PROBLEMS OF TOMATO MARKETING IN CLAVERIA, NORTHERN MINDANAO, PHILIPPINES: THE ROLE OF FARMERS' ASSOCIATIONS

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ABSTRACT

The role of farmers' association in tomato marketing cannot be underemphasised. Previous studies revealed that total production of tomatoes from the Northern Mindanao growers were distributed to agents, assembler-wholesalers, cooperatives or farmers' associations wholesalers, wholesaler-retailers and retailers. A considerable proportion of tomatoes (25%) were directed to cooperatives or farmers' association.

The study surveyed two farmers' associations (UFCI and CPFA) and non-member growers with the objectives of examining the problems perceived by growers in marketing tomatoes, exploring the perceived problems of the associations and presenting the efforts of two farmers' associations in overcoming these problems.

It is concluded that contract selling should be considered by UFCI while CPFA should investigate its present contract agreement. A continuous member education programme (*e.g.* twice a year) and the encouragement to attend open discussion sessions are important suggestions to improve the performance of the associations.

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INTRODUCTION

1.1 *Objectives of the Study*

The motivation of this research is based on the premise that farmers' associations or cooperatives can be of great assistance to small-size farmers in minimising if not totally eliminating their marketing problems and therefore improving marketing efficiency.

The study has the following objectives:

1) To accurately assess the marketing problems/inefficiencies of the tomato producers in Northern Mindanao particularly the Claveria area and categorising them into technical and pricing inefficiencies;
2) To analyse the impact of the associations in overcoming marketing problems;
3) To examine the various problems of the associations as perceived by their members;
4) To find out the reasons of non-member for not joining the associations; and
5) Formulate recommendations with respect to:

   5a) Future organisation, functions and management of the associations;
   5b) Improvement on the performance of the associations; and
   5c) Appropriate government assistance.

1.2 *Background to the Vegetable Industry in the Philippines*

1.2.1 *Importance of the Vegetable Industry*

The vegetable industry is essential to the Philippine economy. It contributes an average of US $28.5 million annually to the Philippine economy and provides a good source of income for agricultural producers, traders and processors. The Gross Value Added (GVA) in agriculture, fishery and forestry reached an average of P23,680 million from 1975 to 1987. While in the same period, the Gross Domestic Product (GDP) was P88,604 million. Agriculture, fishery and forestry contributed an average of 26.7 percent to GDP. The agriculture sector specifically contributed 3.2% to GDP in 1987.

An average export earning of US $1.9 million is realised for foreign reserves. The value of agricultural exports in 1987 was around $608 million (Table 1.1). The vegetable and fruit industry yielded 62.8% to the total export earnings in the same period.

Table 1.1 *Value of Agricultural Exports, Philippines, 1987*

Commodity	Value (FOB US $'000)	Percent (%)
Live Animals Chiefly for Food	47.5	0.01
Meat & Meat Preparations	359.3	0.06
Dairy Products & Birds Eggs	420.8	0.07
Cereals & Cereal Preparations	31,339.9	5.15
Vegetables & Fruits	382,412.6	62.80
Sugar & Sugar Preparations	78,168.2	12.85
Coffee, Tea, Cocoa, Spices & Manufactures Thereof	44,719.7	7.35
Miscellaneous Edible Products & Preparations	8,515.2	1.40
Beverages	5,254.0	0.86
Tobacco & Tobacco Manufactures	23,031.1	3.78
Hides, Skins & Furskins, Raw	84.7	0.14
Oil Seeds & Oleaginous Fruit	33,659.3	5.53
Total	608,012.3	100.00

Source: National Statistics Office

The industry is also vital to the nutritional needs of the population. Vegetables are considered to be the most inexpensive source of proteins, vitamins and minerals (Lantican, 1989).

In 1987, the employment rate is 88.9 percent of the total population. Fifty percent of the total work force is in the agriculture sector, 13.7% is in the wholesale and retail business, and 9.2% is in the manufacturing sector. Among industry groups, the vegetable industry contributed only an average of 0.40 percent to total employment in agriculture for the four-year period from 1979 to 1982 (Table 1.2). A greater portion of the total employment is in sugarcane (47%) and fruit and nut (22%) industries.

Table 1.2 *Total Employment in Agricultural Establishments by Industry Group, Philippines, 1979 - 1982*

Industry Group		Total Employment (Average for the Year)				
		1979	1980	1981 In Percent	1982	Average
PHILIPPINES	- No.	190,380	155,803	183,064	176,373	176,405
	%	100.00	100.00	100.00	100.00	100.00
Rice		2.88	3.07	2.37	1.81	2.53
Corn		0.08	0.07	0.05	0.05	0.06
Vegetables		0.47	0.41	0.42	0.29	0.40
Fruits & Nuts		27.30	19.65	23.36	20.17	22.62
Coconut		5.27	5.00	3.96	4.34	4.64
Sugarcane		44.76	49.72	45.09	49.57	47.29
Fiber Crops		0.31	1.10	0.48	0.90	0.69
Other Crops		4.86	6.23	4.35	5.91	5.33
Livestock & Livestock Products		6.41	7.82	8.16	9.26	7.91
Poultry & Poultry Products		5.59	4.78	9.49	5.27	6.28
Agricultural Services		2.07	2.15	2.27	2.43	2.23

Source: National Statistics Office

Note: Total Employment consists of paid employees and working owners and unpaid family workers.

