



Enhancing the Value of Banana Products in Lai Chau Province- Vietnam

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Abstract

Since the banana trees were planted in Phong Tho (Lai Chau), located in the Northern region of Vietnam, which contribute to agricultural development in the province, the farmers here have a prosperous life. Authors used statistical method, qualitative analysis through survey, combined with synthesizing the data on the contents of production, processing, consumption, environment and chain of agricultural products in Lai Chau province in order to estimate net added value. With the income from 70-100 million VND/household, the people's material and spiritual life is improved more and more, so poverty has decreased. However, the process of raising, planting and production by many households is not technically correct, and there are no enterprises investing in deep processing, so the value of goods is not high, the consumption market mainly depends on China. Therefore, many solutions need to be implemented related to the production, processing and consumption of agricultural products in order to add value, promote the brand of Phong Tho banana products to many domestic and foreign markets. It is necessary to have domestic and foreign distribution channels for post-harvest processed products such as dried bananas, banana jam, banana leaves, and banana powder.

Keywords: Banana tree; Products; Value; Consumption; Phong Tho; Vietnam

JEL: Q13, Q14, O10, M10, M21

Introduction

Phong Tho district has favorable climatic and soil conditions for banana trees, banana area for harvest accounts for 94% of the total area of Lai Chau province with 3413 ha. The annual banana output reaches more than 42,000 tons. The high banana area has initially turned banana products of Phong Tho district of Lai Chau province into goods that can be supplied to the market. The cost of growing bananas is low and the income is high. It can be grown for 1 year but can be harvested for many years. Banana prices are sometimes up to 0.6-0.65 USD/kg, the cheapest is also 0.26-0.3USD/kg. On average, a household growing 1 ha of banana will generate an income of 80-100 million VND/year. Many households in the district have taken advantage of the hilly areas to grow crops such as maize, potatoes, and cassava inefficiently to switch to banana. We will discuss more on its scientific values later. Bananas are popular fruit in Vietnam. In

fact, banana tree is a kind of plant, just as orchid family, and bananas are enrichment in vitamin and carbohydrate and vitamin C presented an ideas that at coastal areas, farmers need to plant more banana trees to get more profits from its products and for better environment [1]. People can take advantage of banana fiber for handicraft products making and wastes can be used as fertilizers [2]. Then, Pointed that some banana genotypes are rich in provitamin A carotenoids (pVACs), providing an opportunity to use bananas as a readily available vehicle for provitamin A delivery [3]. Next, considered fibers with dietary in bananas can be function as nutrition ingredients [4]. Beside, gave a very good opinion that bananas can be favourite food for patient with diabetes. Food industry will recognize values from bananas and banana products with many uses from banana trees, leaves and peels as we see in below analysis [5]. In summary it will help to reduce weight with fiber as it has lots of benefits. Other benefits from banana including: Lower cholesterol

Received date: 17 March 2021; **Accepted date:** 22 March 2021; **Published date:** 27 March 2021

Citation: Nguyen Thu Thuy, Duong Thi Tinh and Vu Bach Diep (2021). Enhancing the Value of Banana Products in Lai Chau Province- Vietnam. SunText Rev Econ Bus 2(1): 125.

DOI: <https://doi.org/10.51737/2766-4775.2021.025>

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The banana stem helps lower cholesterol and is a great remedy for diabetes. Eliminate toxins the banana stem assists in the detoxification process of the body. Treat dry cough drinking banana stem juice on a regular basis is great for treating a dry cough. Treat kidney stones Banana stem juice with lemon helps prevent the formation of kidney stones. Improve bowel movements Banana stalks help treat digestion and improve bowel movements. Reduce heartburn, if you suffer from frequent heartburn, banana stem juice can lower acid levels while reducing heartburn. When our family eat bananas in various kinds, we can obtain many benefits for our health, energy, blood pressure and heart muscle but cheap price. These are advantages of bananas and that's why we conduct this study in order to expand markets for bananas. Next, we will discuss scientific values of banana value-added products, we can see in practice that bananas can provide lots of value-added products, for instance, it can be used as material for other industries, or material for producing biomass. Banana products including peels, leaves...can be used as livestock feed, fish feed, fibre for fabric and natural fibers and bio-fertilizers. Beside, Banana tree not only helps people increase income, alleviates poverty, but also helps to green bare land, bare hills, and prevent erosion. However, the degree of diversity in the processing of finished bananas is still low because of the seasonal characteristics, pests and diseases in the cultivation process. Thus, the selling price of bananas is not stable and the product value has not been improved. This will reduce the product value and limit the promotion of the Phong Tho banana brand and affect people's income. The authors give a number of solutions to improve the value of Phong Tho banana products after having had an objective assessment of the banana production, processing and consumption in the locality over the past time. Therefore, banana trees can be grown in most inconvenient places for house construction, construction sites and to protect soil. In Vietnam, bananas are grown in almost all regions of the country [6].

