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	1982	Average
				In Percent		
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%).

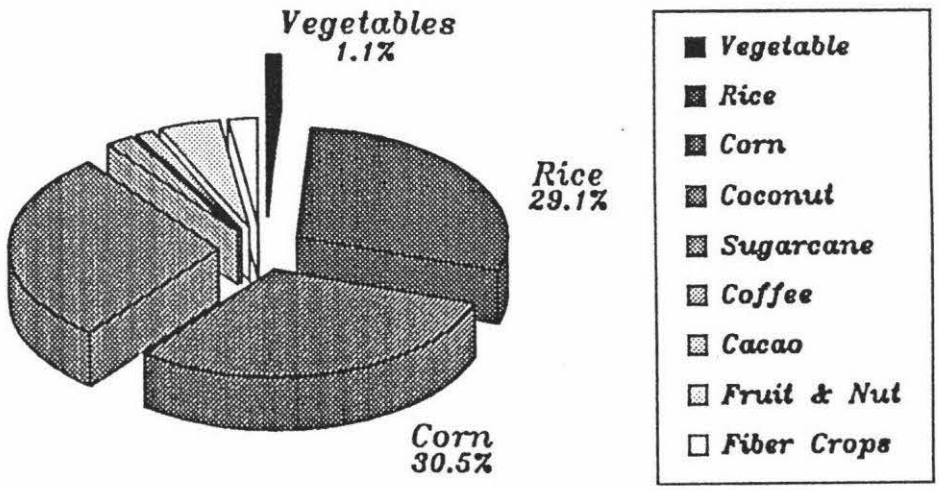

Figure 1.1. Percentage comparison on hectarage and production of agricultural crops, 1987, Philippines.

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.

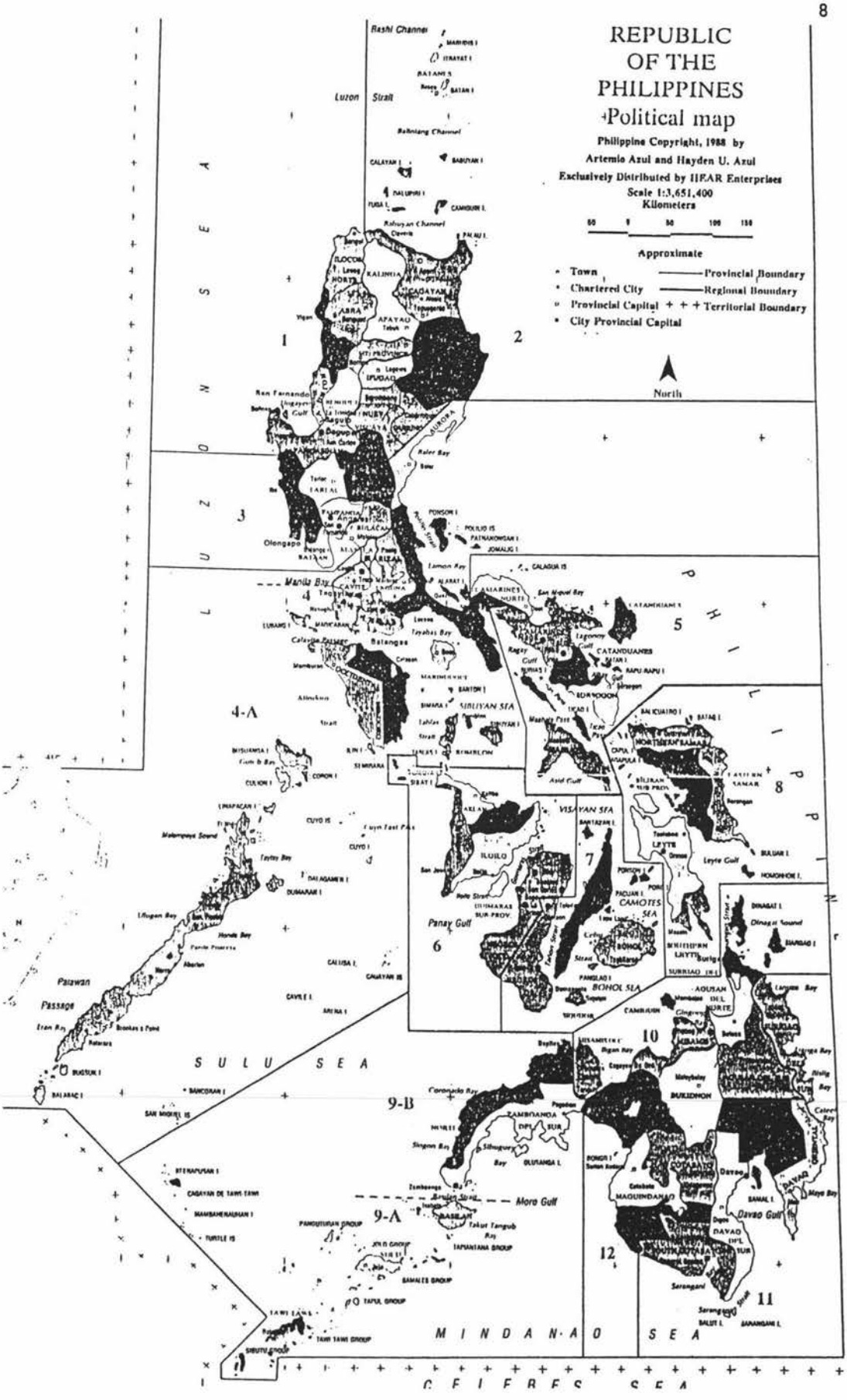

Figure 1.2. Political map of the Philippines.

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).

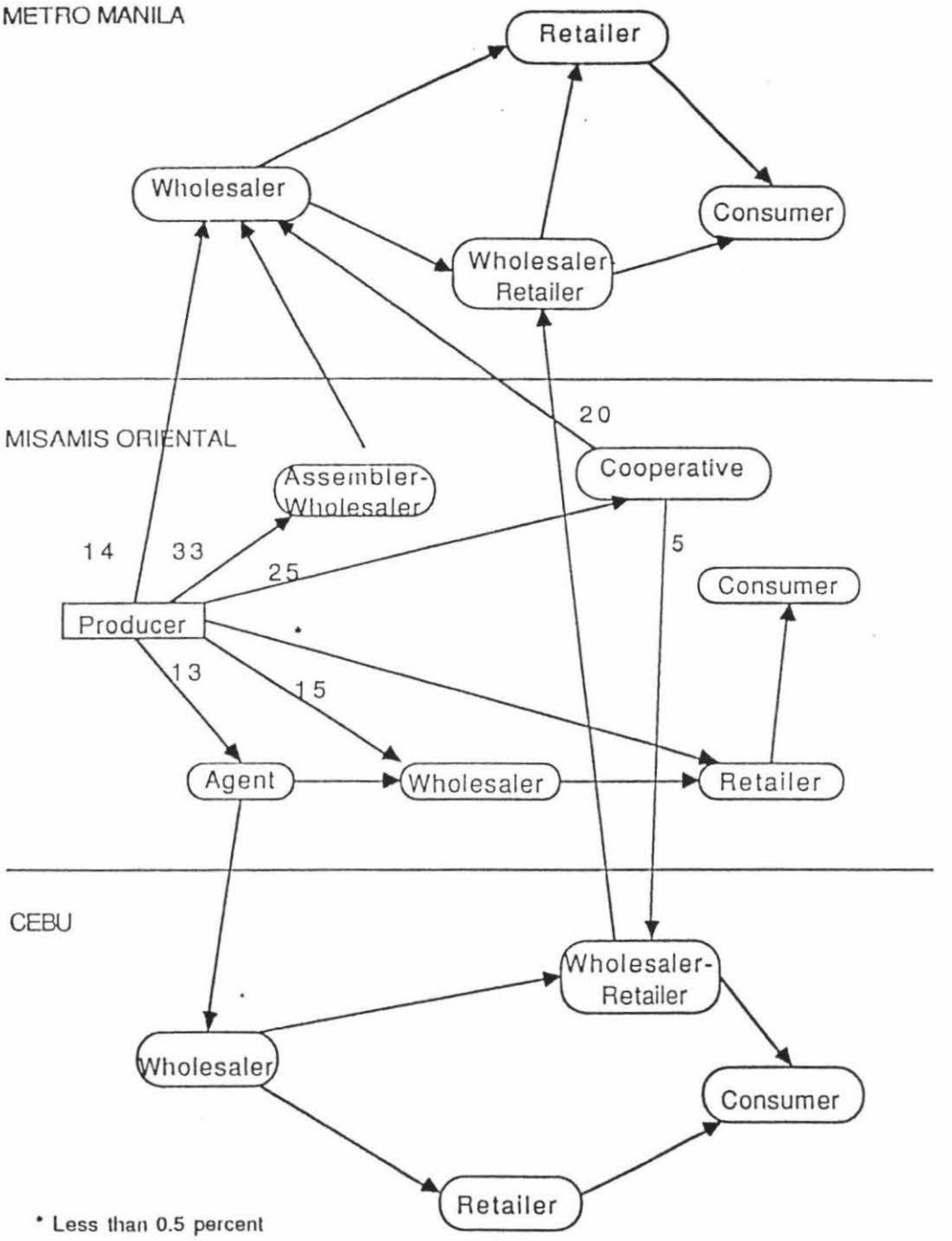

Figure 1.4. Schematic diagram illustrating the marketing channel of tomato from Claveria, Misamis Oriental, Philippines.

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.

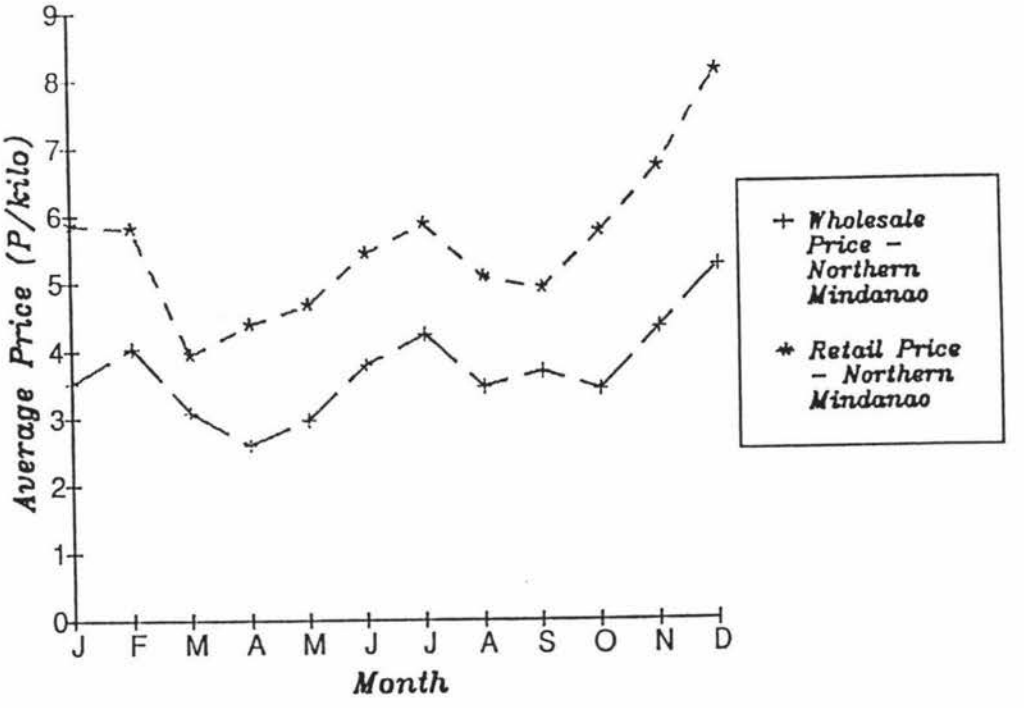

Figure 1.5. Average wholesale and retail prices, Northern Mindanao, 1979 - 1988.

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)	Wholesale (%) [a]	Retail (P/kg)	Retail (%) [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.

CHAPTER 2
CONCEPTUAL FRAMEWORK

2.1 *The Concept of Marketing Efficiency*

There has been confusion in aptly defining what efficiency means. It was held that efficiency is the proportion of goals to the resources available. A simple definition of efficiency is given by Kriesberg (1974) as "performing marketing functions at reasonable cost". A rather technical definition is supplied by Kohls (1980). He measured efficiency as an input-output ratio where input refers to the costs incurred and output to the benefits derived from the product in terms of form, place and time utilities.

Marketing efficiency, therefore, is measured by comparing output and input values. Output values are based on how the consumer values the good. Input values are costs incurred during the marketing process. Markets are considered efficient when the ratio of output to the value of input throughout the marketing system is maximised or at its optimum level.

Any change that decreases marketing costs without decreasing satisfaction of consumer is considered an improvement in the marketing system. However, if the reduced cost leads to lower consumer satisfaction this can be a manifestation of lower efficiency. When marketing costs are increased but are more than offset by increased consumer satisfaction, marketing efficiency is said to have been improved. Direct measurement of consumer satisfaction is a difficult task. As such, changes are examined in terms of operational efficiency and pricing efficiency.

2.1.1 *Operational Efficiency*

Operational or technical efficiency relates to the reduction of costs involved in the marketing process as long as the output is not greatly affected. It is concerned with the manner in which physical marketing functions are performed to achieve optimum output per unit of input. Often, new technologies are developed to improve the storage, transportation and processing functions of the sellers. These technological changes may be evaluated to determine whether they will reduce marketing costs per unit of output. For example, it is relatively simple to investigate the costs of a new tomato processing facility that may handle more tomatoes per day while also reducing labour costs.

Kriesberg (1974) stated that operational efficiency emphasizes decreasing the costs of services and shifting the goods through market channels. Abbott (1970) discussed the forms of marketing advances. These forms can be a reduction of costs by efficient management, application of new transport or packing techniques, expansion of sales through effective promotion and the provision of new services and facilities.

Generally, new high-yielding and pest-resistant varieties can increase the farmer's operational efficiency. Due to this technological change, his production increases and savings are realized in terms of lower input costs. However, a warning is issued concerning the introduction of cost-reducing technologies to developing countries where huge underemployment exists. These technologies might further add to the unemployment situation and therefore to greater social costs.

Acquiring raw materials in bulk can also promote operational efficiency. This can save transport costs and result in lower prices by purchasing larger

volumes. Availing of unit transportation rates is also inclined to increase operational efficiency.

Another dimension of operational or technical efficiency is the measurement of physical loss of commodities as they move through the channels of distribution from producer to ultimate consumer. Losses due to poor handling methods and storage facilities indicate operational inefficiencies.

