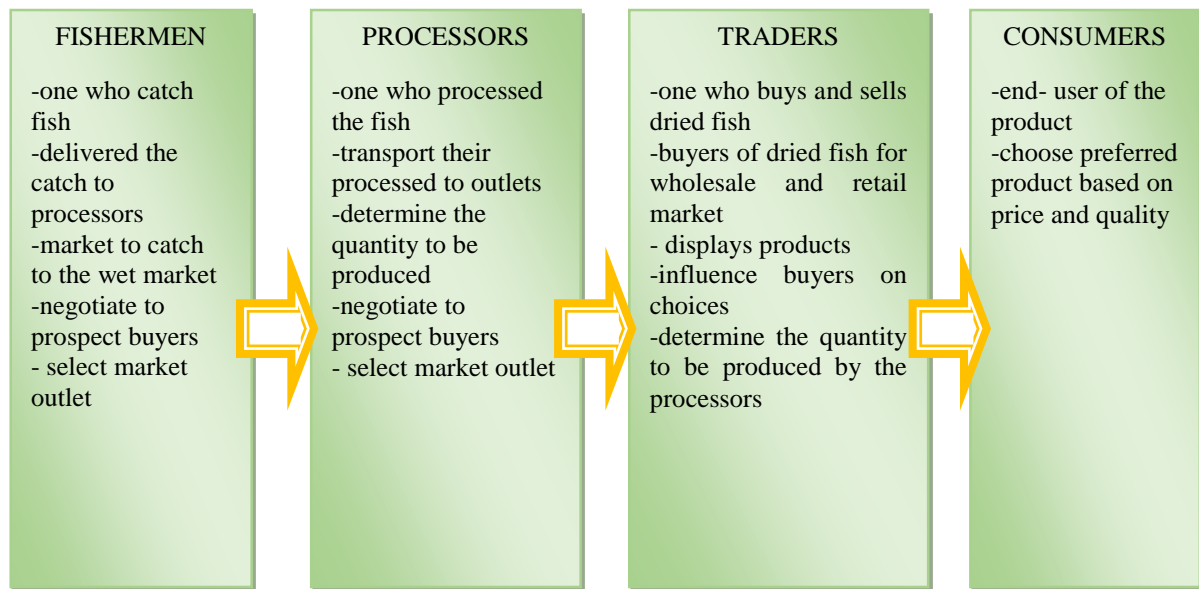


Figure 1. Actors, roles and functions in the supply chain

Table 3. Actors, their roles and functions in the supply chain

KEY PLAYERS	ROLE	FUNCTION
Fishermen	-one who catch fish -delivers the catch to processors -market their catch to the wet market	-negotiate to prospect buyers -selection of channels or market outlet
Processors	-one who processed the fresh fish into dried fish -transport their processed to outlets -determine the quantity to be produced	-negotiate to prospect wholesalers -selection of market outlet
Traders	-one who buys and sells dried fish -buyers of dried fish for wholesale and retail market	- displays products -influence buyers on choices -determine the quantity to be produced by the processors
Consumers	-end users of the product	-choose preferred product based on price and quality

Profile of the Chain Actors

Table 4 presents the profile of the chain actors as to their age, sex and educational attainment, years of experience in fishing, processing and trading, major and other source of income, reasons for engaging on said enterprise.



Age. Only the processor respondents of the respondents under the processor indicated their ages. Sixty three percent has an age bracket of 41- 56 years old. Six (32%) of the respondents has an age bracket of 57-66 years old and one (5%) has an age bracket of 67-76 years old.

Table 4. Profile of chain actors

PARTICULAR	CHAIN ACTORS							
	FISHERMEN		PROCESSORS		TRADERS		CONSUMERS	
	F	%	F	%	F	%	F	%
Age								
41-56			12	63				
57-66			6	32				
67-76			1	5				
TOTAL			19	100				
Educational attainment								
Elementary graduate	1	9	2	10.53				
High school graduate	8	73	12	63.16	14	58	10	28
College	2	18	2	21.05	5	21	20	55
Vocational graduate			1	5.26	5	21	6	17
TOTAL	11	100	19	100	24	100	36	100
Gender								
Male	11	100	5	26	2	8	4	11
Female			14	74	22	92	32	89
TOTAL	11	100	19	100	24	100	36	100



Educational attainment. Majority (73%) of the fishermen and processors (63%), and traders (58%) were high school graduate. Most (55%) of the consumers were college graduate. This shows that all the respondents have attended formal education. However, according to the fishermen, fishing is a job for those with limited education like those who have not finished college. The skills in fishing could be learned from other fishermen what is important is that your body can tolerate the heat during day fishing and coldness during night fishing and does not feel dizzy staying in the boat for long hours.

Gender. All of the fishermen interviewed were males. Just like in most areas of the country, females are tasked to oversee the household chores thus males are responsible in fishing. Majority of the processors (74%), traders (92%) and consumers (89%) were females. This implies that females are more involved in processing, trading and most especially in buying and deciding what food to buy for the family.

