

**VALUE ADDING ACTIVITIES OF SUGARCANE IN BANAWAG NORTE, SANTIAGO CITY AS AN ALTERNATIVE LIVELIHOOD BY UPLAND FARMERS:
A CASE STUDY**

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ABSTRACT

Generally, the study assessed the value adding activities of sugarcane farmers in Banawag Norte, Santiago City, Isabela. Specifically, this was aimed the following: 1) document the operation of small farmers engage in sugarcane production and its value adding activities; 2) identify the marketing strategies employed by the farmers; and 3) determine the profitability in production and doing value adding activities in sugarcane.

The study showcased the marginal farmers in Banawag Norte, Santiago City, Isabela and from their smallholding upland farms were able to utilize them into a very productive and progressive livelihood that dwells the economy of the community. Through the supports of the Department of Agriculture and the City Government of Santiago were boosted the development of the community and they are now being known of their one-town-one product “Patupat” (Glutinous Rice Cooked by dipping in a boiling sugarcane juice).

They started to engage this kind of endeavour since 1988 up to the present. The farmers produces sugarcane, process them and marketed by themselves within the community. The value adding activities and marketing of products are village-type involving family members with greater participation of women and young children in the household. They produced various organic food products out of sugarcane like “patupat”, vinegar, “tagapulot”, wine and mascovado sugar.

Incomes generated were able to support the social and economic advancement of their respective families. They were able to purchase processing equipment, improved farming operation, put up product display centers along Santiago-Quirino road and sent their children to school.

Keywords:. value adding activities, sugarcane, livelihood, organic food products, profitability

INTRODUCTION

Sugar is one of the most important commodities that propelled the Philippine economy which generating an amount of Php76 billion in Gross Domestic Product of the country in 2012 (sra.gov.ph, 2014). Philippine sugarcane industry is contributing a lot of employment particularly in agriculture sector as a means of income for family subsistence (sra.gov.ph, 2012). Sugarcane production is usually engaged by wealthy or farmers with big land area and have a capability to invest capital for commercial scale. The production of this crop is usually intended to produce

sugar for local and foreign markets. Small farmers are seldom to engage production of sugarcane due to their limitation. In areas of the Philippines like Negros, Tarlac, Cagayan, Mindanao, Panay, etc. found out that big sugarcane producers or “Hacienderos” employed workers (“Sakadas”) to do the usual farm works from planting to harvesting of sugarcane in a year round. Farm workers are dependent their income from wages that they receive from the fruits of their labor and most of them have no other means of livelihood to augment for it. This unprivileged condition, their families are usually below the economic threshold level of income which could not support/sustain even the basic needs of the family.

The farmers in Bannawag Norte, Santiago City in Norther Luzon of the country is showcasing the marginal and smallholding upland farms were able to utilize them into a very productive and progressive livelihood that dwells the economy of the community. Through the supports of the Department of Agriculture and the City Government of Santiago were boosted the development of the community and they are now being known of their One-Town-One Product (OTOP) “Patupat” (Glutinous Rice Cooked by dipping in a boiling sugarcane juice) (Peace Corps, 2007). They started to engage this kind of endeavor since 1988 up to the present. The farmers produces sugarcane, process them and marketed by themselves within the community. The value adding activities and marketing of products are village-type involving family members with greater participation of women and young children in the household. They produced various organic food products out of sugarcane like “patupat”, vinegar, “tagapulot”, wine and mascovado sugar. The incomes generated were able to support the social and economic advancement of their respective families. They were able to purchase processing equipment, improved farming operation, put up product display centers along Santiago-Quirino road and sent their children to school.

Generally, the study assessed the value adding activities of sugarcane farmers in Bannawag Norte, Santiago City. Specifically, a) document the operation of the farmers; b) identify the marketing strategies; and c) determine the profitability of their value adding activities.

