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Potential for Restaurant Markets for Tilapia in Honduras

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Abstract

This report is part of a series of studies conducted during the third quarter of 1999 in Honduras. The project was designed to assess the Honduran market to determine the potential market for tilapia. Three different surveys were conducted: a supermarket survey, an open-air fish market survey, and a full-service restaurant survey. This report will focus on the latter. A random sample and a census of full-service restaurants were taken in all the major urban and selected rural areas of the country. The survey resulted in 72 completed questionnaires by restaurants randomly selected throughout the urban and selected rural areas. While the vast majority of restaurants were familiar with tilapia, only 30% sold tilapia. While tilapia sales were increasing, less than half of the restaurants promoted tilapia entrées. Restaurants that did not sell tilapia still rated it favorably on many attributes but had difficulty obtaining reliable supplies. These restaurant managers also were hesitant about customer reactions to tilapia. Reliable supplies, samples, and catch-of-the-day promotions in restaurants would likely be effective in increasing sales of tilapia. An emphasis on quality and year-round availability of fresh fillets will be critical factors to encourage more restaurants to experiment with tilapia.

Introduction

The introduction of tilapia in Honduras dates back to the late 1970s (Teichert-Coddington and Green, 1997). During those early days, the production of tilapia was primarily a family operation that was managed either extensively or semi-extensively as a supplemental agricultural activity. In 1995, Sarmiento and Lanza Nuñez (1995) found a total of 114 ha of small-scale, family-level fish ponds (2,738 ponds) that included every department (province) of Honduras (Engle et al., 2001).

Export-oriented production of tilapia began in 1990 and has grown rapidly since 1991–1992 (Teichert-Coddington and Green, 1997). In 1997, there were 15 tilapia farms with a total water surface area of 185 ha that produced tilapia for export and domestic markets. Those farms produced tilapia exclusively and were owned by individuals, local investors, and international investors (Green and Engle, 2000). Exports of tilapia to the US from Honduras have grown consistently since 1992 (Engle, 1997a).

The rapid growth in tilapia production is expected to generate a supply that could be available domestically in Honduras. The development of a strong domestic market for tilapia in Honduras could diversify market opportunities for tilapia growers and serve to stabilize this young aquaculture industry from the external shocks common in export-oriented markets. Furthermore, the development of a domestic market could enhance the income-generating potential of small-scale tilapia production (Engle, 1997b).

A limited amount of work has been done on markets for fish in Central America. The few studies that have been carried out focused on the catch from commercial fisheries in Panama (Matton, 1981) and in Costa Rica (Scheid and Sutinen, 1979). Head et al. (1994) developed market guidelines for saltwater-cultured Florida red tilapia in Puerto Rico. Several studies conducted in the US have examined the potential to develop markets for tilapia (Crawford et al., 1978; Galbreath and Barnes, 1981; Nelson et al., 1983). More recently, Swanson (1995) described US market requirements for tilapia. Engle (1997b) interviewed intermediate seafood buyers in the US to determine the potential to increase sales of fresh and frozen tilapia fillets in the US. However, virtually no work has been done on the potential to further develop the domestic markets for tilapia in Honduras. Thus, the goals of this research were to find and qualitatively analyze possible alternatives to increase tilapia sales in the restaurant sector.

Methods

Direct personal interviews were conducted in Honduras in 1999 based on a random sample of restaurants in Tegucigalpa and San Pedro Sula (the two main urban population centers in Honduras) and in selected small rural towns. Small rural towns were selected along the primary route from north to south through the country to collect data along a possible gradient of preferences between the Pacific and Atlantic coasts. Honduras is the only Central American country with good access between the two coasts where this might be possible. Additional towns that were large enough to be included on maps and located to the east and west of the Tegucigalpa–San Pedro Sula highway were included. In all, the following small rural towns were included in the survey: Catacamas, Siguatepeque, Santa Barbara, Comayaguela, Lago de Yojoa, Choluteca, Puerto Cortes, Juticalpa, Comayagua, La Paz, Santa María de Real, and Campamento La Lima.

Fast-food establishments, bars, cafes, and Chinese restaurants were excluded from the restaurant survey; only full-service restaurants were represented. The interviews were in 72 restaurants from all urban and selected rural areas throughout the country. Thirty-one percent of the restaurants surveyed were located in the North region of Honduras, while the largest percentage (69%) was concentrated in the Central-South region of the country.

Data collected from the surveys were entered in computers for analysis using Survey Pro® Software, a program designed to develop and analyze survey data. These data were then cross-tabulated by the two previously cited regions, by restaurants that had fish or seafood as entrées on menus and those that did not. Those that did have fish or seafood as entrées on the menu were again cross-tabulated by those restaurants that sold tilapia and those that did not.

Table 1. Number and percent of restaurants, by fish and seafood as a percent of total sales and by region. Restaurant survey, Honduras, 1999.

Percentage of Sales (%)	Region of Country					
	North		*Central-South*		*Total*	
	N	%	N	%	N	%
0–19	2	10	9	18	11	16
20–40	10	48	17	35	27	39
41–60	2	10	7	14	9	13
61–80	4	19	4	8	8	11
81–100	3	14	12	25	15	21
Totals	21	30	49	70	70	100

Results

Characteristics of Honduran Full-Service Restaurants

The total number of restaurants surveyed can be grouped into those that had fish or seafood as entrées on their menus and those that did not. Based on this classification, 97% of the respondents fell in the category of restaurants that had fish or seafood on their menus, while the remaining 3% had neither fish nor seafood as entrées on their menus (Figure 1). Of the restaurants that reported having fish or seafood on the menu, 30% were located in the North region of the country and 70% were located in the Central-South region of Honduras. However, those that did not have either fish or seafood on the menu were equally located in both regions. Collectively, respondents of both groups from the North accounted for nearly 31% of the total, while those from the Central-South accounted for over 69% of the total.

Twenty-one percent of the restaurants that reported having fish or seafood as entrées on menus reported that 81 to 100% of their total revenues resulted from sales of fish or seafood (Table 1). Another 11% reported having 61 to 80% of their sales from selling fish and seafood, 13% reported 41 to 60% of revenues from fish and seafood, 39% reported 20 to 40% from fish and seafood, and the remaining 16%

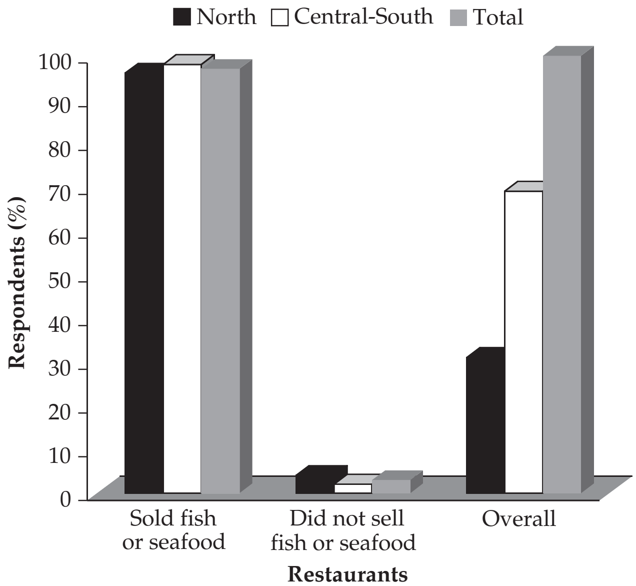

Figure 1. Percent of restaurants with and without fish or seafood as an entrée on menu, by region. Restaurant survey, Honduras, 1999.

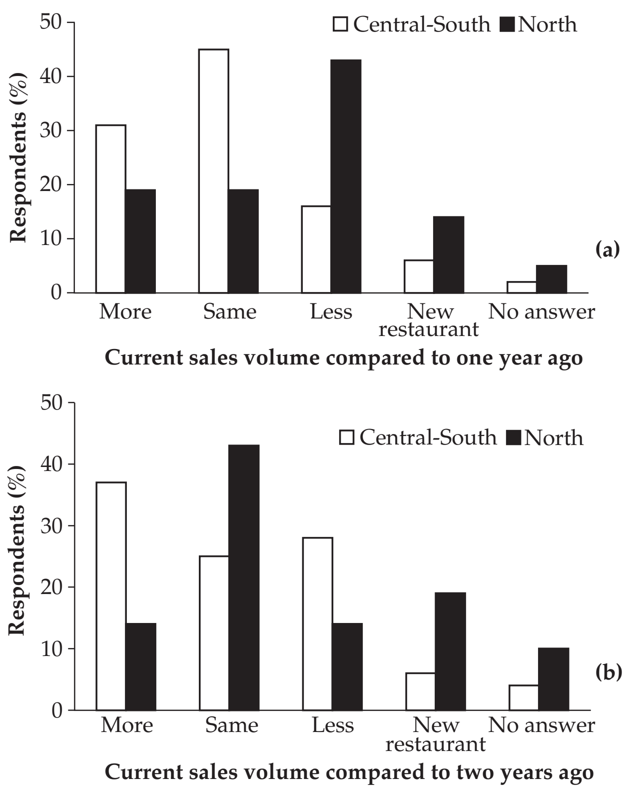

Figure 2. Current sales volumes of fish and seafood in the survey year compared to one year and two years ago. Restaurant survey, Honduras, 1999.

