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## Analysis of Pineapple Chips Agroindustry in Kualu Nenas Village Kampar District

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**Abstract**— The purpose of this study is to analyze the production cost, efficiency level and marketing process of pineapple chips business, and to analyze the institutional support of pineapple chips agroindustry. The study was conducted by survey method from 12 pineapple chips entrepreneurs, chosen by census sampling method in Kualu nenas village in 2012. Data were analyzed by descriptive method. The growing number of pineapple chips entrepreneur was followed by the increasing number of machine owned by the entrepreneur, ranging from 1-4 unit facum frying machine for each entrepreneur. The average production cost of pineapple chips produced by 4 times production process scheme/ day are Rp.15.514.749 for 1 machine, Rp. 34.199.267 for 2 machine, and Rp. 62.515.120 for 3 machine. The average production cost of pineapple chips, produced by 3 times production scheme/ day with 4 unit machine is Rp. 57.478.340. The efficiency levels ranging between 1,27 (the average efficiency of 1 unit machine) up to 1,78 (the average efficiency of 4 unit machine). While the value added obtained per unit machine is about 9 million rupiah or 38.000/kg. Some of the products (60%) were marketed through broker or wholesaler, the others (40%) were directly sold to the consumer using their own brands. In the accessibility of the entrepreneurs to financial institution, the entrepreneurs were able to obtain the capital assistance from BMUN, micro economic and banking institutions.

**Keywords**— Agroindustry, Pineapple chips, Cost, Efficiency

### I. INTRODUCTION

Village of Kualu Nenas is pineapple production center in Kampar district with area coverage approximately about 1,050 hectares of land. Total production and productivity per hectare are 15,750 tons and 15 tons / ha consecutively (Monograph of District Tambang, 2011). Since 2002 the people in the village had produced pineapple chips and to date there are 12 small industries of pineapple chips. Pineapple chip can create added value quite significantly. For every 35 kg the farmer can get Rp 250,000 in return while to the chop producer compared to only Rp 157,500 if it sells fresh pineapple.

Although the pineapple has potential to be the income source of farmers in Kualu Nenas village, however, the pineapple agroindustry has not grown significantly. From the field observation this may be due to the lack of synergy among the pineapple agroindustry entrepreneur so that the added values do not go to farmers but go to the traders. In addition, the variation of pineapple agroindustry product is still limited.

The problems of pineapple agroindustry among others are the processing technology is still simple, inherited from generation to generation, so that the shelf life is short;

training and supporting have not been implemented on an ongoing basis; and the role of institution is not optimal yet to support marketing and promotion. Consequently, the product distribution is not wide spread across the market. Most of the product is sold in bulk at the wholesale market rather than sold in the retail market. Based on the above explanation, we do the research about the analysis of agroindustry of pineapple in Desa Kualu Nenas with the objective of: 1) to analyse the cost of production, 2) the efficiency of marketing and 3) supporting institution of pineapple agroindustry.

### II. RESEARCH METHOD

This research is done in Kualu Nenas village by using Survey method in 2012. Samples were taken from all 12 pineapple agroindustry farmers. Analysis method are :

#### A. Cost of Production

$$TC = TFC + TVC \quad (1)$$

Where :

TC : total cost of pineapple chip agroindustry (Rp/process) and (Rp/month)

TFC : total fixed cost pineapple chip agroindustry (Rp/process) and (Rp/month)

TVC : total variable costs of pineapple chip agroindustry (Rp/process) and (Rp/month)

#### B. Gross Income

$$TR = Y \cdot Py \quad (2)$$

Where :

Y : amount of production (unit)

Py : price of product (Rp/unit)

TR : Gross revenue (Rp/process) and (Rp/month)

#### C. Net Income

$$\pi = TR - TC \quad (3)$$

Where :

$\pi$  : net income of pineapple chip agroindustry (Rp/process) and (Rp/month)

TR : Gross revenue of pineapple agroindustry (Rp/process) and (Rp/month)

TC : Total costs of pineapple agroindustry (Rp/process) and (Rp/month)

#### D. Efficiency

$$RCR = TR / TC \quad (4)$$

Where :

RCR : Return Cost Ratio

TR : Gross revenue of pineapple agroindustry (Rp/process) and (Rp/month)

TC : Total costs of pineapple agroindustry (Rp/process) and (Rp/month)

With the criteria as follow :

RCR > 1 : the agroindustry of pineapple chips is profitable

RCR = 1 : the agroindustry of pineapple chips is break even,

RCR < 1 : the agroindustry of pineapple chips is not profitable.

