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Cavendish Banana Value Chain Analysis: A typical case of Ca Mau Province, Vietnam

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Abstract:

The study aims to analyze the value chain of Cavendish Banana products grown in Ca Mau Province, Vietnam. Based on the value chain approach developed by Kaplinsky and Morris (2001) and ValueLinks theory built by GTZ (2007), the study surveyed 180 participants within the chain including farm households, exporters, traders, wholesalers and supporters. The results show that the Cavendish Banana value chain was operated through four main distribution channels including two domestic channels and two export channels, in which export value chains dominate in terms of both profits and income with 30 times higher compared to domestic ones. Besides, there was a disparity in profit distribution between farm households and export companies, which was mainly due to variation in sales volume and price. Finally, strategic recommendations on improving the economic value of the Cavendish Banana value chain in Ca Mau were proposed.

Keyword: Value chain, Cavendish banana, Ca Mau Province, GTZ ValueLinks.

1. INTRODUCTION

Export promotion of agricultural products is currently one of the major economic initiatives of Vietnam to ensure national food security, create jobs, generate foreign currency revenue and accumulate capital for the national industrialization and modernization process. As a large province in the dynamic Mekong delta region of Vietnam, Ca Mau is restructuring its agriculture sector by 2020 focusing on rice and some other agricultural products including Cavendish banana, a highly potential product for exportation.

According to the 2017 Ca Mau Statistical Yearbook, the province has about 5,622.30 hectares of banana and is the second largest cultivation area in the Mekong Delta region. In 2017 its output reached 53,318.3 tons and production capacity approximated 10 tons per hectare per year. Ca Mau targets to develop banana material area up to 8 thousand hectares by 2020, in which Cavendish banana accounts for about a thousand hectares with productivity of 100 tons per ha and a volume of 100 thousand

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tons per annum. Income efficiency is expected to increase so that income from Cavendish banana production should be from 150 to 200 million VND per ha per annum. Designing and promoting agricultural production models based on value chain approach is a suitable direction, especially in the current globalization. Linkages among economic organizations alone and with production units and farmer households have been proved to be an inevitable trend in agribusiness to take advantage of strengths, reduce production costs, increase profits and promote competitiveness (Gibbon, 2003)

2. RESEARCH METHODOLOGY

Value chain approaches have been adopted for several decades in developed countries to provide goods and services efficiently and to guide product improvement and innovation, especially in agricultural products.

Table 1. Summary of value chain approaches

	Kaplinsky & Morris (2001)	**GTZ (2007)**	**M4P (2008)**
Step 1	• Strarting point of value chain analysis	• Selecting a value chain to promote	• Value chain selection for analysis
Step 2	• Mapping the value chain	• Mapping the value chain	• Mapping the value chain
Step 3	• Product segmentation and key success factors in the final market	• Quantifying and analyze the value chain in detail	• Governance, Coordination, Regulation and Control
Step 4	• How producers reach the final market	• Analyze economic aspects of value chain	• Relationships, Linkages and Trust
Step 5	• Evaluating production efficiency according to standards	• Agreement on a vision and strategy for value chain upgrading	• Chain upgrades on demand side, Knowledge, Skills, Technologies and Support Services
Step 6	• Value chain management	• Analyzing opportunities and obstacles	• Cost and profits analysis
Step 7	• Upgrading the value chain	• Establishing operational updating goals	• Analysis of income distribution
Step 8	• Allocation issues	• Identifying agents to implement an upgrade strategy	• Analysis of employment distribution
Step 9	-	• Predicting the impact of chain upgrades	-
Step 10	-	• Facilitating the development process	-
Step 11	-	• Strengthening private business links,	-

(Source: Kaplinsky & Morris (2001 cited in *Tran Tien Kha, 2011)*

In Vietnam these approaches have attracted awareness and application since 2002. The value chain approach developed by Kaplinsky and Morris (2001) and "ValueLinks" of GTZ (2007) are among the most popular approaches in Vietnam. Another approach which is highly relevant to agricultural production for the poor is Making Markets Work Better for the Poor (M4P, 2008). Table 1 below illustrates characteristics of the three value chain approaches. This study employs a combined theory framework of Kaplinsky and Morris (2001) and GTZ's ValueLinks (2007). Based on proportionate quota sampling, data was collected from direct interviews of 180 participants in Ca Mau Cavendish Banana value chain including farmer households, export companies, traders and other supporters.

