

## CATFISH MARKET IN THE MEKONG DELTA: AN ANALYSIS OF THE BEHAVIOR OF THE LOCAL CATFISH CONSUMERS

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### 1. Problem

Currently, Vietnam's pangasius and basa (catfish) products are in great favor on international markets and account for the first position among exports in the total export turnover of Vietnam's aquatic products. In the first eight months of 2009, catfish output amounted to 264,000 tonnes and earned some US\$600 million by export. In the past ten years, from 1997 to 2006, area for catfish farming increased only seven times while catfish output increased 36.2 times (from 22,500 tonnes to 825,000 tonnes). According to FAO, total catfish production worldwide in 1995 was 10,000 tons and in 2005; 440,000 tons, but, in 2007, Vietnam's catfish output alone amounts to about 1 million tonnes. In addition to the rather attractive growth, Vietnam's catfish market is facing lots of difficulties both subjective and objective. In nine consecutive years, there have been eight times when catfish price fluctuated. In the catfish anti-dumping lawsuit taking place in the US market in December 2002, Vietnam's exported catfish was found to be infected with Malachite Green and Fluoroquinolones antibiotics.

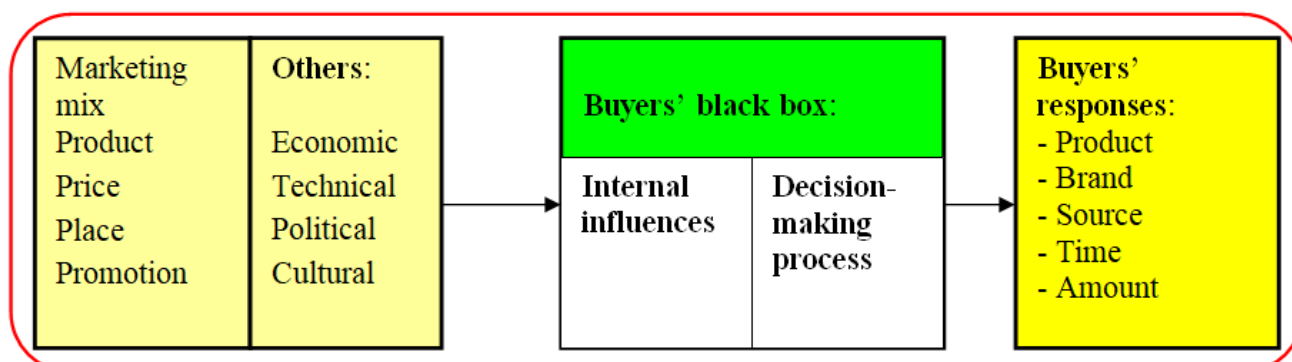
This problem shows that although catfish export yields high profit, it is not stable and has seriously influenced the people's life in the Mekong Delta that is the main supply of catfish as raw materials for processing industry. In addition to the export market, the local market would play an important role and if we know how to exploit it, it would help to considerably reduce the above-mentioned instability. In order to do this, it is necessary to analyze the behavior of the consumers especially the behavior relating to their needs and buying decision, hence to figure out appropriate measures both to solve the problem and to enhance the local market share so as to make possible the more stable income of those engaging in fish farming and to help provide the local people with sources of nutritious food within their reach.

### 2. Methodology

#### a. Principle and subject of study:

Behavior of the catfish buyers is examined with seven elements (7Ps) in the model of Philip Kotler:

Consumer buying behavior model of Philip Kotler



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On the left, marketing stimuli consist of 7Ps: product, price, place, promotion, people, process, and physical evidence; other stimuli are external factors such as economic, technical, cultural, and political ones. All those stimuli have impact on the “black box” of the buyers which consists of buyers’ internal influences and decision-making process. In the black box they are transformed into indications of the buyers including choices of product, brand, source, market, time and amount.

Three problems to be studied are: (1) identifying the main factors which have impact on the buyers’ behavior, namely cultural, social, personal, and psychological one and the cultural factor has a deep and overall impact on the behavior of the buyers; (2) specifying the main factors having impact on the buyers’ decision-making and identifying the role of each subject when buying (starter, influencer, decision-maker, buyer, and consumer); and (3) specifying the different stages in the decision to buy (problem solving, information search, alternate evaluation, purchase, and post purchase) (Philip Kotler, 1994).

## ***b. Localities of the study:***

- Region in examination: mostly covering five cities and provinces in the Mekong Delta, namely Cần Thơ, An Giang, Đồng Tháp, Vĩnh Long, and HCMC.

- Range of subjects in study: for local catfish consumers, subjects must be Vietnamese, 18 years of age and above, male or female with their marital status, monthly income and spending.

- Range of time in study: this survey has been conducted in four consecutive months from April to August 2009.