Other Characteristics of Major Actors in the Chain

Table 5 shows the other characteristics of the major actors in the chain such as the source of income, major source of income of the respondents, number of years of experience in that livelihood, and reason for going in that enterprise. All the respondents considered fishing, processing and dried fish trading as their major source of income. There were 2 processors who do also fishing as source of livelihood and process their own catch. Other sources of income were sari- sari store, one of the processor is also engaged in dried fish dealing delivering dried fish to the different market areas like Baguio City, San Fernando City, La Union, Dagupan City and other areas in Region 1 and one of the respondents is a pensioner. In terms of the experience in fishing, processing and trading,



twelve (36.4%) of the fishermen respondents, and processors (42.1%) were engaged into fishing and processing for 11- 20 years. Most (54.5%) of the fishermen were engaged in fishing for almost ten years. Five (26.3%) of the processors and one (9.1%) fishermen is into processing and fishing for 21- 30 years. While three (15.8%) and one (5.3%) of the processors are engaged in processing for 31-40 years and 41- 50 years respectively. The results show that most of the respondents have enough experience in the enterprise they are engaged in. Generally, the enterprise (fishing, processing and trading) are small enterprise.

Table 5. Profile of fishermen, processors and trader respondents

PARTICULAR	FISHERMEN		PROCESSORS		TRADERS	
	F	%	F	%	F	%
Major source of income						
Fishing	11	100	2	10.5		
Processing			19	100		
Trading					24	100
Other source of income						
Sari-sari store	3	27.3	4	21.1	5	20.8
Pensioner			1	5.3		
Dried fish dealer			1	5.3		
Years of experience						
10 years and below	6	54.5	2	10.5		
11-20 years	4	36.4	8	42.1		
21-30 years	1	9.1	5	26.3		
31- 40 years			3	15.8		
41-50 years			1	5.3		
TOTAL	11	100	19	100		
Reason						
Major source of Livelihood	11	100	5	26.3	24	100



Better Profit			4	21.1	3	12.5
Low costs of Inputs			3	15.8		
Augment Family Income	7	63.6	11	57.9	10	41.7
Support existing Industries			1	5.3	5	20.8
Give the market a better product			2	10.5		

*Multiple responses

On the reasons why they are engaged in such livelihood activity, all the respondents mentioned that it is their major source of livelihood. Other reasons mentioned were; it augments their family income, low cost of input, thus requires small capital, gives them better profit, and to provide market with quality products.

Logistic in Production and Marketing

Marketing pertains to series of services or activities that involved in the movement of an idea, good or service from the point of production to the point of consumption (Kohls and Downey, 1972). Marketing of product is a daily activity in our environment wherever we go we see people marketing their products. This is a natural affair in the pursuit of satisfying societal or individual's wants and needs.

Market outlets of fishermen. Table 6 presents that majority of the fishermen (64%) sell their catch to wet market retailers and dried fish processors, and 36% sell to trader/wholesalers. Result implies that fishermen are supportive to the dried fish industry in the area because instead of selling their catch to fish dealers or wholesaler, they prefer to sell to processors, maybe they would like to maintain the trademark area as the "Dried fish capital of the North".

Method of selling. In terms of selling the product, eight fishermen (73%) sell their catch either delivered or picked-up. Two (18%) sell on consignment and delivered to the



buyers specifically to the processors, and others buyers picked up the catch of the fishermen.

Table 6. Market outlets of fishermen

PARTICULAR	FREQUENCY	PERCENTAGE
Buyers/outlet		
Trader/ Wholesalers	4	36
Wet market retailer	7	64
Sell to Dried Fish Processors	7	64
Method of selling		
Cash picked up	8	73
Picked up	1	9
Delivered	8	73
Delivered consignment	2	18

*Multiple response

Technology Employed, Source of Raw Materials and Storage Facilities

Table 7 shows the technology employed by the processors, source of the raw materials, methods of acquiring the raw materials, reasons in selecting supplier and storage of products.

Technology employed. All the processor respondents were still practicing manually in processing their products. The fish are sliced, salted or sometimes some spices are added and sun drying is practiced.

Source and system of acquiring raw materials. Twelve (63.2%) of processors buy directly from fishermen within the area. Eight (42.1%) buy direct from fish dealer coming from other areas. Six (31.6%) respondents were buying from the wet market. And two (10.5%) used their own catch in processing. In acquiring the raw materials, eight (42.1%)



respondents pay the fish to the supplier when it is already disposed, in other words the system is credit. Seven (36.8%) respondents pay in cash, while five (26.3%) pay in advance to have sure supply of fish for processing.

Reasons in selecting suppliers. For easy acquiring of raw materials, respondents have their own regular suppliers (“suki”). Reasons for selecting supplier were; twelve (63.2%) respondents mentioned that it is because of the availability of the raw materials. Nine (47.4%) respondents said that suppliers are giving credit. Six (31.6%) respondents mentioned that the prices were lower. Four (21.1%) mentioned that the high quality of raw materials supplied which means that products are fresh catch. According to these respondents this is very important to product also a quality processed products.

Storage. Area allotted in the storage of the product is important because this will help in prolonging the shelf life and maintaining the quality of the product. Nine (47.9%) of the respondents mentioned they store their products in cooler and freezer. However, these is only used to those marinated fish like the boneless bangus. Seven (36.8%) of the respondents mentioned that just store the product in one corner of their houses or in the stalls they are occupying and three (15.8%) of the respondents store in warehouses. The warehouse referred by these respondents is a room which is intended for storing dried fish. In the market center in Santo Tomas, there is a small building, where all the dried fish sellers in the area store their products.

Quality control over raw materials. Majority (89.5%) of the respondents practiced quality control over the raw materials. Two (10.5%) of the respondents do not practice quality control over the raw materials because they lack technical knowledge (100%). Processors maintain quality control through product inspection (76.5%) and the use of



quality raw materials (23.5 %). Result implies that majority of the respondents would like to produce quality products by using quality raw material or use fresh catch fish and inspection. Those who do not practice quality control have limited knowledge on how to do it and maybe do not know what id a quality dried fish product.