1.2.2 *Production of Vegetables*

Among the total crop hectarage in 1987, about 1.1% is planted to vegetables which produced only 2.8% of the total yield of all agricultural crops (Figure 1.1). As expected, a higher percentage of the production (34%) is rice, the main staple food, followed by corn (15%).

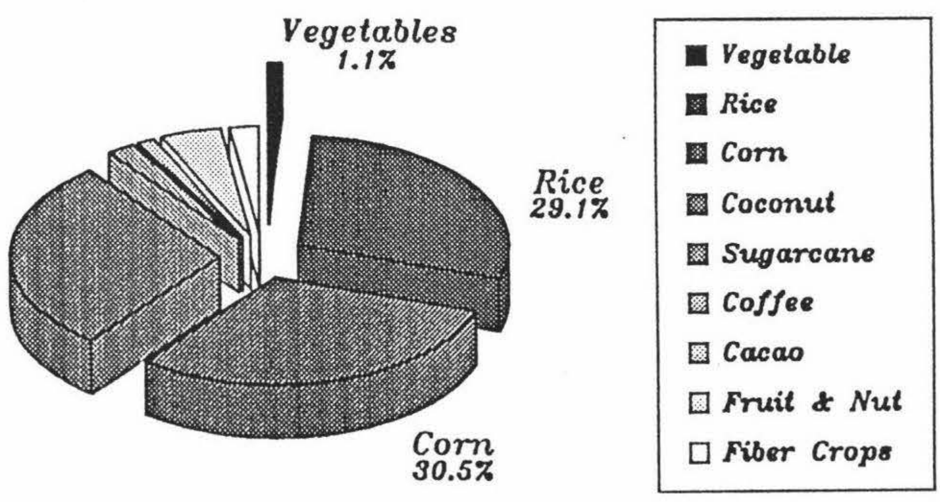

Figure 1.1. Percentage comparison on hectarage and production of agricultural crops, 1987, Philippines.

Land area utilized for vegetables has been almost static between 1983 and 1987 (Table 1.3). Major vegetables grown in the Philippines include tomatoes, cabbage, eggplant, garlic, bulb onion, etc. Among these crops, a substantial portion of land was cultivated with tomato in 1987. However, mean yield of major vegetables increased by 2 tons per hectare (Table 1.4) but this increase cannot cope with the rapid increase in population. As a result, Filipinos consume only 12 kgs of vegetable per year compared to over 50 kgs in other Asian developing countries and over 80 kgs in the developed countries of the world. This per capita consumption is far below the recommended intake of about 109 kgs per year (Batugal, 1989).

Table 1.3 *Land Utilization ('000 hectares) For Selected Vegetables Philippines, 1983-1987*

Crop	1983	1984	1985	1986	1987
Major Vegetables					
Cabbage	6.3	5.8	6.0	6.6	6.4
Eggplant	14.2	14.9	15.4	15.1	16.1
Garlic	8.9	5.8	6.7	6.8	6.4
Ginger	5.2	5.4	5.2	4.2	4.3
Bulb Onion	6.7	7.8	7.0	6.5	6.8
Pechay	3.9	3.7	3.7	3.9	4.0
Radish	1.7	1.6	1.5	1.6	1.6
Tomato	13.6	16.0	16.4	17.4	18.1
Other Vegetables	62.8	60.0	60.8	61.7	59.7
Total	123.3	121.0	122.7	123.8	123.4

Other Vegetables includes bitter gourd, bottle gourd, cucumber, chayote, green leafy vegetables, green onion, mustard, other leguminuous vegetables, squash and sweet/hot pepper.

Source: Bureau of Agricultural Statistics

Table 1.4 *Mean Yield (t/ha) Of Major Vegetables In The Philippines Crop Year, 1983-1987*

Crop	1983	1984	1985	1986	1987
Cabbage	9.93	10.40	10.62	11.09	11.10
Eggplant	7.68	7.03	6.25	5.82	5.27
Garlic	1.90	2.46	2.66	2.44	2.69
Ginger	6.84	5.69	5.58	6.49	6.68
Bulb Onion	6.89	6.73	7.60	8.34	9.04
Pechay	6.65	6.93	6.49	6.38	6.02
Radish	5.23	5.59	5.50	5.48	5.59
Tomato	7.60	8.52	7.98	8.23	8.27

Source: Bureau of Agricultural Statistics

1.2.3 *Tomato Production*

The tomato production data shown in Table 1.5 indicates that of the average annual production of 131,730 metric tonnes over the years 1977-1986, the Ilocos Region had the biggest share (28%) followed by Central Luzon (17%) and Northern Mindanao (16%). [1]

In terms of hectarage, an average of 16,446 hectares was planted to tomato over the same 10-year period. Ilocos Region gave the highest hectarage (26%) followed by Central Luzon (21%) and Metro Manila (11%).