Data and Methodology

Research issues

Research purpose: Research to find out necessary solutions related to the production, processing and consumption of agricultural products. This is to enhance the value and promote the brand of Phong Tho banana products to domestic and foreign markets.

Research questions

Question 1: Analysis of opportunities and challenges for bananas in Lai Chau province, Vietnam through the SWOT model.

Question 2: What solution for businesses and farmers to expand the banana distribution markets and channels in Lai Chau and Vietnam?

Methodology

The method of data collection

- Collection of secondary data: including documents, production planning reports, production projects, preliminary and final reports of the People's Committees of districts and communes, the Department of Agriculture and Agricultural Development Phong Tho district village was announced; Collect documents and data from research projects and related websites. Collect primary data: information from surveys authors use to analyze SWOT and quantitative models with Excel software. Details as below:
- Subjects, investigation methods and survey samples: surveyed by random sampling method, surveyed 3 subjects using prepared form:
- Banana product supply in Phong Tho district - 100 surveys.
- The head of the household, the processing establishments, and the enterprises selling banana products in Phong Tho district - 20 surveys.
- Leaders of specialized divisions and departments at the People's Committees of districts and communes in Phong Tho district - 12 surveys.
- Content of the survey: Evaluate the results and efficiency of banana production by people in the district; Development patterns and expectations for the district's banana products in the future.

Data processing method

The collected data is calculated into indicators that are appropriate to the research requirements with Microsoft Excel software and some other supporting tools. Then developing tables to make specific analysis and evaluation for the research results. Qualitative analysis method: using the results from the questionnaire, the authors will analyse the results and efficiency of banana production in the district through appropriate analysis criteria. From there, there are bases to evaluate the efficiency of banana trees on household economy and contribution to local development. In addition, the authors also use the SWOT model to assess opportunities and challenges in developing Phong Tho banana products as a basis for building appropriate solutions [7-9].

Research criteria

- + Sale Revenue = Number of Units Sold x Sales Price per Unit (1)
- + Total Cost = Intermediary Costs + Direct Costs (2)
- + Value Added = Total revenue - Intermediary Costs (3)
- + Nest Added Value = Value Added - Direct costs (4)

Results and Discussion

Current situation of developing banana production in Phong Tho district

At table 1, banana area is mainly concentrated in Phong Tho district with square is over 94% of the total banana area of the

province. The banana area increased from 2,500 ha in 2016 to now nearly 3,700 ha, the planting area increased on average from 300 to 500 ha/year. In 2019, the current banana yield has reached about 14 tons of fresh fruit/1 ha and the yield level reached 42.173 kg, accounting for 93.7% of the province's banana yield. This output level is not commensurate with the potential of Phong Tho district (Table 1).

Table 1: Current situation of banana production in Phong Tho district in 2019.

	Lai Chau province	Phong Tho district	Rate of Phong Tho district / Lai Chau province (%)
Area (ha)	3924	3694	94.13
Yield (tons/ha)	14	14	
Output (tons)	45006	42173	93.70

Table 2: Summary of revenues, costs and added value of banana growing households.

Items	Cost	Proportion
Intermediary costs	2.679	35.08
Seed cost	0.645	8.44
Expenses for plant protection drugs	0.363	4.75
Fertilizer costs	1.347	17.64
Production fuel costs	0.324	4.24
Direct costs	4.957	64.92
Labor costs	3.654	47.85
Depreciation	0.364	4.766
The cost of renting a machine	0.939	12.29
Total cost = Intermediary costs + Direct costs	7.636	100
Revenue	16.634	
Added value = Revenue - Intermediary costs	13.955	
Net added value = Added value - Direct costs	8.998	

Table 3: Evaluate the level of linkages among stakeholders in banana production in Phong Tho district from survey data.