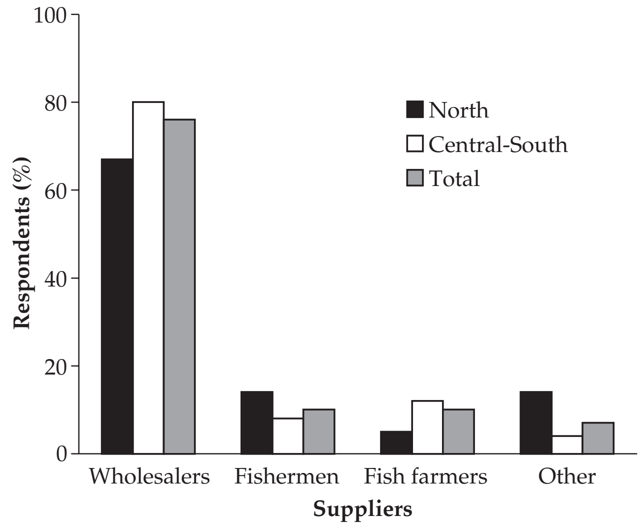

Figure 3. Primary sources of fish and seafood supply, by region. Restaurant survey, Honduras, 1999.

had 0 to 19% of their sales from selling fish and seafood.

Most restaurants from each region obtained at least 20 to 40% of their sales from selling fish and seafood (Table 1). For example, 48% of the restaurants in the North had 20 to 40% of their sales from selling fish and seafood, and approximately 35% of those in the Central-South also reported having sales from selling fish and seafood in that range. In the North and Central-South, respectively, 14% and 25% of the respondents reported 81 to 100% of their sales from selling fish and seafood.

Managers were asked to provide a comparison between sales from the previous year and from two years ago with the current year (1999) (Figure 2). Thirty-seven percent of all managers reported selling the same amount of fish and seafood as the previous year, whereas 27% reported having sold more than the year before, and 24% said that they sold less fish and seafood than the previous year.

When partitioned by region, 43% of the managers in the North reported selling less than one year ago (Figure 2). Smaller percentages reported selling either more or the same amount. In the Central-South a larger percentage (45%) of restaurants had constant sales of fish and seafood compared to the previous year. However, 31% reported having sold more than they had the preceding year, and 16% reported having sold less. Compared with two years ago, a higher percentage of respondents in the Central-South reported selling more. Most respondents in the

Table 2. Number and percent of respondents, by number of suppliers and by region. Restaurant survey, Honduras, 1999.

Number of Suppliers	**Region of Country**					
	North		*Central-South*		*Total*	
	N	%	N	%	N	%
0–2	15	71	27	55	42	60
3–5	3	14	15	31	18	26
6–7	1	5	4	8	5	7
10–12	2	10	1	2	3	4
26	0	0	2	4	2	3
Overall	21	30	49	70	70	100

Table 3. Number and percent of restaurants that transport their own fish, by region. Restaurant survey, Honduras, 1999.

Transport Fish	**Region of Country**					
	North		*Central-South*		*Total*	
	N	%	N	%	N	%
Yes	5	24	9	18	14	20
No	16	76	40	82	56	80
Overall	21	30	49	70	70	97

Table 4. Average expenditures on fish transportation, by region. Restaurant survey, Honduras, 1999.
[a] Original amounts were converted from Honduran lempiras to US dollars at the prevailing rate of Lps. 15 = US$1.

Expenditures (US$ per trip)[a]	**Region of Country**					
	North		*Central-South*		*Total*	
	N	%	N	%	N	%
0–7	2	40	3	38	5	39
8–20	1	20	4	50	5	39
21–33	2	40	1	13	3	23
Overall	5	36	8	64	13	100

North reported selling the same amount as two years ago.

It was important to determine the sources and the channels through which respondents purchased their fish and seafood supply. Restaurant managers in each region were asked to provide information on supply channels. Seventy-six percent of the restaurant managers reported receiving fish and seafood supplies primarily from wholesalers, while only 10% reported receiving their supplies primarily from fishermen and fish farmers (Figure 3). Seven percent reported purchasing from other sources.

Table 5. Average expenditures on ice by restaurants that transport their own fish, by region. Restaurant survey, Honduras, 1999.
[a] Original amounts were converted from Honduran lempiras to US dollars at the prevailing rate of Lps. 15 = US$1.

Expenditures (US$ per trip)[a]	**Region of Country**					
	North		*Central-South*		*Total*	
	N	%	N	%	N	%
0–3	0	0	2	33	4	29
13	2	67	0	0	2	14
Other	1	33	1	67	8	57
Overall	3	50	3	50	6	100

Wholesalers tended to be the most preferred source of fish and seafood in both regions (Figure 3). For example, 67% of respondents from the North reported receiving their supplies primarily from wholesalers, compared with only 14, 5, and 14% who received their supply from fishermen, fish farmers, and other sources, respectively. This trend continued throughout the Central-South region on an even larger scale. For instance, 80% of responding restaurants mentioned wholesalers as their primary source of fish and seafood, but only 8, 12, and 4% mentioned fishermen, fish farmers, and other sources as their primary sources of fish and seafood supply.

Data showed that, independent of region, many of the restaurants surveyed limited themselves to receiving their fish and seafood supplies from no more than two different suppliers (Table 2). In the North region 71% and 55% of respondents in the Central-South reported receiving their supplies from up to two different suppliers. However, in the North region, very few or no restaurants had more than 12 different fish and seafood suppliers. In the Central-South region, by contrast, some restaurants reported having up to 26 different fish and seafood suppliers.

Suppliers were not obligated to deliver fish and seafood supplies to customer restaurants. Restaurants were responsible for either transporting the supply themselves or paying transporters, whichever would benefit them the most (Table 3). Twenty percent of the respondents preferred transporting fish supplies themselves, whereas the remaining 80% selected other options. Those who opted to transport fish supplies incurred expenditures associated with the transportation. Thirty-nine percent of respondents who opted to transport their own fish also reported an average expenditure of up to $7 on transportation (original amounts were converted from Honduran lempiras to US dollars at the prevailing rate of Lps. 15 = US$1) (Table 4). Another 39% reported average expenditures between $8 and $20 on transportation. An additional 23% reported an average expenditure between $21 and $23 on fish transportation.

Results showed that 29% of restaurants that opted to transport their own fish and seafood spent an average of between $0 and $3 on ice to ensure freshness of their fish and seafood supplies (Table 5). Fourteen percent reported an average expenditure of $13 on ice.

Restaurant managers were asked to characterize businesses according to the type of ownership. Thirty-five percent of respondents reported being independently owned, 26% were family-owned, 24% were international chains, 8% were national chains, and 7% had other types of ownership (Figure 4). Most of the restaurants from the North were international chains (36%), followed by independents (27%), family-owned (18%), and national chains (9%). In the Central-South, however, 38% of respondents were independent, 30% were family-owned,

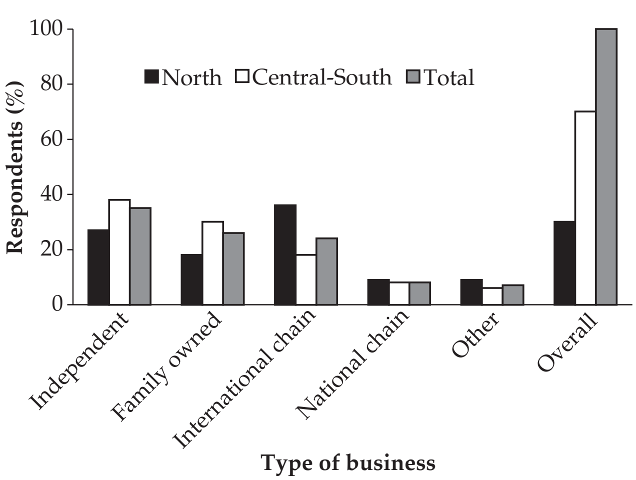

Figure 4. Type of business ownership, by region. Restaurant survey, Honduras, 1999.