Research Methodology

The case study was utilized and making use the farmer processors of sugarcane as its main source of information. This study was conducted from December 2012 to March 2013 at Bannawag Norte, Santiago City covering 12 farmers engaged in production and backyard processing of sugarcane. Two researchers lived along the farmers for the duration of the study conducting observation and data collection. The data were analyzed using descriptive methods.

Results and Discussion

Almost all of the respondents were female (10 or 83.33%), while few of them were male (2 or 16.67%) interviewed in the study. The age ranged of the respondents was 30 to 74 years old and majority of them were an age ranged from 30 to 44 years old with 7 or 58.33%. They have an average productive age of 45.67 years old. Unfortunately, almost all of them were obtained secondary education, but they were land owners tilling the land planted with sugarcane with 9 or 75% respectively. The farming experiences of farmers have ranges from 7 to 32 years and majority of them having 7 to 12 years (7 or 58.33%) farming experiences in producing and processing of sugarcane. They have an average farming experiences of 4.8 years (Table 1).

As indicated in Table 2, most of the farmers (9 or 75%) were planted Phil 8033 sugarcane variety, while the rest (3 or 25%) were plated Native (superior) sugarcane variety which they claimed high yielding varieties. Farmers planted this crop in a staggered basis suit to the processing schedule of sugarcane to produce by-products. The sugarcane area is divided in 3 to 4 parcels distributed in a year. They applied fertilizers like triple 14 and farm manures in basal and side dressing. Farmers engaged in hand weeding to clean the field. The sugarcane plants were off barred and hill-up to cultivate and clean the field. But most of the farmers clean the fields through burning the dry leaves right after harvest. They engaged three ratooning of sugarcane production cycles before replacing it with a new plant. Sugarcane plant is harvested within 9 to 13 months from planting. They usually harvested on January to April, May to August and September to December. They engaged in manual harvesting using long bolos or “tabas” and hauled it using carabao/cattle drawn cart going to their respective household.

On processing activities, it started in cleaning the sugarcane stalks and extraction of sugarcane juice by using squeezer machine. These were assisted by the Local Government Unit (LGU) of Santiago City and other agencies like Department of Agriculture (DA), Department of Trade and Industry (DTI), Department of Labor and Employment (DOLE) and Isabela State University (ISU) by providing financial, technical and marketing assistance. The said agencies were also helping to promote “Patupat” as OTOP. Other processed products were caked molasses (sinaklob), sugarcane wine, vinegar, pulotipot, muscovado sugar and raw molasses for animal feeds (Figure 1,2,3,4,5,6, and 7). The farmers have engaged in selling the products in local markets to walk-in buyers (65%) and to wholesalers (35%) coming in to buy in bulk for resell to retailers or direct consumers (Figure 8).

Table 3 shows the quantity of processed products and its selling price of the product. Vinegar, “muscovado” sugar and caked molasses or “sinaklob” were the most produced products by

farmers. “Patupat” has the highest price in bundle, wine “basi” in terms of litters, muscovado sugar in terms of kilograms and “pulotipot” small in terms of grams. From among the processed products (Table 4), patupat, wine “basi”, pilotipot big and muscovado sugar have the highest cost of production per unit. In terms of profit obtained, patupat has obtained the highest profit margins per bundle of Php38.94, wine “basi” (Php37.59), molasses dry/wet (Php29.31), muscovado sugar (Php26.55) and sinaklob “cake molasses big (Php25.51). The average profit margin of all products was Php23.22.