Figure 2.1. Theory framework and methodology

3. RESUTLS AND DISCUSSION

3.1 Current production and consumption of banana

Ca Mau is the second largest banana cultivation region of the Mekong Delta, with an area of over 5,500 hectares. Banana production has become the main source of earnings for people in banana cultivation areas, which are scatter-grown throughout 9 districts and cities of Ca Mau Province. Tran Van Thoi District accounted for the largest area with 46,40%, followed by U Minh District (30,77%) (2018). The rest is from other districts and cities, which are all under 300 hectares. Production productivity, however, is low. The average productivity is about 10 tons/ha/year, much lower than the national average (14 tons/ha/year).

Figure 3.1. Areas of banana plantation by districts in Ca Mau, 2017 -2019

District/City	Plantation area (ha)			Yields (tons)		
	2017	2018	2019	2017	2018	2019
Ca Mau City	281	3,231	3,358.6	3,546.6	287.0	29.0
Thoi Binh	345	2,596	2,431.0	2,523.9	307.6	300.6
U Minh	1,751	14,886	14,996.1	15,452.4	1,667.7	1,730.0
Tran Van Thoi	2,515	28,983	28,730.3	29,123.2	2,541.3	2,631.6
Cai Nuoc	110	334	335.0	351.3	108.5	111.7
Phu Tan	133	362	375.8	441.3	136.1	147.7
Đam Doi	251	1,442	1,398.5	1,470.7	261.1	267.6
Nam Can	51	260	259.6	270.2	53.7	56.4
Ngoc Hien	83	146	146.0	138.7	84.6	84.7
Total	**5,520**	**52,240**	**52,030.9**	**53,318.3**	**5,447.6**	**5,622.3**

(Source: Ca Mau Statistical Book, 2017-2019)

Most farmers are adopting traditional cultivation practices with out of date instruments, fertilizing and pruning methods. Most of banana fields in the province are old aged and the bananas are degraded without purity, leading to low productivity, quality and output. Other reasons for the inefficiency are small-scaled and spontaneous farming practices, lacks of production concentration and intensive farming techniques. Improvement of banana varieties and development of high-yielding banana cultivation models are, therefore, essential for the locality.

While most of banana products from small-scaled farming regions such as Ca Mau city, Thoi Binh, Cai Nuoc, Phu Tan, Dam Doi, Nam Can and Ngoc Hien are consumed by the local, banana products from U Minh and Tran Van Thoi districts are exported and partially distributed to Ho Chi Minh City and the Mekong Delta region. These two regions accounted for 83.6% of total output and 77.58% of total cultivation area. Compared to other regions, banana fields in U Minh and Tran Van Thoi are more cluster-grown, which is convenient for collection and transportation process.

3.2 Value chains of Ca Mau Cavendish banana

The Cavendish banana value chain in Ca Mau was illustrated in Figure 3.2. Among export companies in Ca Mau, there is one company which is in charge of both production and export. The company is supported by the local government in preferential land rent for 300 hectares of Cavendish bananas in accordance with VietGAP standards (i.e. Vietnamese Good Agricultural Practices). On each hectare, 2500 banana seedlings are planted, with a width of 1.5m and the length of the row is 2m/tree apart. Currently 77.5% of the company's output are exported to the Middle East markets such as Saudi Arabia, Dubai, UAE, and China and South Korea. A small proportion of 22.5% (mostly defects and inconsistency) is consumed domestically. It could be seen that there are four channels of Cavendish banana sold from farmers to final consumers which are showed in figure 2. These four channels of distribution are simple and modest.

Channel 1. Export companies (in charge of all functions in the chain) → export. Companies take orders, do packaging and export approximately 66.6% of their output to foreign markets. In general, foreign traders come find potential partners based on quality, negotiate and sign contracts.

Channel 2. Export companies (in charge of all functions in the chain) → domestic markets. About 22.95% of their production is for domestic consumption. In this channel, buyers and sellers agree on the price and mode of transportation. Most of

these products goes to groceries and supermarkets. A few of them are collected in-field by traders.

Channel 3. Farmer households → export. Farmer households export only 10.9% of their output. The most common mode is in-field purchasing. About 10% of all banana plantation farmer households in the province are cultivating Cavendish banana.

Channel 4. Farmer households → domestic markets. This channel accounts for 1.55% of total farmer households output. Products are purchased right at their gardens by traders.