The highest mean yield for the years 1979-1986 was given by Northern Mindanao of 13.8 tons per hectare followed by Bicol (13 t/ha) and Central Visayas (11.9 t/ha). This observation suggests that tomato productivity in Northern Mindanao, as measured by yield per hectare, is greatest among regions. It is understandable that Bicol obtained the lowest mean yield as its provinces are prone to floods and typhoons.

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1 Please refer to Figure 1.2.

Table 1.5 Area, Production And Yield Per Hectare Of Tomatoes, By Region (Average of 10 Years, 1977-1986)

	Region	AREA Ha.	%	PRODUCTION '000 MT	%	Yield (t/ha)
1	Ilocos Region	4,198	26	36.29	28	8.60
2	Cagayan Valley	714	4	4.21	3	5.90
3	Central Luzon	3,474	21	21.97	17	6.32
4	Metro Manila	1,861	11	11.45	9	6.15
5	Southern Tagalog	1,138	7	8.44	6	7.14
6	Bicol	1,457	9	18.87	14	12.95
7	Western Visayas	785	5	1.89	1	2.40
8	Central Visayas	122	*	1.45	1	11.90
9	Eastern Visayas	169	1	10.63	*	3.77
10	Northern Mindanao	1,502	9	20.72	16	13.79
11	Southern Mindanao	800	5	4.10	3	5.13
12	Central Mindanao	194	1	1.62	1	8.14
	Total	16,414		131.64		

* Less than 1 percent.

A study by Buyagawan (1985) revealed that Philippines has a comparative advantage in growing such commercial vegetables as garlic, onion and tomato. The computed domestic resource cost (DRC) of tomato is P5.71 per U.S. dollar. This value indicates how much it would cost the society to earn or save a unit of foreign exchange through tomato production. The sensitivity analysis disclosed that even if the world price of garlic, onion and tomato would fall by 10 percent or domestic cost would increase by 10 percent, other things remaining constant, a comparative advantage would still exist.