On per farm income and return on investment analysis for sugarcane production, Mrs. Medy Lapada with a farm area of 0.66 hectare has obtained with the highest return of 132.02%, Mrs. Naty Suguitan (Return on Investment (ROI)=131.48%) with an area of 0.23 hectares, Mrs. Evelyn Manuel (ROI = 105.98%) with an area of 0.78 hectare and Mr. Danny Guzman (101.81%) with a farm area of 0.83 hectare. Thus, the average ROI per farm and per hectare was 56.74% (Table 5). Whereas, for sugarcane processed products, the highest ROI of 343.51% was obtained by Mrs. Lita Natividad with sugarcane area of 1.39 hectare, Mrs. Evelyn Manuel (139.48%) with an area of 0.78 and Mr. Danny Guzman (113.96%) with an area of 0.83 hectare (Table 6). The average ROI of all farmers included in the study was 93.72%. On the other hand, for combined ROI (Table 7), the highest was obtained by Mrs. Lita Natividad with 144.14%, Mrs. Evelyn Manuel (123.15%), Mrs. Medy Lapada (112.81%), and Mr. Danny Guzman (108.32%). The average combined ROI was 75.13% per farm and per hectare which considered very desirable since for every one (Php1.00) peso investment there would be Php0.75 return as compared to the current agricultural lending rate of 18% per annum. The highest ROI was attributed with greater farm income relative to the area and less farm inputs incurred by the farmers.

The cost and return analysis per product was shown in Table 9. All products showed with very inspiring ROI which gave to the farmers an encouragement to engage this kind of entrepreneurial activities. From among the products, molasses dry/wet was obtained with the highest ROI of 287.44%. Sugarcane wine “basi”, and vinegar have also obtained with considerable ROI of 123.53% and 109.87%, respectively. The highest ROI was attributed to lower cost of production and higher gross proceed of the product.

Table 1. Demographic profile of the respondents in Bannawag Norte, Santiago City

Particular	No. of Respondents (n = 12)	Percent (%)
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1. Gender:

Male	2	16.67
Female	10	83.33

2. Age:

30 – 44	7	58.33
45 – 59	2	16.67
60 – 74	3	25

Average age = 45.67

3. Educational Attainment:

Secondary	9	75
College	3	25

4. Tenurial Status:

Farm Owner	9	75
Amortizing Owner	3	25

5. Farming Experience in Sugarcane:

7 – 12	7	58.33
13 – 18	3	25
19 – 25	1	8.33
26 – 32	1	8.33

Ave. Farming Exp. = 4.8 years

Table 2. Sugarcane variety planted by the farmers in Bannawag Norte, Santiago City

Variety	No. of Respondents (n = 12)	Percent (%)
Phil 8033	9	75.00
Native (Superior)	3	25.00

Table 3. Quantity & selling prices of sugarcane by-products produced by Bannawag Norte, Santiago City

Sugarcane By-products	Ave. Volume Of Production	Unit/Description	Unit Selling Price (Php)
1. Patupat	237	bundle (15 pcs/bundle)	100.00
2. Vinegar	1,465	Litter	30.00
3. Wine "Basi"	724	Litter	70.00
4. Pulotipot small	789	Plastic bottle @25 g	30.00
5. Pulotipot Big	676	Plastic bottle @50 g	50.00
6. Muscovado Sugar	1,296	Kg	60.00
7. Sinaklob "Caked Molasses" Big	811	Kg	50.00
8. Sinaklob "Caked Molasses" Small	1,183	Pcs	20.00
9. Molasses Dry/wet	507	Kg	40.00

Table 4. Selling price, cost of production per unit and profit margin of sugarcane by-products in Bannawag Norte, Santiago City

Sugarcane By-product	Unit Selling Price (Php)	Unit Cost (Php)	Profit Margin (Php)
1. Patupat (in bundles)	100.00	61.06	38.94
2. Vinegar	30.00	14.80	15.20
3. Wine "Basi"	70.00	32.41	37.59
4. Pulotipot small	30.00	18.32	11.68
5. Pulotipot Big	50.00	32.06	17.94
6. Muscovado Sugar	60.00	33.45	26.55
7. Sinaklob "Caked Molasses" Big	50.00	24.49	25.51
8. Sinaklob "Caked Molasses" Small	20.00	13.74	6.26
9. Molasses Dry/wet	40.00	10.69	29.31

Average			23.22
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Table 5. Income and cost analysis for sugarcane production by farmers in Bannawag Norte, Santiago City