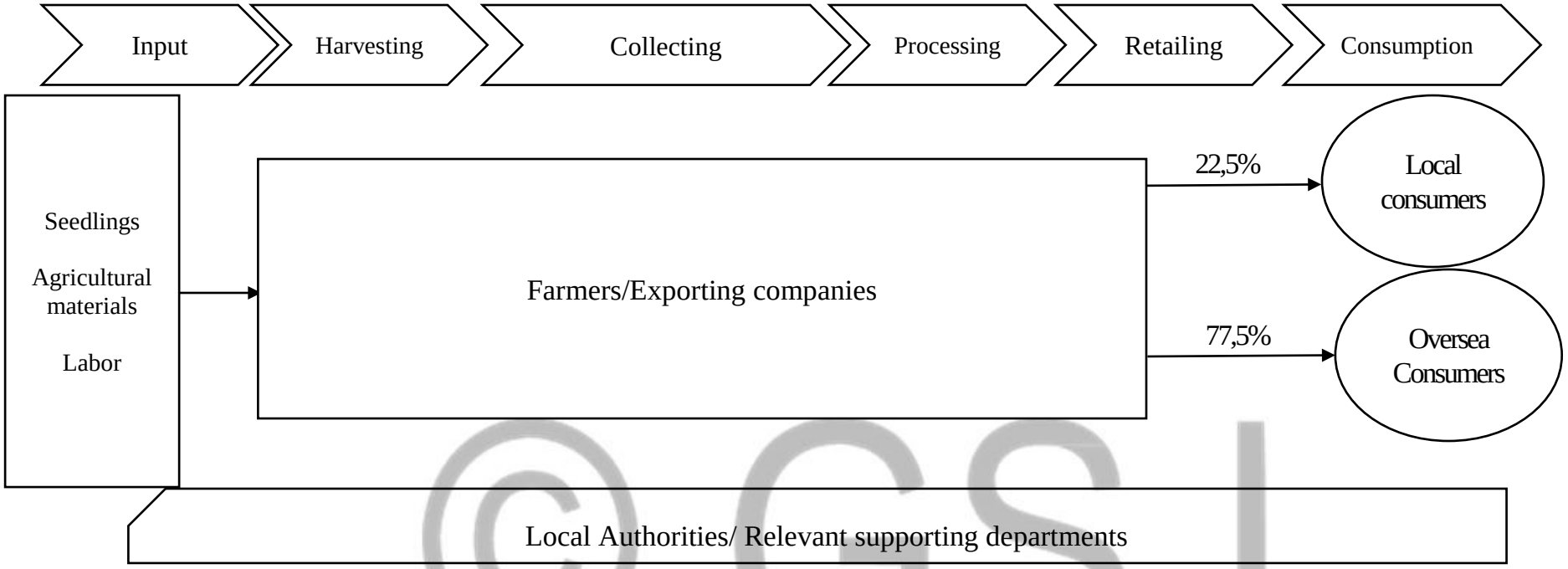

Figure 3.2. Diagram of Cavendish banana value chain in Ca Mau

Source: Survey results

3.3 Analysis of economic value in the Cavendish banana value chain

3.3.1 General analysis base on financial indicators:

Figure 3.3 points out that total profit for the entire value chain is approximately VND 31,600.40 million and total income is VND 1,682.22 million including both profit gained from domestic and exporting value chain.