#### E. Break Even Point (BEP)

$$BEP \text{ cost} = \frac{TFC}{1 - \frac{TVC}{TR}} \quad (5)$$

Where :

BEP : Break Even Point

TFC : total fixed cost pineapple chip agroindustry (Rp/process) and (Rp/month)

TVC : total variable costs of pineapple chip agroindustry (Rp/process) and (Rp/month)

TR : Gross revenue of pineapple agroindustry (Rp/process) and (Rp/month)

### III. RESEARCH RESULT

Kualu Nenas village is among the 17 villages in Tambang district with the area of 35,000 hectare, with four sub villages of: Dusun I Pasar Baru, Dusun II Sungai Putih, Dusun III Lengkok Indah dan Dusun IV Simpang Durian.

The population is Kualu Nenas village is 2,610 person and the number of family is 603. The average elevation is  $\pm 15$  m above thye sea level, rain fall of 1,200 mm/year and the temperatura is 26°C - 33°C, soil type is peat with Ph between 4,5 – 5,6. There two season in thsi vullage, dry and rainy season. Crops type cultivated by farmers are pineapple, rubber, and rambutan (District Monograf, 2011)<sup>4</sup>

The area planted with pineapple is 1.050 hectare in year 2011 with totl production of produksi 1,456 ton/year or 121 ton per moth. Pineappe used for chips industry is about 38 ton (31%).

The production process ranging from stripping to packaging takes approximately 4 hours. In one day in general entrepreneur perform three to four times the production process. For a one-time production process produces an average of 2.5 kg of pineapple chips per unit of engine derived from fresh pineapple raw materials ranged from 35 pieces to 45 pieces. This amount depends on the size of the pineapple fruit is used, resulting in an average day enterpreneur are able to produce 7.5 kg of pineapple chips per unit of the machine. Scale artisan production process is determined by the amount of capital owned by enterpreneur and raw materials available. Stages of the production process: 1) Stripping 2) Disposal of pith 3) trashes wont, 4) Immersion, 5) draining, 6) Cooking, 7) draining, and 8) Packaging.

#### Analysis of pineapple chips agroindustry

##### A. Production Costs

Production costs consist of all expenses incurred to produce pineapple chips. The production costs for each entrepreneur who have 1, 2, 3, or 4 frying machine are different each other. The cost analysis will be analyzed according to the number of machines owned by enterpreneur so that we get an idea of the cost of the necessary conditions based on the number of units frying machine. Total production enterpreneur pineapple chips 60% sold in bulk form. The following is the cost of production based on the amount of used frying machine.

*Production Cost of 1 Frying Machine (TABLE 1) :* The cost of production needed is Rp.15.514.749 / month which consists of the cost of raw materials, auxiliary raw materials, labor, depreciation of equipment, packing, electricity and transportation. The number of products sold more entrepreneur in bulk form, the amount of costs incurred for bulk products (Rp.8.681.421) is in the form of packing (Rp.6.833.328), where the cost of buying raw materials fresh pineapple (57%) , then labor costs (20%) and supporting materials (15%), especially cooking oil. Entrepreneur used cooking oil is oil packaging, because it produces a pineapple chips with better quality.

*Production Cost of 2 Frying Machine (TABLE II) :* The cost of production required for 2 units active frying machine is similar to the costs of those enterpreneur who have 1 unit machine which is Rp.36.602.379. The use of cost includes the cost of raw materials (77%), supporting materials (7%), labor (10%), depreciation of equipment (1%), packing (3%), electricity and transport, respectively 1%.