Content	Average score	Consent
Between farmers and local government	3,05	Confused
Between farmers and enterprises and buyers	3,17	Confused
Between farmer and bank	2,48	Disagree
Between farmer and scientist	2,22	Disagree

The advantages of growing bananas are low investment costs such as the cost of seeds, fertilizers, pesticides, labor costs per tree from 30,000 to 60,000 / root per year and easy care. This is an easy plant to take care of. In 1 year, banana trees can be harvested with 1 chamber / stem about 30kg / chamber, the selling price in the district is 3,000-5,000 VND / kg. People can earn from 70 million to more than 140 million / ha / year. The below table shows us that Direct cost still little high then affect to reduce net added value (Table 2).

Table 2 shows that the production cost of banana/kg of the household includes costs such as seeds, fertilizers, labour in which direct cost accounts for nearly 65% of the value of 1 kg of banana. With a total cost of about 7600 VND/kg and a turnover of about 16600 VND/kg, people are getting an added value of nearly

9000 VND/kg. Such profitability makes people more motivated to expand acreage, focus on increasing cultivation to improve productivity and quality of banana products in Phong Tho district. In Phong Tho district, banana post-harvest processing has only been initially implemented until now, mainly by consuming fresh products and exporting to China. This is a limitation that prevents banana products from increasing product value. However, there is an enterprise in Phong Tho district where there is a plan to invest in a banana drying line, which is a plan to help solve the outstanding amount of un-consumed bananas. This plan is also a solution to increase product value and diversify local banana products [10-14].

Situation of banana product consumption in Phong Tho district

The district's banana products are mainly fresh products for local consumption and export to China. Currently, farmers mainly sell green bananas to buyers of Vietnam and China, then bananas will be sold to consumers or businesses for export or processing. Some banana products processed by famers include: dried bananas, dried bananas for medicinal purposes, soaking in wine, but quantity is not much so the value is not high. The main market consumes about 90% of the banana production of Phong Tho district (Viet Trung banana market consumes about 300-350 tons/day). The biggest method of consuming bananas is through traders, collecting them and exporting them to China. However, this large consumer market has become more and more difficult due to the requirement of product origin traceability, which is not currently available in Phong Tho district. The influence of Covid 19 has affected the consumption of products not purchased by China. This is a factor hindering the development of production and product consumption, this factor also reduces the value of banana products. Below table shows us that Export, Chinese traders and Vietnamese consumers/retail plays main role in distribution channels of banana products. Figure 1 shows the market for banana products in Phong Phong district over the past time (Figure 1).

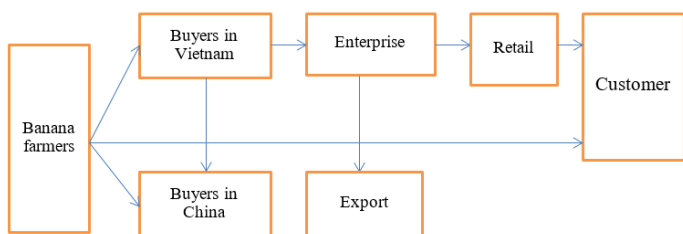


Figure 1: Distribution channels of Banana products in Phong Tho district.

Current situation of production association with Banana product value chain in Phong Tho district

The linkage between actors has been concerned through supportive policies and mechanisms of local authorities. There are specific programs to support capital, technology, product consumption policy, processing and branding. However, the link between the people and the processing and purchasing enterprises is mainly based on market demand. Besides, it is regulated by market mechanism. These relationships depend on the main factor of export market demand because it accounts for more than 90% of the volume for export. Through survey, the subjects assessed the relationships at a rather high level (from 2-3 of the rating scale), this means that the relationship was not tight (Table 3).

Synthesizing the results from the surveyed subjects, the authors found that: the degree of association in the process of banana production and consumption in Phong Tho district is still quite loose. Currently, there are a number of policies to support agriculture and banana production have been issued but the effectiveness is not high; Enterprises mainly buy and sell directly with little attention to the production process; The level of capital support from banks is not high, there is no specific preferential mechanism; There is almost no connection with scientists in the application of science and technology in banana production, preservation and processing. This is one of the reasons why the value of banana products is not high, while the district there are conditions to do this. There should be policies to support people in planning and orientation. The relationship has not really been shown when creating a large volume of goods and difficult consumption products. The State should have mechanisms and policies to call for investment in processing to support people to consume products [15].