2.1.2 *Pricing Efficiency*

Pricing or economic efficiency pertains to the adequacy, preciseness and speed of prices to find ways of supplying products that are demanded and the resulting optimal allocation of resources. Prices provide the stimuli which regulate choices with regard to production and distribution as well as the incentive to respond to consumer preferences.

Kohls (1980) asserted that the goal of pricing efficiency is "efficient resource allocation and maximum economic output". Hill and Ingersent (1977) commented that pricing efficiency is obtained when it enables changes in consumer demand to be reflected back to producers and also allows the effects of changes on the supply side, like changes in factor costs and new technology to be reflected back through the system from producers to consumers.

This notion is further echoed by the OECD when it aptly described the conditions for achieving pricing efficiency. It is stated that:

> "Pricing efficiency is achieved in the short run, when the price quoted in the market is such that supply and demand are in equilibrium. This means that no

> excess supply or demand for the product exists at that price. However, in the longer run, pricing efficiency is achieved when the price fully reflects consumer preferences and the cost of technological progress that generate a rate of return enough to ensure cost-reducing technological progress, and a rate of remuneration to producers/ processors/ distributors equal to that obtainable in the rest of the economy". (OECD, 1982)

Economic or pricing efficiency is concerned with whether the price of marketing services reasonably reflects the costs of resources used in providing them. Economic efficiency also means that the marketing process is responsive to consumer wants. For example, more resources will be utilized to provide more marketing services. However, the question is: Are the consumers willing to pay the price that firms charge for these additional services? The applicability of the measure is subject to four conditions. First, there must be other viable alternatives for consumers to choose from. Second, the prices of these alternatives must reflect the costs of providing them. Third, barriers to entering or quitting specific marketing activities. Lastly, there should be no competition among market participants.

Differences in prices of a certain commodity over space, time and among product forms may be indicators of inefficiencies. Prices should only vary between different locations by the transportation costs from one area to another. The price of a storable commodity at a certain point in time should not exceed the price in a previous period of time by more than the cost of storage. In the same way, the price of a processed produce should only exceed the price of unprocessed equivalent by the cost of processing.

Prices that are not truly reflecting the marketing activities are indications of inefficiencies in the marketing operation, or to the degree of monopoly or excessive economic power prevailing somewhere within the marketing system.

To a greater extent, pricing efficiency is influenced by the rigidity of marketing costs and the nature and degree of competition in the industry as well as the arrangements made by the market participants such as auctions, contracts and the like. Activities that may promote pricing efficiency are improvements in market information and competition.

2.2 *The Theory of Market Structure*

Market structure analysis is relevant to this study because weaknesses in the structure often leads to the formation of producer associations or cooperatives to overcome lack of market power. Market structure refers to the number and size of all agencies involved either vertically or horizontally in the selling and buying of the produce, and to the entry and exit conditions within the market.

The major elements of market structure are (1) the number and relative size of buyers and sellers; (2) the degree of product differentiation and (3) the degree of difficulty of entry and exit of buyers and sellers (Bain, 1980).

There are several market models that can be studied but the more relevant models to this study are discussed below.

2.2.1 *Perfect Competition*

In a perfectly competitive market, it is assumed that there are numerous buyers and sellers, a homogeneous product, ease of entry and exit and complete information. Given that all other factors remain constant, perfect competition assures that the market will satisfy this demand at a minimum cost.

It is repeatedly argued and accepted that competition enhances efficiency. Under competition, all a firm can do is try to slash back its costs to a minimum. To do this may require technical developments by the existing or new firms.

2.2.2 *Workable Competition*

Because of the unrealistic assumptions of the pure or perfect competition another form of market model has been established, the workable competition. Implicit in this form of market model are the the following assumptions given by Kohls (1980):

1) A number of buyers and sellers just enough to provide alternative options;
2) No trader powerful enough to intimidate his rivals;
3) Traders must be sensitive to provide sufficient rewards on profit and loss;
4) No commercial policy arrangements among rivals;
5) Easy entry save those that are already existing; and
6) There should be free access of buyers and sellers and no preferential treatment of any trader.

With the above requirements, the idea of competition is taken to be that there are differences in the product sold, that there exists both price and non-

price competition and that large firms will evolve due to economies of scale through adoption of new technologies.

2.3 *The Theory of Bargaining*

The concept of bargaining is an essential element to the study because of the various transactions made between and among buyers and sellers. Bargaining power pertains to the ability of the market participants to influence the outcome of the transactions. There are two types of bargaining power described by Ladd (1964). These are:

1) Opponent-gain bargaining power in which case the power emanates from the benefits which an individual or a group can provide to the other for accepting the terms. This can be in the form of extra savings offered or extra services provided.

2) Opponent-pain bargaining power, on the other hand, refers to the recognition that one has the power to threaten or make the other party worse off. The higher the costs or the larger the losses that can be imposed, the greater the bargaining power.

2.3.1 *Sources of Bargaining Gains*

To be able to use effectively the two types of bargaining power mentioned above, an association must possess the following conditions:

Sufficient control on the market supply

Brandow (1968) specified two forms of market-supply control. These are the control of product disposal and the control of production. Control of product disposal is only feasible when there exist primary and secondary markets for the product. Bargaining power is exercised by the growers in dealing with traders in the primary market because they have other sales options. In the case of fresh fruits and vegetables, the primary market is the fresh market. Diversion of a part of production into processing helps to maintain or strengthen the fresh market price.

The exercise of bargaining power with the use production control requires a compulsory organization of growers. Brandow (1968) believed that this is more effective with the aid of government intervention through the creation of market-wide controls or compulsory bargaining legislation as in the case of the United States. A voluntary organization for marketing will result in greater bargaining power than coercive one because farmers who join an organization because they want to are more cooperative and willing to devote their time and energies for the attainment of agreed goals than when they are dragged on their heels. The source of power in any voluntary organization is its membership (Shuman, 1968).

Babb (1968) contended that bargaining is more likely to be successful when growers do not greatly increase production in response to higher prices. An association that could control production to meet demand at satisfactory prices could enhance the income of producers, whether it had bargaining power or not. If production cannot be controlled, the gains from bargaining power are much more limited.

The more of the total volume offered to the market that is controlled by the association, the greater its bargaining power. Its bargaining power

decreases as its proportion of the total volume become smaller. The other party can then turn more easily to other sources. If these are adequate and readily available, the association may have practically no bargaining power at all.

Unity

The position taken in negotiations by the representatives of a bargaining association usually represents a compromise among the different positions preferred by various groups of members.

Each member must be willing to allow the association to make some decisions on behalf of himself and all other members. Further, each member must be willing to support each decision even though it might not be the one he preferred. These decisions may pertain to prices; quality, seasonal or quantity price differentials; time and method of delivery; or production and marketing restrictions.

Unity requires that the association has cohesion and disciplinary power over its members. Members must have a unity of purpose and must be willing to make the sacrifices necessary to achieve the advantages of a strong bargaining position. They must delegate to the organization some of their rights as individuals and must be bound as individuals to the decisions that are made by their association.

An informed membership is necessary to obtain unity and strength. Jensen as cited by Ladd (1964) listed lack of communications and lack of information as reasons for the cooperative's failure. A well informed membership will back up the management and Board of Directors in connection with their bargaining techniques and their bargaining operations.

Members need information on such topics as current market and demand

conditions and production costs. They need a clear understanding of what the association is trying to accomplish in the way of prices, price differentials or marketing contracts, for instance. They also need a clear understanding of what they, as individuals, can do to help accomplish these objectives and of how their actions may cause the association to fail or to succeed.

Disciplinary power over individual members is important, too. An association cannot be successful if members refuse to abide the contract signed by the association whenever it is in their individual interests not to abide by it.

Success requires unity. The more an association can do for its members, the more reasons the members have for supporting the associations. The members will feel more unity, if their association is working for them on many fronts than if it is working for them on only one front. To be successful, an association must be large and united. There is a conflict between the two; as size increases, unity becomes more difficult to attain. The main reasons for lack of unity are the heterogeneity of membership, difficulties of communications among members and between members and officers, lack of felt participation in decision-making by most members, and lack of feeling of responsibility for and contribution to the large association.

Members who desire to support an association are vulnerable to the acts of those who have no incentive to support it. Those who have no incentive to support are not similarly vulnerable to the acts of others. The severest test of unity will come when an association has to limit the production of its members.

Recognition

Another condition that must be met if bargaining is to be successful is that the other party must recognize a group's ability to exercise opponent-pain power. To gain such recognition, a bargaining association may have to

demonstrate this ability at an early stage of its development.

Paying the Price

This condition holds that members must be able and willing to bear the cost of withholding their products or purchases from the firm they wish to influence. These conditions largely contribute to the success of the association in exerting economic pressure on the traders.

2.3.2 *The Effect of Bargaining Power*

If grower does not have enough power to bargain with the trader, price obtained may be expected to be lower. If grower does not know of other alternative outlets, he will be at a disadvantage.

Growers are concerned that their power against large traders they are negotiating is inadequate, resulting in the prices and/or conditions they acquire being less desirable than otherwise.

In bargaining between growers and traders, opponent gain elements offered by the grower can be such things as high and consistent quality, good presentation, regular delivery and certain services such as packaging. But if these elements can be acquired from all other growers then they will be of little benefit in bargaining.

Opponent pain power is considerably restricted to withholding of supplies from traders. Traders are in a stronger position only when supplies are insufficient and when individual growers have the power to refuse to supply, and since vegetables are not notable for supply shortages this power is restricted to short periods. Traders have the option to change his source of supply if this happens.

CHAPTER 3
REVIEW OF LITERATURE

3.1 *Introduction*

This chapter provides a review of cooperatives or farmers' associations, dealing with marketing problems or inefficiencies and the solutions these organisations have presented.

Marketing inefficiencies are divided into two categories: (1) technical or operational; and (2) pricing or economic. Operational inefficiencies comprise production inefficiencies and diseconomies of scale. Pricing inefficiencies include inefficiencies in price transmittal and distortion of prices of inputs, products or resources due to monopolistic elements.

3.2 *Reducing Operational Inefficiencies*

3.2.1 *Reducing Costs of Services*

This concerned the efforts of cooperatives in lowering the costs of supplying services to the members of the associations or cooperatives through applications of new transport or packing techniques and provision of services and facilities such as storage, transport, grading and packing.

Clark (1952) stated that the primary purpose of cooperatives is to serve individual members at the lowest possible cost. This can be achieved by introducing recent technological techniques. Abbott (1987), using several case

studies, provided evidence to show that new production technologies can increase operational efficiency. However, no quantitative measures were presented. A banana growers' association in Windwards Islands in Caribbean designed a plastic field box to hold banana cut from the stalk to maintain their quality. This technique reduced physical bruising and damage as might have happened through manual carrying or heading the fruit. In Japan, eggs were hauled in wooden crates instead of old cardboard boxes while selling has changed from paper bag to vinyl to polyethylene (Sugiyama, 1988).

Operational efficiency can be enhanced through the use of shipping associations/cooperatives (Kwon, 1983; Edward, 1988). The organisation reduced transport costs, provided less risk through prudent selection of markets, and lowered production costs through cooperative buying of agricultural inputs. Cooperatives arranged to buy farm supplies like fertilizers, materials for production and packing, pesticides, seeds and the like. This helped growers in purchasing reliable supplies from their cooperatives at lower price than are available to individual farmers. Growers were also allowed to secure supplies on credit through cooperative account. This benefit was reinforced in Gasson's study (1977). She found that economies of bulk buying allowed members of the vegetable cooperative to obtain packing materials more cheaply than previously. Small-sized growers indicated that it was convenient for them to collect boxes as required rather than maintaining stocks of boxes for the year.

By putting small lots of produce together, associations are able to hire trucks to transport to distant markets where prices are higher (Abbott, 1976; Abbott, 1986; Barker, 1989). In India, a group of farmers saved 20 cents per sack of rice arranging transport to pick up a full load at one place instead of each farmers making his own arrangements. A study conducted by Gasson (1977) disclosed that small-sized growers were impressed by the ability of their vegetable cooperative to handle large quantities, hence it could afford to sell

produce to far-away places of the country if prices dictated.

Pooling and cooperative selling saves time and expenses for buyers, and growers are more likely to obtain higher price through market power. An empirical investigation on this issue revealed that group marketing did, indeed earned savings in time and cost on joint growing of seedlings, purchase of supplies and marketing squash (Abbott, 1987). The group saved 66 cents per box by joint sales and obtained $1.28 more for the sales. This totalled to an average of $800 additional income per member in 1982, when they sold 1120 tonnes. Similarly, group farming in Australia derived economic benefits in the form of reduced labour employment, costs of spreading fertilizer, costs of shearing through the use of group labour in the shed, and costs of repairs and maintenance of machinery and fixed assets. Financial gains resulted from increases in gross income and substantial savings in operating costs. In 1971, there was a total increase in gross income of $4000 while realised annual cost savings was $14,790 (Powell, *et. al.*, 1982).

Another empirical study revealed that cooperative marketing of rice incurred the highest marketing costs as against private and regulated markets. This result was due to lack of proper infrastructure available at the procurement points (Rajagopal, 1986). Bansil (1981) as cited by Bohle, further investigated the accessibility of markets and corresponding costs. Findings showed that market inaccessibility increased the proportion of marketing costs to total costs for all farm size groups. Moreover, inaccessibility had a relatively higher negative impact on small and marginal farmers' income than that of large and medium farmers. This indicates the necessity of improving main roads especially farm-to-market roads which lowers transport costs and also because vegetables require speedy handling.

It has also been suggested that operational efficiency can be enhanced by increasing the practice of grading and pre-packing of produce at the farm level

(Gasson, 1977; Lee, 1983). Abbott (1987) observed that cooperatives have the capacity to standardise quality of product, packaging and presentation over a larger volume of produce. The Ha-ee group in Korea profited greatly from strict grading and packing of their produce in accordance with the central wholesaling requirements.

Extending technical assistance and farm extension services to members of associations or cooperatives can also contribute to operational efficiency. Wang (1979) claimed that one of the major services that farmers' associations performed is farm extension. In Taiwan, farm discussion groups were organised and became the most successful and influential farm extension activity. This group, composed of 20 farmers and met once in a month to study, discuss and carry out agricultural production activities and receive instruction and advice. Subjects for discussion groups included crop production techniques, family farm management, problems related to joint operations, joint marketing and procurement, mutual assistance and cooperative service, and training in citizenship.