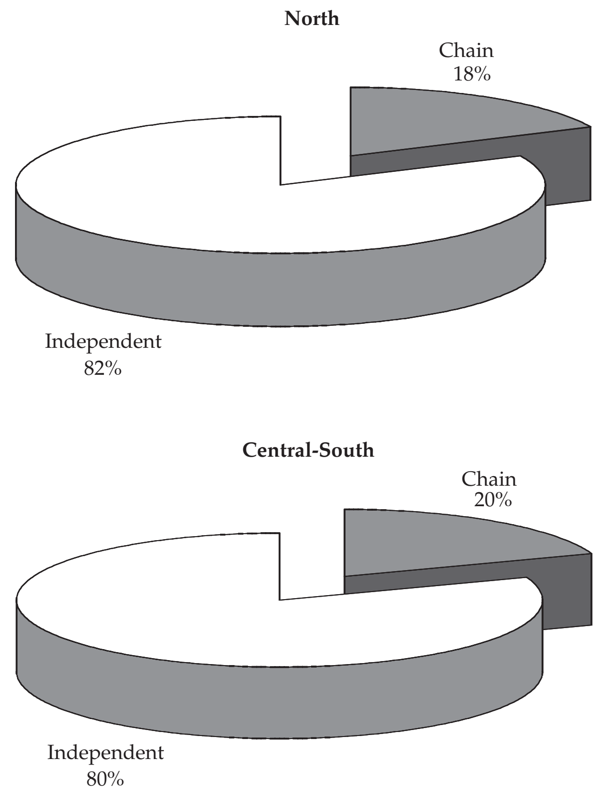

Figure 5. Restaurants in the North and Central-South that reported being independent or part of a chain. Restaurant survey, Honduras, 1999.

18% were parts of international chains, and national chains (10%). Based on the above data, it was deduced from the results that most of the restaurants (81%) in both regions combined were independent businesses compared with only 19% that were part of a chain (Figure 5). Nearly 82% of the restaurants in the North were independent compared to only 18% that were part of chains. In the Central-South, 80% were independent businesses and the remaining 20% reported being part of a chain.

All of the restaurants that reported being part of a chain in the North reported that there were two to three restaurants in their chain (Table 6). Eighty percent of those in the Central-South reported that there were two to three restaurants in their chain, and the remaining 20% said that there were four or five restaurants in their chain.

Eighty-six percent of restaurants surveyed were concentrated in urban areas, whereas the remaining 10% and 4% of the restaurants were located in rural and suburban areas, respectively (Figure 6). Independent restaurants accounted for nearly 34% of all

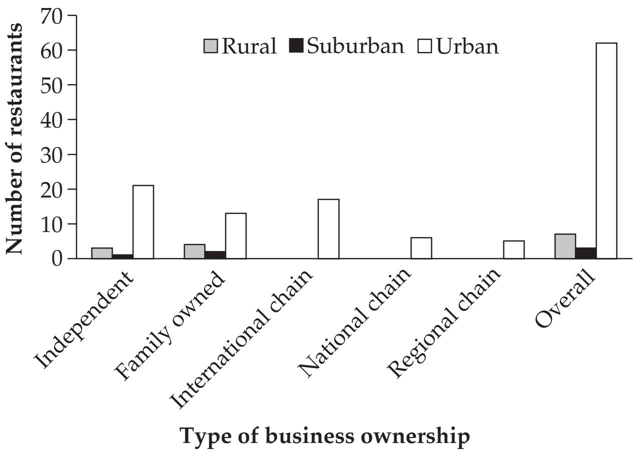

Figure 6. Location of restaurants surveyed with respect to type of business ownership. Restaurant survey, Honduras, 1999.

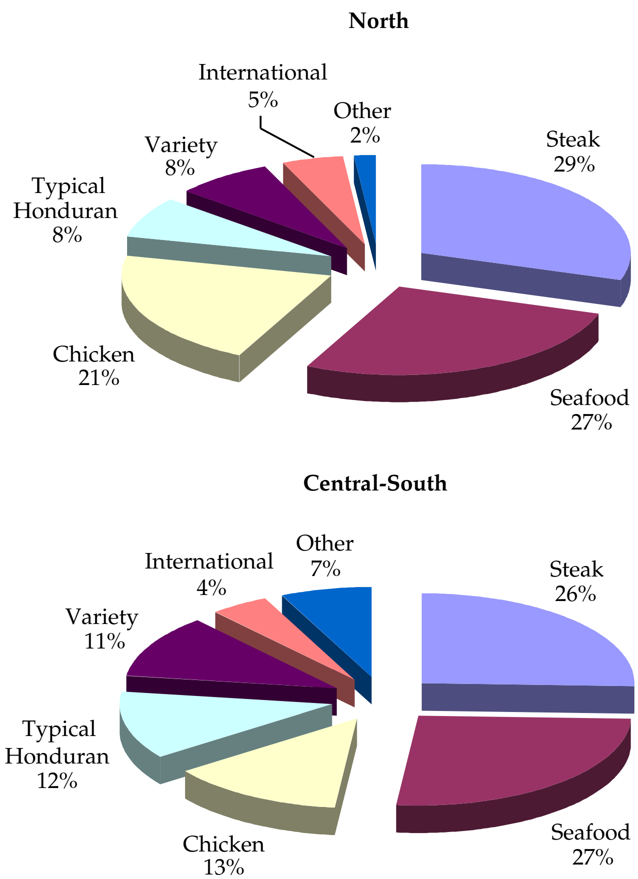

Figure 7. Cuisine type of respondents, by region. Restaurant survey, Honduras, 1999.

restaurants located in urban areas, for over 33% of those in suburban areas, and for approximately 43% of those located in rural areas. Family-owned restaurants made up the largest group of restaurants located in suburban (67%) and rural (57%) areas, but they accounted for only 21% of those located in urban areas. Restaurants that were parts of international, national, or regional chains were all located in urban areas, representing 27%, 10%, and 8%, respectively, of all restaurants in these areas.

Regardless of ownership type, 68% of all restaurants indicated that steak was the primary type of cuisine (Figure 7). This was followed by 67% that indicated seafood as the main cuisine type, 40% chicken, 26% typical Honduran cuisine, 25% a variety of food, 11% international cuisine, 4% Spanish cuisine, 3% Chinese cuisine, 1% French cuisine, and 4% other types of cuisine.

The degree to which each type of restaurant was serving each type of cuisine was higher or lower depending on the type of ownership (Table 7). Restaurants that reported being part of international chains were more inclined to serve steak and seafood cuisine than the other types of cuisine. Another 35% of international chains reported serving chicken, 41% typical Honduran cuisine, 18% a variety of foods, 12% international cuisines, and 6% Spanish cuisine. In contrast, restaurants that reported being parts of national chains were more limited to serving only a few types of cuisine. For instance, 83% of national chains primarily served chicken, 67% steak, 50% seafood, 33% typical Honduran cuisine, and 50% served a variety of foods. Regional chains, on the other hand, did not serve chicken, French cuisine, or other types of cuisine. However, 60% were equally specialized in seafood or international cuisines, 40% served steak, variety foods, or Spanish food, and 20%

Table 6. Number of restaurants in chain, by region. Restaurant survey, Honduras, 1999.

Restaurants in Chain	**Region of Country**					
	North		*Central-South*		*Total*	
	N	%	N	%	N	%
2–3	4	100	8	80	12	86
4–5	0	0	2	20	2	14
Overall	4	29	10	71	14	100

Table 7. Number and percent of respondents, by cuisine type and by type of ownership. Restaurant survey, Honduras, 1999.
[a] Multiple answers can result in total over 100%.

Cuisine Type	Type of Business											
	International Chain		*National Chain*		*Regional Chain*		*Independent*		*Family Owned*		*Total* [a]	
	N	%	N	%	N	%	N	%	N	%	N	%
Steak	14	82	4	67	2	40	18	72	11	68	49	68
Seafood	14	82	3	50	3	60	15	60	13	68	48	67
Chicken	6	35	5	83	0	0	10	40	8	42	29	40
Typical Honduran	7	41	2	33	1	20	4	16	5	26	19	26
Variety Food	3	18	3	50	2	40	6	24	4	21	18	25
International	2	12	0	0	3	60	2	8	1	5	8	11
Comida Española	1	6	0	0	2	40	0	0	0	0	3	4
Chinese Food	0	0	0	0	1	20	0	0	1	5	2	3
French	0	0	0	0	0	0	1	4	0	0	1	1
Other	1	6	0	0	0	0	2	8	0	0	3	4

Table 8. Most important meal served. Restaurant survey, Honduras, 1999.

