

Knowledge Management On The Status Of Mango Industry : In The Province Of Guimaras, Philippines

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ABSTRACT

Knowledge Management study on the Status of Mango Industry in the Province of Guimaras was conducted to (1) evaluate the economic status of the respondents, (2) analyze the cost and return of producing mango, (3) enumerate the production and marketing practices used and (4) solve the problems met by mango producers. The results of this study will guide the mango growers what knowledge management skills and inputs to be used in producing high quality mango fruits with lower cost and highest average return. Based on the result of this study growers harvested their mangoes when it is already matured using sandok, marketed in wholesale basis in Guimaras and in the nearby island and as well as outside the country. Relatives and friends were the source of financial assistance while their source of information was self-experience and the technician of Department of Agriculture. Problems encountered were high cost of farm inputs and equipment, pest and diseases, fluctuation of prices, distance from the market, source financial of assistance as well as thieves. Income analysis showed that growers who sprayed their own trees had higher income, compared to those mango sharecroppers, part owners and those who depended on contract arrangement. Therefore out of the different management techniques in mango production, growers can already select the best way producing quality mangoes profitably for commercial purposes.

Keywords

Knowledge Management strategies, knowledge management information

1.0 INTRODUCTION

Mango (Magnifera Indica Linn) is native to Asia and widely cultivated in warm regions for its delicious fruits. called "Peach of the Topics" in the United States, mangoes are grown in Florida and California. The fruits are usually large, hanging drupes and grow in oval or egg-shaped with a thin, smooth skin that maybe green, reddish or yellowish when ripe. Mangoes vary greatly in length, from approximately egg size to 5 inches (12.7 cm), and weigh up to 5 pounds (2.3 kg). Although they

typically have a sweet, aromatic, peach-like flavor, some smaller varieties may have a flavor like that of the turpentine. The single large flat seed is fibrous and attached to the juicy pulp. They can be eaten or used in preserves like that of jam and chutney. It may reach 90 feet (27.5 m.) in height. Propagation is by seeds but more commonly by grafting and budding. A rich well-drained soil promotes best growth. There are two principal strains or "races" of mango; the Indian (Monoembryonic) strain and the Philippine (Polymbryonic) strain. Most American varieties of mango are of the Indian strain. Some persons are mildly allergic to mangoes and develop a rash on the lips when they eat the fruits because it contains poison ivy (Encyclopedia Americana, P. 132)

Not only in other places that mango are known. It is also a source of livelihood among the population of Guimaras. Mangoes are abundant from the period December to June and this fruit is one of the leading domestic exports of the island to Manila and nearby provinces of Negros Occidental, Capiz, Aklan, Antique, Masbate and Palawan. The climate is considered favorable to mango production because it has a definite alternation of wet and dry season (Osorio 2002)

Guimaras has an average annual rainfall of 95.7 inches, and an average monthly temperature of 26.42 degrees Celsius. In spite of these favorable conditions for mango culture in this area, the progress has been slow and could not keep pace with the progress of the region. Cultural practices of mango growers in this island are still traditional that production.

Curious about how mango producers take good care of the mango production and whether they make money for this endeavor, the investigator thought of conducting a study of mango production in Guimaras .

1.1. Statement of the Problem

The study was conducted to gather information about the economics of mango production in the province of Guimaras. The study also aimed to determine the practices involved in the production and marketing of mango.

1.2. Objectives o f the study

The study was conducted in order to achieve the following objectives:

1. to determine the economic status of mango producers in Guimaras.
2. to determine the cost and return of producing mango in Guimaras.
3. to determine the production and marketing practices of mango in Guimaras.
4. to know the problems of mango producers in the area covered by the study.

1.3 Significance of the Study

This study on the economic growth of mango production on selected barangays in the five towns of Guimaras will be beneficial to mango growers and to those who plan to become one. The results of the study will guide them in starting the business and at the same time, to maintain or improve those that have already been started. Realizing the problems encountered by the mango growers, proper help and incentives must be provided by the government in form of technical assistance so that idle lands can be utilized for productive purposes. The success of mango growers, through this study, will become an inspiration to those who are planning to embark in mango production. .