Respondents	Area (hectare)	Gross Income (Php)	Expenses (Php)	Net Income (Php)	ROI (%)
1. Jocelyn Bretania	5.82	884,903.00	711,920.00	172,983.00	24.30
2. Martha Cabudoy	1.03	262,485.00	137,500.00	124,985.00	90.90
3. Danny Guzman	0.83	262,823.00	130,230.00	132,593.00	101.81
4. Medy Lapada	0.66	287,550.00	123,920.00	163,630.00	132.04
5. Josie Manibog	1.56	329,877.00	236,940.00	92,937.00	39.22
6. Evelyn Manuel	0.78	264,330.00	128,330.00	136,000.00	105.98
7. Lita Natividad	1.39	394,875.00	250,605.00	144,270.00	57.57
8. Melinda Natividad	1.23	48,290.00	44,800.00	3,490.00	7.79
9. Raquel Natividad	1.26	50,229.00	45,940.00	4,289.00	9.34
10. Jocelyn Paredes	2.06	484,936.00	274,955.00	209,981.00	76.37
11. Juan Paredes	0.65	28,935.00	23,850.00	5,085.00	21.32
12. Naty Suguitan	0.23	19,688.00	8,505.00	11,183.00	131.48
Average per Farm	1.46	276,577.00	176,458.00	100,119.00	
Average per Hectare		189,653.00	121,000.00	68,653.00	

Table 6. Income and cost analysis for by-products of sugarcane by farmers in Bannawag Norte, Santiago City

Respondents	Area (Hectare)	Gross Income (Php)	Expense s (Php)	Net Income (Php)	RO I (%)
1.Jocelyn Bretania	5.82	1,081,548.00	629,700.00	451,848.00	71.76
2.Martha Cabudoy	1.03	320,815.00	173,350.00	147,465.00	85.07
3.Danny Guzman	0.83	321,228.00	150,135.00	171,093.00	113.96
4.Medy Lapada	0.66	351,450.00	176,350.00	175,100.00	99.29
5.Josie Manibog	1.56	403,183.00	218,040.00	185,143.00	84.91
6.Evelyn Manuel	0.78	323,070.00	134,905.00	188,165.00	139.48
7.Lita Natividad	1.39	482,625.00	108,820.00	373,805.00	343.51
8.Melinda Natividad	1.23	59,021.00	34,700.00	24,321.00	70.09
9.Raquel Natividad	1.26	61,391.00	34,850.00	26,541.00	76.16
10. Jocelyn Paredes	2.06	592,699.00	394,693.00	198,006.00	50.17
11. Juan Paredes	0.65	35,365.00	21,210.00	14,155.00	66.74
12. Naty Suguitan	0.23	24,063.00	17,200.00	6,863.00	39.90
Average per Farm	1.46	338,038.00	174,496.00	163,542.00	
Average per Hectare		231,798.00	119,654.00	112,143.00	

Table 7. Income and cost analysis for both (production and processing of sugarcane) by Farmers in Bannawag Norte, Santiago City

Respondents	Area (Hectare)	Gross Income (Php)	Expenses (Php)	Net Income (Php)	ROI (%)
1.JocelynBretania	5.82	1,966,450.00	1,341,620.00	624,830.00	46.57
2.MarthaCabudoy	1.03	583,300.00	310,850.00	272,450.00	87.65
3.Danny Guzman	0.83	584,050.00	280,365.00	303,685.00	108.32
4.Medy Lapada	0.66	639,000.00	300,270.00	338,730.00	112.81
5.Josie Manibog	1.56	733,060.00	454,980.00	278,080.00	61.12
6.Evelyn Manuel	0.78	587,400.00	263,235.00	324,165.00	123.15
7.Lita Natividad	1.39	877,500.00	359,425.00	518,075.00	144.14
8.Melinda Natividad	1.23	107,310.00	79,500.00	27,810.00	34.98
9.Raquel Natividad	1.26	111,620.00	80,790.00	30,830.00	38.16
10. Jocelyn Paredes	2.06	1,077,635.00	669,648.00	407,987.00	60.93
11. Juan Paredes	0.65	64,300.00	45,060.00	19,240.00	42.70
12. Naty Suguitan	0.23	43,750.00	25,705.00	18,045.00	70.20
Average per Farm	1.46	614,615.00	350,954.00	263,661.00	
Average per Hectare		421,450.00	240,654.00	180,796.00	