Importance	Breakfast		Lunch		Dinner/Supper		Carry Out		Banquet	
	N	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*
Very Important	9	13	59	82	57	79	54	75	62	86
Somewhat Important	3	4	11	15	11	15	12	17	5	7
Less Important	5	7	1	1	4	6	3	4	3	4
Service Not Available	55	76	1	1	0	0	3	4	2	3
Overall	72	100	72	100	72	100	72	100	72	100

served either typical Honduran or Chinese cuisine. Independent restaurants served primarily steak (72%), 60% served seafood, 40% chicken, 16% typical Honduran cuisine, 24% a variety of foods, 8% international cuisines, and 1% served French cuisine.

A larger percentage of family-owned restaurants served seafood (68%), chicken (42%), typical Honduran cuisine (26%), and Chinese cuisine (5%). However, when compared to independent restaurants, only 68% of the family-owned restaurants served steak, 21% served a variety of foods, and only 5% served international cuisines.

When region of the country was considered, results indicated that higher percentages of restaurants in the North served steak, seafood, chicken, and international cuisines compared to those in the Central-South region (Figure 7). Higher percentages of restaurants in the Central-South region served primarily a variety of foods and international cuisines. The Central-South region is the most heavily populated urban area, and several restaurants likely compete in similar types of cuisine. Therefore, increased competition and consumer preferences would be more likely to result in closure of less competitive restaurants.

When asked about the seating capacity of their restaurants, 18% of respondents from all types of ownership and from both regions reported seating capacities of 10 to 50 seats (Figure 8). Thirty-six percent each reported having seating capacities ranging from 51 to 100 and from 101 to 200 seats. However, only 10% reported having a seating capacity of over 200 seats. A higher percentage of restaurants in the North had seating capacities between 101 to 200 and 51 to 100 seats (41% and 37%, respectively) than in the Central-South region (34% and 36%, respectively) (Figure 8). However, there was a larger percentage of restaurants in the Central-South with seating capacities between 10 and 50 seats (20%) and over 200 seats (10%) than of those in the North with similar seating capacities (14% and 9%, respectively).

All of the restaurants surveyed reported having some of the typical meal services found in American restaurants, i.e., breakfast, lunch, dinner or supper, carryout, and banquet, but these meal services varied with the type of restaurant and the importance attributed to these services (Table 8). For instance, when restaurant managers were asked to classify their breakfast services in order of importance to the business operation, 13% classified it as very important, whereas 4% classified it as somewhat important, 7% as less important, and 76% reported that this meal service was not available at their restaurants. However, survey results revealed that meal services such as lunch, dinner or supper, carryout, and banquet carried strong weights for the restaurant industry in Honduras. For example, 82% of restaurant managers reported lunch as very important, 79% reported dinner or supper as very important, and 75% and 86% reported carryout and banquet as very important, respectively. By contrast, only 1% reported lunch as less important, 6% reported dinner or supper as less important, and 4% reported carryout and banquet in the same manner.

Forty-three percent of the restaurants surveyed were fairly new (0 to 5 yr) in the restaurant industry (Table 9). Twenty-six percent had been in business

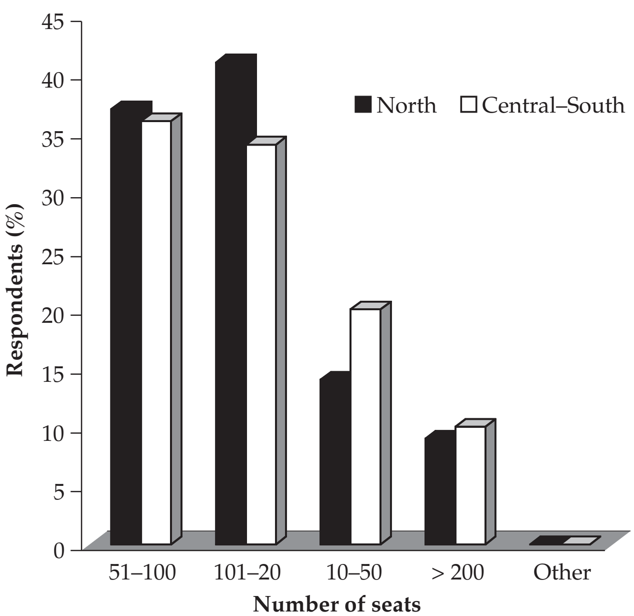

Figure 8. Seating capacity of responding restaurants, by region. Restaurant survey, Honduras, 1999.

Table 9. Years in business of respondents, by region. Restaurant survey, Honduras, 1999.

Years in Business	Region of Country					
	North		*Central-South*		*Total*	
	N	%	N	%	N	%
0–5	11	50	20	40	31	43
6–10	7	32	12	24	19	26
11–15	1	5	11	22	12	17
16–20	1	5	5	11	6	8
> 20	2	9	2	4	4	6
Overall	22	31	9	69	72	100

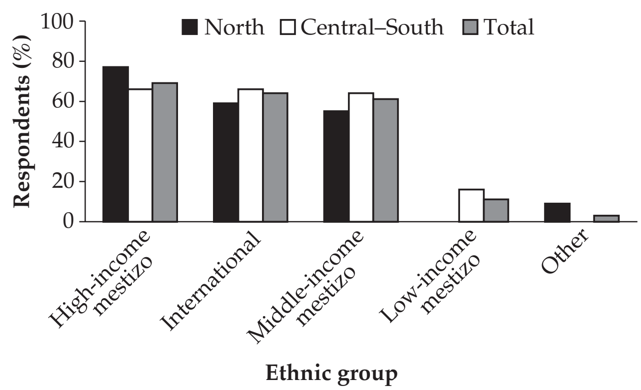

Figure 9. Ethnic groups that make up largest customer base for all restaurants surveyed, by region. Restaurant survey, Honduras, 1999.

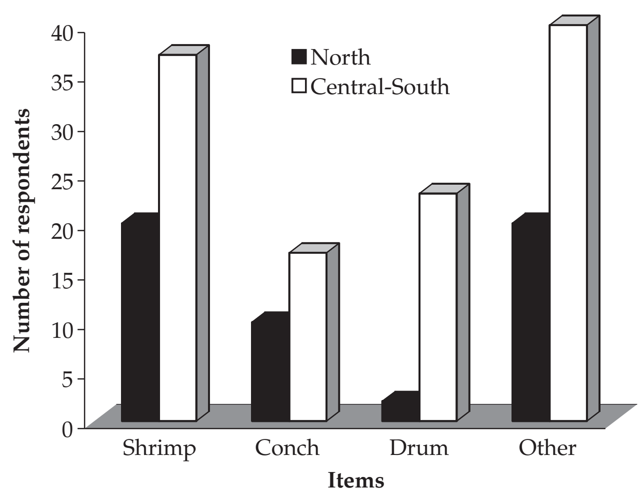

Figure 10. Most popular fish and seafood items in terms of sales, by region. Restaurant survey, Honduras, 1999.

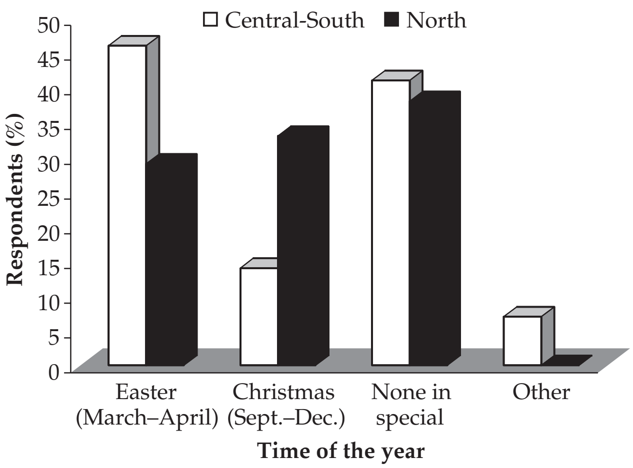

Figure 11. Peak demand seasons for fish and seafood items, by region. Restaurant survey, Honduras, 1999.

