ENHANCING THE MANDARIN INDUSTRY OF MALABING VALLEY, NUEVA VIZCAYA, PHILIPPINES

GAYON P. SARMIENTO

Nueva Vizcaya State University, Philippines
E-mail: gayonsarmiento@yahoo.com

Abstract- Malabing Valley, Nueva Vizcaya, Philippines is known for its Mandarin production. In fact, this led the provincial government to include the mandarin farms as part of its plans for an eco-tourism project. However, in recent years, mandarin production has been declining and some farmers are turning to other livelihood projects. This study was conducted to look into thenature and structure of the mandarin industry and to make recommendations for government intervention to boost the current status of the industry and to support its plans to create Nueva Vizcaya as an eco-tourism destination. Qualitative research was used to map the mandarin chain, analyze the price and cost structure of the industry and recommend projects for government intervention in the industry based on development thrusts of stakeholders. Data were collected from different agencies and by interviewing key players in the mandarin commodity chain. Key informant interviews and focus group discussion were likewise conducted. Recommended interventions are:organization of farmers into clusters; expansion of credit services; establishment of strategies for the control and monitoring of seedling production; conduct of extension services and trainings for farmers on proper utilization of farm inputs; establishment of irrigation system; rehabilitation of poor roads and construction of new farm to market roads; provision of a packing house with mechanical sorting and packing facilities; conduct of research on prolonging shelf life of mandarin fruits; and establishment of market linkages.

Index Terms- Nature and Structure, Mandarin, Nueva Vizcaya,

I. INTRODUCTION

Mandarin is the dominant kind of Citrus in Nueva Vizcaya. It generated income and employment to the people in Nueva Vizcaya especially in the Malabing Valley communities for some time. Nueva Vizcaya became known all over the country due to its flourishing mandarin industry. In fact, the provincial government, in its development plan, the inclusion of the mandarin farms as part of its eco-tourism project. However, lately, there was a decline in the production and productivity of the industry and this needs Government intervention.

The general objective is to determine the nature and structure of the mandarin industry of the province. Specifically, to:

1. map the mandarin industry;
2. analyze the nature and structure of the industry; and
3. recommend projects for government intervention.

II. METHODOLOGY

The study utilized primary and secondary data. Primary data were gathered through personal interviews of players in the chain consisting of mandarin producers, buyers, processor, cooperative members, and farmer leaders. Key informant interviews and focus group discussion were conducted to elicit participatory suggestions for government intervention. Secondary data were obtained from local government units and other agencies involved in the mandarin industry.

Tracer methodology was applied to locate chain players and capture the actual product distribution. Data gathering through personal interviews were complemented with information from key informant interviews and stakeholders consultation.

III. RESULTS

Malabing Valley, Nueva Vizcaya. Nueva Vizcaya is a top mandarin-producing province of the Philippines. Since the introduction of the cultivars (Satsuma and Ponkan) in Malabing Valley in the early 90s, mandarin production and marketing have become an industry. These mandarin types currently dominate citrus production areas sharing over 80% of the more than one thousand hectares planted to citrus. Production sites of the province are concentrated in Malabing, Muta and KongkongValleys (600-700 m above sea level), all these three places are generally called Malabing Valley. These are located in the town of Kasibu, north-east of Nueva Vizcaya. Orchards in these areas are surrounded by mountains with thick forest cover that influences prolonged periods of rains that promote fruiting. Satsuma is the early bearer with three-month staggered harvesting from July to September. Ponkan harvest is done within a month between September and October. During peak seasons, local trading of mandarins in the province can reach 30-40 tons/day. Fresh fruits are sold, specifically in the agriculture terminals of the towns of Solano and Bambang, and fruit stands in town of Bayombong, especially along the highway. From the terminals, mandarins are marketed to Manila, Baguio, Pangasinan, Batangas, and Laguna. At present, over a thousand mandarin growers and their families depend on their existing orchards and industry for livelihood.

The commodity mapping entails drawing a visual presentation of the commodity chain, which involves

various linkages among the mandarin growers, input providers, buyers and traders. The commodity chain map depicts the flow of mandarin fruits in the market, activities carried out at each stage of the commodity chain, the structure of actors and the support involved. Table 1 summarizes the different segments along the chain with the corresponding tasks, operators, and enablers.

TABLE I
COMMODITY MAP OF MANDARIN, MALABING VALLEY, NUEVA VIZCAYA

Segment	Task	Operator	Enabler
Input provision	Seedlings Fertilizers Pesticides Fruit wax Etc	Farmers' cooperatives Private businesses Nueva Vizcaya State University	Nueva Vizcaya State University Department of Agriculture, Bureau of Plant Industry
Production	Weeding Fertilizing Pest and disease management Pruning Harvesting	Farmers	Departments of: Science and Technology, Agriculture; Nueva Vizcaya State University
Post-harvest	Washing Sorting Waxing Packaging Fruit Processing	Malabing Valley Multipurpose Cooperative Other Buyers	Departments of: Trade and Industry, Science and Technology, Agriculture, Public Works and Highways
Distribution	Transporting Distributing Selling	Malabing Valley Multipurpose Cooperative Other Buyers	Department of Trade and Industry
Consumption	Marketing and Retailing	SM chain of supermarkets Divisoria and Balintawak markets, Rustan's supermarket Other provincial markets	Local Government units, Department of Trade and Industry

The mandarin marketing channels. The marketing channels for mandarin in Malabing Valley, Nueva Vizcaya are depicted in Fig 1. Each farmer has his own buyer and way of selling his produce. This adds to the differences in marketing cost and selling price of mandarin across farmers making some farmersrealizing lesser profit than others.