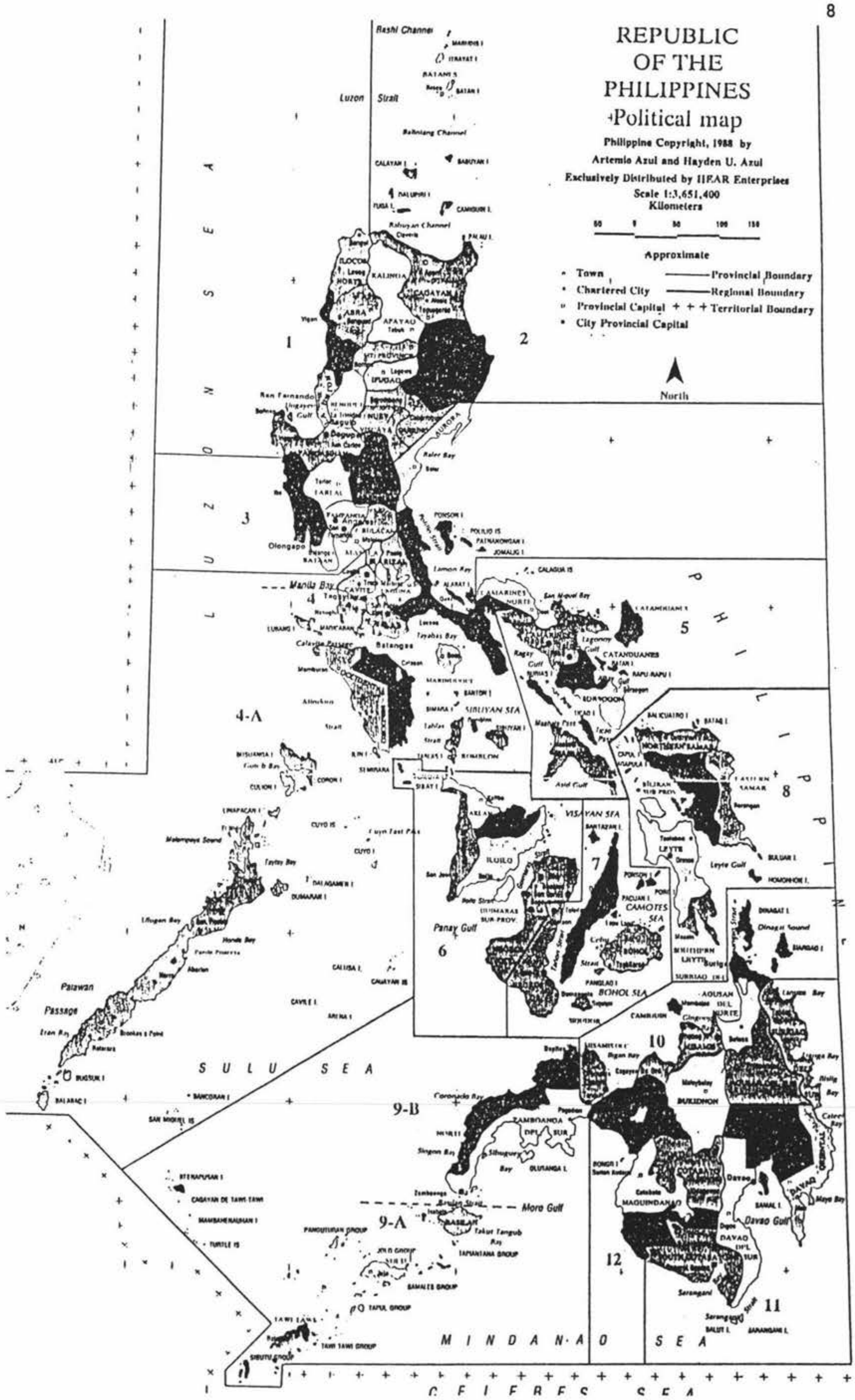

Figure 1.2. Political map of the Philippines.

Fresh tomatoes are planted in both wet and dry seasons. The dry season in the Philippines is from January to May while the wet season is from June to December. Wet season planting is more risky because tomatoes are very susceptive to pests and diseases as brought about by continuous rain and high temperatures. However, based on the economic analysis done by the Bureau of Plant Industry, production of tomato is more profitable during the wet season illustrated in Table 1.6.

Table 1.6 *Economic Analysis Of Tomato Production (Per Hectare) Dry and Wet Season, 1986*

	Dry Season	Wet Season
Total Cost of Production	11,501.42	13,837.44
Average Yield (t/ha)	20.00	8.00
Price per Kilo (Peso)	1.00	5.00
Gross Revenue (Peso)	20,000.00	40,000.00
Net Income (Peso)	8,498.58	26,162.56
Break-even Yield (t/ha)	11.50	2.80

Source: Bureau of Plant Industry

1.2.4 *Tomato Export*

The Philippines' leading vegetable exports are dried onions and fresh or chilled tomatoes, tomato catsup, juice and sauce and dried mungbeans. Hongkong is the major buyer of fresh or chilled tomatoes while Singapore, Hongkong and Indonesia are the usual importers of tomato catsup, juice and sauce.

From 1980 to 1987, the country earned an average of $137,625 for fresh tomatoes from an average volume of 397,250 metric tons. (Table 1.7). In 1987, the country earned the highest recorded foreign earnings of $430 thousand.

Table 1.7 Fresh Tomato Export And Import Volume And Value, Philippines, 1980-1987

Year	Export		Import	
	Quantity ('000 MT)	FOB ($'000)	Quantity ('000 MT)	FOB ($'000)
1980	54	22	43	71
1981	321	115	51	83
1982	267	66	32	48
1983	160	48	63	85
1984	700	200	6	11
1985	700	200	6	11
1986	21	10	5	6
1987	962	430	3	4
Average	397	137	27	40

Source: FAO Trade Yearbook 1980-1987

Imports of fresh tomatoes have decreased from 43 metric tons in 1980 to 3 metric tons in 1987. This indicates that the national supply of tomatoes is becoming increasingly stabilized. The need to import fresh tomatoes from 1980 to 1985 was attributed to seasonal fluctuations in supply and price.

1.2.5 *Tomato Consumption*

Based on a survey conducted by the Food and Nutrition Research Institute, the Ilocos Region consumes 56 grams of tomato per day per person followed by Central Luzon and Cagayan Valley of 23 and 32 grams per day per person respectively (Table 1.8).

Northern Mindanao people eat only 7 grams per day per person and most of the tomatoes produced in the region are shipped to Manila to fill the nutritional demand of the Luzon Regions (Regions 1, 2, 3, 4, 5 and 6) as well as for export needs.