Table 8. Average income and cost for sugarcane by-products in Bannawag Norte, Santiago City

Sugarcane By products	Average Gross Income (Php)	Average Expenses (Php)	Average Net Income (Php)	ROI (%)
1. Patupat	23,662.66	13,959.69	9,702.97	69.51%
2. Vinegar	43,944.94	20,939.53	23,005.41	109.87%
3. Wine "Basi"	50,705.70	22,684.49	28,021.21	123.53%
4. Pulotipot	57,466.46	34,899.22	22,567.25	64.66%
5. Muscovado Sugar	77,748.74	41,879.06	35,869.68	85.65%
6. Sinaklob "Caked Molasses"	64,227.22	34,899.22	29,328.01	84.04%
7. Molases Dry/wet	20,282.28	5,234.88	15,047.40	287.44%
Annual Average	338,038.02	174,496.08	163,541.94	93.72%



Figure 1. Extraction of sugarcane juice using crude sugarcane machine squeezer by the farmer



Figure 2. Cooking of sugarcane juice until it become granular and crystalized muscovado sugar



Figure 3. Muscovado sugar ready for packing in market size

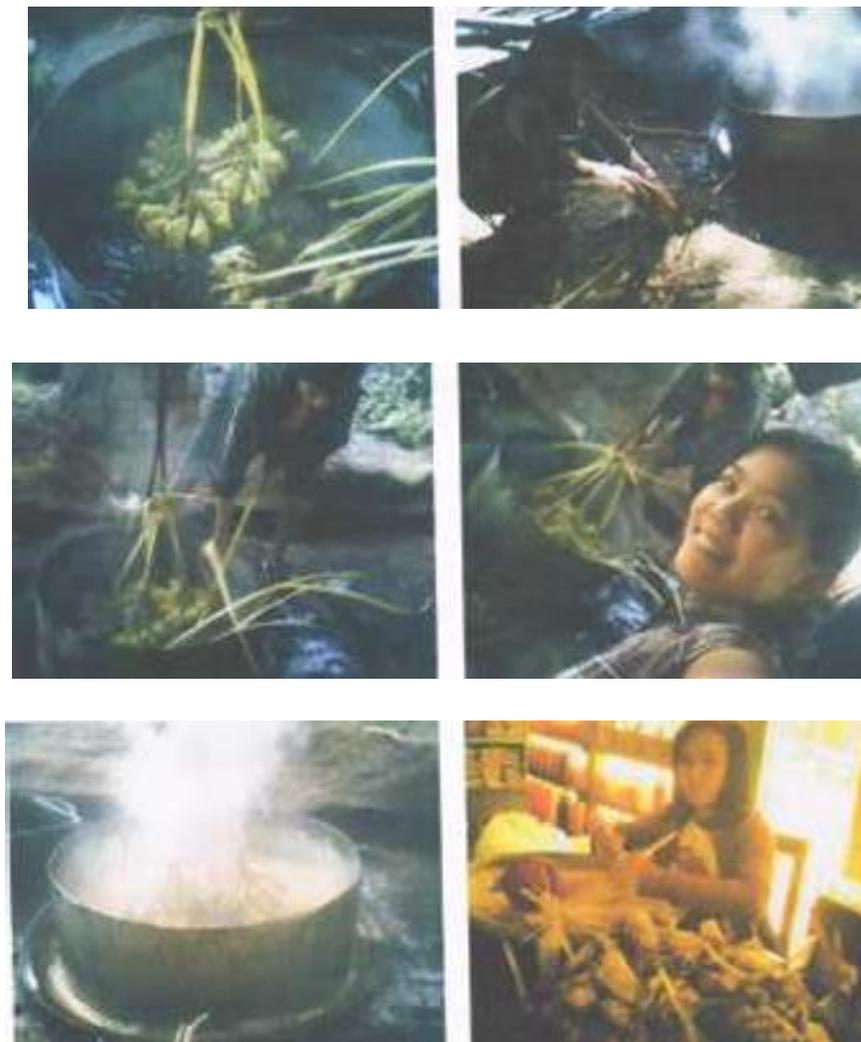


Figure 4. Cooking of “patupat” an OTOP product of the community



Figure 5. Sinaklob and packed muscovado sugar displayed in the trading center of the farmer



Figure 6. Tagapulot and packed muscovado sugar displayed in the trading center of the farmer



Figure 7. Vinegar and wine displayed in the trading center of the farmer

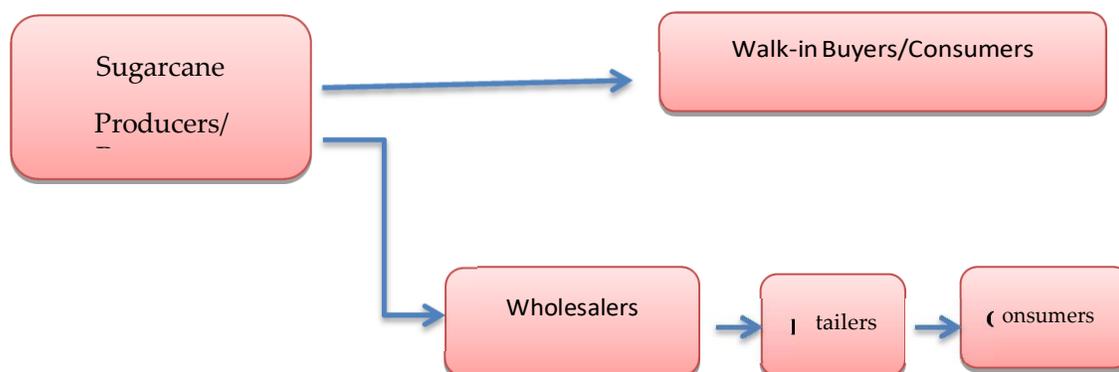


Figure 8. Marketing channel of processed sugarcane products in Bannawag Norte, Santiago City

Conclusions

Sugarcane producers and processors are dominated by women (female), matured with average age of 45.67 year old. They own their farm planted with sugarcane and use in processing for 4.8 years. Most of the facilities and equipment are owned by the farmers, they utilized their family members as major sources of labor. Adopted staggered planting to have a staggered harvesting to suit to their processing activity. They engaged traditional way of growing sugarcane and adopted three crop ratooning. They processed with organic based sugarcane by-products where “patupat” is identified as OTOP. They marketed these products within the locality by putting display center in front of their respective houses/processing centers.

Per farm and per hectare basis sugarcane production were obtained with Php100,119.00 and Php68,653.00 net income, respectively with an ROI of 56.74%. On the other hand, processing obtained with Php163,542.00 and Php112,143.00 net income for per farm and per hectare basis, respectively with an ROI of 93.72%. In by-products profitability analysis, molasses, wine “Basi” and vinegar are the most profitable while other products have also favorable return on investment

Recommendations

To further improve the operation of small hold farmers in Bannawag Norte, Santiago City, the following recommendations are set forward for implementation: a) strict monitoring by the DTI and other concern agencies in production and by-product processing to insure good quality

products; b) improve the product packaging so that it will become more competitive and attractive to the buyers; c) LGU and other agencies should provide the sugarcane farmer processors with more technical, financial and marketing supports to improve further their technical know-how and increase the level of competencies to catch up the growing niche market of sugarcane organic products; and d) adopt this scheme to increase income by other upland farmer's particularly to those with larger unutilized marginal lands.

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