TABLE I  
AVERAGE COST OF PINEAPPLE CHIPS WITH 1 MACHINE

No	Production Input	Total	%	Packaging	%	Bulk	%
1	Raw material	8.434.286	57	3.373.714.4	53	5.060.572	58
2	Intermediate material	2.276.190	15	910.476	14	1.365.714	16
3	Labors	3.000.000	20	1.200.000	19	1.800.000	21
4	Depreciation	308.559	2	123.423.6	2	185.135	2
5	Packing	1.045.714	3	1.045.714	7	0	0
6	Electric	171.429	1	68.571.6	1	102.857	1
7	Transportation	278.571	2	111.428.4	4	167.143	2
	Total costs	15.514.749	100	6.833.328	100	8.681.421	100

TABLE II  
AVERAGE COST OF PINEAPPLE CHIPS WITH 2 MACHINE

No	Production Input	Total	%	Packaging	%	Bulk	%
1	Raw material	23280000	77	9312000	72	13968000	79,8
2	Intermediate material	5842222	7	2336889	7	3505333	7.8
3	Labors	3693333	10	1477333	9	2216000	10,3
4	Depreciation	596824	1	238730	1	358094	1,1
5	Packing	2640000	3	2640000	8	0	0
6	Electric	250000	1	100000	1	150000	0,8
7	Transportation	300000	1	120000	2	180000	0,3
	Total costs	36.602.379	100	16.224.952	100	20.377.427	100

TABLE III  
AVERAGE COST OF PINEAPPLE CHIPS WITH 3 MACHINE

No	Production Input	Total	%	Packaging Type	%	Bulk	%
1	Raw material	43200000	62	17280000	55	25920000	67.8
2	Intermediate material	9131600	17	3652640	15	5478960	18.1
3	Labors	5760000	10	2304000	9	3456000	11.3
4	Depreciation	892996	2	357198.4	1	535797.6	1.8
5	Packing	4320000	8	4320000	17	0	0
6	Electric	400000	1	160000	1	240000	0.7
7	Transportation	500000	1	200000	1	300000	0.3
	Total costs	64.204.596	100	28.273.838	100	35.930.758	100

TABLE IV  
AVERAGE COST OF PINEAPPLE CHIPS WITH 4 MACHINE

No	Production Input	Total	%	Packaging Type	%	Bulk	%
1	Raw material	37800000	59	26460000	57	11340000	65
2	Intermediate material	9560000	19	6692000	18	2868000	21
3	Labors	4800000	9	3360000	9	1440000	10
4	Depreciation	1194080	2	835856	2	358224	3
5	Packing	4320000	9	4320000	12	0	0
6	Electric	500000	1	350000	1	150000	1
7	Transportation	600000	1	420000	1	180000	1
	Total costs	58.774.080	100	42.437.856	100	16.336.224	100

Portion of production costs using either sold in bulk or packaged form, the cost of raw materials is a major part of the cost component. If the pineapple fruit is less available, the cost of raw materials will be even greater pineapple.

*Production Cost of 3 Frying Machine (TABLE III)* : The cost of production needed by entrepreneur who operate 3 unit of machine is approximately Rp.64.204.596. The largest costs incurred (62%) are the raw Vahan, both supporting materials. Labor used four power which comes entirely from within the family. Entrepreneur utilizing the machine to 4 times a day with the production process. Production entrepreneur 60% of which was sold in bulk form and the rest in containers that are sold to a particular merchant.

*Production Cost of 4 Frying Machine (TABLE IV)*. The total cost incurred is Rp 58,774,080, of which 59% is the cost of raw materials, auxiliary materials 18.7%, 9.4% and labor cost of packing 8.5%. Packing costs incurred large enough for about 70% of products sold in packaged form entrepreneur.