Figure 3.3. Economic analysis of the Cavendish banana value chain in Ca Mau

Indicator	Unit	Farmer	Exporter	Gross
Domestic value chain				
Volume	Ton	48.45	654.20	702.65
Per unit Price	VND 1,000/kg	5.12	4.31	
Per unit Profit	VND 1,000/kg	-4.05	-5.34	
Total Revenue	VND 1,000/kg	248.06	2,819.61	3,067.67
Revenue Rate	%	8.09	91.91	100.00
Total Profit	VND million	-196.22	-3,493.43	-3,689.65
Profit Rate	%	5.32	94.68	100.00
Total Income	VND million	-195.74	-3,486.88	-3,682.62
Income Rate	%	5.32	94.68	100.00
Indicator	**Unit**	**Farmer**	**Exporter**	**Gross**
Export value chain				
Volume	Ton	340.25	2,080.00	2,420.25
Per unit Price	VND 1,000/kg	10.50	12.00	
Per unit Profit	VND 1,000/kg	1.33	2.35	
Total Revenue	VND 1,000/kg	3,572.63	24,960.00	28,532.63
Revenue Rate	%	12.52	87.48	100.00
Total Profit	VND million	452.53	4,888.00	5,340.53
Profit Rate	%	8.47	91.53	100.00
Total Income	VND million	455.94	4,908.80	5,364.74
Income Rate	%	8.50	91.50	100.00
Domestic and export combination				
Volume	Ton	388.70	2,734.20	3,122.90
Per unit Price	VND 1,000/kg	9.83	10.16	
Per unit Profit	VND 1,000/kg	0.66	0.51	
Total Revenue	VND 1,000/kg	3,820.93	27,779.47	31,600.40
Revenue Rate	%	12.09	87.91	100.00
Total Profit	VND million	256.54	1,394.44	1,650.98
Profit Rate	%	15.54	84.46	100.00
Total Income	VND million	260.44	1,421.78	1,682.22
Income Rate	%	15.48	84.52	100.00
Average Volume	Ton/participant/year	21.59	2,734.20	
Average Profit	Ton/participant/year	14.25	1,394.44	

Source: Data processing analysis from 180 respondents, 2019.

It could be seen that there is 94.68% of total profit comes from export channels and the rest of 5.32% is from domestic markets. In other words, export channels accumulate 10 times higher in revenue than domestic channels. This is explained by differences in sales quantity and sales price between export and domestic channels. Export channels account for 77.5% of total quantity with unit price between 10,500 and 12,000dong while domestic channels take 22.5% in quantity with the unit price between 4,310 and 5,120 dong.

3.3.2 Cavendish banana primary value chains

Figure 3.4 shows economic value in four main Cavendish banana value chains in Ca Mau province.

Figure 3.4. Net added value created by participants in the Cavendish banana value chain in Ca Mau (in VND 1,000)

Indicator	Farmer Household	Export Company
Channel 1. Export company → Export		
Price (1)		12.00
Input cost (2)		9.00
Value added cost (3)		0.65
Added value (1-2)		3.00
Net added value (1-2-3)		2.35
Profit/Cost ((1-2-3)/(2+3))		0.14
Channel 2. Export company → Domestic market		
Price (1)		4.31
Input cost (2)		9.00
Value added cost (3)		0.65
Added value (1-2)		-4.69
Net added value (1-2-3)		-5.34
Profit/Cost ((1-2-3)/(2+3))		-0.55
Channel 3. Farmer household → Export		
Price (1)	10.50	
Input cost (2)	8.63	
Value added cost (3)	0.54	
Added value (1-2)	1.87	
Net added value (1-2-3)	1.33	
Profit/Cost ((1-2-3)/(2+3))	0.15	
Channel 4. Farmer household → Domestic market		
Price (1)	5.12	
Input cost (2)	8.63	
Value added cost (3)	0.54	
Added value (1-2)	-3.51	
Net added value (1-2-3)	-4.05	
Profit/Cost ((1-2-3)/(2+3))	-0.44	

(Source: Data processing analysis from 180 respondents, 2019)

Channel 1. Export companies → Export

Companies incur input cost of 9.00 thousand dong/kg and export at the price of 12.00 thousand dong/kg, resulting in their added value of 3.00 thousand dong/kg. Added value cost is 0.65 thousand dong/kg. Thus, net added value stays at 2.35 thousand dong/kg. Profit/cost ratio is 0.14, indicating that for each VND invested export companies gain 0.14 VND in profit.

Channel 2. Export companies → Domestic consumption

Companies sell at the price of 3,000 VND/kg in domestic market. Their input cost and value added cost are 2.7 thousand dong/kg and 1,900 VND/kg respectively. As a result, their net added value is 1,100 VND/kg. In this channel, export companies gain 400 VND of profit for each dong invested. It could be seen that, the intermediary cost of the Cavendish banana exported in Ca Mau is 9,000 VND/kg, the average selling price in the domestic market is 4.310VND/kg, hence the exporters got loss of 4,690 VND/kg. The additional cost was 650 VND/kg, so the net revenue was -5,340 VND/kg. The profit and cost ratio of the exporting company is -0.55, i.e. for each VND invested, the exporting company must incur an additional loss of VND 0.55.

In fact, with the harvest, only about 75% of the production could meet exporting standards due to the frequent elimination of the first and last hips and inside or outside damages. Instead of giving up and losing the cost of the remaining 25% of production, most companies decide to redistribute to the domestic market through feed mills, processors and consumers for minimizing the losses.