2.0 REVIEW OF LITERATURE

Blando (2000) stated that the mango seed borer larva feeds on the tissues under the rind tunnels toward the seed. Infestation symptoms are bursting of the apex and longitudinal cracking of the fruit. The damage portions are infested with fungi and bacteria which cause the fruit to rot or decay.

Golez, (1999) also found out that about 11% of the mango fruits examined in Guimaras was infested with the pest. Infestation is higher in dry season than in rainy season. So, far, the most promising control measure is the application of insecticide cyfluthrin and deltamethrin at 72 days after induction of flowering.

Manoto (2002) stated that the presence of the oriental fruitfly, *Dacus Dorsalis* Hendel, has been a long time problem of growers and exporters in the Philippines. Fruit infestation of oriental fruit fly was found prevalent in mango producing areas in Cebu, Guimaras, Cavite and Bulacan. He believes that with the development of the new techniques of

control, the country's mango export industry faces a bright future to become another earner for the country.

Krishnamurthy, Shantha and H. Subramanyah (2002) led the discovery of flower inducing chemical and development of technology for off season mango production. The use of chemical inducers resulted to be more convenient, effective and profitable than smudging. A commonly used flower chemical inducer is Potassium Nitrate (KNO_3), which was found to be very effective in off seasonal inducers commercially available today.

3.0 METHODOLOGY

The study was conducted in the selected producing towns of Guimaras from January 2006 to November 2006, which involved ten and above trees by each grower and includes only persons engaged in mango production. The respondents of the study were randomly selected mango growers in selected producing barangays in selected towns of Guimaras. The interview schedule covered bearing and non-bearing trees.

The interview schedule needed in the study includes personal information about the respondents; farm information; production inputs used; yield; sources of labor; production and marketing practices as well as problems met by the growers. The data collected were organized and analyzed using frequencies, percentages, averages, ranges and standard deviation. Cost and return analysis was used to analyze the economic benefits received by the growers.

4.0 RESULTS AND DISCUSSION

4.1 Profile of the Respondents

The study revealed that mango growers had an average age of 44.4 years, mostly are married and they were educated. Majority of them were males and with primary occupation as farming with mango production as their secondary occupation. The average household size of the growers is a typical Filipino family composed of 6 members and most of them reached high school level. Growers had an average calendar year engaged in mango production of 1980 with the main income of P 14,669.20 per year. However, their secondary income is from P3,000-P28,004 with an average income of P14,329.90 (Table 1).

Table 1. Profile of the Respondents.

Profile of respondents	Average	Percent (N)
1. Age	44	
2. Gender	Number of respondents	
Male	54	84.38
Female	10	15.62
Total	64	100
3. Civil Status		
Single	1	1.56
Married	58	90.63
Widower	5	7.81
Total	64	100
3. Educational Attainment		
Primary	13	20.31
Elementary	13	20.31
High School	31	48.44
Total	64	100
4. Occupation		
Primary		
Farming	51	79.69
Government Employee	5	7.81
Mango growing	8	12.5
Total	64	100
Secondary Occupation		
Mango growing	56	87.5
Farming	8	12.5
Total	64	100
Household size	Average	Range
	6	1-11
Educational Attainment of household members		
Pre-School	16	3.85
Primary	87	20.91
Elementary	78	18.75
High School	146	35.10
College	89	21.39
Total	416	
Year when project started	Average	Range
	1990	1971 - 1991
Annual gross income	Average	Range
Main occupation	14,669.20	4,320 - 68,205
Secondary occupation	14,329.90	P3,000-P28,004

4.2. Information About Mango Farms

For the area planted, most producers did not own their trees and only seven of them had an area of 2 hectares and the an average total number of trees planted was 62. Their average fruit-bearing trees

used was 47 with an average of 15 full-bearing trees in a crop year. On the other hand, the numbers of fruit-bearing trees is 61 and were planted in scattered basis. As to their status, 32 were owners and 31 were involved only in spraying mango trees.

Table 2. Information about mango farms.