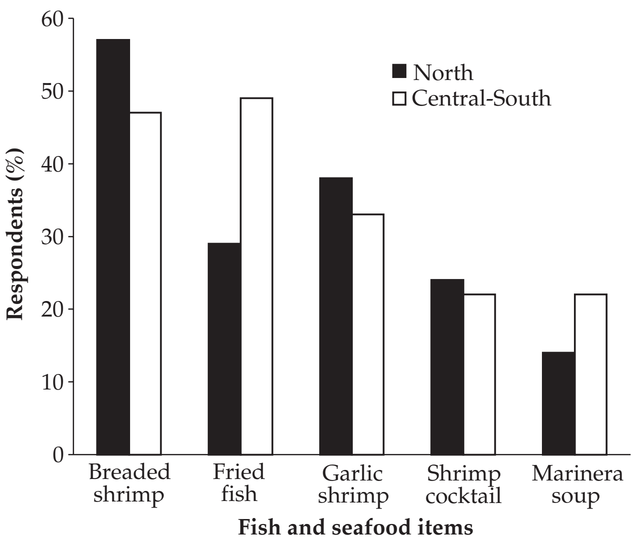

Figure 12. Top five fish and seafood products in terms of sales, by region. Restaurant survey, Honduras, 1999.

between six and ten years, 17% between 11 and 15 years, 8% between 16 and 20 years, and the remaining 6% had been in business for over 20 years. Half of the restaurants surveyed in the North were between zero and five years old compared with 40% in the Central-South. Thirty-two percent of the restaurants in the North reported being in business for six to ten years, whereas 24% of those in the Central-South region reported being in business for as long as those in the North. Survey results indicated more restaurants in the Central-South had been in business longer periods of time (11 to 20 yr) than in the North.

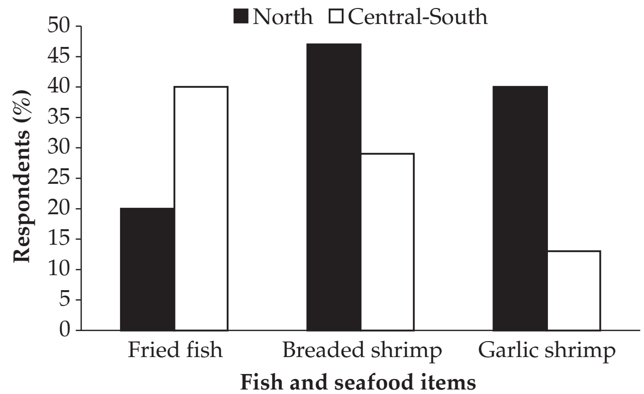

Figure 13. Top three fish and seafood products with fastest sales growth in the previous year, by region. Restaurant survey, Honduras, 1999.

However, an equal number of restaurants had been in business for over 20 years in the two regions.

The results indicated that high-income mestizos made up the largest customer base (77%) of all restaurants in the North, followed by international (59%) and middle-income mestizos (55%) (Figure 9). In the Central-South, high-income mestizos and international groups were reported as the largest customer base for restaurants in the region, followed by middle-income mestizos (64%) and low-income mestizos (16%). Overall, high-income mestizos, followed by international and middle-income mestizos, made up the largest customer bases for all restaurants with fish and seafood on the menu. Only a few respondents reported low-income mestizos and other ethnic groups as being their major customer bases.

Characteristics of Fish and Seafood Offered in Honduran Restaurants

Restaurants served a variety of fish and seafood species (Figure 10). Shrimp, conch, and drum were reported by high percentages of respondents. Shrimp, for instance, was reported by 81% of respondents as one of the most popular items in terms of sales, followed by conch (39%), and drum (36%). All other species combined were also reported by 86% of the respondents to have had some popularity in terms of sales.

It was important to understand whether restaurants in one particular region tended to prefer some items compared to those in the other region and, if

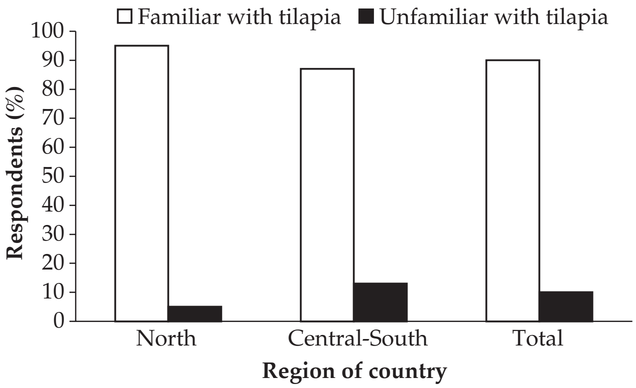

Figure 14. Restaurants familiar with tilapia, by region. Restaurant survey, Honduras, 1999.

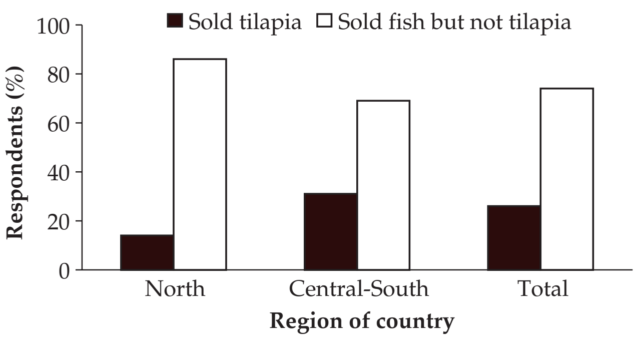

Figure 15. Percent of respondents that reported selling tilapia, by region. Restaurant survey, Honduras, 1999.

so, to understand the degree of differences. Shrimp was the most popular species in both regions (Figure 10). However, conch was more popular in the North than in the Central-South. Drum, on the other hand, was more popular in the Central-South than in the North.

The Easter season was reported by 41% of respondents as the peak demand season for fish products, whereas 39% reported the Christmas season as being their peak demand season. Easter as the peak demand season for fish and seafood products can be best understood on the basis of religious background. Most of the Honduran population is Roman Catholic, a religion that prohibits the consumption of all flesh except fish during the Lenten season preceding Easter. However, 39% reported that there was no one peak demand season for selling fish and seafood products at their restaurants. A higher percentage of respondents in the Central-South region indicated that Easter was the peak season whereas more respondents in the North indicated that Christmas was the peak season (Figure 11).

Shrimp products accounted for three of the top five fish and seafood products in terms of sales by

Table 10. Number and percent of restaurants serving tilapia, by type of menu item and by region. Restaurant survey, Honduras, 1999.
[a] Multiple answers can result in total over 100%.

Type of Menu Item	Region of Country					
	North		*Central-South*		*Total* [a]	
	N	%	N	%	N	%
Entrée	3	100	15	100	18	100
Appetizer	0	0	2	13	2	11
Other	0	0	0	0	0	0

Table 11. Number and percent of restaurants, by forms of preparation of tilapia and by region. Restaurant survey, Honduras, 1999.
[a] Multiple answers can result in total over 100%.

Forms of Preparation	Region of Country					
	North		*Central-South*		*Total* [a]	
	N	%	N	%	N	%
Fried	3	100	15	100	18	100
Breaded	1	33	5	33	6	33
Boneless	2	67	2	13	4	22
Garlic	2	67	2	13	4	22
Grilled	2	67	1	7	3	17
Other	2	67	8	53	10	56

Table 12. Amount of time restaurant has been in business with respect to those that sell tilapia and region. Restaurant survey, Honduras, 1999.

Time in Business	Region of Country					
	North		*Central-South*		*Total*	
	N	%	N	%	N	%
< 6 months	1	33	1	7	2	11
1–2 years	0	0	2	13	2	11
2–5 years	1	33	3	20	4	22
> 5 years	1	33	8	53	9	50
Other	0	0	1	7	1	6
Overall	3	17	15	83	18	100

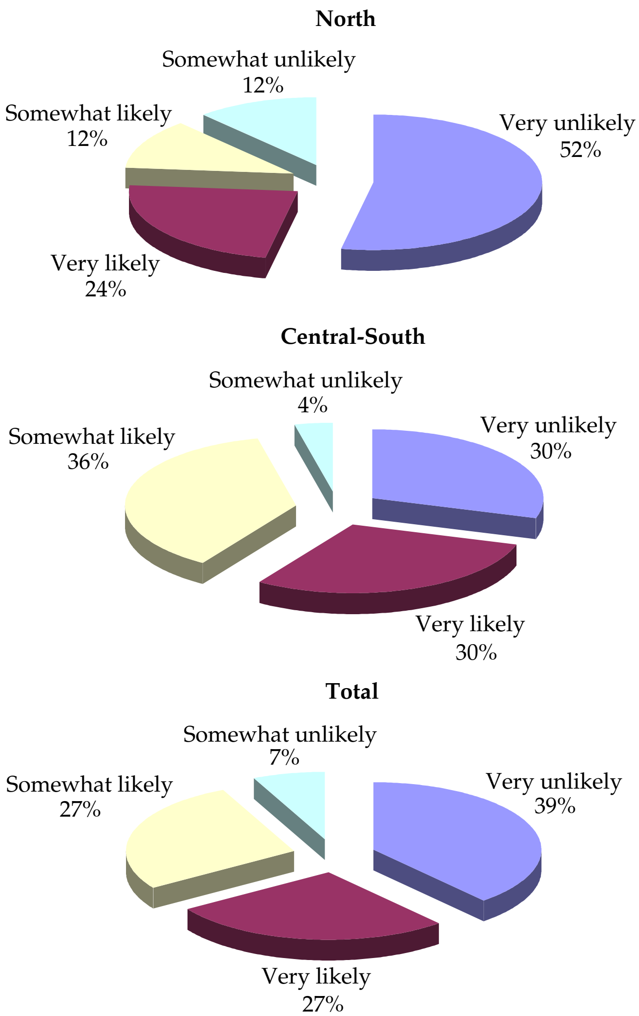

Figure 16. Likelihood of restaurants that did not sell tilapia to start including tilapia on their menu within the following year, by region. Restaurant survey, Honduras, 1999.

region (Figure 12). Such shrimp products as breaded shrimp (57%), garlic shrimp (38%), and shrimp cocktail were reported as three of the five fish and seafood products with the highest volume of sales in the North. In the Central-South, however, fried fish was reported as the product with the highest volume of sales, followed by breaded shrimp (47%), garlic shrimp (33%), shrimp cocktail (22%), and marinera soup (22%).