Quality/quantity produced in a given period of time. There were five (26.3%) of the processors that processed fish with fixed quantity in a given period of time because of availability or capacity of facilities (40%) and agent order (60%). Fourteen (73.7%) of the respondents do not produced fixed quantity due to seasonality of raw materials (92.9%) and availability of labor (28.6%). The result implies that quality of products produced by processors would depend on the quality of raw materials (fresh catch), and the quantity produced would depend on the availability of raw materials and labor.

Table 7. Technology employed, source ad acquisition of raw materials of processors

PARTICULAR	FREQUENCY	PERCENTAGE
Technology employed		
Highly manual	19	100.0
Source of raw materials		
buy from the public market	6	31.6
from direct distributors	8	42.1
own catch	2	10.5
buy directly from fishermen	12	63.2
Method of acquisition		
Cash on acquisition	7	36.8
Advance payment on delivery	5	26.3
Credit	8	42.1
Reason		
High quality of raw materials	4	21.1
Low price on the raw materials	6	31.6
Giving credit	9	47.4
Availability of Supplier	12	63.2



Table 7. Continued...

PARTICULAR	FREQUENCY	PERCENTAGE
Storage facilities		
Warehouse	3	15.8
Freezer/cooler	9	47.4
House/ stall	7	36.8
TOTAL	19	100.0
Quality control		
Practice quality control	17	89.5
Do not practice	2	10.5
TOTAL	19	100.0
Practice quality control		
Product inspection	13	76.5
Use of Quality raw materials	4	23.5
Reason for not practicing quality control		
Lack of technical knowledge	2	100.0
Quality/quantity produced		
Fixed quantity	5	26.3
No fixed quantity	14	73.7
Reason for no fixed quantity produced		
Availability or capacity of facilities	2	40.0
Agent order/ demand	3	60.0
Factor that affects quantity produced		
Seasonality of raw materials	13	92.9
Availability of labor	4	28.6

Marketing Practices of Processors

The marketing practices of processors as to the packaging practices, market outlets/buyers, and pricing are presented in Table 8.

Packaging materials used. Majority (78.9%) of the respondents packaged their product while the remaining four (21.1%) respondents do not package their product. Processors who packaged their products used box (73.3%), Cellophane (73.3%), “Bayong”



(13.3%) and newspaper (6.7%). The reason of the four processor of not packaging their product is that it is not necessary.

Market outlets/buyers. Buyers of the product produced by the processors were wholesalers (63.2%), retailers (57.9%) and consumers (57.9%) who are buying directly from the processors.

Facilitators of marketing. Most (63.2%) of the producers are the ones who are in charge in the movement their product. Six (31.6%) of the respondents answered that distributors are in charge in the movement of the products in the market. One (5.3%) says that they “paw- it” the product in a bus.

Reason for the choice of outlet. The producer’s path to the market frequently involves interaction with external agencies or intermediaries that bridge the gap between the point of production to the point of sales. Table 10 present that ten (52.6%) respondents mentioned that one reason why they choose outlet is that it is convenient and accessible. Eight (42.1%) respondents respond that it is because of less transportation. In other words, the area of production is just a walking distance to the market outlet. Five (26.3%) of the respondents mentioned that they pay cash upon delivery.

Pricing. Most (57.9%) producers priced their product based on the prevailing price in the market. Six (31.6%) of the respondents based their price on the cost incurred. Four (21.1%) of the respondents said that producers themselves price their products. One (5.3%) of the respondents said that it is based on the supply of fish they buy to be processed. Majority (83.3%) of the respondents were the ones who dictate the price from the supplier. Three (12.5%) of the respondents mentioned they follow standard price set by all the traders in the area. One (4.2%) of the respondent also mentioned that the



Table 8. Marketing practices of processors

PARTICULAR	FREQUENCY	PERCENTAGE
Packaging practices		
Packaged	15	78.9
Do not packaged	4	21.1
Materials used in packaging		
Boxes	11	73.3
Cellophane	11	73.3
Newspapers	1	6.7
Bayong	2	13.3
Reason for not packaging		
No need	4	100.0
Buyers/outlets		
Direct consumers	11	57.9
Retailers	11	57.9
Wholesalers	12	63.2
Responsible in bringing products to market outlets		
Processors themselves	12	63.2
Distributors/traders	6	31.6
Send through Public Utility Vehicle("Paw-it ti lugan")	1	5.3
Reasons for the choice of outlet		
Convenience/ accessibility	10	52.6
Less transportation	8	42.1
Cash on delivery	5	26.3
Pricing Technique		
Producers dictate	4	21.1
Based on cost of input	6	31.6
Based on prevailing price	11	57.9
Based on supply of fish	1	5.3
Who Dictates the price from Supplier		
Myself/ trader	20	83.3
Follow standard price set by all the traders in the area	3	12.5
Supplier's dictate	1	4.2
Method of selling		
Pick up	11	58
Delivered	7	37
Consignment, delivered	1	5



supplier is the one who establish the price. On the other hand, in selling the product, twenty-two (91.7%) of the respondents are the ones who establish the selling price. Two (8.3%) of the respondents follow standard price in selling the products. In terms of the mode of payment, sixteen (66.7%) of the respondents were into consignment basis, seven (29.2%) of the respondents sell it cash upon delivery and one (4.2%) of the respondent is credit.

Method of selling. Most (58%) of the buyers of processors pick-up the product in their place or stall, 37% deliver the product to the stalls of traders and 5% delivered but on consignment.

Geographical Flow of Dried Fish Products

Marketing defined by Kohls and Downey (1972) is the performance of all the business activities involved in the flow goods and services from the point of agricultural production until they are in the hand of ultimate consumers.