Items	Frequency	Percentage
Producers planting	7	10.94
Producers not planting (as share-croppers)	57	89.6
Total	64	100
Average area planted to mango	2	2-10
Average total number of trees	62	12-170
Average fruit bearing trees	47	6-73
Average number of full bearing trees in a crop year	15	4-32
Average number of non-fruit bearing trees	61	20-68
Distance of planting	Frequency	Percentage
Scattered	60	93.75
10 x10	1	1.56
15 x 15	2	3.12
16 x16	1	1.56
Total	64	100
Tenurial status		
Owners-operator	26	40.62
Owner/ lessor	20	31.25
Share-cropper	2	3.12
Part-owner	6	9.38
Producer/ part-owner	10	15.62
Total	64	100

4.3. Tools and Equipment, Cultural Practices and Other Material Inputs Used by the Mango Growers.

The tools and equipment used were bolo, spade and knapsack sprayer while the cultural practices commonly used was underbrushing and only wildlings which are allowed to grow and home

grown seedlings were used as planting materials. Urea and complete fertilizer were used and applied once a year for bearing and twice a year for non-bearing trees. Chemicals were sprayed as control measures for insect pests and diseases that attacked mango fruits were fruit fly, waya-way, seed borer, aphids and tip borers.

Table 3. Tools, equipment cultural practices, and other material inputs used by the mango growers.

Tools and equipment used	Average Number of growers
Bolo	64
Spade	40
Knapsack sprayer	24
Weeding practices	
Unbrushing	56
No clearing	8
Total	64
Source of seedlings	
Wildlings	48
Homegrown seedlings	16
Total	64
Fertilizer used	
Complete fertilizers	16
Urea	20
Foliar	8
Frequency of application	
Once a year	7
Twice a year	8
Pest and diseases	
Fruit fly	58
Way-a-way	46
Seed borer	28
Aphids	10
Tip borers	4
Frequency of spraying fungicides	Average: 4
Frequency of Spraying insecticides and pesticides	6

4.4 Expenses on Mango Growing

When it comes to expenses, chemicals especially the cost of pesticides was the most expensive followed by fungicide cost, flower inducers, and pesticides. The respondents reported that they incurred labor cost for spraying inducers, pesticide and insecticide. Other expenses incurred were harvesting cost and transportation cost.

Table 4. Expenses on mango growing.

Expenses (P)	Average (P)	Range (P)
Chemical expenses		
Fungicides	3,146.80	650 – 5,656.00
Insecticides and pesticides	6,159.90	3,928-4,658
Flower inducers	2,348.90	2,486-23,418.90
Labor costs		
Spraying of flower inducers	1,883.19	678-2,159
Spraying of insecticides and pesticides	2,136.48	780-3,412.00
Spraying of fungicides	900.00	
Harvesting cost	926.00	560-1,458
Transportation cost	550	600-1,800
Total Average Expense (P)	18,051.27	

4.5. Harvesting and Marketing

In harvesting, fruits were harvested at an average of 116 days counting the number of days from blooming stage to harvesting stage. It is done using “sandok” as a tool, and then marketed on a wholesale basis in Guimaras and other nearby islands

Table 5. Methods of harvesting and marketing used by growers.

Number of days from blooming to maturity	Average	Range
Number of days	116	110-120
Methods of harvesting		
Use of sandok	64	100
Others (specify)	0	0
Total	64	100
Marketing method		
Wholesale	60	93.75
Retail	3	4.69
Taba system	1	1.56
Total	64	100

4.6 Financial Assistance

Growers finance their business with the help of their neighbors and friends, but some obtained from multi-purpose cooperatives and have their personal savings.

Table 5. Sources of financial assistance

Source	Frequency	Percentage
Neighbors and friends	44	68.75
Multi-purpose cooperatives	16	32.25
Personal savings	4	100

4.7 Income of the Mango Growers

In terms of income mango growers as a part-owner had on average income of P 29,500; as owner operator P113, 385.00; as owner/ lessor P 84,670.000; as mango producers P113, 385.00; as share-croppers P105,960.00 and as mango producer part-owner P200, 000, 000.00 respectively. The average income received by those growers are as follows: part owner P10,998.73; owner/lessor P66,168.73; as mango producers part-owner P181,948.73; owner operator P94,863.73 and as sharecroppers P87,458.73.