Table 1.8 ***Per Capita Consumption Of Tomato By Region, Philippines, 1982***

Region	Per Capita Tomato Consumption (grams/day)
1 Ilocos Region	56
2 Cagayan Valley	32
3 Central Luzon	33
4 Metro Manila	20
5 Southern Tagalog	16
6 Bicol	10
7 Western Visayas	9
8 Central Visayas	4
9 Eastern Visayas	5
10 Northern Mindanao	7

Note: National Food Consumption of tomato is 18 gms/day or 7 kgs/year.
Source: Food and Nutrition Research Institute

1.2.6 *Tomato Marketing Channels*

1.2.6.1 *Regional Marketing Flow*

In the Luzon area, Nueva Ecija is the biggest supplier of tomato from December to May although in January, Pangasinan dominates the market. From June to November, Cagayan de Oro and other Northern Mindanao growers supplied Manila with tomatoes. [2] It is usual at this time of the year when Luzon is plagued with typhoons which are hazardous to tomato production. This explains their dependence on Mindanao growers for their requirements.

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2 Please refer to Figure 1.3.

In the Visayas area, Cebu tomatoes come from various towns of the province as well as from Cagayan de Oro. These are then shipped to other Visayas and Mindanao provinces.

Davao City obtains its tomato supply from Davao towns, Cagayan de Oro City and South Cotabato. In turn, they are shipped to other Mindanao provinces such as Agusan del Sur and Norte, Surigao del Sur and Cotabato, among others.

Torres and Lantican (1977) and Faylon et al. (1981) identified the major marketing channels from farmers to consumers. Among those identified are:

(1) farmer ------ wholesaler ------ retailer ------ consumer
(2) farmer ------ wholesaler-retailer ------ retailer ------ consumer
(3) farmer ------ retailers ------ consumer

Agents, popularly known as "canvassers", usually buy tomatoes for a wholesaler or assembler-wholesalers. The assembler-wholesalers buy from the canvassers or directly from the producers. The purchases are assembled into large volume lots and transported to other consuming areas. Some wholesalers have permanent stalls where they sell on a wholesale basis. They can be found in rural and urban centres.

The wholesaler-retailers can be found mainly in urban centres and get product from the assembler-wholesalers. They have permanent stalls in urban centres and usually sell to retailers. Most of the produce is sold on a wholesale basis. Cooperatives or farmer associations procure tomatoes from their members and sell mostly to wholesalers. Retailers are the final link in the marketing chain to consumers. Most produce sold are obtained from the wholesalers and wholesaler-retailers and sometimes from growers.

Figure 1.3. Provincial Map of the Philippines.

1.2.6.2 *Claveria Marketing Flow*

Based on a study conducted by the National Food and Agriculture Council, the primary outlets for marketing tomatoes in Northern Mindanao are agents, assembler-wholesalers, cooperatives or farmers' associations, wholesalers, wholesaler-retailers and retailers (Figure 1.4). The study revealed that most of the produce (33%) is directed to the assembler-wholesalers and to cooperatives (25%). Of the latter 25 percent, 20 percent is sold to the wholesalers in Metro Manila (Region 4) and 5 percent to the wholesaler-retailers in Cebu (Region 7).

1.2.7 *Weaknesses of the Tomato Industry*

1.2.7.1 *Perishability of Product.*

Tomatoes, like other vegetables, are perishable in nature. They tend to spoil easily and so need either to be sold immediately or stored properly. This requires better transport and storage facilities. As a homogeneous product, there is no distinct product difference although consumers may perceive differences in quality through its freshness. This implies careful handling of the produce.

The use of a particular variety suitable and adaptable to the production area is a critical choice of the growers. Two varieties, BPI TM 1 (Improved Pope) and BPI TM 2 (Apple-Shaped), developed at the defunct Bureau of Plant Industry Claveria Experiment Station accounted for 95% of the crop grown commercially in Northern Mindanao (Table 1.9).