Fish that are being processed in the area are not only delivered to traders in the area. Most of the products are being sold to different areas of the country. Some of the processors have contacts with wholesalers and retailer from Pangasinan, Baguio City, Manila, Bataan, Dagupan, Ilocos Sur, Ilocos Norte and also some areas of La Union (Figure 2). Locals and visitors also came from these areas in which they buy these products for “pasalubongs” to their loved ones. Most of the visitors buy the products along the highway where there are a lot of stalls selling dried fish to choose from but not all of the products are produced in the area some of these products were bought from Palawan, Alaminos, Bolinao and Cebu.



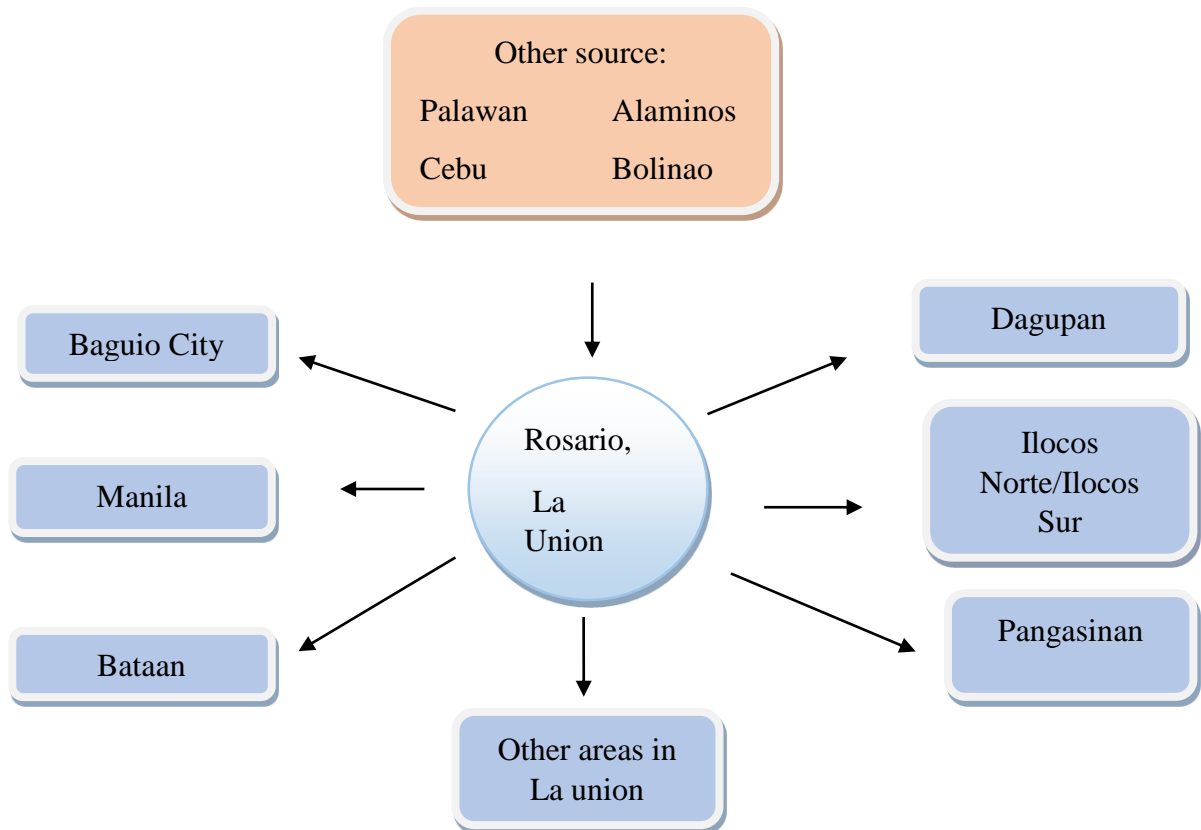


Figure 2. Geographical flow of dried fish

Information Flow

Effective supply chain management requires obtaining information from the point of end-use, and linking information resources throughout the chain for speed of exchange. Overwhelming paper flow and disparate computer systems are unacceptable in today's competitive world. Fostering innovation requires good organization of information. Linking computers through networks and the internet, and streamlining the information flow, consolidates knowledge and facilitates velocity of products. Account management software, product configurations, enterprise resource planning systems, and global communications are key components of effective supply chain management strategy



(Rockford Consulting Group, 1999). However, in the study area these communication means and facilities are not available or accessible.

Table 9 and Figure 3 shows that fishermen acquire information from other fishermen (fishermen to fishermen sharing) and processors regarding market information, such as where to market the product and price. On the other hand, the processors and traders received marketing information such as price of the products. Processors also received information on where to market the products and the quantity to be produced/demand from the traders and other processors. Moreover, consumers get information through internet as well as to sellers receiving the information about the product, its source, quality and price.