In some developing countries like Bangladesh, the problem of congested market area surfaced as more transactions in terms of volume and goods occurred over the years. Thus the construction of new wholesale or retail market becomes essential. Since this requires huge capital expenditures, cooperatives or farmers' associations can only facilitate such construction through recommendation to and assistance of the concerned government agency.

3.2.2 *Fostering Efficient Management*

Pickard (1970) discussed the factors that affect the success and failure of farmers' cooperative associations. Abbott (1987) said that factors favouring successful cooperative marketing and hence contributing to operational

efficiency are the availability of local leadership and management, a well-educated membership, and a membership with strong kinship and religious ties.

McBride (1989) provided the framework for analysing the management triumvirate, that is, the manager, board of directors and members. The members constitute the foundation of the management team. They have certain rights and privileges as well as obligations and responsibilities, the acceptance of which are critical to the success or failure of the cooperative. The board of directors are responsible for the management of the organisation which involves establishing policies for the cooperative and evaluating its performance. The cooperative manager is an extremely important component of the triad. Most studies usually trace the success and failure of cooperatives or associations to poor management or inexpert directoral leadership (Le Vay, 1983). One study attributed at least 88% of all business failures to ineffective management (Cobia, 1989).

Underlying the problem of inefficient or poor management are other major social-behavioural problems. Member conflict occurs when one member perceives another member(s) to be engaged in behaviour that is preventing or impeding him from achieving his goals (Stern and El-Ansary, 1982). The degree of conflict depends on goal incompatibility, role performance and differences in perceptions of reality among members. The common interests of primary agricultural producers involve farm price, volume sold, gross income, net income, bargaining power and freedom to farm (Al-Zand *et. al.*, 1986). Conflict may also occur when a member is assigned to a role that he does not have the capacity to fulfill, when demands are made upon the member that are more than can be expected from the position within the channel that the member holds, and when a member feels he must relate to two groups and cannot decide which role is dominant. Differing perceptions of reality are also important sources of conflict because they indicate that there will be differing bases of action in response to the same situation. As a result, behaviours

stemming from these perceptions are likely to frustrate and produce conflict.

Shim (1983) in his study of Korea's successful farmers' voluntary activities, indicated that managers stimulate the activities of farming by encouraging members to participate in the production and marketing decisions of the organisation. Open discussion among members provided learning avenues on production skills, pest control, market situation and price trends. Moreover, cooperative managers increase an organisation's business by initiating activities for the benefits of the cooperative membership. An example of this is the hog breeding programme in which hogs were distributed to members at their request.

Therefore communication, demarcation of responsibility and delegation become crucial especially when the association or cooperative gradually increases its members.

3.3 *Reducing Pricing Inefficiencies*

The problem of price instability is most common to agricultural produce because of its perishability and seasonality characteristics. Ways are open for cooperative behaviour to counteract this problem. In Japan, for instance, cooperatives played a dominant role in regulating prices of vegetables. Agricultural cooperatives combined their marketing activities and applied a vegetable supply and demand adjustment scheme. The purpose of the scheme was for vegetable farmers to market vegetable from designated producing areas to designated consuming areas in an effort to contribute towards stable consumer prices and to compensate for losses incurred whenever market prices deviated from the guaranteed standard prices. The main point of this scheme was that payments were made to offset any drop in vegetable prices (Suzuki, 1983).

The provision of marketing information is also crucial in achieving pricing efficiency. Lee (1983) stressed the role of the Korean cooperative system in disseminating marketing information. The cooperative ran a marketing information centre which linked major consuming areas with producing areas. Information on prices and the marketed volume of major farm commodities were collected with the help of 102 sets of teletypewriters and telephones. Collected market information was circulated throughout Korea through automatic telephone-answering services, radio/TV networks, major newspapers and the Farmers Weekly Newspaper and Information Weekly of the cooperative. In some cases, the use of market intelligence services extended by cooperatives or associations saved individual producer much time as well as expenses in contacting major markets each day (Gasson, 1977).

Credit is an indispensable element to most agricultural producers. Because of the delay between the time of the planting season and the sale of produce to consumers, working capital is required during the production period. In the Philippines, the majority of vegetable growers are financially tied up with traders or middlemen. Hence prices were often dictated by buyers (Faylon, 1981). Cooperatives in Korea made arrangements for institutional loans to all members of farming groups to finance the necessary expenses of small sized farmers (Shim 1983). Farmers' associations in Taiwan are recognised as very effective in financing agricultural production (Wang, 1979). Because they have an intimate knowledge of the farmers' needs and are capable of linking the farmers' borrowings with extension services, they are in a position to render credit service directly to the farmers. Since farmers usually feel more at ease discussing their financial problems with staff members of the farmers' associations than with bankers, some of the loans provided by the government and banks were channeled through the farmers' associations.

Promotional activities through advertising can also increase pricing efficiency. Firestone (1967) claimed that advertising increases competition

which is essential in obtaining reasonable prices. He further suggested that advertising contributes not only to facilitating consumer acceptance of quality products but also aided in removing low quality products. This implies that producers be given incentives through high prices for their high quality produce. In the process, resources are maximised and wastefulness is minimised. In some developed countries like the United States, generic advertising is exercised by several fruit and vegetable cooperatives or associations.

Sosnick (1964) included vertical integration as a possible means of increasing pricing efficiency. In principle, vertical integration offers savings like avoidance of costs of exchange (advertising, search, agents, order-taking, haggling, billing, collecting, and protection against honesty). It also provides coordination through the inter-change of production and marketing information which are necessary elements to obtain the desired market equilibrium. Vertical integration synchronized expansion from the producers' level to the consumers' end which can be in the form of production tie-up between processors and growers. Retailers and/or wholesalers fed back to processors how much quantity and what form they will likely require based on the response of the consumers. Processors, on the other hand, passed this required demand to the growers as well. Contract agreements are usually utilised to coordinate production activities with marketing and/or processing activities. The experience of integrating production, marketing and processing activities in India indicated that farmers' gained benefits through having the alternative to sell fresh produce or to sell them to the factory. Hence, farmers' price received are assured through the provision of unsupplied factory demand (Ramaswamy, 1976).

CHAPTER 4

COMPARATIVE SURVEY RESULTS OF TOMATO MARKETING IN CLAVERIA, NORTHERN MINDANAO

4.1 *Introduction*

Tomato production in Northern Mindanao involves over 200 growers who are widely scattered over the region. In Cagayan de Oro City, around 26 tomato traders could take supply from growers. This suggests an imbalance of power between growers and traders.

To remedy this situation, the growers grouped together into producer associations in an attempt to obtain greater bargaining power and thus the ability to influence prices. Cooperative marketing is therefore aimed at aiding growers in disposing their produce by providing efficient marketing facilities or services and giving alternative marketing outlets. It was also established to enhance farmer's income through stabilisation of prices, lower marketing margins and exploration of other new markets.

The role of cooperatives or farmers' association in tomato marketing cannot be underemphasised. According to a study conducted by the National Food and Agriculture Council, the primary marketing outlets for tomatoes in Northern Mindanao are agents, assembler-wholesalers, cooperatives or farmers' associations, wholesalers, wholesaler-retailers and retailers. Most tomatoes (33%) are directed to the assembler-wholesalers and to cooperatives (25%).

This study will identify the marketing problems encountered by tomato growers in Northern Mindanao, and will analyse the cooperatives' impacts by

surveying groups of members of two associations. Non-members were also included in the survey to provide benchmarks against which the performance of the associations could be assessed.

4.1.1 *Selection of Study Area*

The Philippines is administratively divided into 13 distinct regions with 75 provinces and two sub-provinces. It is further subdivided into 60 cities and 1,531 municipalities that contained 41,196 small units called "barangays".

Northern Mindanao (Region 10) occupies an area of 28,328 sq. km. It is subdivided into seven provinces. One of these provinces is Misamis Oriental is located in the northern portion of Mindanao. The province is composed of two cities (Cagayan de Oro City and Gingoog), 24 municipalities and 498 "barangays". Its terrain is generally rugged with low mountains covering about 41 percent of its 3,570 sq. km. total land area (NEDA, 1986). Misamis Oriental has no distinct wet and dry season; May to October are its rainy periods however maximum rain periods are not pronounced. Its average temperature is 26.5°C while average annual rainfall is 1,529.8 mm. Major crops grown are coconut, tomato, corn, banana, palay, coffee, tobacco, cassava, sweet potato, mango, cacao, lanzones, and vegetables, among others.

Claveria, the selected study area, is a municipality of Misamis Oriental and east of Cagayan de Oro City. It is an important off-season tomato production area with an altitude of over 3,000 feet. Most of the inhabitants are farmers engaged in the production of rice, corn, vegetables and fruits. It has been the major source of tomatoes, cabbage, baguio beans and other vegetables for Cagayan de Oro City and nearby towns. Tomatoes produced in this area reach as far as Manila during certain times of the year.

4.2 *Survey and Questionnaire Design*

4.2.1 *The Questionnaire*

A preliminary informal interview was undertaken with the president of a farmers' association in Claveria to gain insights into the operations and management of that association and to understand the tomato marketing system in the locality to guide in the questionnaire design. Interviews were also conducted with traders and officials concerning the structure and problems of the tomato industry in Northern Mindanao.

The questionnaire was pre-tested using five grower interviews. Questions that proved too difficult for the respondents to understand were rephrased. The final questionnaire is presented in Appendix 5.1. Most questions are open-ended which provide the respondents more freedom to express their opinions.

4.2.2 *Administration of the Survey*

A personal interview type of survey was used to obtain data for the study. The survey was undertaken over January 22 to 27 and February 1 and 2, 1990. An arrangement with the administration of Misamis Oriental State College of Agriculture and Technology (MOSCAT) [3] resulted in four of their y students being available to help conduct the survey.

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3 MOSCAT is an agricultural institution located in Claveria. It also provides technological advices to farmers in the locality.

4.2.3 *Selection of Respondents*

The survey included 45 member and 50 non-member growers. A list of individual vegetable growers was obtained from the Department of Agriculture including the two farmers' associations. An additional list of 50 private growers was obtained from the president of the association. These lists became the sampling frame for the individual producers. Sample non-member respondents were randomly selected. On the other hand, all members of the two associations were interviewed. In cases where private grower-respondents were not available for interview, a nearby grower was chosen for substitute.

4.3 *Description of Producer Associations*

4.3.1 *The United Farmers of Claveria Inc.*

The Association

The United Farmers of Claveria Inc. (UFCI) is a farmers' association organized in February 1989. Its main concept is to involve the family in the operation of the organisation. Members pay an annual membership fee of P100.00 to be utilised as a revolving fund for the association.

UFCI is a pre-cooperative organisation composing of 22 members. In order to form a *Samahang Nayon*, a village-based association such as UFCI, it has to have 30 members or more. Samahang Nayon cannot engage in business activities until such time when it has completed the requirements established by the Bureau of Cooperatives Development (BCOD), a link agency of the Department of Agriculture. Firstly, farmers have to undergo a 10-week pre-education session conducted by the BCOD before they can organise their Samahang Nayon. Beforehand, farmers have to contact the BCOD regarding their intention to form a Samahang Nayon. After they are organised and

registered with the BCOD, the Board of Directors of the Samahang Nayon are then obliged to attend the 10-week management course. This is designed to develop among officers the knowledge, skills and attitudes necessary for intelligent leadership and effective management of the Samahang Nayon. Secondly, members have to attend the technical agricultural training for 20 weeks on the uses of fertilizers and pesticides; raising of poultry, hogs, cattles and vegetables; financing credits; and other specific topics. These lessons are accompanied by actual demonstration projects conducted in the farms of the members. An abridged management training is also conducted to all members of the Samahang Nayon for 12 weeks. Thirdly, Samahang Nayon has to comply with the savings programme set by BCOD.

As soon as Samahang Nayon is organised and registered at the end of pre-education 10-week training session, it is considered as Class "C" Samahang Nayon. When members finished technical agriculture training, the Samahang Nayon is considered "Class B". When in addition to the completion of the technical agriculture training its members have substantially complied with the savings programme then the Samahang Nayong graduates into Class "A". A group of at least 10 Class "A" Samahang Nayon may now form a fully-pledged cooperative called *Kilusang Bayan* which can engage in business. The two types of Kilusang Bayan which Samahang Nayon are organising are the Area Marketing Cooperative and the Cooperative Rural Bank.

The 1989 production operation of the UFCI was financed by the government through its Livelihood Enhancement of Agricultural Development (LEAD) Programme. The Programme has two components, the bank-assisted and grant-assisted. The grant-assisted component of LEAD provides assistance to farmers' groups like UFCI who undertake income generating projects which are not yet recognised as credit worthy by the bank. Farmer organisations put up equity in terms of land, labour or cash. For the income-generating projects like UFCI's, the Programme provides start-up funds which will be returned

through a roll-over scheme and will be passed on to the "next-in-line" farmers' group in the same community.

The association was primarily organised to export tomatoes from the region to Hongkong. However, this has not been realised as yet because of the limited supply available to the organisation compared with the required order from the importing company. Its primary objective is to centralise the marketing of tomatoes for the association members. Members are not permitted to sell their produce individually. Secondary objectives include extending input supplies such as fertilizers, seeds, chemicals and the like as loans to the members, uniting small farmers morally and spiritually and bringing these small farmers in closer contact with the programs of government. For its technological update and conduct of seminar, the association relies on MOSCAT and other government agencies.

The associations' activities and services are exclusive to members only. However, there are plans to accept other farmers as adopted farmer-brothers to serve a screening period in order for qualify membership. Directors are selected through secret ballot.

Activities

During the study period of 1989, the association imposed a weekly production quota of 1000 crates or boxes of tomato per member. The terms of payment to the members consisted of 70 per cent going to the loan extended by LEAD and 30 per cent going back to the member-growers on a weekly basis. Most often, payments are delayed by one week or more depending on the collection of money from the contact wholesalers. Some wholesalers pay in full while others do not.

The association has its own warehouse for assembling, packing and

short-term storing of tomatoes before the produce is sold to the wholesaler. The produce from the farm is usually delivered to the warehouse. Tomatoes are sorted according to size by the use of a ring. Produce from individual growers are pooled prior to selling them to the wholesaler. The packaging material consists of a wooden crate. Packaging is done by family members. The association then transports the produce to the wholesaler by the use of a hauling truck which is hired by the association.

Organisational Structure

The organisational structure is given in Figure 4.1. The two advisers are obliged to attend monthly meetings. There are two external agencies linked to the association, the Regional Agricultural Fishery Council (RAFC) which is linked to the Department of Agriculture and Misamis Oriental State College of Agriculture and Technology (MOSCAT). RAFC-DA gives financial assistance and monitors the project while MOSCAT helps in technology extension.