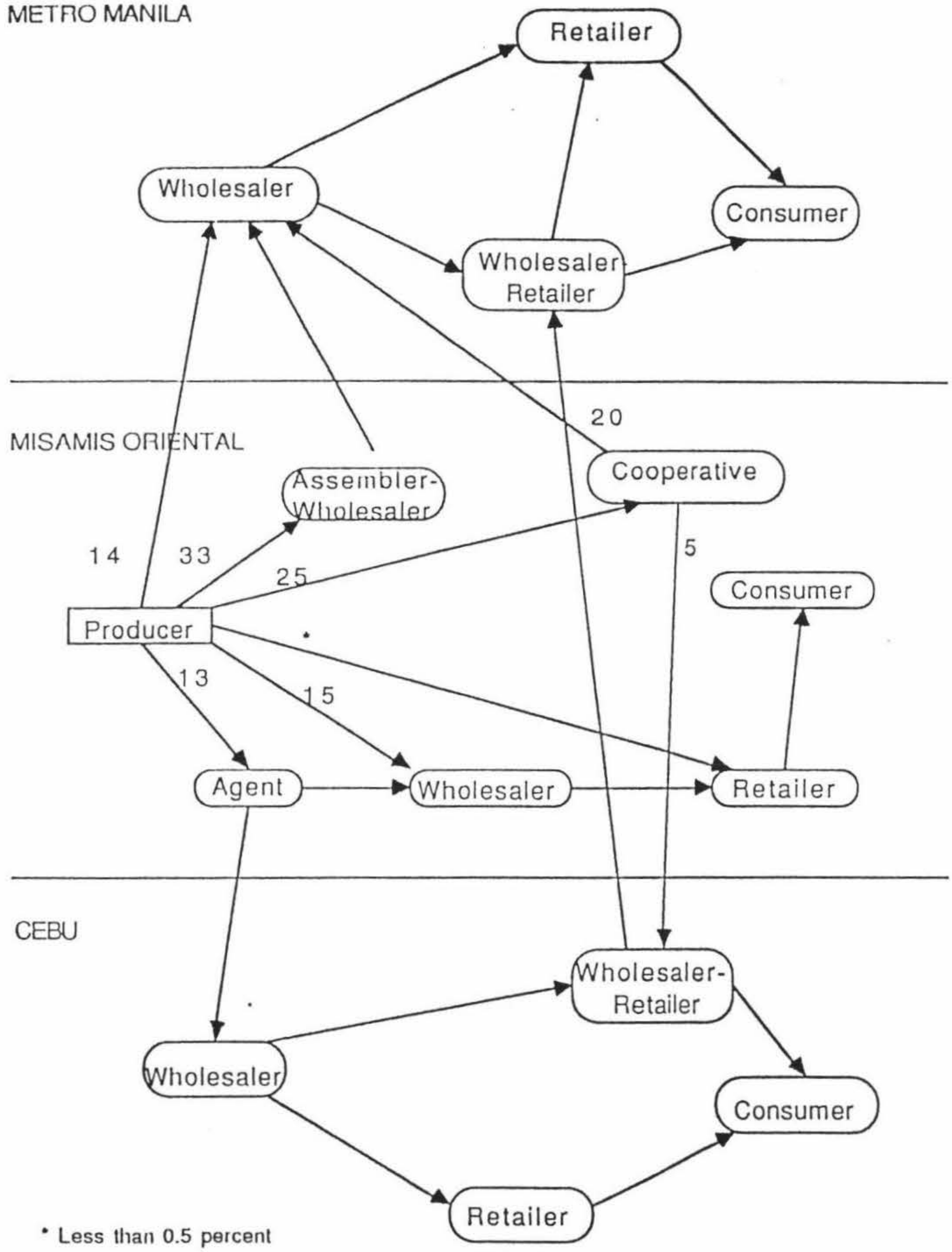

Figure 1.4. Schematic diagram illustrating the marketing channel of tomato from Claveria, Misamis Oriental, Philippines.

Table 1.9 ***Characteristics Of Tomato Varieties Commonly Grown By Farmers In Claveria, Misamis Oriental and Manolo Fortich, Bukidnon, Philippines***

Variety	Computed Yield (tons/ha.)	Days to Flower	Days to Maturity	Disease Resistance
BPI Tm 1 (Improved Pope)	25-30	40	90-95	Slightly susceptible to bacterial wilt and moderately resistant to foliar diseases.
BPI Tm 2 (Apple-Shaped)	21-25	49	100-105	Resistant to bacterial wilt and moderately resistant to foliar diseases.

Source: Philippine Seedboard
Bureau of Plant Industry, Manila

These varieties thrive well in Claveria, Misamis Oriental and Manolo Fortich, Bukidnon where the temperature is cool and rainfall is evenly distributed throughout the year.

Of the two varieties, BPI Tm 1 is preferred by traders and producers because it has a longer postharvest life and responds better to fertilization. BPI Tm 2 has a large stem-end scar and rots easily when wet.

1.2.7.2 *Seasonality.*

Due to its seasonal production, prices usually soar during lean months and fall rapidly during peak months. In Northern Mindanao, production of tomatoes is generally during the off-season months from June to January when tomato supplies in Manila are scarce. During this period, most nearby tomato-producing areas in Manila suffer weather problems like high temperatures, heavy rainfall and frequent typhoons. Instead, farmers grow rice, the traditional rainy season crop. At this time, climatic conditions are favourable for planting tomatoes in Northern Mindanao.

Figure 1.5 shows that average wholesale and retail prices of Northern Mindanao tend to rise from April to July and again from August to December. Prices from February to June are low due to abundant supplies. Planting for off-season production usually starts from June. Hence, prices of tomatoes from August to December are relatively high compared to prices during the own season.