Figure 13 indicates increases in the sales of shrimp products as compared to the previous year, particularly in the North. Fried fish was reported to have the fastest sales growth in the previous year in the Central-South.

Table 13. Number and percent of respondents that promoted tilapia, by region. Restaurant survey, Honduras, 1999.

Promotion	**Region of Country**					
	North		*Central-South*		*Total*	
	N	%	N	%	N	%
Promote Tilapia	2	67	5	33	7	39
Do Not Promote Tilapia	1	33	10	67	11	61
Overall	3	17	15	83	18	100

Table 14. Number and percent of means of promotion used by restaurants. Restaurant survey, Honduras, 1999.

Means of Promotion	**N**	**%**
In-store Signs	3	43
Radio	3	43
Discounted Specials	1	14
News Circular	1	14
TV	1	14
Newspaper	1	14
In-store Samples	1	14

Tilapia Sales

Approximately 90% of all the respondents surveyed (all but seven restaurants) in the country reported being familiar with tilapia (Figure 14). Ninety-five percent of respondents in the North reported being familiar with tilapia, and 87% of those from the Central-South were familiar with tilapia.

Since familiarity does not guarantee sales, the data were partitioned into restaurants that were familiar with and actually sold tilapia and those that were familiar with it but did not carry tilapia on their menu. Results showed that although a large percentage of restaurants had reported being familiar with tilapia, only a small percentage included tilapia on their menu (Figure 15). This was true both at the national and regional levels. For instance, only 28% of restaurants that reported awareness of tilapia also reported selling tilapia. Only 15% of the respondents in the North who had earlier reported being familiar with tilapia actually had it on their menu. The largest percentage of respondents with tilapia sales (37%) was from the Central-South region. All of the respondents who reported selling tilapia in the North sold it as an entrée (Table 10). In the Central-South region,

Table 15. Tilapia sales trends as compared to the previous year and two years ago, by region. Restaurant survey, Honduras, 1999.

Frequencies	**Region of Country**					
	North		*Central-South*		*Total*	
	N	%	N	%	N	%
One Year Ago						
More Tilapia	2	67	9	64	11	65
Less Tilapia	1	33	3	21	4	24
Same	0	0	2	14	2	12
Overall	3	18	14	82	17	100
Two Years Ago						
More Tilapia	1	50	6	46	7	47
Less Tilapia	1	50	4	31	5	33
Same	0	0	3	23	3	20
Overall	2	13	13	87	15	100

Table 16. Number of tilapia suppliers per restaurant, by region. Restaurant survey, Honduras, 1999.

Number of Suppliers	**Region of Country**					
	North		*Central-South*		*Total*	
	N	%	N	%	N	%
One	3	100	7	47	10	56
Two	0	0	5	33	5	28
Four	0	0	2	13	2	11
Other	0	0	1	7	1	6
Overall	3	17	15	83	18	100

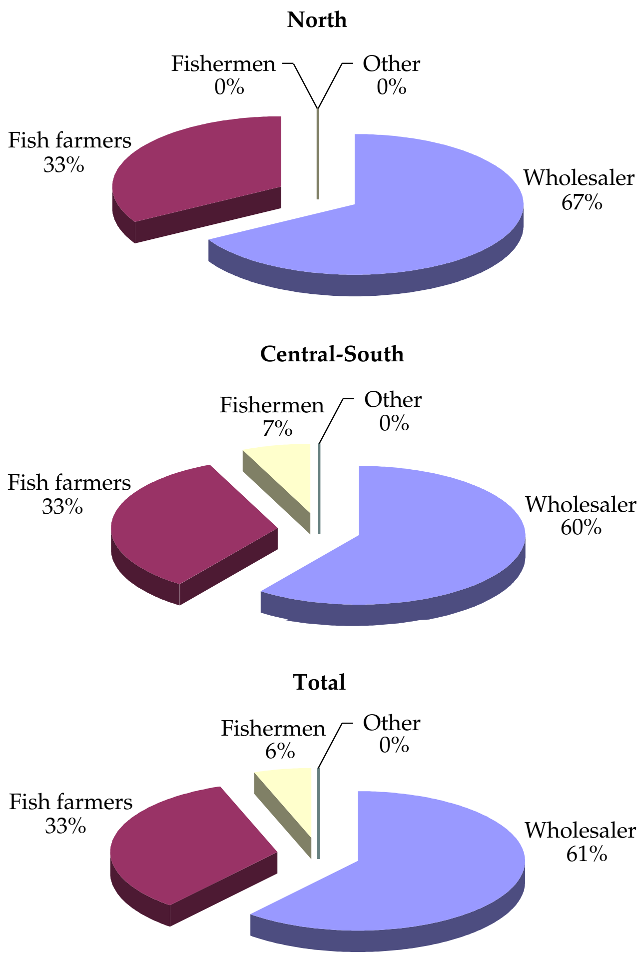

Figure 17. Primary sources of tilapia, by region. Restaurant survey, Honduras, 1999.

however, tilapia was sold both as an entrée (100%) and as an appetizer (2%).

Tilapia were served in a variety of forms, with some forms favored more in one region than in the other (Table 11). In the North, respondents tended to prepare tilapia more as boneless, garlic, grilled, and in other dishes than did those from the Central-South region. However, by far the most common method of preparing tilapia was as a fried dish.

Menu decisions may differ according to the years the restaurant has been in business. Table 12 indicates that half of the restaurants that sold tilapia had been in business for over five years, 22% were between two and five years old, and 11% each were one to two years and less than six months old. Only one-third of the restaurants in the North that sold tilapia had been in business for over five years, and over half of those in the Central-South had been in business for over five years.

More than half (54%) of the respondents who were not selling tilapia were willing to try it within the next year (Figure 16). At the regional level, results indicated that the likelihood of restaurants in the Central-South beginning to include tilapia on their menu was greater than in the North. Sixty-six percent of the respondents from the Central-South expressed some degree of likelihood of adding tilapia to their menu, compared to only 36% of those from the North.

Since tilapia is a relatively new product in Honduran restaurants, promotional activities might be important to increase sales. A larger percentage of the restaurants in the North (67%) reported promoting tilapia than did restaurants in the Central-South (33%) region (Table 13). Overall, seven of the restaurants (39%) that sold tilapia had promoted it while the remaining 61% did not. Of seven restaurants that promoted tilapia, three used in-store signs and radio,

Table 17. Restaurants that transport their own tilapia supplies, by region. Restaurant survey, Honduras, 1999.

Transportation	Region of Country					
	North		*Central-South*		*Total*	
	N	%	N	%	N	%
Transport Tilapia Themselves	0	0	4	27	4	22
Do Not Transport Tilapia	3	100	11	73	14	78
Pay Others	0	0	1	7	1	6
Do Not Pay Others	3	100	14	93	17	93
Overall	3	17	15	83	18	100

Table 18. Port or region from which the majority of tilapia was purchased, by region. Restaurant survey, Honduras, 1999.

Port/Region	Region of Country					
	North		*Central-South*		*Total*	
	N	%	N	%	N	%
Central	0	0	6	40	6	33
North	2	67	2	13	4	22
South	1	33	2	13	3	17
West-Central	0	0	2	13	2	11
West	0	0	2	13	2	11
Other	0	0	1	7	1	6
Total	3	17	15	83	18	100

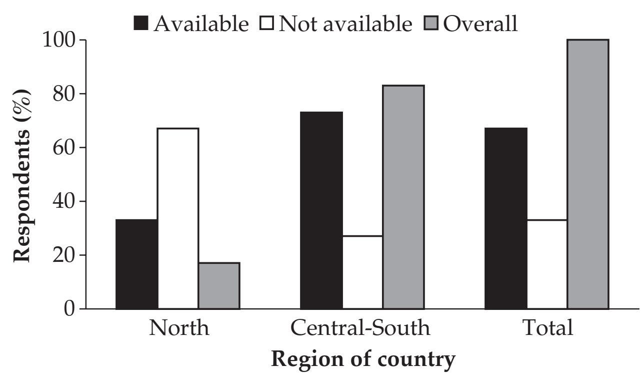

Figure 18. Availability of tilapia supplies with respect to restaurants that sell tilapia and region. Restaurant survey, Honduras, 1999.