The Committee is composed of six activities namely: grievance, planning and budget, education, production, marketing and audit and inventory. The grievance committee deals mainly with complaints from the member-growers. Planning and budget committee develops short (a year) and long term (five years) plan and prepares budget for such plan. The education committee provides the necessary training and seminar on its staff and the member-growers. The production committee allocates to the association's members the number of crates of tomatoes that they are expected to deliver. The marketing committee seeks potential buyers and negotiates reasonable prices for the association's pooled produce. The audit and inventory committee examines and verifies the financial records of the association.

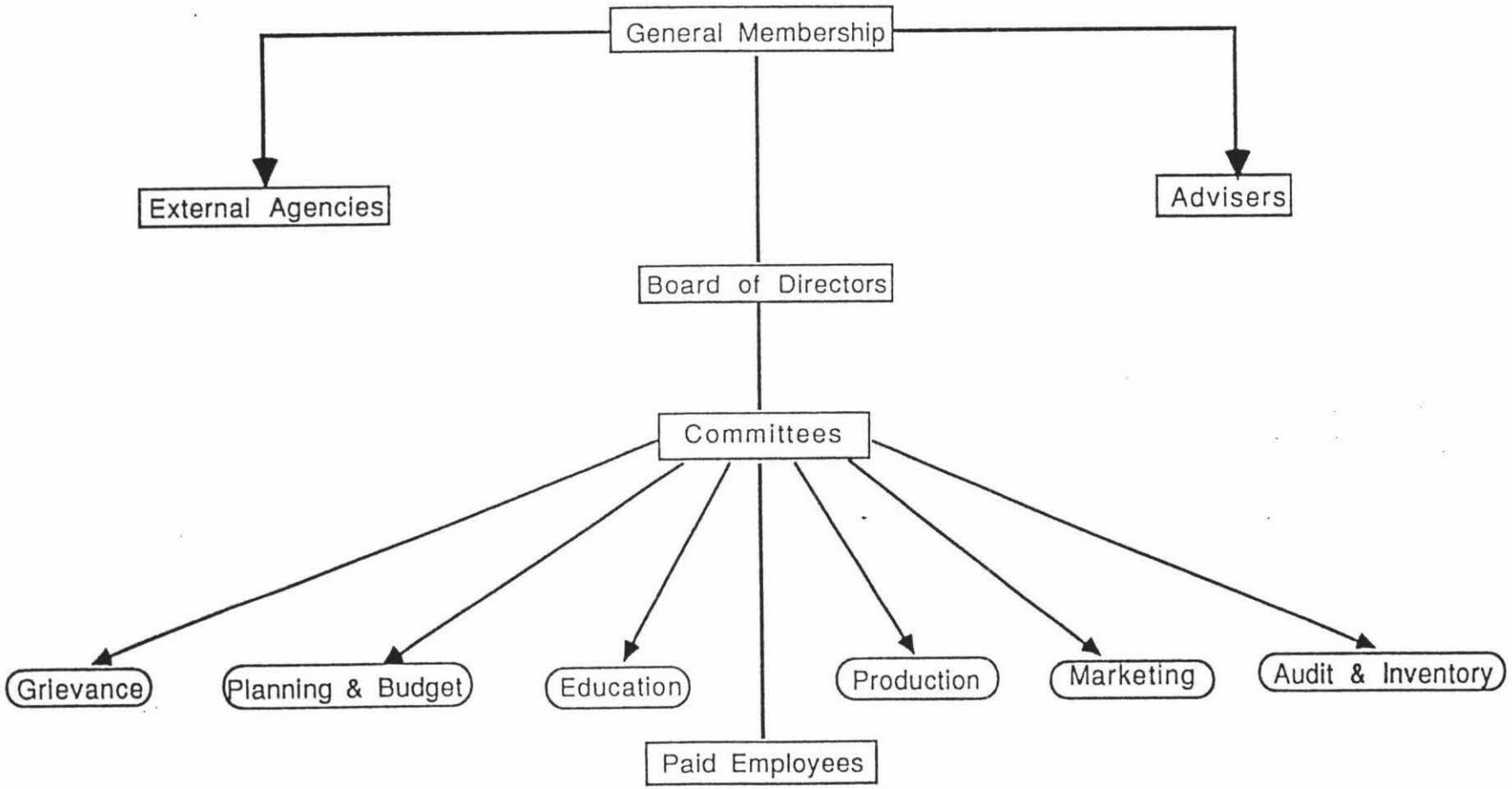

Figure 4.1. UFCI Organization Chart.

The duties and responsibilities of the members include: attending monthly meetings; attending all "pahina" system programmes by the association; [4] paying all obligation such as annual dues and loans from the association on the agreed systems; maintaining their production quota and centralising all produce to the association's warehouse (bodega) for final packaging; obtaining agricultural supplies such as fertilizers, chemicals as part of their loan from the association; and assisting and cooperating in the undertakings of the association to further its growth.

The duties and responsibilities of the Board of Directors consist of: planning and making rules and regulations of the association; attending board meetings twice a month; and resolving any conflicts in the association.

4.3.2 *The Claveria Progressive Farmers' Association*

The Association

The Claveria Progressive Farmers' Association (CPFA) was organized in December 1984 to obtain higher incomes for the tomato grower members and to help the community in providing employment. Although the association have 33 members, it decides to remain as an association rather than applying to the BCOD as a recognised cooperative. Its annual fee is P60.00 per member.

The association has a production contract with the Eden Corporation, a private business corporation operating domestically in marketing and processing of fruits and vegetables. The association is expected to deliver to

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4 The pahina system refers to the spirit of cooperation among members so that when one member needs assistance other members come to his aid.

them around 3,000 to 5,000 crates of tomatoes per week. The buyer provides inputs such as fertilizer, chemicals and seeds but does not advance credit to the association.

Some 54 hectares of land was being cultivated in 1989 with around 40,000 crates being harvested by the members. The association distributes the quota equally to the members. Payments are in accordance with the volume delivered to the association. Members are paid in cash on a weekly basis.

The association earned a total gross sales of around P4.67 million from 41,658 crates sold in 1989. Realised income from other sources such as rebates and sales from empty boxes and covers totalled P103,804. Total income gained was around P4.58 million giving a cash on hand of P196,567 (Appendix 4.2).

Activities

CPFA rents its warehouse where assembling, sorting and grading, packaging and storing takes place. Similar to UFCI, packaging is also done by family members of the association.

The association is exclusively for members only. There are certain criteria to be met before a grower can be a member of the association. However, these were not disclosed by the association.

Organisational Structure

Figure 4.2 describes the organisational structure of the association. Members are required to follow the rules and regulations promulgated by the Board of Directors. The Board of Directors is responsible for the creation of the laws, rules and regulations and policies of the association which has to be ratified by the General Assembly which consists all members in the association. The Board of Directors are elected from the General Assembly. Every member of good standing is qualified to be elected as one of the Board of Directors. Elected officials automatically become members of the Board. The Project Manager programs the number of hectares to be planted and establishes the weekly quota.

The responsibilities of the various committees are: production committee - to supervise the farm operation of members and ensure that they are following the required technology in order to obtain the required production per hectare; quality control committee - to ensure adherence to the tomato grading system; marketing committee - to assist in the shipment of produce from Cagayan de Oro to Manila; and educational committee - to contact needed resource people for the association's seminars.

4.4 *Survey Respondents' Profile*

Of the 95 respondents, 45 belonged to either of the two farmers' associations and 50 were private growers. Most of the sample respondents were in 30 to 49 years age category (Table 4.1). A larger proportion of CPFA members belonged to this category. UFCI, on the other, hand had more 50 to 60 year-old members. In terms of educational experience, majority of non-members have finished their primary levels while most of the association-members have completed their tertiary or university levels. Between

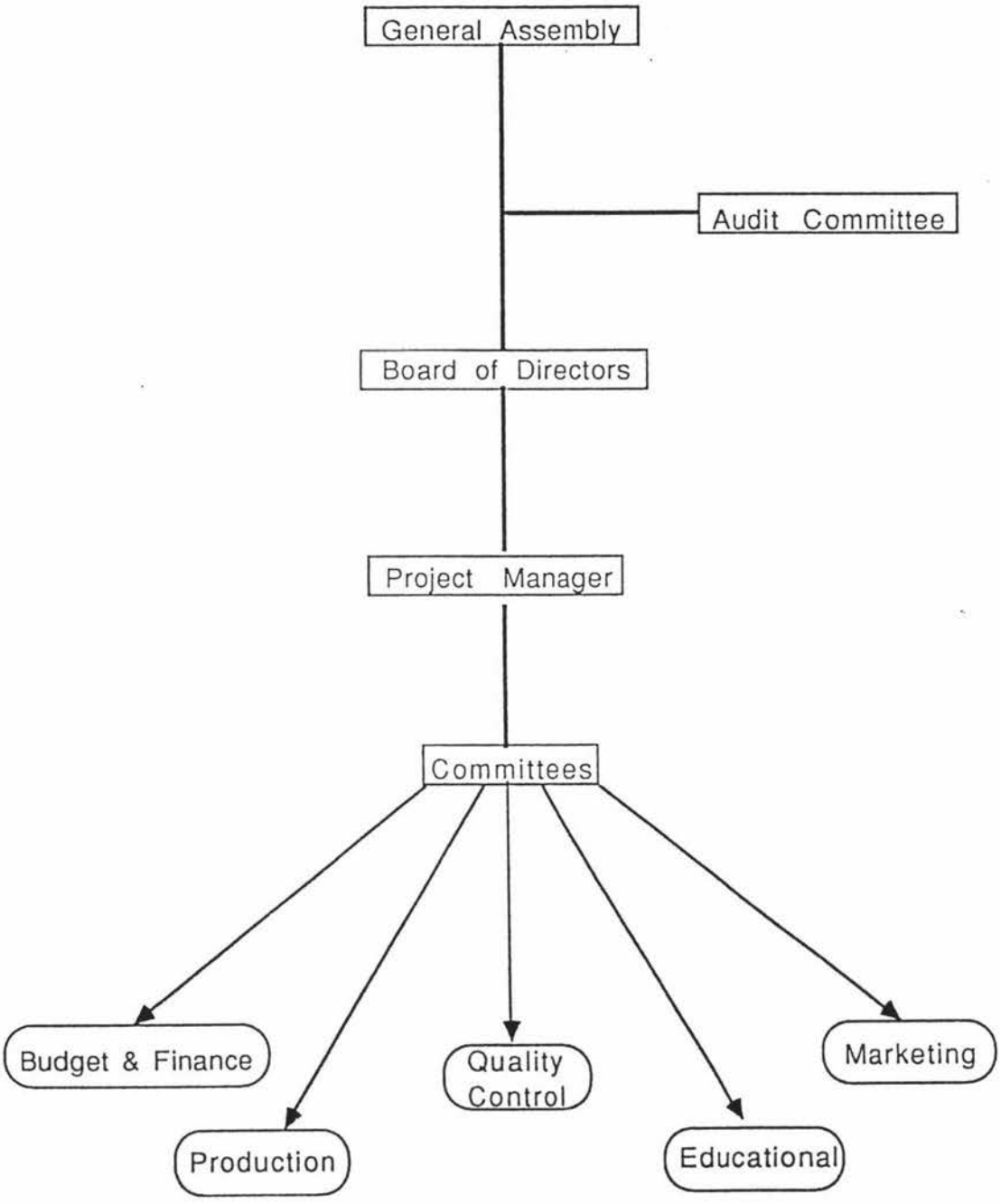

Figure 4.2 CPFA Organizational Chart.

association-members, more than one-half of the UFCI members completed their primary levels while most CPFA members have finished their tertiary levels.

Table 4.1 Age and Educational Attainment of Respondents

Category	Members Of Association				Total		Non-Members Of Association	
	UFCI		CPFA					
Age (Year)								
20-29	4	(67%)	2	(33%)	6	(13%)	12	(24%)
30-49	8	(31%)	18	(69%)	26	(57%)	33	(66%)
50-60	6	(75%)	2	(25%)	8	(18%)	3	(6%)
Above 60	1	(50%)	1	(50%)	2	(4%)	1	(2%)
NR [a]	1	(33%)	2	(67%)	3	(7%)	1	(2%)
Highest Educational Attainment								
Primary	9	(53%)	8	(47%)	17	(38%)	30	(60%)
Secondary	5	(42%)	7	(58%)	12	(26%)	13	(26%)
Tertiary	5	(38%)	8	(62%)	13	(29%)	7	(14%)
No Schooling	0	(0%)	1	(100%)	1	(2%)	0	(0%)
NR	1	(50%)	1	(50%)	2	(4%)	0	(0%)
Total					45	(100%)	50	(100%)

[a] NR = No response.
Refer to Questions 1-9, Appendix 4.1.

The farming experience of non-members were much more expansive than association-members with 56% of them having been growing tomatoes for 10 years or more (Table 4.2). Among association-members, a larger proportion of CPFA members were more experienced in growing tomatoes than UFCI having been cultivating tomatoes for 10 years and over. Majority of the member-associations own the land where they grow tomatoes while non-members rented or leased their farming area. Between associations, most CPFA members own their farming land while UFCI members rented or leased.

The farm size of a greater percentage of non-members covered under study were mainly small-sized with mostly half a hectare of land cultivated. Most CPFA members grow tomatoes on larger tracts of land.

Table 4.2 ***Farming Experience, Tenure Status and Farm Size of Respondents***

Category	Members Of Association				Total		Non-Members Of Association	
	UFCI		CPFA					
Years in Farming								
< 1 to < 5	8	(57%)	6	(43%)	14	(31%)	11	(22%)
5 to < 10	6	(46%)	7	(54%)	13	(29%)	11	(22%)
10 & above	6	(33%)	12	(67%)	18	(40%)	28	(56%)
Tenure Status								
Own	8	(35%)	15	(65%)	23	(51%)	23	(46%)
Rent/Lease	12	(54%)	10	(46%)	22	(49%)	27	(54%)
Farm Size (Ha.)								
1/2	9	(60%)	6	(40%)	15	(33%)	33	(66%)
1	6	(55%)	5	(45%)	11	(24%)	11	(22%)
2	2	(17%)	10	(83%)	12	(27%)	5	(10%)
3 & above	3	(42%)	4	(58%)	7	(16%)	1	(2%)
Total					45	(100%)	50	(100%)

Refer to Questions 1-9, Appendix 4.1.