## ***c. Data collecting and analyzing method:***

- Field research approach: questionnaires are sent to consumers in surveyed localities. There are 140 questionnaires arranged in the following table:

**Table 1: Number of survey samples**

Sample by locality	Cần Thơ	An Giang	Vĩnh Long	Đồng Tháp	TPHCM	Total
Consumers	40	40	20	20	20	140

- Expert-consulting approach: polls are conducted among experts in institutes and universi-

ties, and among managers from related enterprises, officials from related departments as well as among experienced people in aquatic farming.

- Data processing and result presentation: data are processed with Excel. Descriptive statistics and comparative approaches, measurements and scales are used to obtain remarks of characteristics of the behavior of the local catfish buyers.

## **3. Results and discussions**

The behavior of the local catfish consumers according to Philip Kotler model consists of the awareness of need, motives, perception, learning, choosing, and purchase decision. All these characteristics would have impact on the way enterprises do their business and modify the behavior of the catfish farmers in the Mekong Delta in accordance with the standards of catfish farming.

### ***a. Requirements of catfish consumers on the local market:***

The need for catfish depends on incomes, characteristics of each locality, the kind of fish (pagansius or basa), and on the education levels. According to our survey, consumers with average or low income (under VND2.9 million/month) prefer pagansius to basa; those with incomes above 3 million/month and with higher levels of education have a higher need for basa than for pagansius if differences in prices between these two kinds of fish are not much high.

Results of the study show that in where there are more basa farmers, basa consumers are fewer. For example: 75% of basa consumers in HCMC and 62.5% in Cần Thơ prefer basa to pagansius. Percentage of basa buyers decreases gradually depending on the localities: 25%, 15%, and 12.5% in Vĩnh Long, Đồng Tháp, and An Giang respectively.

**Table 2: Percentage of catfish consumers by locality**

Locality	Pagansius	Basa	Total of samples
	Chooser	Chooser	
Cần Thơ	15	25	40
TPHCM	5	15	20
An Giang	35	5	40
Vĩnh Long	15	5	20
Đồng Tháp	17	3	20

## RESEARCHES & DISCUSSIONS

### *b. Motives of catfish consumers on the local market:*

The three criteria determining the motives for buying catfish of the local buyers are: firstly, prices account for 96.43%; secondly, availability 91.43%, and thirdly, the tastiness of catfish 85.71%. The motives for buying catfish are also influenced by the characteristics of each locality, by the purpose of the buyers and kinds of fish. For example, buyers in Cần Thơ, An Giang, Vĩnh Long, and Đồng Tháp say that catfish price is the most important reason for them to buy catfish while buyers in HCMC are not interested in the selling price but in the availability, the tastiness, and the nutrition of catfish.

### *d. Consumers' awareness of catfish products:*

The study shows that catfish's meat is white which means it has high quality and commercial value. However, 71.43% of the consumers do not know this, and are not interested in the color of its meat when they buy it. The media such as the press, the television and radio stations, and the Internet have great influence on local consumers' knowledge of catfish. Getting information about catfish varies over localities: 90% of the consumers in HCMC know market information about catfish and similar percentages are 85%, 75%, 60%, and 50% in An Giang, Cần Thơ, Đồng Tháp, and Vĩnh Long respectively.

**Table 3: Factors impacting the motives for buying catfish**

Motive	Total	TPHCM	Cần Thơ	An Giang	Vĩnh Long	Đồng Tháp
Reasonable price	135	18	40	38	19	20
Availability and ease in buying	128	16	38	38	16	20
Tastiness	120	18	38	32	16	16
Nutrition of catfish	40	16	12	6	4	2
Influenced by friends and relatives	25	2	10	4	6	3
Influenced by advertisements	25	12	4	2	5	2
Total of samples	140	20	40	40	20	20

### *c. Awareness of catfish consumers on the local market:*

Results of the study show that 97.14% of the catfish consumers say that eating catfish is more beneficial than eating meat because catfish have some advantages such as (1) more vitamins, (2) better fat because it contains Omega 3, and less cholesterol than meat; (3) fewer diseases than meat; and (4) cheaper than meat. The media have great influence on the awareness of the buyers, for example: the press has the strongest impact, followed by words of mouth.

**Table 4: Consumers' awareness of benefits of catfish**

Grade	Very good	Good	Fair	Not good	Bad
Choosers	5	125	10	0	0
Total of samples	140	140	140	140	140
(%)	3.57	89.28	7.14	0.00	0.00

**Table 5: Sorts of media chosen by the local consumers**

Associations of	Choosers	Total of samples	(%)
Advertisement on publications	123	140	87.85
Television	86	140	61.42
Radio	46	140	32.86
Internet	15	140	10.71

### *e. Factors affecting consumers' decision to buy catfish:*

The study mentions 10 factors divided into 4 major groups affecting the decision to buy catfish: product, price, place, and promotion. The results show that the "place factor group" is most agreed upon (90%), next is the "product factor group" (83.57%), third is the "price factor group"