### B. Production, Return, Efficiency and Added Value

Revenue is the amount of dollars that can be produced by entrepreneur pineapple chips. There are two types of income are seen the gross income and net income. Prices are calculated on this activity is the average price that occurred at the time the survey was conducted and classified into two groups, namely the price of the product price in the form of packaging and pricing in the bulk form. Calculation of income distinguished between entrepreneur who have one, two, three and four machines.

TABLE V  
PRODUCTION, RETURN, EFFICIENCY AND ADDED VALUE  
WITH 1 MACHINE

No	Items	Total	Packaging	Bulk
1	Production	238	112	127
2	Average prices		117143	70000
3	Gross income	21726857	12836857	8890000
4	Total costs	15514749	6833328	8681421
5	Net income	6212108	6003529	208579
6	Efficiensi (RCR)	1.40	1.88	1.02
7	Added value	11016381	4406552	6609829
8	Added value /Kg	46287	39344	52046

Production, Return, Efficiency and Added Value with 1 Machine (Table 5) : Farmers with 1 machine produces 238 kg of pineapple chips capable of generating gross income Rp.21.726.857, - and net income Rp.6.212.108, - the value of an efficiency is 1.40. It shows the business is efficient, if entrepreneur selling a product in the form of packaging efficiency value of 1.88, due to higher prices received compared to selling in bulk to a particular merchant, so of course the price factor will determine the amount of income earned by entrepreneur.

Production, Return, Efficiency and Added Value with 2 Machine (Table 6) : Average production and revenue in this group is 2 times from group owned 1 unit machine. Net income obtained from entrepreneur is Rp.23.597.621. The value of efficiency is 1,64, higher comparing to 1 unit machine. Pineapple chips sold in packaging (self packaging by the entrepreneur) has an efficiency value 1,83 and in the bulk form 1,01. This shows that the income obtained is higher if sold in packaging and it is more efficient, and the added value obtained higher comparing with the bulk form.

TABLE VI  
PRODUCTION, RETURN, EFFICIENCY AND ADDED VALUE  
WITH 2 MACHINE

No	Items	Total	Packaging	Bulk
1	Production	647	367	280
2	Average prices		120000	65000
3	Gross income	60200000	29680000	20520000
4	Total costs	36602379	16224952	20377427
5	Net income	23597621	9439048.4	14158572.6
6	Efficiensi (RCR)	1.64	1.83	1.01
7	Added value	31077778	12431111	18646667

Production, Return, Efficiency and Added Value with 3 Machine (Table 7). Entrepreneur with 3 units of machine do the process four times a day. Most of the production is sold in bulk form or meet the demands of employers or other traders outside the village Kualu Pineapple. The added value that can be obtained per unit of engine entrepreneur were also higher compared with other entrepreneur. This suggests that businesses with large production capacity will be more efficient than a business with little production, as some kind of means of production will be more suppressed costs.

TABLE VII  
PRODUCTION, RETURN, EFFICIENCY AND ADDED VALUE  
WITH 3 MACHINE

No	Items	Total	Packaging	Bulk
1	Production	1100	440	660
2	Average prices		120000	65000
3	Gross income	95700000	52800000	42900000
4	Total costs	64204596	28273838	35930758
5	Net income	31495404	24526162	6969242
6	Efficiensi (RCR)	1.49	1.87	1.19
7	Added value	43368400	17347360	26021040

Production, Return, Efficiency and Added Value with 4 Machine (Table 8). The highest income of entrepreneur who have four machines that is Rp.41.805.920, -. Although total production craftsman with the 4 machines (4 times the production process 1 day) average with artisans who have 3 machines (three times the production process 1 day), about

70% of products sold in the form of packaging (dipecking by artisans) with Brand artisans themselves (average selling price Rp.120.000,). Prices received entrepreneur higher than selling in bulk (average selling price Rp.65.000, -).