Among member-associations, 71% have been in the association for less than a year. A higher percentage of the UFCI members (56%) entered the association for less than a year indicating new membership but not necessarily to an association. Some members have been CPFA members but resigned due to management conflict; they could not get along with other members and the manager as well. Eighty-three percent of the CPFA members were older members having been in the association for a year to five years.

Table 4.3 Length of Membership of Respondents

Length of Membership (Year)	Members Of Association				Total		Non-Members Of Association	
	UFCI		CPFA					
< 1	18	(56%)	14	(44%)	32	(71%)		
1 to 5	2	(17%)	10	(83%)	12	(27%)		
> 5	0	(0%)	1	(100%)	1	(2%)		
Total					45	(100%)	50	(100%)

Refer to Questions 1-9, Appendix 4.1.

4.5 *Survey Results*

The survey results are sub-divided into four headings:

1) Marketing inefficiencies
   1a) Technical inefficiency
   1b) Pricing inefficiency
2) Impact of the association on members compared with non-members in terms of prices received, quantity sold, and costs incurred
3) Association management
4) Reasons for not joining an association

The following specific questions are raised:

1) What are the major marketing problems perceived by association-members and non-members? Are their perceptions significantly different from each other?

2) Are there significant differences in the prices received by members and non-members?
3) Is the quantity sold significantly different between members and non-members?
4) Are the marketing costs significantly different between members and non-members?
5) How do members perceive the services offered by their association?
6) How do members perceive the benefits received?
7) What are main problems faced by the association and what solutions are perceived by the members?
8) Why did non-members not join the association?

All results were obtained using the SPSS programme. The significance or extent of the relationships was tested using the chi-square technique. The null hypotheses, that is, there is no significant difference between tested variables or between sample and the population, were assumed in each case. Criteria for rejection were at 0.01 and 0.05 percent level of significance.

4.5.1 *Marketing Problems/Inefficiencies*

4.5.1.1 *Technical Inefficiency*

Technical inefficiency relates to problems that generally hinder production or operational efficiency on tomato marketing. These problems include overcrowding at the port especially during the harvest season, and inadequate storage and transport facilities and poor road conditions.

The problem of overcrowding at the port usually occurred during the harvest season when crates of tomato were "stuck up" at the pier waiting to be transported to Manila. Although there is a regular shipping schedule, tomato crates cannot all be accommodated due to lack of space. Table 4.4 showed that

this presented a major problem to the non-members. Members, on the other hand, do not perceive this as a major problem. The difference in perception is statistically significant at 0.01%. Of those who said "Yes", 60% were from CPFA and only 40% from UFCI.

Table 4.4 Overcrowding Problem Perceived By Respondents

Problem Area	Members Of Association				Non-Members Of Association			
	UFCI		CPFA		Total			
Overcrowding at the pier **								
Yes	8	(40%)	12	(60%)	20	(44%)	37	(74%)
No	12	(48%)	13	(52%)	25	(56%)	13	(26%)
Total					45	(100%)	50	(100%)

Refer to Question 10, Appendix 5.1.
** = Significant at 0.01 percent level.

In relation to this problem and to provide an alternative marketing route, respondents were interviewed concerning the use of land route. This route connects from Cagayan de Oro City, the regional centre of Northern Mindanao, through the San Juanico Bridge over Visayas Island finally reaching Manila. The survey showed that among association members, 40% believed that the land route is "most needed" compared to only 24% of the non-members (Table 4.5). Between association-members, almost two-thirds of CPFA members held this opinion. Majority of non-members (68%) and 37% of association-members felt that this is "least needed". Results, however, are not significant.

Table 4.6 revealed that there is no significant difference between perceptions of association-members and non-members on the lack of storage and transport facilities as not their major problem. Most of the respondents do

not store tomatoes for a long period of time. Normally, tomatoes were stored for only four to five days for sorting, grading and packing at the associations' warehouses.

Table 4.5 Opinion On Alternative Land Route By Respondents

Opinion	Members of Association						Non-Members	
	UFCI		CPFA		Total			
New Route[NS]								
Most needed	7	(39%)	11	(61%)	18	(40%)	12	(24%)
Less needed	1	(20%)	4	(80%)	5	(11%)	3	(6%)
Least needed	9	(53%)	8	(47%)	17	(37%)	34	(68%)
Uncertain	1	(100%)	0	(0%)	1	(2%)	0	(0%)
No response	2	(50%)	2	(50%)	4	(10%)	1	(2%)
Total					45	(100%)	50	(100%)

Refer to Questions 35 & 36, Appendix 4.1.
NS = Not significant.

Table 4.6 Problems of Inadequate Storage & Transport Facilities Perceived By Respondents

Problem Areas	Members Of Association						Non-Members Of Association	
	UFCI		CPFA		Total			
Inadequate storage facilities[NS]								
Yes	1	(20%)	4	(80%)	5	(11%)	5	(10%)
No	19	(90%)	21	(10%)	40	(89%)	45	(90%)
Lack of transport facilities[NS]								
Yes	9	(43%)	12	(57%)	21	(47%)	27	(54%)
No	11	(45%)	13	(55%)	24	(53%)	23	(46%)
Total					45	(100%)	50	(100%)

Refer to Question 10, Appendix 4.1.
NS Not significant.

A greater percentage of non-association members indicated that they have problems of lack of transport facilities. For those association-members who perceived this as a problem, 57% were CPFA members.

The major marketing constraint perceived by both association-members (73%) and non-members (70%) in achieving technical efficiency on tomato production was poor road conditions especially from farm to market. It is common to find feeder roads in the interior parts of the surveyed area. Oftentimes, these roads get to be very muddy during rainy or wet season, that is, June to December when harvesting is usually done. Growers, therefore, find it an arduous task to transport their tomato produce. A greater percentage of the CPFA members (52%) as compared to only 48% of the UFCI members experienced this problem (Table 4.7). Their perceptions, however, are not statistically significant.

Table 4.7 ***Problems of Poor Farm-to-Market Roads Perceived By Respondents***

Problem Area	Members Of Association				Non-Members Of Association	
	UFCI		CPFA		Total	
Poor farm-to-market roads[NS]						
Yes	16	(48%)	17	(52%)	33 (73%)	35 (70%)
No	4	(33%)	8	(57%)	12 (27%)	15 (30%)
Total					45 (100%)	50 (100%)

Refer to Question 10, Appendix 4.1.
NS = Not significant.

4.5.1.2 ***Pricing Inefficiency***

Pricing inefficiency is mainly associated with problems concerning the speediness with which prices reflect the consumer demand and producer supply of tomatoes in order to maximise the utilisation of resources (land, labour, and capital). These problems involve instability of prices, inadequate/poor marketing information, unavailability of credit, and lack of production programming.

A greater proportion of member-associations (91%) and non-members (98%) perceived the instability of prices as the major constraint in tomato marketing which is statistically significant at 0.01 percent level (Table 4.8). Between association-members, this problem is more perceived by more than one half of the CPFA members (52%) and only 48% by the UFCI.

Table 4.8 Problem of Price Instability Perceived By Respondents

Problem Area	Members Of Association				Total		Non-Members Of Association	
	UFCI		CPFA					
Price instability*								
Yes	20	(48%)	21	(52%)	41	(91%)	49	(98%)
No	0	(0%)	4	(100%)	4	(9%)	1	(2%)
Total					45	(100%)	50	(100%)

Refer to Question 10, Appendix 4.1.
* = Significant at 0.05 percent level.

The instability of prices relates to the lack of marketing information available to growers. Contrary to expectation, the results revealed that marketing information seems to be of no problem to the respondents though this is not statistically significant (Table 4.9). This may be due to the fact that

their main source of price information were the traders. One of the government officials expressed the problem of growers concerning prices broadcasted over the radio that did not tie up with prices quoted by the traders in their area.

Table 4.9 ***Problem of Lack of Marketing Information Perceived By Respondents***

Problem Area	Members Of Association				Non-Members Of Association	
	UFCI		CPFA		Total	
Lack of marketing informationNS						
Yes	7	(64%)	4	(36%)	11 (24%)	6 (12%)
No	13	(38%)	21	(62%)	34 (76%)	44 (88%)
Total					45 (100%)	50 (100%)

Refer to Question 10, Appendix 4.1.
NS = Not significant.

Associated with improving prices is the availability of credit. The assurance that financially growers could proceed with their production for the next season means that they could negotiate for reasonable tomato prices. A greater proportion of the non-members (82%) indicated this as the next major problem area to price instability as showed in Table 4.10. More than one-half of the association-members (67%) did not perceive credit as a problem since both were financially assisted. UFCI was given a 500,000-pesos production loan by the Regional Agricultural Fishery Council through its Livelihood Enhancement Agricultural Development Programme. CPFA was subsidised by its private contract buyer, Eden Corporation through the provision of inputs like fertilizers, chemicals, and inputs. Results are statistically significant at 0.01 level of significance.

Both associations helped its members in extending financial assistance by advancing them money for their sold tomatoes. This is indicated in Table 4.11 when 84% of the association-members said "Yes". Only half of the non-members (58%) were financially assisted by their buyers. However, when asked if they can borrow elsewhere, majority said "No".

Table 4.10 Problem of Unavailability of Credit Perceived By Respondents.

Problem Area	Members Of Association				Non-Members Of Association			
	UFCI		CPFA		Total			
Unavailability of credit**								
Yes	8	(53%)	7	(47%)	15	(33%)	41	(82%)
No	12	(40%)	18	(60%)	30	(67%)	9	(18%)
Total					45	(100%)	50	(100%)

Refer to Question 10, Appendix 4.1.
** = Significant at 0.01 percent level.

Table 4.11 Credit Alternatives Of Association-Members & Non-Members

Credit Alternative	Members Of Association				Non-Members Of Association			
	UFCI		CPFA		Total			
Buyer Advance Credit								
Yes	16	(42%)	22	(58%)	38	(84%)	29	(58%)
No	4	(66%)	2	(34%)	6	(14%)	15	(30%)
Self-financed			1	(100%)	1	(2%)	4	(8%)
No response					0	(0%)	2	(4%)
Can Borrow Elsewhere								
Yes	8	(80%)	2	(20%)	10	(22%)	15	(30%)
No	12	(35%)	22	(65%)	34	(76%)	32	(64%)
No response					1	(2%)	3	(6%)
Total					45	(100%)	50	(100%)

Refer to Questions 44 & 46, Appendix 4.1.

Production programming can enhance pricing efficiency through its maximisation of resources hence minimising wastefulness in terms of costs. Table 4.12 showed that majority of the association-members (73%) and non-members (78%) perceived the lack of production programming as not a problem area but is not statistically significant. This perception may be due to their practice of staggered tomato planting. Staggered planting was introduced in the early 1970s in Northern Mindanao to correct production surplus of tomatoes. Among those who said "Yes" between association-members, more than one-half of CPFA members gave a positive response.

Table 4.12 ***Problem of Lack of Production Programming Perceived By Respondents***

Problem Area	Members Of Association				Non-Members Of Association			
	UFCI		CPFA		Total			
Lack of production programming[NS]								
Yes	5	(42%)	7	(58%)	12	(27%)	11	(22%)
No	15	(45%)	18	(55%)	33	(73%)	39	(78%)
Total					45	(100%)	50	(100%)

Refer to Question 10, Appendix 4.1.
NS = Not significant.

4.5.2 *Impact of the Association*

4.5.2.1 *Net Price Received*

Tomatoes were sold by crates which contained a standard weight of 25 kilograms. The contract buyer of CPFA usually picked-up the packed tomato crates from their warehouse. The UFCI, on the other hand, shouldered the transport costs from the warehouse to the port. Association-members received

payments for their tomatoes depending on sizes delivered. These payments relied on buyers' terms. Some buyers paid the associations in full amount while others paid in 70% then 30% installment basis.

The average price received by each farmers over the 1989 season was recorded in the survey. The maximum average price received by members was 220 pesos per crate while non-members received 195 pesos per crate. The mean average prices received by association-members was 114 pesos per crate. This is significantly different from non-members (98 pesos) as shown in Table 4.13. This result could be due to their bargaining and better quality control. Since members of both associations possess bargaining power through the use of production quotas and contract production, prices paid to them were expected to be higher than non-members. In addition, variability of average seasonal prices among sampled growers is somewhat higher for non-members (CV=40.68%) as against 34.70% for members which implied more stable prices received by association-members.

Table 4.13 Descriptive Analysis For Net Price Received By Respondents

Descriptive Analysis	Members Of Association			Non-Members Of Association
	UFCI	CPFA	Total	
Average Price (Peso/crate)				
No.	19	23	42	50
Max.	205.00	220.00	220.00	195.00
Min.	60.00	62.50	60.00	35.00
Mean	107.09	127.02	118.67	97.97
SD	38.37	41.02	40.62	39.86
SED		12.27^{NS}		8.43^{*}
CV (%)	35.83	32.29	34.70	40.68

SD = Standard deviation; SED = Standard Error of Difference; CV = Coefficient of Variation.
NS = Not significant.
* = Significant at 0.05 percent level.
Note: CV = SD/Mean.

Between association-members, CPFA received a higher average price of 220 pesos that UFCI's 205 pesos and the minimum average price received is lower for UFCI. Analysis, however, revealed that there is no significant difference between the two associations in terms of average price received.

4.5.2.2 *Volume Sold Per Grower*

The mean volume sold by 42 growers of both associations over the study period was 10,770 crates compared to only 8,830 crates from non-members. However, this is not significantly differently from each other (Table 4.14). The variability of quantity sold is much higher for non-members (161%) denoting a greater fluctuations in contrast to those members of associations (94%).

Between associations, Table 4.14 also showed that CPFA members sold a higher mean volume of 13,650 tomato crates to their association while only 6,900 crates were sold to UFCI. This difference is statistically significant at 0.05 percent level. The variability of quantity sold was almost the same between the two associations.

Table 4.14 Descriptive Analysis For Volume Sold By Respondents

Descriptive Analysis	Members Of Association			Non-Members Of Association
	UFCI	CPFA	Total	
Volume Sold ('000 crates)				
No.	18	24	42	46
Max.	25.50	40.00	40.00	80.00
Min.	1.25	1.00	1.00	0.35
Mean	6.91	13.65	10.77	8.83
SD	5.92	11.69	10.13	14.30
SED		2.26^{*}		2.11^{NS}
CV (%)	85.67	85.64	94.05	161.95

* = Significant at 0.05 percent level.
NS = Not significant.
Note: Coefficient of Variation = SD/Mean.