Analysing opportunities and challenges in banana product development through the SWOT model in Phong Tho district

Strengths (S)

- The climate and soil are suitable for growing bananas.
 - People have long-term experience in planting and taking care of banana trees.
 - People and businesses receive a lot of local support in terms of breeds, techniques and product processing such as: Resolution No. 12/2010, Resolution No. 13/2014 of the Provincial People's Council and Decision 836 / 2014 of the Provincial People's Committee.
 - Consumption market to China is expanding in large quantity.
 - Convenient transportation for transport to other provinces.
- #### 3.4.2. Weakness (W)
- The product is highly seasonal.
 - People do not have much experience in farming, so it is easy to develop diseases for plants.
 - The planting scale is small and there is no clear plan and direction, which will lead to excess or shortage of supply when the market fluctuates.
 - The variety of banana-processed products is minimal.
 - Lack of investment capital for the production and processing of banana products. The forms of loan are not diversified.
 - There is no banana processing enterprise in the area.
- #### 3.4.3. Opportunity (O)
- The source of raw materials is abundant, there are many opportunities in product processing.

- Covid 19 translation in China has been controlled. This is a potential market for banana products in the district.
- Decision No. 1446 - People's Committee dated November 5, 2019 and No. 1447 - The People's Committee issued important products and products. This has encouraged and prioritized the implementation of linkage with production and consumption of products in Lai Chau province. Including banana products of Phong Tho district as the main product of the district, so it will receive a lot of support to develop banana trees [16-18].
- An enterprise is investing in construction in Phong Tho district with the aim of focusing on deep processing of banana products.
- 3.4.4. Threats (T)
- Competitors: banana products grown in many localities have brands and advantages in transportation such as Dai Hoang banana (Ha Nam province), banana from Lao Cai province, Dong Nai province, Son La province...
- There are high technical and quality requirements when Banana of Phong Tho district participates in the commodity market. Requires both people and businesses to have a change in thinking and production methods.
- The variety of fruit substitutes for bananas also needs product processing to be considered.

Conclusion

Bananas are rich in vitamins and minerals, especially vitamin B6, fiber and potassium. Potassium has a role in stimulating muscles, nerves and brain cells. The amount of potassium in a banana is about 450mg, while an adult needs 4.7g of potassium per day. Eating bananas every day helps increase resistance, strengthen the immune system, prevent disease. It helps to keep blood sugar levels stable and treatment of stomach ulcers as well as help with bowel movement. Next, we identify many other uses of banana trees and products, many value-added products from peels, leaves, fruits and other uses can be served for other industries, for instance: antioxidant, colour absorber, as material for various functional foods, alcohol, biogas, cattle feed, etc.

Planting banana garden not only to protect agricultural land but it also help to improve economic conditions for farmers and the poor, at a very low production cost. There many kinds of bananas as well, in mountain areas, farmers can choose suitable banana trees to plant. With the strengths and opportunities in developing banana trees in Phong Tho district, Lai Chau province, it can be seen that this will not only help people eliminate poverty but also become the main tree of the district. Leaders at all levels, businesses and people need to make changes in the production and processing process in order to increase the value of

agricultural products in Phong Tho district. The authors group would like to give some suggestions:

- Production process: Planning and improving the common material areas to meet market standards and reduce production costs; Technical assistance helps farmers to cultivate the right process to improve the quality of banana products; Diversifying loans to help farmers have conditions to invest in technology to produce products according to VietGap, GlobalGap standards
- Banana product processing process: There should be improvements to mechanisms and policies that prioritize the development of post-harvest processing so that products are not in stock. Besides, it also avoids being forced by private traders. Products last longer, added value such as: diversifying products from banana; have incentives in terms of capital, space and technology for processing enterprises...
- Product consumption activities: The Chinese export market is a big potential market that requires an export protection policy for fresh banana products such as signing a principle contract between the two parties. Contract for product consumption to avoid being affected by conditions such as import mechanism of another country or disease.
- Value-added products and wastes from banana trees can be researched in order to support other industries, so a low cost banana production can help farmers in many other uses for economy.

There should be a domestic consumption channel to bring products into large and reputable supermarket chains in the country. It is necessary to have domestic and foreign distribution channels for post-harvest processed products such as dried bananas, banana jam, banana leaves, and banana powder. Diversify purchasing and distribution channels for products and transportation for product consumption.

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