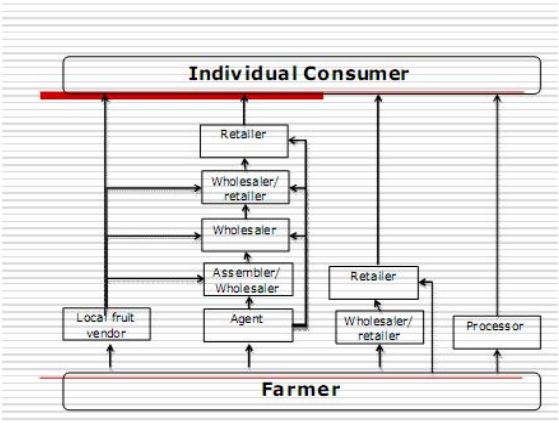

FIG 1. MANDARIN MARKETING CHANNEL

Price and Cost Structure. Cost and returns analysis of mandarin production (Table 2) shows that an average farmer gets a gross revenue of PhP189,759.74 which is way below the revenue generated by well managed farms in the same area. (The well managed farms generate an average of PhP625,000/ha). The cost to produce a kilogram of mandarin is PPhP8.30 yet selling price of mandarin ranges from PhP8.00 to PhP25.00.

Table 2
Costs and returns of mandarin farmer-respondents per ha, malabing valley, nueva vizcaya.

Items	Value per ha (PhP)
GROSS REVENUE	189,759.74
FARM EXPENSES	
Labor	29,281.55
Fertilizer	36,573.28
Chemical Inputs	19,582.03
Transportation	4,374.09
TOTAL FARM EXPENSES	38,114.04
NET INCOME	42,747.21
Average cost to produce/kg	8.30

Fertilizer cost consists of organic and inorganic fertilizer applied. Farm labor consists of labor in weeding, fertilizer application, other chemical inputs application, and harvesting. Table 3 shows expenses in amount and percentage. Labor gets 32.60% which is very high next to fertilizer which is 40.72%.

TABLE 3
PERCENTAGE DISTRIBUTION OF EXPENSES INCURRED IN MANDARIN PRODUCTION,MALBING VALLEY, NUEVA VIZCAYA, PHILIPPINES

Items	Amount (PhP)	Percent share (%)
Labor	29,281.55	32.60
Fertilizer	36,573.28	40.72
Other chemical inputs	19,582.03	21.81
Transportation	4,374.09	4.87
Total	89,810.94	100.00

The bulk of labor cost goes to harvesting. Harvesting cost includes the hauling of harvested mandarin to accessible roads. Harvesting cost gets the bulk of labor expense that implies farms, on the average, are far from accessible roads.

TABLE 4
PERCENT SHARE OF LABOR EXPENSES INCURRED IN MANDARIN PRODUCTION AND MARKETING OF FARMERS-RESPONDENTS, NUEVA VIZCAYA, PHILIPPINES

Labor expenses	Amount (PhP)	Percent share (%)
Fertilizer application	4,108.30	14.03
Other chemical application	4,189.29	14.31
Weeding	2,896.18	9.89
Harvesting	18,087.78	61.77
Total	29,289.55	100.00

Product Flow.Mandarin fruits of Malabing Valley goes to local markets in the different provinces of the nearby regions of the Philippines. The name "Malabing citrus" is very popular that in big cities and supermarkets they label the mandarin as "Malabing Citrus". This attracts buyers. There is minimal processing of the mandarin fruits except for applying wax and sorting by size. Shelf-life of mandarin is 3-4 days. Beyond that the peel of mandarin looks shrivel and color turns yellow. Sellers would either sell them very cheap or throw them away.

Support Services. The Malabing Valley mandarin industry has a lot of support from private and government agencies in terms of financial and non-financial assistance. For financial assistance there is the Cooperatives, Rural Banks and other private lending firms, neighbors, family, co-farmers and mandarin buyers. Non-financial services come in the form of organizational development, marketing promotion and development, research and extension, infrastructure, and production and marketing facilities.

Opportunities in the Mandarin Value Chain. The opportunities in the input provision segment are: (1) increasing demand for mandarin locally and internationally. This is an incentive for input suppliers to produce more farm inputs. (2) There aregovernment agencies conducting research and development on mandarin seedlings. (3) There is an increasing number of sources of organic fertilizers that makes mandarin fruits more acceptable so that mandarin produced in the Malabing Valley can enter the world market. (4) There is wide area for expansion.