4.5.2.3 *Marketing Cost*

Members sold their produce exclusively to their associations. UFCI generally sold its pooled produce to the wholesaler-traders while CPFA to its contract buyer, Eden Corporation. Tomatoes from non-members, on the other hand, were sold primarily to canvasser-agents (Table 4.15).

Table 4.15 Chosen Marketing Outlet of Non-Members

Marketing Outlet	Non-Members of Association	
Wholesaler-Trader	5	(10%)
Contract Buyer	9	(18%)
Canvasser-Agent	35	(70%)
NR	1	(2%)
Total	50	(100%)

Refer to Question 17, Appendix 4.1.

They chose this particular intermediary because of convenience (Table 4.16). This response may be attributed to the easiness that these agents can be contacted. Usually, they come to the farm and collect the farmers' tomato produce so that do not have to worry where to market them.

Marketing costs per crate comprise those costs of hauling, packaging and transport. Hauling costs involve the costs of transferring the produce from the farm to the warehouse, while transport covers the costs from the warehouse to the pier.

Table 4.16 Reason For Chosen Outlet Of Non-Members

Reason	Marketing Outlet (Canvasser-Agent)	
Better Price		
Yes	13	(26%)
No	22	(44%)
Advance of Credit		
Yes	4	(8%)
No	31	(62%)
Convenience		
Yes	21	(42%)
No	14	(28%)
Assured Market		
Yes	0	(0%)
No	35	(70%)
Provide Input		
Yes	2	(4%)
No	33	(66%)
Total (Each category)	35	(70%)

Refer to Question 19, Appendix 4.1.

The mean hauling costs between respondents were 1.42 pesos for association-members and 3.70 pesos for non-members which is statistically significant. However, among members these were not significant. The variability of hauling costs was larger for association-members compared to the non-members (Table 4.17).

Table 4.17 Descriptive Analysis Of Hauling Costs By Respondents

Descriptive Analysis	Members Of Association			Non-Members Of Association
	UFCI	CPFA	Total	
Hauling Costs (Peso/crate)				
No.	20	24	44	33
Maximum	9.00	5.00	9.00	10.00
Minimum	1.00	1.00	1.00	1.00
Mean	3.10	2.03	2.52	3.70
SD	1.69	0.94	1.42	2.51
SED		0.42_{NS}		0.49_{*}
CV (%)	85.67	85.64	94.05	64.26

NS = Not significant.
* = Significant at 0.05 percent level.
Note: Coefficient of Variation = SD/Mean.

Packaging costs were relatively higher to non-members of 100 pesos while only 75 pesos to association-members with the same minimum costs of 12 pesos (Table 4.18). Although the mean packaging costs were higher to association members this is not statistically significant. This is also true between association-members.

Between respondents, non-members seem to incur less expenses on transportation than the association-members which was mainly due to the difference in selling arrangements (Table 4.19). Most produce of non-members were picked up its buyers while the association shouldered the expenses and deduct these from the members' delivery. The difference between mean transport costs of the respondents with 11 pesos among association-members and only seven pesos for non-members were significant. The variability of transport costs of 76% among association members and only 27% to non-members which suggests an erratic behaviour of such costs.

Table 4.18 Descriptive Analysis Of Packaging Costs By Respondents

Descriptive Analysis	Members Of Association			Non-Members Of Association
	UFCI	CPFA	Total	
Packaging Costs (Peso/crate)				
No.	20	24	44	50
Maximum	48.00	75.00	75.00	100.00
Minimum	12.00	12.50	12.00	12.00
Mean	26.85	27.77	27.12	23.66
SD	8.89	15.46	12.77	13.18
SED		3.73^{NS}		2.68_{NS}
CV (%)	33.11	55.67	47.08	55.71

NS = Not significant.
Note: Coefficient of Variation = SD/Mean.

Table 4.19 Descriptive Analysis Of Transport Costs By Respondents

Descriptive Analysis	Members Of Association			Non-Members Of Association
	UFCI	CPFA	Total	
Transport Costs (Peso/crate)				
No.	20	23	43	12
Maximum	25.00	25.00	25.00	10.00
Minimum	3.00	3.00	3.00	5.00
Mean	9.45	12.87	11.28	7.33
SD	7.82	9.15	8.63	2.02
SED		2.59^{NS}		1.44_{*}
CV (%)	82.75	71.10	76.51	27.56

NS = Not significant.
* = Significant at 0.05 percent level.
Note: Coefficient of Variation = SD/Mean.

4.5.3 *Association Management*

4.5.3.1 *Member Perception of Associations' Performance*

One of the objectives of the study is to determine members' degree of satisfaction with services offered by their association. Findings of the survey revealed that majority of the members (75% for UFCI and 88% for CPFA) classified the services of their associations as either "very satisfactory" or "satisfactory". After joining the association, members of both associations felt that they had much benefited as evidenced in Table 4.20. There is no significant difference between perception of UFCI and CPFA members.

When perception of members on associations' services was related to length of membership, most new UFCI and CPFA members felt they were either "very satisfied" or "satisfied" (Table 4.21). Thus, there is no significant difference of their perception.

Table 4.20 Perception Of Members On Their Associations' Services

Members' Perception[a]	Members of Association	
	UFCI	CPFA
Very satisfactory	7 (35%)	13 (52%)
Satisfactory	8 (40%)	9 (36%)
Needs improvement	2 (10%)	3 (12%)
Unsatisfactory	1 (5%)	0 (0%)
Total	20 (100%)	25 (100%)
No response	2	0
Average score	3.20	3.40
SD	0.86	0.71
SED	0.06^{NS}	

Refer to Question 50, Appendix 4.1.

[a] Perception of members were scaled into: 4 = Very satisfactory; 3 = Satisfactory; 2 = Needs improvement; 1 = Unsatisfactory.

NS = Not significant.

Table 4.21 ***Perception of Members on their Associations' Services By Length of Membership***

Members' Perception	< 1	1 to 5	Total
UFCI			
Very satisfactory	6 (85%)	1 (15%)	7 (35%)
Satisfactory	8 (100%)	0 (0%)	8 (40%)
Needs improvement	1 (50%)	1 (50%)	2 (10%)
Unsatisfactory	1 (100%)	0 (0%)	1 (5%)
Total	16	2	18
No response	2	0	2
Average score	3.80	3.00	
SD	0.80	1.40	
CPFA			
Very satisfactory	8 (62%)	5 (38%)	13 (52%)
Satisfactory	4 (44%)	5 (56%)	9 (36%)
Needs improvement	2 (67%)	0 (0%)	2 (12%)
Total	14	10 (46%)	24 (100%)
Average score	3.43	3.50	
SD	0.76	0.53	
SED	0.28^{NS}	1.00^{NS}	

[a] Perception of members were scaled into: 4 = Very satisfactory; 3 = Satisfactory; 2 = Needs improvement; 1 = Unsatisfactory.
NS = Not significant.

CPFA members with more farming experience perceived to be "very satisfied" with the services of their association (Table 4.22). This is in contrast to UFCI members with lesser farming experience. These results, however, were not statistically significant.

Table 4.22 Perception of Association's Services By Farming Experience

Members' Perception	Farming Experience (Years) < 1 to < 5	5 to < 10	10 & over	Total
UFCI				
Very satisfactory	3 (42%)	2 (29%)	2 (29%)	7 (35%)
Satisfactory	3 (37%)	3 (37%)	2 (26%)	8 (40%)
Needs improvement	0 (0%)	1 (50%)	1 (50%)	2 (10%)
Unsatisfactory	1(100%)	0 (0%)	0 (0%)	1 (5%)
Total	8	6	6	18
No response	1	0	1	2
Average score	3.14	3.17	3.20	
SD	1.07	0.75	0.84	
CPFA				
Very satisfactory	3 (23%)	4 (31%)	6 (46%)	13 (52%)
Satisfactory	3 (33%)	2 (22%)	4 (45%)	9 (36%)
Needs improvement	0 (0%)	1 (33%)	2 (67%)	3 (12%)
Total	6	7	12	25
Average score	3.50	3.43	3.33	
SD	0.55	0.79	0.78	
SED	0.88 NS	0.43 NS	0.41 NS	

NS = Not significant.

Most members who have completed their primary levels classified their associations' services as "very satisfactory" and "satisfactory" (Table 4.23). Comparison among members on their perception of their associations taking into consideration their educational attainment, was not statistically significant. This is also true when tested across categories.

Table 4.23 ***Perception Of Members On Their Associations' Services By Educational Attainment***

Members' Perception	Educational Attainment							
	Primary		Secondary		Tertiary		Total	
UFCI								
Very satisfactory	5	(71%)	0	(0%)	1	(29%)	7	(35%)
Satisfactory	2	(25%)	3	(37%)	3	(37%)	8	(40%)
Needs improvement	2	(100%)	0	(0%)	0	(0%)	2	(10%)
Unsatisfactory	0	(0%)	0	(0%)	1	(5%)	1	(5%)
Total	9		3		5		18	[a]
No response	0		2		0		2	
Average score	3.33				2.80			
SD	0.87				1.10			
CPFA								
Very satisfactory	6	(46%)	3	(23%)	3	(23%)	13	(52%)
Satisfactory	2	(25%)	3	(37%)	3	(37%)	8	(32%)
Needs improvement	0	(0%)	1	(33%)	2	(67%)	3	(12%)
Total	8		7		8		24	[b]
Average score	3.75		3.29		3.12			
SD	0.46		0.76		0.83			
SED	0.33 NS				0.57 NS			

[a] One respondent did not respond to the education category but answered that services of the association is very satisfactory.

[b] Another respondent did not answer the education category but opined the association's services is satisfactory. Still another respondent [1 (4%)] from the no schooling category which is omitted expressed no response on the matter.

NS = Not significant.

Association-members aged 30 to 49 perceived that they are "very satisfied or satisfied" with the services offered by their associations (Table 4.24). Among UFCI members this perception was well distributed between ages 20 to 60. Perceptions between UFCI and CPFA members were not statistically significant.

Table 4.24 Perception Of Members On Associations' Services By Age

Members' Perception	Age 20-29	30-49	50-60	Total
UFCI				
Very satisfactory	2(28%)	2 (28%)	2 (28%)	7(35%)[a]
Satisfactory	2(28%)	3 (37%)	2 (28%)	8(40%)[b]
Needs improvement	0 (0%)	1 (50%)	1 (50%)	2(10%)
Unsatisfactory	0 (0%)	1 (100%)	0 (0%)	1 (5%)
Total	4	8	6	18
No response	0	1	1	2
Average score	3.50	2.86	3.20	
SD		1.07	0.84	
CPFA				
Very satisfactory	1 (8%)	10 (76%)	1 (8%)	13(52%)[c]
Satisfactory	1 (11%)	5 (55%)	1 (11%)	9(36%)[d]
Needs improvement	0 (0%)	3 (100%)	0 (0%)	3(12%)
Total	2 (8%)	18 (72%)	2 (8%)	25(100%)
Average score	3.50	3.39	3.50	
SD		0.78	0.71	
SED		0.42[NS]	0.61[NS]	

[a] One respondent belongs to the above 60 category (5% of the total respondent).
[b] One respondent belongs to the no response category on age (5% of the total respondent).
[c] Another respondent who did not respond to the age category responded that he finds the services very satisfactory.
[d] Still another two respondents, one with above 60 category and the other of no response category said that they the services satisfactory.
NS = Not significant.

4.5.3.2 *Members' Perception of Benefits Received*

When asked how they feel after joining the association, majority of association-members perceived that they were much benefited (Table 4.25). This perception does not statistically differ between UFCI and CPFA members.

Table 4.25 Members' Perception of Benefits Received

Members' Perception [a]	Member of Association			
	UFCI		CPFA	
Much benefited	12	(60%)	16	(64%)
Less benefited	5	(25%)	6	(24%)
Least benefited	1	(5%)	0	(0%)
Uncertain	0	(0%)	1	(4%)
No response	2	(10%)	2	(8%)
Total	20	(100%)	25	(100%)
Average score	3.61		3.61	

[a] Perception of members were scaled into: 4 = Much benefited; 3 = Less benefited; 2 = Least benefited; 1 = Uncertain.
Refer to Questions 53, Appendix 4.1.

New members of both associations perceived that they had been much benefited with their membership. On the contrary, older members felt they were less benefited (Table 4.26). This perception is noticeable to association-members who have been farming for 10 years and over (Table 4.27).

Table 4.26 ***Members' Perception of Benefits Received By Length of Membership***

Members' Perception	< 1		1 to 5		Total	
UFCI						
Much benefited	11	(85%)	1	(15%)	12	(60%)
Less benefited	4	(80%)	1	(20%)	5	(40%)
Least benefited	1	(50%)	0	(0%)	1	(10%)
Total	16		2		18	
No response	2		0		2	
Average score	3.62		3.50			
SD	0.62		0.71			
CPFA						
Much benefited	10	(62%)	6	(38%)	16	(66%)
Less benefited	2	(44%)	4	(56%)	6	(25%)
Uncertain	1	(50%)	1	(50%)	2	(9%)
Total	13		11		24	
No response	1		0		1	
Average score	3.69		3.45			
SD	0.63		0.69			
SED	0.23^{NS}		0.54^{NS}			

[a] Perception of members were scaled into: 4 = Much benefited; 3 = Less benefited; 2 = Least benefited; 1 = Uncertain.
NS = Not significant.

Table 4.27 ***Members' Perception of Benefits Received By Farming Experience***

Members' Perception	Farming Experience (Years) < 1 to < 5	5 to < 10	10 & over	Total
UFCI				
Much benefited	4 (33%)	5 (42%)	3 (25%)	12 (35%)
Less benefited	2 (40%)	1 (20%)	2 (40%)	5 (40%)
Least benefited	1 (100%)	0 (0%)	0 (0%)	1 (10%)
Total	7	6	5	18
No response	1	0	1	2
Average score	3.42	3.83	3.60	
SD	0.79	0.41	0.55	
CPFA				
Much benefited	4 (25%)	5 (31%)	7 (42%)	16 (64%)
Less benefited	1 (17%)	2 (33%)	3 (50%)	6 (24%)
Uncertain	1 (100%)	0 (0%)	0 (0%)	1 (4%)
Total	6	7	10	23
No response	0	0	2	2
Average score	3.50	3.71	3.70	
SD	0.84	0.49	0.48	
SED	0.30^{NS}	0.25^{NS}	0.28^{NS}	

NS = Not significant.

The majority of the association-members with primary educational background responded that they were much benefited after having been a member of their associations (Table 4.28).