Table 19. Problems most commonly reported by restaurants that sell tilapia, by region. Restaurant survey, Honduras, 1999.
[a] Multiple answers can result in total over 100%.

Problems	Region of Country					
	North		*Central-South*		*Total* [a]	
	N	%	N	%	N	%
Off-flavor	0	0	2	100	2	100
Freshness	0	0	1	50	1	50
Fish Is Too Small	0	0	1	50	1	50

and one each used discounted specials, news circulars, television, newspapers, and in-store samples (Table 14).

Sixty-seven percent of the respondents in the North reported having sold more tilapia over the past year (Table 15). In the Central-South region, 64% reported having sold more tilapia during the previous year and 46% had sold more than two years ago.

Supply of Tilapia

Restaurants that reported selling tilapia purchased supplies from one or more sources: wholesalers, fish farmers, and fishermen (Figure 17). This was true for both regions. Wholesalers provided tilapia to 67% of the restaurants in the North and to 60% of those in the Central-South region. Fish farmers made up the second group of tilapia suppliers, providing tilapia to 33% of the restaurants in the North and 33% of those in the Central-South. Wholesalers and fish farmers were the only suppliers reported in the North; however, fishermen were reported to provide while in the Central-South the same attribute received an 8.20 rating. Other instances of divergent responses were (North and Central-South, respectively), "tilapia is a high quality fish" (10 and 9.40), "tilapia has a nice fresh flavor" (10 and 9.27), "tilapia is easy to prepare" (10 and 9.33), "tilapia has little fishy odor" (9 and 7.20), and "the patrons of my tilapia to 7% of the restaurants in the Central-South region.

All of the restaurants in the North reported having only one supplier (Table 16). However, in the Central-South region, restaurants tended to have more than one tilapia supplier. For instance, 33% of the restaurants in the region reported having two different suppliers, 13% had four different suppliers, and 7% had more than four.

Tilapia suppliers did not necessarily deliver tilapia (Table 17). Some restaurants transported their own tilapia or paid others to do so. In the Central-South region, 27% of the respondents transported tilapia themselves, and 73% did not transport tilapia.

Current availability of tilapia is a key component characterizing supply. Managers were asked to provide information on how available they felt that tilapia was to their businesses. Managers from the North did not seem to agree that tilapia was available because they had to travel to other regions to get supplies (Figure 18). However, in the Central-South region, 73% of the respondents reported that tilapia was available to them. Overall, 67% of the restaurants that sold tilapia agreed that it had been available, whereas the remaining 33% disagreed.

Sixty-seven percent of restaurants in the North reported purchasing their tilapia supplies from the North region and 33% from the South (Table 18). Restaurants from the Central-South were more apt to purchase tilapia from either region of the country. Forty percent had purchased tilapia from the Central region and 13% from each of the North, South, West-Central, and West regions. Seven percent also reported purchasing tilapia from other regions.

Restaurants from the North seemed to prefer buying tilapia as fresh fillets (67%) and as a fresh whole-dressed product (33%) (Figure 19). In the Central-South region, however, restaurants tended to buy tilapia in all available forms, but fresh whole-dressed products were reported as the most common form. The most commonly purchased forms of tilapia throughout the country were fresh whole-dressed (60%), followed by fresh fillets (26%), live (9%), and frozen whole-dressed tilapia (5%).

All of the respondents that sold tilapia in the North and 89% of those in the Central-South region reported no problems with the quality of tilapia (Figure 20). Table 19 indicates the nature of the problems reported by two restaurants. Both of these restaurants reported off-flavor problems. One also reported problems with freshness and the other reported problems with size of the fish.

Two respondents in the North reported problems with insufficient quantity, and one each reported problems with lack of availability of tilapia at certain times of the year, availability of preferred sizes, and unreliable quality of tilapia products (Table 20). Problems reported by respondents in the Central-South region were analogous to those reported by respondents in the North, with the exception that the most commonly mentioned problem in the Central-South region was the lack of availability of tilapia at certain times of the year.

Restaurant Managers' Attitudes toward Tilapia Attributes

In order to assess respondents' attitudes towards attributes of tilapia such as flavor, odor, size, nutritional value, price, quality, and customer preferences, respondents were asked to agree or disagree with a series of statements by assigning values from 1 to 10. A score of 1 would mean complete disagreement with the statement, 5 neutral, and 10 complete agreement. The higher the score given a statement, the stronger the agreement with that statement. Responses were recorded by region from restaurants that sold tilapia and from those that sold fish but not tilapia. The highest rating overall from respondents who sold tilapia was for "tilapia is a high-quality fish" (9.50) (Table 21). This rating was followed in decreasing order of agreement by "tilapia is easy to prepare" (9.44), "tilapia has a nice fresh flavor" (9.39), "tilapia is always readily available" (8.50), "tilapia supply is of reliable quality" (8.39), and "the patrons of my restaurant would like the variety that adding tilapia would provide" (7.78). Two ratings of 7.50 each were attributed to "selection of product to sell is under your control," and "tilapia has little fishy odor." The attribute that received the lowest rating was the "price of tilapia is too high relative to my patrons' desire to buy it" (4.11).

As Table 21 shows, ratings attributed to a statement varied from one region to the other. The northern restaurants tended to agree more with some statements than Central-South restaurants, and vice versa. For example, a rating of 10 was attributed to "tilapia is always readily available" in the North,

Table 20. Problems related to supply of tilapia, by region. Restaurant survey, Honduras, 1999. Multiple answers can result in total over 100%.

Problems	Region of Country					
	North		*Central-South*		*Total* [a]	
	N	%	N	%	N	%
Unavailable at Certain Times of the Year	1	50	4	100	5	83
Insufficient Quantity	2	100	1	25	3	50
Availability of Preferred Sizes	1	50	1	25	2	33
Lack of Certain Product Forms	0	0	1	25	1	17
Unreliable Quality of Product	1	50	0	0	1	17

Table 21. Mean ratings of tilapia attributes by restaurants that sold tilapia, by region. Restaurant survey, Honduras, 1999.

Attributes	Mean Rating		
	Region of Country		
	North	Central-South	Overall
Selection of Products to Sell Is under My Control	7.00	7.60	7.50
Tilapia Supply Is of Reliable Quality	8.67	8.33	8.39
Tilapia Is Always Readily Available	10.00	8.20	8.50
The Patrons of My Restaurant Like to Eat Tilapia	8.33	7.60	7.72
Tilapia Is a High Quality Fish	10.00	9.40	9.50
Tilapia Has Little Fishy Odor	9.00	7.20	7.50
Tilapia Tastes Like Earth	2.00	3.53	3.28
Tilapia Has a Nice Fresh Flavor	10.00	9.27	9.39
Tilapia Is Easy to Prepare	10.00	9.33	9.44
The Price of Tilapia Is Too High Relative to My Patrons' Desire to Buy It	2.00	4.53	4.11
The Patrons of My Restaurant Would Like the Variety that Adding Tilapia Would Provide	8.00	7.73	7.78
Tilapia Are Too Small for My Patrons	6.00	5.36	5.47

Table 22. Mean ratings of tilapia attributes by restaurants that sold fish but not tilapia, by region. Restaurant survey, Honduras, 1999.