The level of business efficiency is also the highest which is equal to 1.62 compared with entrepreneur businesses that use 1, 2 or 3 frying machine. This is because one of them is some component of the production cost of purchased or paid in bulk can lower the cost of materials and labor, on the other artisans have been able to penetrate the modern market, and most of the pineapple chips products sold in packaged form with the brand entrepreneur itself, so that entrepreneur are able to obtain a higher selling price than the kilogram or sold in bulk form. The added value that can be obtained per unit of engine entrepreneur were also higher compared with other entrepreneur. This suggests that businesses with large production capacity will be more efficient than small production capacity, as some kind of means of production will be more suppressed costs. Pengrajiin which has 4 units of machine is the first craftsman who seeks pineapple chips agro-industry through container farmer groups. The number of products produced by artisans is 70% sold in packaged form.

### C. Institution

*Institution of Farmer Group* : Master Plan for the Acceleration of Indonesian Economic Development (MP3EI) need to consider Kualu Pineapple Village in District Mine Riau Province Based Agro Industry Pineapple Klusterisasi as Micro Small businesses should be developed. It is based on the potential pineapple owned the village: a land area of 1,050 hectares with a production of 121 tons of pineapple per month. Pineapple Kualu village has had 12 entrepreneur agroindustrial pineapple (pineapple chips) with raw material requirements (pineapple) 38 tons per month (31 percent).

Agro-industry businesses are able to provide employment for 2 to 4 people and 1 to 4 people absorb labor outside the family with the wage rate of Rp 1.200.000, - to Rp 9,000,000, - per month. Of the business is able to provide gross income of Rp 21,726,857 per month per unit of engine and net income of Rp 6,212,108 per month with the added value of Rp 11,016,381 per unit per month engine and an efficiency of 1.40

The potential is there was still experiencing problems in its development, karena several factors namely: quality product that is easy withered pineapple chips, the ability to do marketing, businesses still lay out a simple, low human resource capacity entrepreneur, and capital constraints in doing business.

There are 7 groups of farmers in the village who do Kualu Pineapple pineapple cultivation (Thanks Together, Madani, Sakinah I, Sakinah II, Works Pineapple, Farmers Agree, and Mega Kampar). Thanks kelompoktani kelompoktani Together is the first stand and pioneering efforts in the Village Kualu chips pineapple pineapple. Kelompotani contained in Kualu Pineapple Village can be seen in Table 9.

TABLE IX.  
FARMER GROUP AND AGROINDUSTRY ENTREPRENEUR

No	Name of Farmer group	Number of Member		Established Date	Area of Pineapple (Ha)
		Pineapple Farmers	Agroindustri Entrepreneur		
1	Berkat Bersama	5	3	2 Januari 1996	43,00
2	Madani	5	2	3 Juli 2006	67,75
3	Sakinah I	10	1	5 Februari 2006	35,00
4	Sakinah II	5	1	4 Agustus 2007	16,00
5	Karya Nenas	13	1	18 Februari 2008	37,50
6	Tani Sepakat	15	1	6 April 2008	49,00
7	Mega Kampar	10	1	7 Juni 2008	32,00
Total		63	10		280,25

*Cooperative Institution* : The existence of cooperative in the village of Pineapple Kualu will strongly support the development of agro-industry pineapple chips, especially in the capital needed to provide assistance and entrepreneur kelompoktani pineapple chips in developing a business. There are cooperative, named Cooperative State Pelita in this village, but not all kelompoktani and pineapple chips entrepreneur enter into cooperative members. This is because the management of the cooperative is still not optimal so have not been able to convince them to join the cooperative.

Currently the development of agro-industry enterprises pineapple chips are still experiencing problems that can be viewed from any existing sub-systems namely: the means of production (supply and distribution of the means of production such as pineapple frying machine, spare parts required), farming (farming are not yet effective and efficient), post-harvesting and processing (technology-related tools and machinery, capital, and business management), marketing (not inability to penetrate the market of modern artisans, entrepreneur bound to supply to certain markets such as mega flavor, and fragrant fruit juice market, as well as management skills in field marketing efforts), and support systems (limitations of financial institutions in the village (ued-SP) in the amount of capital owned, credit not fully utilized to drive the development effort, and limited marketing. Cooperative State Pelita expected to help overcome the problems faced kelompoktani so as to make the business of agro-industry with high efficiency, market-oriented and competitive in the field of quality (quality), the number (quantity), continuity (continuity), punctuality (on time delivery) and price (price) either in the local market (local) as well as in the national market (domestic).