Table 4.28 ***Members' Perception of Benefits Received By Educational Attainment***

Members' Perception	Educational Attainment			
	Primary	Secondary	Tertiary	Total
UFCI				
Much benefited	6 (71%)	3 (0%)	2 (29%)	11 (61%)
Less benefited	2 (25%)	1 (37%)	2 (37%)	5 (28%)
Least benefited	0(100%)	0 (0%)	1 (0%)	2 (11%)
Total	8	4	5	18[a]
No response	1	1	0	2
Average score	3.75		3.25	
SD	0.46			
CPFA				
Much benefited	5(46%)	6 (23%)	4 (23%)	16 (52%)
Less benefited	3(25%)	0 (37%)	3 (37%)	6 (32%)
Uncertain	0(0%)	0 (33%)	1 (67%)	1 (12%)
Total	8	6	8	23[b]
No response		1	1	2
Average score	3.62	4.00	3.25	
SD	0.52			
SED	0.25[NS]			

[a] One respondent did not respond to the education category but was least benefited.
[b] Another respondent did not answer the education category but was much benefited with the membership.
NS = Not significant.

UFCI members of age groups from 50 to 60 and from 30-49 years old which constitute 42 and 33%, respectively, indicated that they are much benefited after joining their associations (Table 4.29).

Table 4.29 Members' Perception of Benefits Received By Age

Members' Perception	Age 20-29	30-49	50-60	Total
UFCI				
Much benefited	2(17%)	4 (33%)	5 (42%)	12(60%) [a]
Less benefited	1(28%)	3 (37%)	1 (28%)	5(40%)
Least benefited	0 (0%)	1 (100%)	0 (0%)	1(10%)
Uncertain	0 (0%)	1 (100%)	0 (0%)	1 (5%)
Total	3	9	6	18
No response	1	0	1	2
Average score	3.67	3.11	3.83	
SD	0.58	1.05	0.41	
CPFA				
Much benefited	1 (8%)	12 (76%)	2 (8%)	16(52%) [b]
Less benefited	1 (11%)	4 (55%)	1 (11%)	6(36%)
Uncertain	0 (0%)	1 (100%)	0 (0%)	2(12%)
Total	2	17	3	24
No response		1		1
Average score	3.50	3.59	3.67	
SD	0.71	0.80	0.58	
SED	0.60^{NS}	0.40^{NS}	0.37^{NS}	

[a] Includes one respondent from the above 60 category (5% of the total respondent).
[b] Includes one respondent who did not respond to the age category.
NS = Not significant.

4.5.3.3 *Members' Perception of the Main Problems Faced By The Associations*

Members of UFCI and CPFA were asked what problems they thought their associations were experiencing. Five common problems were enumerated. These are conflict among members, difficulty in disposing their

produce, delayed and/or indirect payouts, shortage and/or delayed arrival of production inputs like fertilizer and chemicals and ineffective management. In presenting these problems, assessment of both associations in performing their services were assessed.

More than one-half of the UFCI members (64%) indicated that their association was having problem with them (Table 4.30). There seems to be misunderstanding between members which caused friction. This view is more common to those who have been in the association for less than a year and those who have been farming tomato for a year to less than 10 years (Tables 4.31 & 4.32). Disagreement among members may arise due to differences between the interests and objectives pursued by each member. CPFA does not seem to have much problem on this area as perceived by its members. This perception was probably because of high educational background of CPFA members. In fact, when the problem of member conflict was correlated with educational category the result was highly significant at 0.01 percent.

Table 4.30 ***Problem of Member Conflict Perceived Between Association-Members***

Problem	Members of Association					
	UFCI		CPFA		Total	
Member conflict						
Yes	11	(64%)	6	(36%)	17	(38%)
No	8	(32%)	17	(68%)	25	(55%)
No response	1	(33%)	2	(67%)	3	(7%)
Total	20	(100%)	25	(100%)	45	(100%)

Refer to Question 52, Appendix 4.1.

Table 4.31 ***Problem of Member Conflict Perceived by UFCI Members by Length of Membership***

Problem	Length of Membership (Years)				Total
	< 1		1 to 5		
Yes	10	(90%)	1	(10%)	11 (55%)
No	7	(87%)	1	(13%)	8 (40%)
No response	1	(100%)	0	(0%)	1 (5%)
Total					20 (100%)

Refer to Question 52, Appendix 4.1.

Table 4.32 ***Problem of Member Conflict Perceived by UFCI Members by Farming Experience***

Members' Perception	Farming Experience (Years)						Total
	< 1 to < 5		5 to < 10		10 & over		
Yes	4	(36%)	4	(36%)	3	(28%)	11 (55%)
No	4	(50%)	2	(25%)	2	(25%)	8 (40%)
No response	0	(0%)	0	(0%)	1	(100%)	1 (5%)
Total							20 (100%)

Of the 45 association-members, 36 expressed that their associations do not seem to have problems of disposing their tomatoes (Table 4.33). Although two UFCI and four CPFA members have doubts about this.

Table 4.33 Product Disposal Problem Perceived By Association-Members

Problem	Members of Association					
	UFCI		CPFA		Total	
Disposal of produce						
Yes	2	(33%)	4	(67%)	6	(13%)
No	17	(48%)	19	(52%)	36	(80%)
No response	1	(33%)	2	(67%)	3	(7%)
Total					45	(100%)

Refer to Question 52, Appendix 4.1.

Table 4.34 revealed that both associations have paid its members in time for their delivered tomatoes as evidenced by their majority "No" response. Of those who said "Yes", a larger percentage (86%) were from CPFA. This response was shared by most CPFA members with lesser experience in tomato farming in contrast to those who have higher exposure (Table 4.35). They were mostly cultivating a farming area of half-a-hectare (Table 4.36).

Table 4.34 Problem of Delayed/Indirect Payment Perceived by Association-Members

Problem	Members of Association					
	UFCI		CPFA		Total	
Delayed/Indirect payment						
Yes	1	(14%)	6	(86%)	7	(16%)
No	18	(50%)	18	(50%)	36	(80%)
No response	1	(50%)	1	(50%)	2	(4%)
Total					45	(100%)

Refer to Question 52, Appendix 4.1.

Table 4.35 ***Problem of Delayed/Indirect Payment Perceived by CPFA Members by Farming Experience***

Members' Perception	Farming Experience (Years) < 1 to < 5		5 to < 10		10 & over		Total
Yes	3	(50%)	1	(17%)	2	(33%)	6 (24%)
No	3	(17%)	5	(28%)	10	(56%)	18 (72%)
No response	0	(0%)	1	(100%)	0	(0%)	1 (4%)
Total							20 (100%)

Table 4.36 ***Problem of Delayed/Indirect Payment Perceived by CPFA Members by Farm Size***

Problem	Farm Size 1/2		1		2		3 & over		Total	
Delayed/Indirect Payment										
Yes	3(50%)	1	(17%)	2	(33%)	0	(0%)	6	(24%)	
No	2(11%)	4	(22%)	8	(44%)	3	(17%)	18	(72%)	
No response	1(100%)	0	(0%)	0	(0%)	0	(0%)	1	(4%)	
Total								25	(100%)	

There seemed to be a delay and sometimes shortage in providing inputs such as fertilizers, and chemicals to the UFCI members as reflected in Table 4.37. This can affect the production schedule of its members and consequently the association itself. Those who responded "Yes" were mainly cultivating half-a-hectare farming land (Table 4.38). CPFA, on the other hand, were up-to-date in supplying inputs to its members.

Of the 45 association-members, 22 CPFA members and 18 UFCI members responded that management was not a problem to their association (Table 4.38). This finding suggests that both associations were well-managed at least to the satisfaction of its members.

Table 4.37 Problem of Shortage/Delayed Input Arrival Perceived by Association-Members

Problem	Members of Association					
	UFCI		CPFA		Total	
Shortage/Delayed arrival of input						
Yes	4	(80%)	1	(20%)	5	(11%)
No	15	(40%)	22	(60%)	37	(82%)
No response	1	(33%)	2	(67%)	3	(7%)
Total					45	(100%)

Refer to Question 52, Appendix 4.1.

Table 4.38 Problem of Input Shortage/Delayed Arrival Perceived by UFCI Members by Farm Size

Problem	Farm Size							
	1/2	1		2		3 & over	Total	
Shortage/Delayed arrival of input								
Yes	3(75%)	1	(25%)	0	(0%)	0 (0%)	4	(20%)
No	5(33%)	5	(33%)	2	(13%)	3 (21%)	15	(75%)
No response	1(100%)	0	(0%)	0	(0%)	0 (0%)	1	(5%)
Total							25	(100%)

Table 4.39 Management Problem Perceived by Association-Members

Problem	Members of Association					
	UFCI		CPFA		Total	
Management						
Yes	1	(50%)	1	(50%)	2	(5%)
No	18	(45%)	22	(55%)	40	(88%)
No response	1	(33%)	2	(67%)	3	(7%)
Total					45	(100%)

Refer to Question 52, Appendix 4.1.

4.5.3.4 *Suggested Activities for the Association to Undertake*

Association-members were asked to give their opinion on other activities that their associations could undertake. These suggested activities are broken into two categories: those that might overcome the identified marketing problems/inefficiencies and those that respond to the perceived problems within the associations. For the first category, these activities include contract selling, need for government support price, provision of transport facililities, strengthening administrative and financial operations. Table 4.40 reveals that both UFCI and CPFA members would like their association to practice contract selling. This finding reflects the desire of members to stabilise prices they are receiving which is one of the major marketing problem identified by the

respondents earlier (See Table 4.8). Of those who suggested "No", 73% were from CPFA. This may indicate dissatisfaction with the current contract selling activity which the association was adopting.

Table 4.40 Suggested Activity to be Undertaken by the Associations

Activity	Members of Association					
	UFCI		CPFA		Total	
Contract Selling						
Yes	12	(50%)	12	(50%)	24	(53%)
No	3	(27%)	8	(73%)	11	(24%)
No response	5	(50%)	5	(50%)	10	(23%)
Total					45	(100%)

Refer to Question 54, Appendix 4.1.

Relatively few activities were suggested by association-members in contrast to contract selling (Table 4.41). CPFA members would like its association to provide transport facilities. They also suggested that government should support the tomato industry by granting support prices. A larger proportion of UFCI members wanted to improve its association by strengthening its administrative support.

With regards to activities that may overcome internal problems of the associations, educational seminar or training concerning their association was recommended (Table 4.42). This activity can minimise the conflict among members, which is the major problem of the association. Both association-members (UFCI and CPFA) should be equally nominated to undertake such educational training/seminar.

Table 4.41 Other Suggested Activities to be Undertaken by the Associations

Activity	Members of Association					
	UFCI		CPFA		Total	
Provision of transport facilities						
Yes	0	(50%)	2	(100%)	2	(4%)
Government support price						
Yes	1	(33%)	2	(67%)	3	(7%)
Need for production & preservation techniques						
Yes	2	(50%)	2	(50%)	4	(9%)
Administrative guidance						
Yes	4	(80%)	1	(20%)	5	(11%)
Establish mini-grocery						
Yes	1	(33%)	2	(67%)	3	(7%)
Not suggested	11	(52%)	10	(48%)	21	(46%)
No response	1	(50%)	6	(50%)	7	(16%)
Total					45	(100%)

Table 4.42 Suggested Activity to be Undertaken by the Associations

Activity	Members of Association					
	UFCI		CPFA		Total	
Educational Seminar/Training						
Yes	6	(50%)	6	(50%)	12	(26%)
No	9	(43%)	13	(57%)	21	(46%)
No response	5	(45%)	6	(55%)	11	(24%)
Total					45	(100%)

Of the 11 UFCI members who said that their associations had problem of conflict among members, only 4 suggested that educational seminar could alleviate the problem (Table 4.43). This finding also holds true to the CPFA members.

Table 4.43 ***Suggested Conduct of Educational Seminar Related to the Problem of Member Conflict Perceived by Associations-Members***

	Suggest Educational Seminar							
	Yes		No		NR		Total	
UFCI								
Member conflict								
Yes	4	(36%)	6	(54%)	1	(9%)	11	(55%)
No	1	(13%)	1	(13%)	6	(74%)	8	(40%)
NR	1	(0%)	0	(0%)	1	(100%)	1	(5%)
Total							20	(100%)
CPFA								
Yes	1	(17%)	5	(83%)	0	(0%)	6	(24%)
No	1	(6%)	11	(65%)	5	(29%)	17	(68%)
NR	0	(0%)	1	(50%)	1	(50%)	2	(8%)
Total							45	(100%)

To reduce conflict among members, it was also suggested that regular meetings should be conducted and that punctuality be observed (Table 4.44). It is interesting to know that of those who suggested this activity, CPFA had the larger percentage.

Table 4.44 Suggested Activity to be Undertaken by the Associations

Activity	Members of Association					
	UFCI		CPFA		Total	
Meeting						
Yes	3	(42%)	4	(58%)	7	(16%)
No	16	(51%)	15	(49%)	31	(68%)
No response	1	(14%)	6	(86%)	7	(16%)
Total					45	(100%)

4.5.4 *Reasons For Not Joining The Association*

Non-members were asked whether they were willing to join an association, and the reasons which had hindered them from participating or entering so far. From Table 4.45, survey findings revealed that 84% of members wanted to join an association but are not able to for various reasons.

Table 4.45 Willingness to Join the Association by Non-Members

Category	Non-Members of Association	
Willingness to Join		
Yes	42	(84%)
No	8	(16%)
Total	50	(100%)

Of those who wanted to join an association, 67% are cultivating a farming area of half-a-hectare to a hectare (Table 4.46). While those non-members cultivating two hectares were contented with being an individual grower.

Table 4.46 Willingness to Join the Association by Farm Size

Category	Farm Size									
	1/2		1		2		3 & over		Total	
Willingness to Join										
Yes	28	(67%)	10	(24%)	3	(7%)	1	(2%)	42	(84%)
No	5	(63%)	1	(12%)	2	(25%)	0	(0%)	8	(16%)
Total									25	(100%)

Non-members aged 30 to 49 with greater farming experience of 10 years and over wished to join an association (Tables 4.47 & 4.48).

Table 4.47 Willingness to Join an Association by Age

Category	Age									
	20-29		30-49		50-60		NR		Total	
Willingness to Join										
Yes	9	(21%)	30	(71%)	3	(8%)	0	(0%)	42	(84%)
No	3	(38%)	3	(38%)	1	(13%)	1	(13%)	8	(16%)
Total									50	(100%)

Table 4.48 Willingness to Join the Association by Farming Experience

Category	Farming Experience (Years)						
	< 1 to < 5		5 to < 10		10 & over		Total
Yes	10	(24%)	10	(24%)	22	(52%)	42 (84%)
No	1	(12%)	1	(12%)	6	(76%)	8 (16%)
Total							20 (100%)

The primary reason for not joining the association was lack of information (44%) concerning the association (Table 4.49). Neither associations has a regular newsletter which can be disseminated in their locality to inform of their activities. The distance from the meeting place usually inhibits non-member farmers from joining an association. Of those non-members who wanted to join an association, 85% indicated that their place has no existing association.