Channel 3. Farmer households → Export

In this channel Cavendish banana farmers incur the input cost of 8.63 thousand dong/kg and export at the price of 10,500 VND/kg, thus making their average added value of 1,870 VND/kg. Their value added cost is 1,900VND/kg, thus, the average net added value is 1,330VND/kg. The profit/cost ratio of 0.15 shows that farmer households on average could earn 0.15 VND for each invested VND.

Channel 4. Farmer households → Domestic consumption

Cavendish banana farmers on average pay 2.16 thousand dong/kg for input and 0.14 thousand dong/kg for added cost. They sell at the price of 3.00 thousand dong/kg, thus the added value and net added value are 0.84 thousand dong/kg and 0.70 thousand

dong/kg. Profit over cost ratio is 0.3, indicating that farmer households on average earn 0.30 dong for each dong invested.

In general, Cavendish banana farmers have the average annual sales quantity of 21.59 tons with the average annual profit of VND 14.25 million (Data processing analysis from 180 respondents, 2019). These numbers are much lower compared to export companies, which are 10 times higher (2,734.20 tons and VND 1,394.44 million respectively).

4. CONCLUSION

According to the four main Cavendish Banana value chains mentioned above, it is shown that export channels dominate in both sales volume and value. While there is a minor difference on profit with respect to averaged volume between farmer households and export companies, there is a large gap in total profit. This is explained by a critical variation in sales number between export companies and farmer households.

The increasing profitability and demand on Cavendish banana in both domestic and export markets make it a potential agricultural product for Ca Mau Province. A promotion on plantation methods of Cavendish banana, hence, is important, especially for export orientation. However, it is essential that Cavendish banana producers focus on cultivation techniques to gain the highest yielding with consistent quality, efficient production and consumption.

For export companies, an emphasis should be on applying advanced technologies on processing, storage, marketing and on modern and flexible transportation system so that Ca Mau Cavendish banana products reach the global market effectively.

Not only for exporters, all other players in the banana value chain in Ca Mau province need to be aware of participating in developing traceability data, which is a premise for brand development and trust building for consumers at home and abroad. Local policy makers should pay more attention to branding and imaging "Ca Mau Banana" through seminars, trade promotion and right through sales contracts, and to deploying technology transfer projects such as traceability, seed, technology, labor resources to farmers and producers. As exportation is the main channel in terms of sales volume and income, future study might be on constructing and examining a global value chain for Ca Mau Cavendish banana products, aiming at efficiency and economic value improvement.

REFERENCES

Ca Mau Bureau of Statistics, 2019. *Ca Mau 2019 Statistical Book*

FAO, 2007. Challenges of Agribusiness and Agro-industries Development, Paper prepared for the Committee on Agriculture. Rome, 2007. Item Five of the Provisional Agenda, FAO

Eschborn, G.T.Z., 2007. Manual Value Links–Metodología para el fomento de la Cadena de Valor.

FAO, 2018. *Banana Market Review Preliminary results for 2018*. Rome: FAO.

Gibbon, P., 2003. Value-chain governance, public regulation and entry barriers in the global fresh fruit and vegetable chain into the EU. *Development Policy Review*, *21*(5-6), pp.615-625.

Kaplinsky R & Morris M, 2001. A handbook for value chain research. In *The Institute of Development Studies, University of Sussex*. Brighton: United Kingdom

Lee, J., Gereffi, G. and Beauvais, J., 2012. Global value chains and agrifood standards: Challenges and possibilities for smallholders in developing countries. *Proceedings of the National Academy of Sciences*, *109*(31), pp.12326-12331.

M4P, 2008. *Making Value Chains Work Better for the Poor*, Making Market Systems Work Better for The Poor (M4P)

Nguyen, H. Tam & Luu, D. Hai, 2014. A study of cacao value chain in Ben Tre Province, *Science Journal of Can Tho University*, 35(D), pp.8-15.

Nguyen, Q. Nghi & Mai, V. Nam, 2015. Efficiency assessment of pineapple production of farmers in Tan Phuoc District, Tien Giang Province, *Science Journal of Can Tho University*, 36(D), pp.1-9

Vo, T.T. Loc & Nguyen, P. Son, 2013. *Textbook of value chain analysis in agricultural products*, Can Tho University Publishing, Can Tho