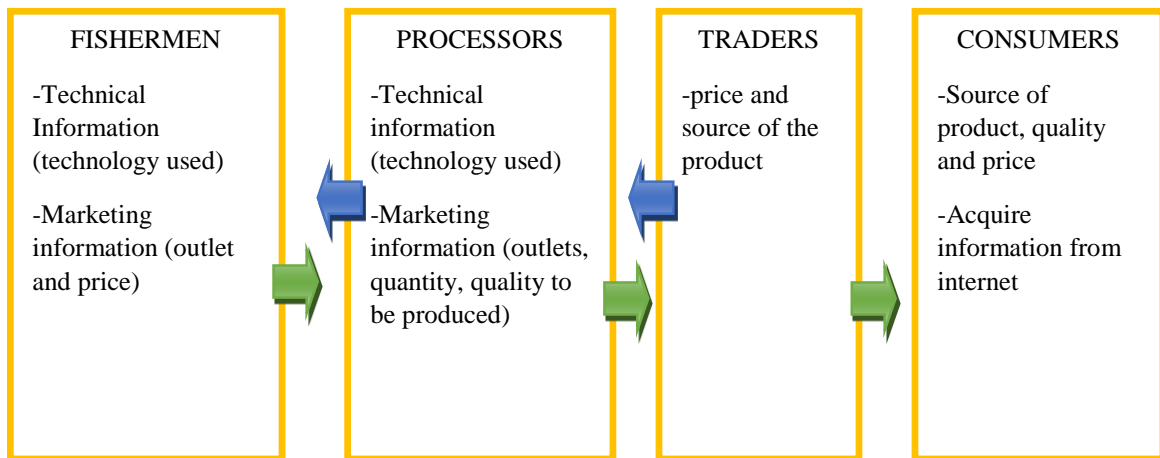


Figure 3. Information Flow

Table 9. Information received and source

KEY PLAYER	INFORMATION RECEIVED	SOURCE OF INFORMATION
Fishermen	-Technical information (technology used) -Marketing Information (outlet and price)	-co- fishermen - Processors
Processors	-Technical Information (Technology used) -Marketing information (outlets, quantity and quality to be produced and price)	-co- processors -traders -pass on by elders
Traders	-Price - source of product and volume	-co- traders, processors and consumers
Consumers	-Source of product, quality and price	-Internet and sellers

Prices of the Product

Majority of the stakeholders in the supply chain were the ones who decide on the price of the product. Table 10 shows that fishermen sell their catch with the average price per kilo as follows: espada P61.11, labahita P87.50, tilapia P80, dilis P48. 57, tamban P29.29, dalagbaybay P58.33, bisugo P121.88, danggit P88, igat P175. For the processors they sell their produce with the average price per kilo as follows: espada P349.73, labahita P242, dilis P251, tamban P165, dalagbaybay P402.81, danggit P490.65 and bisugo P229.12. These major products are being produced by the processors in the area. Moreover, traders price the products according to wholesalers and retailers. Wholesale



price is lower than rather retail because wholesalers buy in bulk where traders can still get profit out of it. While Table 11 shows the prices of the products taken from wholesalers or dried fish dealer from other areas like Bolinao, Pangasinan, Bataan and Visayas area.

Table 10. Prices of the dried fish products produced in the area

ITEMS	AVERAGE PRICE PER KILO						
	FISHERMEN		PROCESSORS		TRADERS		
	SELLING PRICE	PRICE MARGIN	SELLING PRICE	PRICE MARGIN	WHOLESALE	PRICE MARGIN	RETAIL
Espada	61.11	288.61	349.72	27.78	377.5	61.41	438.91
Labahita	87.5	154.5	242	80.5	322.5	13.33	335.83
Dilis	48.57	202.43	251	73.44	324.44	55.24	379.68
Tamban	29.29	135.71	165	28.33	193.33	18.2	211.53
Dalagbaybay	58.33	344.48	402.81	45.75	448.56	44.33	492.89
Bisugo	121.88	107.25	229.13	24	253.13	47.7	300.83
Danggit	88	402.62	490.62	25.84	516.46	32.87	549.33
Igat	175	280	455	25.71	480.71	49.41	530.12

*Multiple response

Table 11. Products bought from other wholesaler

PRODUCT	AVERAGE PRICE				
	BUYING PRICE	PRICE MARGIN	SELLING PRICE	PRICE MARGIN	RETAIL PRICE
Pusit	465.42	45.49	510.91	65.34	576.25
Dapa	420.35	73.4	493.75	59.37	553.12
Sapatero	295	35	330	83	413
Alamang	135.61	51.66	187.27	50.39	237.66



Supply Chain Maps of Dried Fish and Payment Flow

According to Sharma (2004), deciding whether to use an intermediary in the distribution channel depends on many factors, but essentially it involves determining whether the needs of the consumer can successfully be met by the available resources and skills of the producer. There are three basic functions performed by an intermediary in the distribution channel which includes transactional, logistical and facilitating. Transactional involves adding value to the distribution channel by bringing in the intermediary's resources to establish market linkages and customer contacts. Logistical involves the physical distribution of goods, sorting and storing supplies at locations within the reach of the end user. This also breaks up the bulk production of the manufacturer into smaller portions and may include the transportation of smaller shipments to intermediaries or retailers further down the channel of distribution. Although often confused with logistics, the facilitating functions of intermediaries supplement the entire marketing flow of the product and are separate from logistics.

Supply flow 1 (Figure 4) is a case of a fishermen where the catch fish is being sold directly to processors and other catch were being sold to a fish retailer. From the fish retailer the products are being sold directly to consumers. From the processors, after being processed and dried, the products will then be delivered to wholesalers and retailers in the area. The red arrow signifies the payment flow of the respondents.