The opportunities in the production segment, are: (1)increasing demand for mandarin locally and internationally. This is an incentive for farmers to produce more. (2) There is wide area for expansion. (3) Farmers appreciate the use of organic fertilizer which improves the quality of the fruits, improve soil structure, and help mitigate the threat of climate change. (4) Increasing technical knowledge of farmers from conduct of seminars and from their own initiative of seeking knowledge on mandarin production.

The opportunities in the harvesting and Post-harvesting segment are: (1) available labor for harvesting, (2) farmers are interested to learn more on post-harvesting technologies, (3) presence of trading centers for sorting, packing and trading and (4) there is a citrus processing plant albeit small but this could be developed to process more mandarin fruits and develop other mandarin products.

Priority Constraints and Interventions. The priority constraints of the mandarin industry in Malabing Valley are: (1) high cost of agricultural inputs for the maintenance of fruit-bearing trees; (2) Insufficient financial capital of individual growers; (3) continuing production and use of planting materials without quality assurance; (4) varying orchard management across farmers resulting to low productivity and differing quality of fruits; (5) inadequate knowledge of farmers in the use of inputs and management of pests and diseases; (6)insufficient water for the orchards, farmers are highly dependent on natural sources of water; (7) poor road conditions and in some areas, lack of roads for better and timely delivery of farm inputs and outputs; (8) manual sorting of fruits leading to unreliable classification; (9) high post-harvest loses due to lack of uniform fruit quality and short shelf life; (10) high transportation costs; and (11) inadequate market linkages.

The interventions identified are: (1) organization of farmers into clusters for the procurement of inputs in bulk; (2) expansion of credit services; (3) establishment of strategies for the control and monitoring of seedling production; (4) formation of farmers into clusters for implementation of a package of technology for mandarin on farms to produce uniform quality mandarin fruits; (5) conduct of extension services, trainings for farmers on proper utilization of farm inputs; (6) establishment of irrigation system for the mandarin orchards; (7) rehabilitation of poor roads and construction of new farm to market roads in areas where there is no roads; (8) provision of a packing house with mechanical sorting and packing facilities; (9) conduct of research on prolonging shelf life of mandarin fruits; and (10) establishment of market linkages.

CONCLUSION

The Malabing Valley mandarin industry of Nueva Vizcaya had been a flourishing industry. However, lately the production had been declining which brings to the fore the need for government intervention. Opportunities for the industry were identified that could be taken advantage of to make the industry flourish once again. Constraints were identified and recommendations to answer the constraints are:organization of farmers into clusters; expansion of credit services; establishment of strategies for the control and monitoring of seedling production; conduct of extension services and trainings for farmers on proper utilization of farm inputs; establishment of irrigation system; rehabilitation of poor roads and construction of new farm to market roads; provision of a packing house with mechanical sorting and packing facilities; conduct of research on prolonging shelf life of mandarin fruits; and establishment of market linkages.

REFERENCES

[1] BAS. 2008-2012. Other Crops: Area Planted/Harvested by Crop and Year. Retrieved last July 1, 2014 from countrystat.bas.gov.ph

[2] BAS. 2008-2012. Other Crops: Volume of Production by Crop, Geolocation and Year. Retrieved last July 1, 2014 from countrystat.bas.gov.ph

[3] BAS. 2008-2013. Fruits: Farmgate Prices by Geolocation, Commodity, Year and Period. Retrieved last July 1, 2014 from countrystat.bas.gov.ph

[4] BAS. 2008-2013. Other Crops: Number of Bearing Trees/Hills/Vines by Crop, Geolocation. Retrieved last July 1, 2014 from countrystat.bas.gov.ph

[5] BAS. 2009-2014. Fruits: Retail Prices by Commodity, Geolocation, Year and Period. Retrieved last July 3, 2014 from countrystat.bas.gov.ph

[6] De Guzman, C. B. (2008 June). Savoring Sweet-Profit from Nueva Vizcaya's citrus industry. Chronicle, Vol. 9 No. 6. Retrieved from http://www.bar.gov.ph/chronicle-home/archives-list/145-june-2008-issue/2162-savoring-sweet-profit-from-nueva-vizcaya-s-citrus-industry

[7] FAO – APAARI. 2008. Linking farmers to market: Some success stories from Asia-Pacific Region. Retrieved last July 1, 2014 from www.apaari.org/wp-content/uploads/2009/05/ss_2008_01.pdf

[8] FFTC. Citrus production in Asia. Retrieved last July 2, 2014 from www.agnet.org/library.php?func=view&id=20110803104519

[9] Kaplinsky, R. and M. MORRIS, 2001. A Handbook on Value Chain Analysis.

[10] Naseer, M. 2010. Report on export of Kinnow. Retrieved last July 1, 2014 from www.tdap.gov.pl/doc_reports/TDAP_REPORT_ON_EXPORT_%20OF__KINNOW.pdf

[11] Philippine Rural Development Project Operations Manual, 2012.

★★★