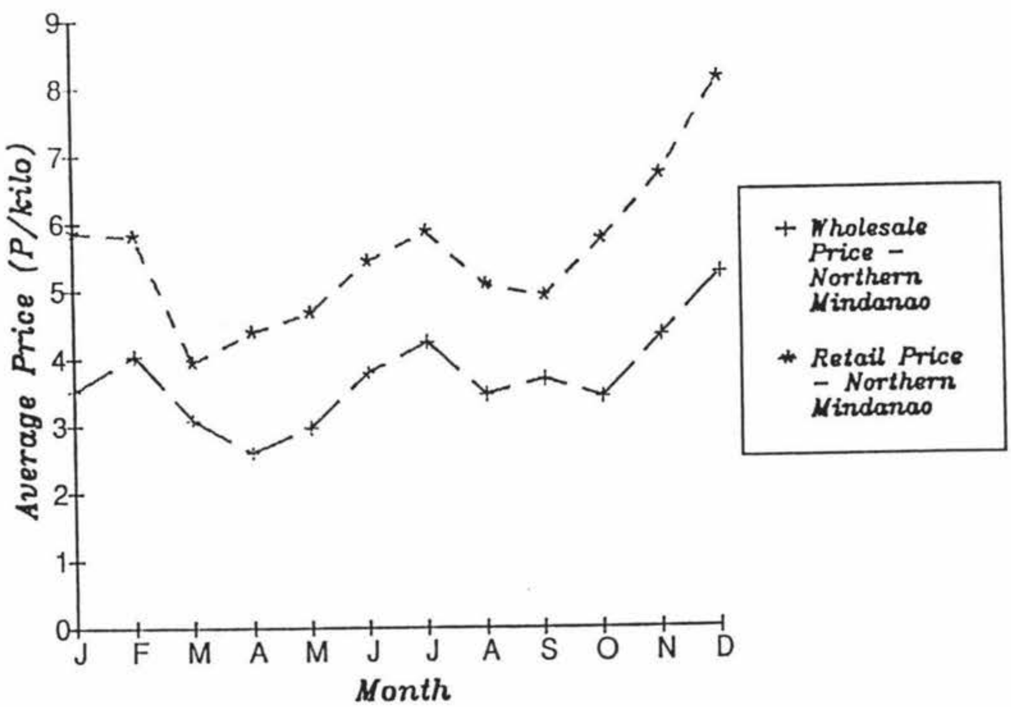

Figure 1.5. Average wholesale and retail prices, Northern Mindanao, 1979 - 1988.

1.2.7.3 *Unprogrammed Planning.*

Farmers tend not to stagger tomato plantings, which results in most tomatoes being harvested at the same time, hence depressing prices. For example, the tomato industry boomed in Northern Mindanao in the early 1970s due to the development of improved varieties coupled with favorable climatic conditions. It was reported in 1973 that gross sales was estimated to be over P5 million.

Tomato growers, motivated by the good return on investment expanded operations in 1974. Presuming that the trend would continue upwards, growers further expanded their operations. Consequently, prices slumped and farm receipts were drastically reduced from P12.01 million in 1974 to only P6.84 million in 1975 (BPI, 1979).

In an effort to rectify the situation, the Regional Development Council of Northern Mindanao embarked on a Coordinated Tomato Production and Marketing Project in 1976. The project had the objective of rationalising production and marketing of off-season tomatoes. Specifically, it was aimed at stabilising farmgate prices through programmed production and assuring producers of equitable returns on a long term basis.

Subsequent improvements were attributed to the following major factors (BPI, 1979):

1) Rationalised and coordinated production and marketing which prevented oversupply and price falls;
2) Climatic conditions (absence of typhoons, even distribution of rainfall and relatively cool night temperature) which favoured tomato production; and

3) Improved technology especially the use of disease resistant tomato varieties with good shipping and keeping qualities.

Staggered planting was adopted to limit the volume of production. A marketing scheme was implemented to regulate shipments of fresh tomatoes from Cagayan de Oro City to deficit areas, particularly Metro Manila, during lean months from July to December. This contributed to a more even and continuous supply in the market and thus a greater degree of price stability.

The result of the program was that the farm value of tomatoes increased by 141% from P6.84 million in 1975 to P16.49 million in 1978. Farm price also rose from P0.77 per kilo to P1.32 per kilo during the same period, thereby giving farmers an improved return on their investments. At a production cost of P12,000 per hectare, farmers obtained a net income of around P14,000 per hectare in 1978 (Table 1.10).

Table 1.10 *Comparison Of Gross And Net Returns Before And After Tomato Programmed Production, 1975 - 1978*

Item	Crop Year			
	1975	1976	1977	1978
Average Yield (tons/ha)	20	20	20	20
Cost of Production (P/ha)[a]	9000	10000	11000	12000
Gross Returns (P/ha)[b]	15400	21200	24200	26400
Net Returns	6400	11200	13200	14400

[a] - At estimated cost of production per kilo of P0.45 (1975); P0.50 (1976); P0.55 (1977); and P0.60 (1978).