(67.86%), and fourth is the “promotion factor group” (61.43%).

printed on the product and nice packaging, and at the same time accept high prices and wide fluctu-

**Table 6: Classification of 10 factors affecting the decision to buy catfish of the local consumers**

Group of factors		Place	Product	Price	Promotion	Physical Evidence
FACTORS						
Availability and ease	1	*				
Quality	2		*			
Cheaper than now	3			*		
No or few diseases	4		*			
Adequate weight	5					*
Nice packaging and lots of details on it	6		*			
Seller’s friendliness	7				*	
Easily cooked into delicious dishes	8		*			
Discount of price	9				*	
Gift added though not many	10				*	

Once again, the study shows that the income affects strongly the decision to buy and to choose catfish of the local consumers.

**Table7: Impact of income on the choice of catfish of local consumers**

Criteria	Classification of local consumers by income		
	High income	Average income	Low income
Products from organic farming	1	3	7
Products with quality standards: ISO 9000, HACCP	2	6	8
Fresh look	5	1	1
Little fat and white	6	2	2
Nice and hygienic packaging	9	7	3
Color of the fish meat	8	5	4
With information about nutritious elements and expired date	3	8	6
Safe and free from disease-causing agents	4	4	5
Elasticity of meat	7	9	9
Almost free from bad smell	10	10	10

Results of the study also show that consumers with high incomes (from VND5 million /month and above) are interested mostly in the quality and organic origin of the fish, in the information

ations in prices. For those with average incomes (from VND1-4.9 million/month), they are interested chiefly in the outside appearance, and then in the quality of the product while consumers with low incomes (under 1 million/month) pay little attention to the product quality and quality standards.

As for the distribution channel: the modern distribution channel has strongly influenced the consumers' way of choosing. For example, consumers in HCMC are very fond of buying catfish in supermarkets while those in Cần Thơ, Đồng Tháp, An Giang, and Vĩnh Long like to buy catfish at markets near their homes. However, residents in Cần Thơ now have a trend to buy more in supermarkets.

**Table 8: Catfish outlets where consumers can buy catfish**

Locality	Catfish outlets			
	Markets near residential area	Supermarkets	Mobile sellers	
	Choosers	Choosers	Choosers	Total
TPHCM	4	12	4	20
Cần Thơ	25	11	4	40
Vĩnh Long	16	2	2	20
Đồng Tháp	17	1	2	20
An Giang	35	2	3	40
<b>Total</b>	<b>97</b>	<b>28</b>	<b>15</b>	<b>140</b>

## 4. Some important proposals to develop the local catfish market

The results of the study show that the behavior of the consumers in choosing to buy catfish depends greatly on various factors including the products' characteristics, selling places, information and on the consumers' characteristics including income, awareness, information, and others. Based on these results, we would like to propose some suggestions to help make it possible for catfish to have a stable share in the local market.

(1) Identifying products for distribution according to characteristics of each region and average income of local residents: Basa should be available in cities and towns where the people have high incomes while people with low incomes should be supplied with more pagansius.

(2) It is necessary to produce various categories of products with high quality and in all shapes and sizes in order to meet the requirements of the customers who are also diversified and it should be noted that the income of the customers is an important factor. It is also necessary to supply them with nicely-packaged products originated from organic fish farming and with adequate and trustworthy information about nutritious elements so as to meet the requirements of customers with high incomes. Products with simple packaging and low prices suitable for low-income customers are also necessary.

(3) It is necessary to pay attention to the important factors affecting the decision to buy catfish of the customers in the following order: a) "the place factor group", b) "the product factor group" c) "the price group, and d) "the promotion group" in order to build up the strategy to develop the products that can be accepted in the local market.

(4) Today, systems of supermarkets are more and more developed and the people, especially those with high incomes, are putting their trust in the supermarkets to be assured about the quality of the product. Therefore, supermarkets should co-operate with one another to develop various kinds of products with high quality for high-income consumers and to be able to sell them at stable and reasonable prices.

(5) The results of the study also show that information about the advantages of catfish has great impact on the choices of the people and for

that reason, information on publications and on various television stations play a very important role.

## 5. Conclusion

On account of the limit of time and manpower, this paper only collects data from a limited number of samples (140) and the field of study covers only 5 representative regions of production, and areas with low and high-income people, so the results have not yet had a high degree of reliability. However, the data collected have indicated something interesting about the behavior of the catfish consumers. The results of this study could be used as primary data for the next studies on a larger scale and with a higher degree of reliability about the special product of the Mekong Delta. The quantity consumed and the stability of the supply of catfish are closely linked with the lives of many people in the Mekong Delta because this region is the place that provides the raw materials for this market. To develop the local market is an important measure to help this product to be consumed steadily. In order to do so, studying the behavior of the local consumers of catfish is a subject of study that should be paid much attention to ■

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