With regards to the net income due to 60:40, sharing basis for 10 producers part-owner, the income they received individually was only P 72,779.19. To the 6 part-owner, 20 owner lessor, 26 owner operator and 2 share croppers the net income they received were P 4,399.49; P26, 467.49; P94, 833.73 and P34, 983.49, respectively.

Based on the results of the study producers who sprayed their own mangoes had the highest income per year compared to share-croppers and part-owners (See Table 6.a and Table 6.b.).

Table 6. a. Cost and Return analysis of mango production by share-croppers, owner operator and owner lessor.

Items	Share-croppers N=2	Owner operator N=26	Owner/lessor N=20
Total Income (P)	211,920.00	2,948,010.00	1,693,400
Average Income	105,960	113,385.00	84,670.00
Less Average Expenses			
Tools and Equipment			
Bolo	250	250	250
Spade	550	550	550
Knapsack sprayer	2,500	2,500	2,500
Chemical Expenses			
Fungicides	3,146.80	3,146.80	3,146.80
Insecticides and Pesticides	6,159.90	6,159.90	6,159.90
Flower inducers	2,348.90	2,348.90	2,348.90
Labor Cost			
Spraying of Inducer	1,883.19	1,883.19	1,883.19
Spraying of Insecticides and pesticide	2,136.48	2,136.48	2,136.48
Spraying of fungicide	900.00	900.00	900.00
Harvesting cost	926.00	926.00	926.00
Transportation cost	550	550	550
Total Average Expense Per Grower	18,501.27	18,501.27	18,501.27
Average income with no share taken (P)	87,458.73	94,883.73	66,168.73
Average income with share taken (P)	34,983.49	94,883.73	26,467.49
Sharing basis	* 60 percent for the owner * 40 percent for the grower		* 60 percent for the owner * 40 percent for the grower

Table 6 b. Cost and return analysis of mango production by producer part-owner and par-owner.

Items	Producer part-owner N= 10	Part-owner N=6
Total Income	2,000,000	177,000.00
Average Income	200,000.00	29,500.00
Less Average Expenses		
Tools and Equipment		
Bolo	250	250
Spade	550	550
Knapsack sprayer	2,500	2,500
Chemical Expenses		
Fungicides	3,146.80	3,146.80
Insecticides and Pesticides	6,159.90	6,159.90
Flower inducers	2,348.90	2,348.90
Labor Cost		
Spraying of Inducer	1,883.19	1,883.19
Spraying of Insecticides and pesticide	2,136.48	2,136.48
Spraying of fungicide	900.00	900.00
Harvesting cost	926.00	926.00
Transportation cost	550	550
Total Average Expense Per Grower	18,501.27	18,501.27
Average income with no share taken	181,948.73	10,998.73
Average income with share taken	72,779.49	4,399.49
Sharing basis	* 60 percent for the owner * 40 percent for the grower	* 60 percent for the owner * 40 percent for the grower

4.8. Problems Encountered by the Respondents

Problems cited by the respondents according to rank, were high cost of farm inputs and equipment, pest and diseases, fluctuation of prices, distance of the farm to market, financial assistance and thieves.

Table 7. Problems encountered by the respondents according to rank.

Problems	Frequency	Rank
High cost of farm inputs and equipment	64	1
Attack of pest and disease	58	2
Fluctuation of prices	54	3
Distance to market	50	4
Source of financial assistance	48	5
Losses due to thief	11	6

5.0 CONCLUSION

Based on the results, producers who sprayed their own mangoes had the highest income per year compared to sharecroppers and part owners. The largest expense incurred by the producers was on the cost of chemicals

6.0. RECOMMENDATIONS

Out of the problems encountered the researcher made the following recommendations.

1. There must be information dissemination from the Department of Agriculture because the producers need right information about mango production.
2. The government must take necessary action for the over inflation of farm inputs and tools and equipment which can give extra overhead expenses on the part of the producers.
3. There must be a stable market for mango products so that producers will not be at the mercy of the prices dictated by the middlemen.
4. There must be an agency to extend proper financial assistance to the producers in order to improve mango production as well as the quality to production.
5. There must be a regulated price control for the products to avoid price devaluation, thus

saving the farmers from the adverse effects of these problems.

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