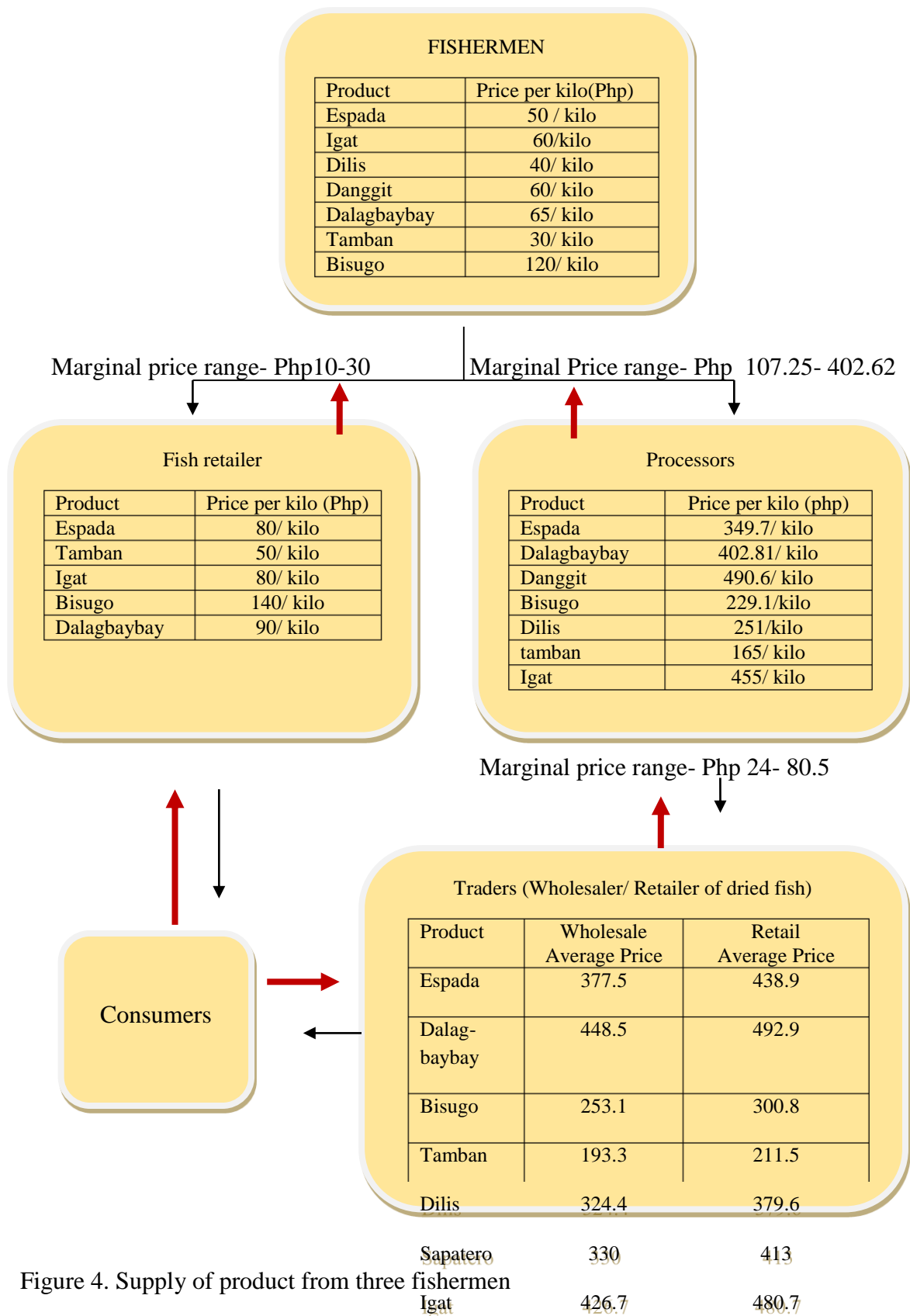


Figure 4. Supply of product from three fishermen



Supply flow 2 (Figure 5) is a flow of products of fishermen who supplies traders/wholesalers and at the same time supplies processors. The red arrow signifies the payment flow of the respondents.