Table 4.49 Reasons for not Joining an Association by Non-Members

Category	Willingness to Join						
	Yes		No		NR		Total
Reasons For Not Joining							
Lack of information	22	(100%)	0	(0%)	0	(0%)	22 (44%)
No existing organisation	17	(85%)	3	(15%)	0	(0%)	20 (40%)
Other reasons	2	(29%)	5	(71%)	0	(0%)	7 (14%)
No response	1	(100%)	0	(0%)	0	(0%)	1 (2%)
Total							50 (100%)

CHAPTER 5
SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 *Summary and Conclusion*

Vegetable industry in the Philippines is essential to its economy contributing an average of US $28.5 million annually. Major vegetables grown include tomatoes, cabbage, eggplant, garlic, bulb onion, among others. Tomato production is greatest in Ilocos Region, followed by Central Luzon and Northern Mindanao. Northern Mindanao attained the highest average productivity level from 1979 to 1986 as measured by its yield per hectare.

Tomatoes are planted in both dry (January to May) and wet (June to December) seasons. In terms of profitability, wet season is recommended although growers should be willing to take the risk of pests and diseases infestation due to continuous rain and high temperatures. Northern Mindanao usually produce tomatoes when it is off-season in Luzon area, the time when the place is plagued with typhoons. Common problems associated with growing tomatoes are seasonality, unprogrammed planning, lack of price information, lack of financing, and inefficient marketing channels.

A study of two tomato farmer associations (UFCI and CPFA) and non-association members was conducted in Northern Mindanao to ascertain the inefficiencies in its marketing system. Marketing inefficiencies are divided into two categories, technical/operational and pricing/economic inefficiencies. Findings of the survey suggests that non-association members faced a major problem of overcrowding of tomato produce at the port. The lack of storage

facilities do not seem to represent a problem to both association members while the lack of transport facilities appears to be a problem to the non-members. Of those association-members who indicated this as a problem area, more than one-half (57%) came from the CPFA. However, the most predominant marketing constraint perceived by both association-members and non-members was the poor farm-to-market road conditions.

As expected, the instability of prices is perceived to be the most common problem of tomato growers. The lack of marketing information does not appear to be a problem but majority of non-members indicated that they have problems of credit availability. The two associations, UFCI and CPFA, aided its members in advancing money for their produce. However, they do not seem to have an alternative creditor. Production programming is still practised by tomato growers, hence not a problem area for them.

Most non-members sell their produce to canvasser-agents primarily because of convenience and secondarily because of the realisation of a better price. Under the study period, the average price received per crate of tomatoes between association-members and non-members are statistically significant. Association members received a higher average price per crate than non-members. This may be attributed to their greater bargaining power and better quality control of tomatoes through quota and contract production. Average prices received per crate for the season between UFCI and CPFA do not statistically differ from each other. Larger quantities of tomatoes were sold by CPFA which may account for the higher average price received by its members. The marketing costs which constitute hauling, packaging and transport costs were analysed. Hauling costs are significantly different between association-members and non-association members. Association-members incur lower hauling costs than non-association members. But among association-members these costs do not statistically differ from each other. Although packaging costs are relatively higher to non-members than

association-members, these are not statistically different. Due to differences in selling arrangements, non-association members incur lower transport costs than association-members.

The two farmers' associations provide such services as assembling points, sorting and grading, packaging and transporting members' produce. In the study, a greater percentage of members and non-members with more farming experience indicated that they are highly satisfied with the services that their associations are rendering. In terms of farming area, UFCI members with less than a hectare and CPFA members with two hectares gave this opinion. This opinion supports the principle that cooperatives aid its small-sized members to turn out more uniform descriptions of tomato in bigger lots and improve the realisation of prices through the various activities such as; sorting and aggregating of tomato, preparing it for sale and finding the best channels and methods of disposal. Members further felt that they have benefited much after joining the association.

Problems faced by the associations as perceived by its members provide an assessment in providing its services and thus gain insights concerning its performance. To UFCI members, who have been in the association for less than a year and have been farming for less than 10 year, conflict among members is their association's main problem. Disposing the members' produce seems not to be a problem to both associations as perceived by the members. Payments are also in time as indicated by the majority of responses from the association-members. CPFA members with lesser farming experiences of less than 10 years shared this view in contrast to UFCI members with over 10 years farming experience. It appears that UFCI are sometimes delayed in providing input supplies such as fertilizers and chemicals to its members. Those who voiced this opinion are mostly cultivating a small (half-a-hectare) farming area. Members of both association felt that the associations are being managed well.

To improve performance of their associations, members cited major activities for their associations to undertake. Contract selling is the most suggested activity. Of the 11 members who are not willing to use contract selling, 8 were from CPFA. Other activities include the provision of transport facilities, the strengthening of associations' administrative support services and the granting of government support price to the commodity. To minimise the problem of conflict among members, attendance to educational training/seminar is suggested by both association-members. Most CPFA members recommended that regular meetings should be conducted.

Non-members were asked if they wished to join an association. A majority of them with primary educational level and farming experience of 10 years and over, hoped to join. However, this desire was forestalled due to lack of information. Both associations do not have newsletters and most members are informed of its activities only during meetings. However, both have a bulletin boards which posted their activities and accomplishments.

In conclusion, the two farmers' associations under study are equally trying to increase efficiency in marketing tomatoes by practising standard methods through sorting and grading of products at the farm level. These associations are providing services such as advance payments to its members, supplying inputs which will be deducted from their total quantity of tomatoes delivered thus incurring lesser costs. UFCI, being a relatively new organisation, is faced with the problem of conflict among its members which is a critical matter if it has to survive. As a whole, members of both associations are generally satisfied with the services that their associations are offering to them.

5.2 *Recommendations*

From the above findings, the following recommendations are given:

1) There is a need for continuing training/education to members of the associations, especially UFCI, so they will know more about their association and to match their expectations with that of their association. Open discussion among members and between management are further encouraged to share their opinions on critical issues. This can partly solve the problem of conflict among members.

2) Both farmer's associations have generally tried to cope with problems of fluctuating prices through the use of production quota and contract production. However, the "free-rider" problem is common in which case non-members benefit from the constraints which members of associations are faced into. There is, therefore, a need to conduct further study to quantify the economic and social benefits of such action.

3) The use of contract selling is strongly advocated to vertically coordinate production with marketing or processing activities. This has the advantage of equating demand with supply, hence enhancing pricing efficiency.

4) Leadership and management training/seminars are necessary to enhance the performance of managers and therefore the associations. Potential young members should be encouraged to attend such training/seminar.

5) To attract new members into the association, dissemination of information through newsletters concerning the association should be promoted.

6) To enhance the performance of the association, it is necessary to

provide extension services to its members.

7) The assistance of government is necessary through improvement of farm to market roads. This should reduce transport costs, and therefore marketing costs for both growers and buyers.

8) In the case of non-members where credit becomes one of their main marketing problems, there should be a study conducted to determine their credit or input requirements. Findings of the study will hopefully guide the policy-makers in proposing a program for possible financial upliftment of these growers.

9) Aside from initiating a land route, another option in solving overcrowding problems can involve direct negotiations between the association and the shipping and transport agencies such as those launched by Hongkong and Japanese cooperatives. This can minimise transport costs and increase payouts to members of associations. The possibility of establishing tomato processing plants at the farm level is also encouraged for the same reasons.

10) Further studies on marketing efficiency measures should be conducted, that is, measurement of physical losses from farm to consumer, and the effects of distance. Results of these studies should be interpreted to growers, traders as well as to consumers.

11) An in-depth study of the cost structure of production and marketing should also be considered.

12) Provision of transport facilities can also be considered by the associations. However, this requires appropriate cost-benefit studies.

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APPENDICES

Appendix 1.1 *Summary of Total Vegetable Hectarage and Production Compared to Other Commodities, Philippines, 1987*

Commodity	Area		Production	
	'000 Ha.	%	'000 Tonnes	%
Vegetables	131.5	1.13	724.9	2.78
Rice	3,402.9	29.13	8,957.7	34.38
Corn	3,564.5	30.52	4,015.0	15.41
Coconut	3,360.0	28.76	3,262.5	12.52
Sugarcane	274.3	2.35	1,861.2	7.14
Coffee	149.5	1.28	134.6	0.52
Cacao	18.7	0.16	7.3	0.03
Fruits & Nuts	522.7	4.48	6,819.5	26.17
Fiber Crops	255.8	2.19	272.1	1.05
Total	11,679.9	100.00	26,054.8	100.00

***Appendix 4.1** Survey Questionnaire.*

Respondent No.
Name of Respondent:
Location:

I. ***Respondent's Profile***

1. How old are you?
2. What is your civil status?

   ( ) Single ( ) Widow/Widower
   ( ) Married ( ) Others (Specify)

3. Are you a member of an association or cooperative?
   ( ) Yes ( ) No
4. If yes, when did you join the association?
5. How many years have you been in tomato farming:
6. What is the size of your farm?
7. Do you own your farm?

   ( ) Own ( ) Lease ( ) Other (Specify)

8. If leased or rented, how much do you pay every year?
9. What is your highest educational attainment?

II. *Marketing Problems*

10. What problems have you encountered in marketing your produce?

( ) Overcrowding of tomato supply at the pier for transport
( ) Inadequate/Absence of storage facilities
( ) Low prices during peak harvest months
( ) Price instability throughout the year
( ) Price differences due to quality and location
( ) Lack of transport facilities
( ) Inavailability of credit
( ) Lack of marketing information
( ) Poor farm to market roads
( ) Lack of production programming

11. Which of the above problems have affected you most?

Most affected:

Least affected:

12. Which of the above problems have been given attention by the government?

13. What are you doing to alleviate these problems?

III. *Marketing Functions*

A. Assembling

14. Do you assemble your produce? ( ) Yes ( ) No

15. Do you sell all of your produce? ( ) Yes ( ) No

16. If no, how many percent of your produce are sold?

17. Where do you sell all your produce?

( ) Wholesaler-Trader
( ) Retailer-Trader
( ) Contract Buyer
( ) Other (Specify)

18. How far is it from your farm?

Farm to Warehouse
Warehouse to Pier

19. Why do you prefer your chosen outlet?

20. Do you have other alternative outlets open to you if you don't sell to your chosen outlet? ( ) Yes ( ) No

21. Does your buyer require a standardized produce? ( ) Yes ( ) No

B. Sorting/Grading

22. Do you grade your produce? ( ) Yes ( ) No

23. If yes, how do you sort/grade your produce?
( ) Size ( ) Maturity ( ) Weight

24. Do you think the enforcement of voluntary or compulsory grading

practicable?
( ) Yes ( ) No
Why?

C. Packaging

25. Do you do the packaging? ( ) Yes ( ) No

26. What materials do you use? State the dimension.

27. How much does it cost you? (rate per crate)

28. How long did it take you to pack?

D. Transporting

29. Do you transport your own produce?
( ) Yes ( ) No

30. How much does it cost you? (rate per crate)

31. What kind of transportation is used?

32. Is your area accessible to transportation?
( ) Yes ( ) No

33. Is there a regular vehicle trip in your area?
( ) Yes ( ) No

34. If yes, how often does it visit your area?

( ) Daily/Regular
( ) Once a week
( ) Twice a week
( ) Others (Specify)

35. Do you think a new route by land is needed?

( ) Most needed ( ) Least needed

( ) Not so needed ( ) Uncertain

36. How do you feel about introducing a containerized transport by land from Cagayan de Oro to Manila?

( ) Most agreeable ( ) Not agreeable
( ) Not so agreeable ( ) Uncertain

E. Storage

37. Do you store your produce? ( ) Yes ( ) No

38. Where do you store?

39. If strage facility is not owned, how much does it cost you?

40. How many days do you normally store your produce?

IV. *Impact*

41. What price did you receive for your produce?
Lowest:
Highest:

42. Is this price adjusted according to quality?

43. What source of information did you use in considering to accept this price?

44. Does the financer/buyer advance you credit?

45. If yes, what are the terms of repayment?

46a). Are you able to borrow money elsewhere?

46b). Do you know the interest rate?

47. Why do you prefer the source you use?

48. How many crates did you harvest per hectare?

Before:

After:

49a). Do you receive other income aside from tomato?
( ) Yes ( ) No

49b). What is/are your outside source/s of income? (off-farming & on-farming)

V. *Coop Management*

50. How do you find your association in providing services?

( ) Very satisfactory
( ) Satisfactory
( ) Needs improvement
( ) Unsatisfactory

51a). What was your income before you joined the association?

51b). What was your yield?

52a). Are there problems encountered by your association?

52b). If yes, what are these problems?

53. How do you feel after joining the association?

( ) Most benefited
( ) Not so benefited
( ) Least benefited
( ) Uncertain

54. What other economic/marketing activities would you like your association to undertake?

55. Can you recommend ways to further improve the performance of your association?

Appendix 4.2 Financial Status of CPFA, 1989

INCOME:		
Sales: (a) Eden Corporation		3,482,600.00
(b) Traders		1,187,732.00
Total Gross Sales [a]		4,670,332.00
OTHER INCOME:		
(a) Sales from empty boxes & covers		3,345.00
(b) Rebates		103,459.87
TOTAL INCOME		4,777,136.87
LESS: DISBURSEMENTS		
Inputs	1,889,866.00	
Empty Boxes & Covers	350,025.35	
Nails	15,905.80	
Straps & Clips	45,014.00	
Travelling Allowance	35,996.00	
Trucking Fee	256,475.00	
Salaries	104,240.00	
Liquidation to Farmers	1,253,146.70	
Advances to Farmers	11,946.70	
Office Supplies	2,135.10	
Meals & Snacks	10,983.45	
Warehouse Rental & Maintenance	2,349.00	
Light & Water	1,840.16	
Communications	318.80	
Shipping Expenses	576,474.42	
Miscellaneous	13,509.65	
Taxes & Licenses	520.00	
Aids & Donations	2,790.25	
Anniversary Expenses	6,852.50	
Total Disbursements		4,580,568.88
CASH BALANCE		196,567.99

[a] Total No. of crates sold = 41,658 at an average price of P112.