[b] - At an average actual farm price per kilo of P0.77 (1975); P1.06 (1976); P1.21 (1977); and P1.32 (1978).

Source: Department of Agriculture, Bureau of Plant Industry

1.2.7.4 *Lack of Price Information.*

Wide variations in prices result, in part, from lack of knowledge regarding market prices. Establishing a price information network should make producers and buyers better informed regards to existing prices and guide them in their production, buying and selling operations.

At the moment, the Department of Agriculture in all its regional operations keeps growers and consumers informed through regular price reporting on radio and bulletin boards. However, an interview with government officials revealed that farmers complained of "mispricing", meaning that prices broadcast on radio are not the same prices that are quoted in the market later that day.

1.2.7.5 *Lack of Financing.*

Due to perishability, seasonality and price instability, the tomato industry is considered a high-risk venture, and only a few banks which grant loans to farmers. As a consequence, farmers tend to approach private money lenders or financial institutions which charge higher rates of interest. Usually, growers have difficulty in obtaining loans because they do not have collateral for bank loans.

Among the financial institutions that small, resource-poor farmers could use are:

1) CALF (Comprehensive Agricultural Loan Fund)

This is a guarantee facility for agricultural projects like vegetables which are typically higher risk. Small vegetable projects are eligible for CALF guarantee which would enable banks to give loans to small vegetable farmers.

Vegetables which are eligible for guarantee under first priority status include onion, garlic, beans, peas, white potato, watermelon, squash, cucumber, tomato, eggplant, sweet potato and sweet pepper.

2) NAFC-LEAD

The National Agriculture and Fisheries Council (NAFC) is implementing the Livelihood Enhancement for Agricultural Development Program (LEAD) where financial and logistic support to livelihood-generating projects are provided. Vegetables are eligible for financing under this program.

3) Land Bank Loans

a) Loans to farmers at 15% per annum
b) Loans to cooperatives at 12% per annum
   Coops relend funds at 18% per annum
c) Rediscounting facility with rural banks

One of the most salient features of the Land Bank loans is the high repayment rates. In 1989, the repayment for direct farmer loans averaged 87%, while for cooperatives,it averaged 93%.

1.2.7.6 *Multi-level Nature of Marketing Channels.*

Tomatoes pass through up to four to five layers of middlemen before produce reaches consumers, which may contribute to high marketing margins. Table 1.11 shows the price levels from farmgate to wholesale and retail outlets. The tomato price increment from farmgate to wholesale was 31% and from wholesale to retail 45%. The incremental price between farmgate and retail was about 95%.

Table 1.11 *Tomato Wholesale, Retail and Farmgate Prices, Northern Mindanao, 1979-1986*

Year	Farmgate (P/kg)	Wholesale (P/kg)	(%) [a]	Retail (P/kg)	(%) [b]
1979	1.25	1.91	52.80	2.76	120.80
1980	2.30	2.83	23.04	4.22	83.48
1981	2.10	2.93	39.52	4.14	97.14
1982	2.20	2.37	7.73	3.68	67.27
1983	2.95	3.83	29.83	6.17	109.15
1984	3.85	5.00	29.87	6.68	73.51
1985	2.75	3.66	33.09	5.79	110.55
1986	3.65	4.75	30.14	7.20	97.26
Average	2.63	3.41	30.75	4.95	94.90

Source: Bureau of Agricultural Statistics
[a] Wholesale/Farmgate
[b] Retail/Farmgate

It is possible, in the absence of traders' hold over producers that marketing cooperatives could undertake some of the funtions of existing traders thus capturing part of the marketing margin for the growers.

1.4 *Scope and Limitations of the Study*

The study is focused on producer associations and how these associations benefited their members.

A limitation of the study is that only "small-size" growers with less than three hectares of land were selected. The reason for this is that marketing problems tend to be concentrated on these small size growers. According to the reports from the Department of Agriculture (1980) concerning the farm size distribution in Northern Mindanao, more than half (55.6%) of all farms in the region are less than three hectares in size (DA, 1980). To provide a comparison, small-sized non-member growers were also studied.

Only one channel is considered in the study, that is, from the farmer to the cooperative then to the first line buyer. Hence, costs incurred by the farmers were recorded with this limitation.

1.4 *Organisation of the Study*

A theoretical framework for the study is discussed in Chapter 2. Chapter 3 provides a literature review on farmers' associations or cooperatives and presents interesting solutions these organisations have undertaken.

The role of the government in cooperative development and the Philippine experience in particular, is examined in Chapter 4. The chapter also contains pertinent information on the Livelihood Enhancement Agricultural Development (LEAD) Program of the government.

A survey of tomato growers was undertaken and Chapter 5 includes a discussion of questionnaire design, sample selection, and the survey results. Finally, the summary, conclusions and recommendations are given in Chapter 6.