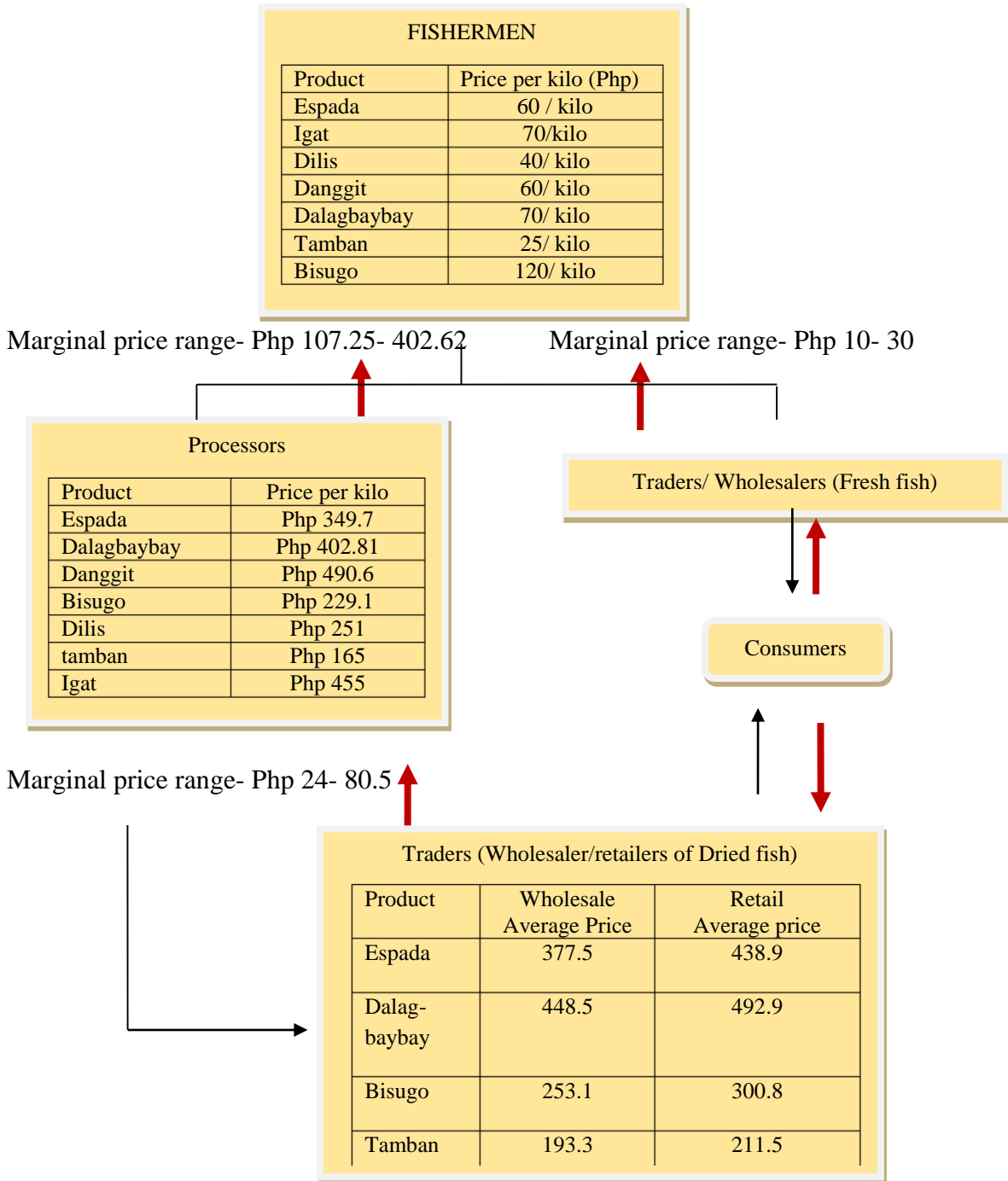


Figure 5. Supply flow of product from five fishermen

Dilis	324.4	379.6
Sapatero	330	413
Igat	426.7	480.7



Supply flow 3 (Figure 6) is a case of fishermen who supplies their catch and processed fish to traders/ wholesalers that are being sold to consumers. This traders/ wholesalers are the regular buyers of the product produced by the fishermen/ processor. The red arrow signifies the payment flow of the respondents with corresponding marginal average price.

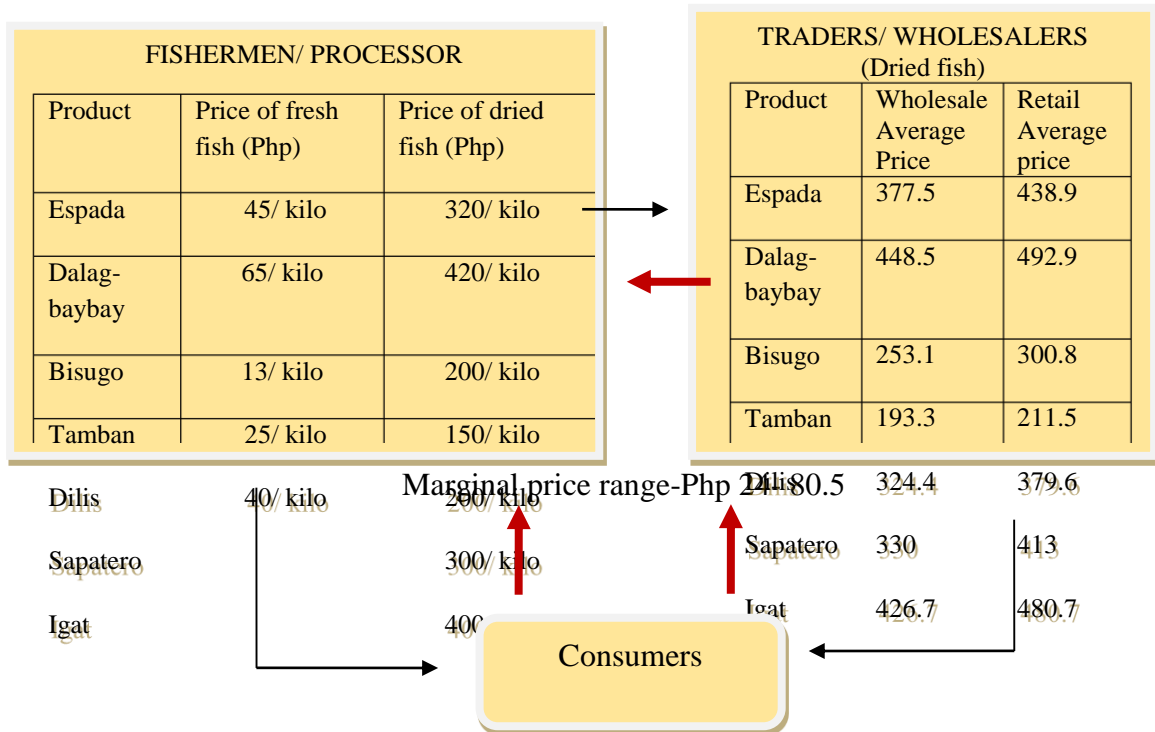


Figure 6. Supply chain of fishermen/processor

Problems Encountered

Problems in production. Table 12 shows that the two main production problem of processors were insufficient/ seasonality of raw materials (63.2%) and laborious (52.6%). Others were identified as follows: Lack of training (5.3%), sanitation (15.7%), high cost of inputs (15.8%), government policies and restrictions (5.3%), equipments are not available (10.5%), weather condition (10.5%), classification/ quality of fish (5.3%), and capital (5.3%).