Attributes	Mean Rating		
	Region of Country		
	North	Central-South	Overall
Selection of Products to Sell Is under My Control	4.56	7.38	6.40
Tilapia Supply Is of Reliable Quality	4.27	3.96	4.08
Tilapia Is Always Readily Available	5.71	4.28	4.79
The Patrons of My Restaurant Like to Eat Tilapia	3.35	5.38	4.58
Tilapia Is a High Quality Fish	5.31	6.15	5.88
Tilapia Has Little Fishy Odor	5.92	5.72	5.78
Tilapia Tastes Like Earth	5.69	5.09	5.31
Tilapia Has a Nice Fresh Flavor	5.62	6.72	6.34
Tilapia Is Easy to Prepare	8.50	8.66	8.61
The Price of Tilapia Is Too High Relative to My Patrons' Desire to Buy It	4.00	5.05	4.83
Tilapia Are Too Small for My Patrons	5.75	5.93	5.87
The Patrons of My Restaurant Would Like the Variety that Adding Tilapia Would Provide	4.56	5.57	5.17

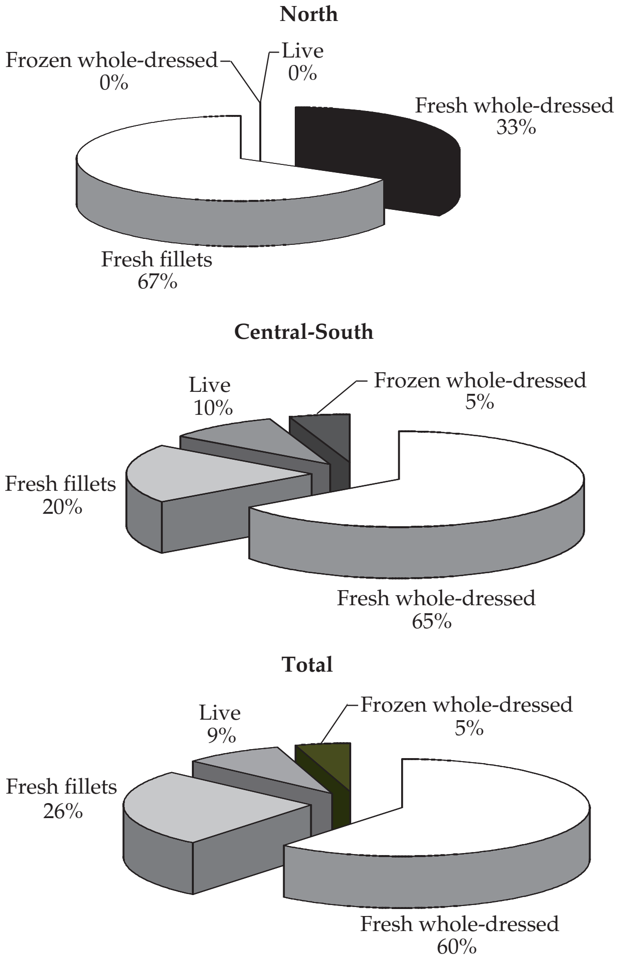

Figure 19. Most common forms of tilapia, by region. Restaurant survey, Honduras, 1999.

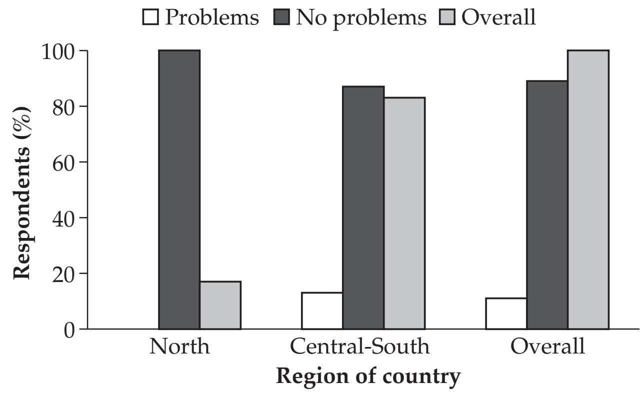

Figure 20. Restaurants that reported problems with the quality of tilapia, by region. Restaurant survey, Honduras, 1999.

restaurant like to eat tilapia" (8.33 and 7.60).

It could be expected that respondents who did not sell tilapia would rate tilapia less favorably than those who did. Respondents who did not sell tilapia tended to disagree with almost all statements agreed upon by respondents who sold tilapia. The highest overall rating given to a tilapia attribute by this group was an 8.61 for "tilapia is easy to prepare," almost as high as those who sold tilapia (Table 22). This was followed by "tilapia has a nice fresh flavor" (6.34), "tilapia is a high-quality fish" (5.88), "tilapia available are too small for my patrons" (5.87), and "tilapia has little fishy odor" (5.78). All other attributes, such as "supply of tilapia is of reliable quality" (4.08), received a negative rating.

Respondents from the Central-South region rated tilapia more favorably than those from the North. The highest rating given in both regions was for "tilapia is easy to prepare" (8.50 in the North; 8.66 in the Central-South). In the Central-South, this rating was followed by "selection of products to sell is under my control" (7.38) and "tilapia has a nice fresh flavor" (5.72). In the North, ease of preparation was followed by "tilapia has little fishy odor" (5.92).

Respondents from the North mildly disagreed that restaurant patrons would like the variety that adding tilapia would provide (4.33), whereas the Central-South respondents rated the same statement higher (5.37). Other differences can be found on "the patrons of my restaurant like to eat tilapia," rated 3.35 in the North and 5.38 in the Central-South. The restaurants in the North agreed that tilapia is always readily available (5.71), whereas the Central-South respondents disagreed with the same statement (4.28). However, restaurants from both the North and Central-South disagreed with "the supply of tilapia is of reliable quality."

A similar series of statements was presented to the managers of the only two restaurants that reported not selling fish or seafood. The highest rating was for the statement, "the patrons of my restaurant would like the variety that adding fish or seafood to the menu would provide" (7.50) (Table 23). These statements were disaggregated by region to better assess respondents' responses. Respondents in each region were neutral on "I have considered adding fish or seafood to my menu." Results showed that, while the respondent from the North rated some statements very low, the restaurant manager from the Central-South rated the same statements very high. For example, while the restaurant in the North strongly disagreed with (1) "the price of fish is too

Table 23. Mean ratings of attributes of fish by restaurants that do not sell fish or seafood, by region. Restaurant survey, Honduras, 1999.

Attributes	Mean Rating		
	Region of Country		
	North	Central-South	Total
Selection of Products to Sell Is under My Control	10.00	6.00	8.00
I Have Considered Adding Fish to My Menu	5.00	5.00	5.00
The Restaurant Does Not Have the Necessary Space	5.00	8.00	6.50
It Would Be Difficult to Add Fish to Menu	4.00	5.00	4.50
Fish Is More Difficult to Prepare	7.00	6.00	6.50
Fish Can Cause Storage Problems	8.00	5.00	6.50
Fish Storage and Preparation Give the Restaurant an Undesirable Odor	2.00	8.00	5.00
Supply of Fish Is Not of Reliable Quality	1.00	8.00	4.50
Fish Is Not Always Readily Available	2.00	9.00	5.50
The Patrons of My Restaurant Do Not Eat Fish	3.00	5.00	4.00
The Price of Fish Is Too High Relative to My Patrons' Desire to Eat Fish	1.00	9.00	5.00
Fish Available Are Too Small for My Patrons	5.00	6.00	5.50
The Patrons of My Restaurant Would Like the Variety of Adding Fish or Seafood to the Menu	7.00	8.00	7.50
I Would Consider Adding Fish or Seafood to the Menu within the Next Year	7.00	5.00	6.00

high relative to my patrons' desire to eat fish," that same statement was strongly agreed with (9) by the restaurant from the Central-South region that reported not selling fish or seafood. Other examples of these sorts of discrepancies are on such statements as "supply of fish is not of reliable quality" (1 and 8 from North and South, respectively); "fish is not always available" (2 and 9, respectively); "fish storage and preparation gives the restaurant an undesirable odor (2 and 8, respectively); "fish can cause storage problems" (8 and 5, respectively); and "patrons of my restaurant do not eat fish" (3 and 5, respectively). However, despite the discrepancies outlined above, the northern restaurant agreed with "I would consider adding fish or seafood to the menu within the next year" (7), while the restaurant in the Central-South was neutral on the same statement.

Conclusions

Survey results indicated that tilapia was a well-known fish in Honduras despite the fact that only 30% of the restaurants were selling it as an entrée. However, tilapia sales had been reported to have increased over the years preceding the survey year. For instance, over 47% of the respondents who sold tilapia had reported selling more tilapia over the two previous years, whereas over 65% reported selling more than the previous year. Moreover, 27% were very likely and 27% were somewhat likely to begin selling tilapia within the following year. Restaurants that sold tilapia sold it as entrée, but less than half of the restaurants promoted tilapia products.

Off-flavor, freshness, and small fish were identified as the greatest quality problems. Nonetheless, the greatest problem overall was the lack of availability.

Attributes received high ratings by those restaurants that sold tilapia. Restaurants that sold fish but not tilapia rated it favorably on most attributes, but rated it unfavorably on reliable quality and ready availability. These managers also seemed to indicate that their customers would not like it.

There appears to be potential to develop the restaurant market for tilapia in Honduras. Reliable supplies, samples, and catch-of-the-day promotions in restaurants would likely be strategies to encourage sales by restaurants. Effective forms of preparation such as grilled and with garlic may be attractive to international and high-income clientele groups.

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