Table 12. Problems encountered in production

PROBLEMS	FREQUENCY	PERCENTAGE
Lack of training	1	5.3
Insufficient/seasonality of raw materials	12	63.2
Laborious	10	52.6
Sanitation	3	15.8
High cost of inputs	3	15.8
Government policies and restrictions	1	5.3
Equipments are not available	2	10.5
Weather condition	2	10.5
Classification/quality of fish	1	5.3
Capital	1	5.3

*Multiple response

Problems in Marketing

Table 13 presents the problems in marketing encountered by fishermen, processors and traders in the supply chain. The most encountered problem in marketing of the product is the weather condition especially during rainy season. In addition, due to rainy season fishermen only catch few which leads to lack of supply, difficulty in drying the products, shortens the lifespan due to moist. Moreover, most of the traders (91.7%) and two processors (10.5%) mentioned loss in weight is one of the problems being encountered. Other problems encountered are as follows: Poor packaging materials, lack of government support, price fluctuation, lack of supply, decreased market demand, sales turnover is low, lack of market outlet and they also mentioned insects like flies which affect the marketing



of the product.

Table 13. Problems encountered in marketing

PROBLEMS	FISHERMEN		PROCESSORS		TRADERS	
	F	%	F	%	F	%
Loss in weight			2	10.5	22	91.7
Weather condition	11	100.0	1	5.3	4	16.7
Poor Packaging Materials			3	15.8	1	4.2
Lack of government support			5	26.3	2	8.3
Price Fluctuation			5	26.3	2	8.3
Insects					2	8.3
Sales turnover is low					1	4.2
Lack of supply	5	45.5	1	5.3		
Decreased market demand			5	26.3		
Lack of market outlet			2	10.5		
Few are being catch	5	45.5				

*Multiple response



SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The study was conducted in La Union specifically in Damortis on November, 2011. The study aimed to identify kinds of dried fish products produced and traded in the area, identify key players, their roles and functions, identify products, information and payment flow in the supply chains, draw specific supply chain maps, identify problems, issues and external influences in the supply chain.

The study was conducted through survey questionnaires and followed by an interview to validate their answers. Findings shows all of the fishermen interviewed were males. Just like in most fishing areas of the country, females are tasked to oversee the household chores, thus, males are the ones responsible for the fishing. As to their major source of income, respondents major source of income are the job/ work they are engaged into, meanwhile, other respondents are owners of a sari-sari store, a pensioner and a dried fish dealer. Most of the fishermen and processors are into fishing and processing for 11-20 years. All the respondents mentioned that the reason why they are engaged in such activity is that it is their major source of income in the area.

Aside from fishing, two of the respondents are engaged in processing dried fish. All of them were still practicing manual in processing the products. Raw materials used are being bought directly to fishermen in the area while others from direct distributor because of the availability of the supplier and gives credit to processors. Processed products are stored in a cold storage but mostly they are stored on the stalls.

Packaging of such product is very important to prolong the lifespan and avoid unnecessary activities related to it. Majority of the respondents package their products



mostly with boxes and cellophane. There were seventeen respondents practicing quality control over their raw materials through product inspection. There is no fixed quantity to be produced because of the seasonality of raw materials.

The processed products were sold to wholesalers, retailers and direct consumers. Most of the producers were the ones who are in charge in the movement of their produce to outlets which are accessible/ convenient for them and the price is based on the prevailing price in the area.

Traders are sole proprietor and are mostly wholesaler- retailer. Majority of them follow the price dictated by the suppliers. Dried fish that are mostly produced and traded in the area were espada, danggit, dalagbaybay, dilis, tamban and bisugo. The volume of delivery of the products depends on the quantity produced per production because of the seasonality of the raw materials which is one of the problem encountered in production. Another reason is that production is laborious.

Traders from Rosario, La Union were mostly the market outlet of dried fish producers. Some of the produced were brought to different provinces like Pangasinan, Dagupan, Baguio City, Ilocos Norte, Ilocos Sur, Manila and other areas in La Union. Marketing problem encountered by the respondents is the weather condition which results to lack of supply of raw materials, difficulty in drying the products and sometimes the lifespan of the product shortens due to moist that occurs.

Conclusions

Based on the findings of the study, the following conclusions were made:



1. Processors still practice the traditional method of producing dried fishes. They do not employ any machinery in cleaning fish up to drying. The processors practice sun drying of fish.

2. Not all dried fish sold in Rosario are produced in the area. Dried fish that are produced commonly in the area were espada, danggit, dalagbaybay, bisugo, tamban and dilis. Other products are bought from other traders from other provinces of Luzon and Visayas like Bataan, Cebu, and Palawan.

3. Since the availability of fishes are seasonal, production of dried fish are also seasonal. Volume and kind of fish processed depends on the kind and volume of catch by fishermen.

4. The major market outlet dried fish were the traders along the highway. These traders have their own stalls where they display the products.

5. Production problem encountered were insufficient/ lack of supply of raw materials and the laborious process of producing of dried fishes. In terms of marketing, the primary problem is the weather condition particularly during rainy season.

Recommendations

Quality of dried fish produced in the area should be maintained in order to sustain the trademark of the area as the “Dried Fish Capital of the North” and like Cebu which is known of its variety of quality dried fish products. Continuous product innovation should be done to reduce the saltiness of the product because people now are conscious on safe and healthy foods. Improve handling like storage, and packaging of product to make it attractive to consumers.



The government should support the industry by promoting the products. In that case, respondents will have more outlets to supply.



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