Cooperative necessary transformation process that is oriented economic transformation, transformation technology, human resources and management competencies, the partnership in the form of organization, and the social value system. These conditions will take the role of cooperatives in the development of agro-industry enterprises pineapple into: 1) more efficiency, 2) be able to compete, 3) businesses into an integrated system, 4) the national market-oriented production, 5) professional

management, 6) business technology is environmentally friendly, and 7) and become stronger institutional cooperation (cooperation between agencies).

*Craftmen Institution* : There are 12 carftmen mof pineapple chips derived from 7 kelompoktani Kualu Pineapple Pineapple Village. Members range from 5 to 15 people, there are artisans pineapple chips from one to three people in each group. Agro-industry and the owner's name is presented in Table X. Table X illustrates that pineapple is vary good craftsman is seen from the side of the age, education, and years of effort to build. Reason of artisan chips pineapple chips concentrating profession as an entrepreneur is to make pineapple pineapple raw materials they have and many are on their derah that have additional income through value-added processing of business they do.

Entrepreneur pineapple chips have been incorporated in the container of pineapple chips employer groups with group name Mega Kampar. But until now not been able to play a role to help business development entrepreneur.

TABLE X  
PROFILE OF PINAPPLE CHIPS AGROINDUSTRY ENTERPRENEUR

No	Agroindustri	Owner	Age	Education	Date
1	Berkat Bersama	Muslimin	62	SD	2002
2	Sakinah I	Mardanis	56	SMU	2004
3	Madani	H. Yahya	75	SLTP	2006
4	Aroma Rasa	Kayarudin	42	SD	2007
5	Prima Tani	Khoirunnas	50	SMU	2007
6	Sakinah II	Liyusmar	36	SMU	2008
7	Berkah	Yusafrizal	35	SMU	2008
8	Munirius	Munir	50	SD	2008
9	Sinar Hidayah	Samsinar	50	SMU	2011
10	Dua Saudara	Chandra	25	S1	2011
11	Usaha Baru Ibu	Martini	52	SMU	2011
12	Madani	Paimin	63	SD	2011

*Access to Capital Institution* : Agro-industry entrepreneurs pineapple chips are micro-entrepreneurs with small scale. In terms of addressing the capital needs of entrepreneur sometimes have more contact with moneylenders or loan sharks because: 1) can be taken at any time, 2) procedure in a year, 3) formal assurance is usually not necessary, 4) the certainty of instrumental parts, and 5) sustainability business relationships, and 6) is often associated with the marketing collateral. Their existence according to most entrepreneur pineapple quite helpful in conditions of desperate farmers to financial need. The procedure is simple, not requiring collateral to make

entrepreneur became dependent on money lenders in meeting the financial needs of both business and sometimes for capital to meet their daily needs.

Already, there are government assistance in the form of two pieces of vacuum frying which is a relief from the government against the group. In 2005 CECOM the foundation of RAPP helps artisans in the form of loan capital for business development, but due to the bad credit of some entrepreneur capital loan program does not continue. Besides, there Cooperative State Pelita Village Pineapple Kualu capital that can help farmers and artisans pineapple chips. In addition to several institutions of capital, some artisans have been able to access capital to other capital institutions, such as; Bank BNI, SOE (PTPN V), Telkom, Bank Sarimadu.

#### IV. CONCLUSION

Kualu Nenas Village, Tambang Sub-District, Kampar District has a potency in the development of pineapple agribusiness because it is supported by district potency and natural resources that are capable in producing fresh pineapple. These things support the development of pineapple agroindustry especially pineapple chips.

Pineapple chips production process, starting from peeling, cutting, soaking, frying, drying to packaging takes approximately 4 hours. The entrepreneurs on the average do 3 production process in a day. If the raw materials were abundant or the demand was increase, the production intensity will be increased from the usual. Each production process needs 35-45 pineapples as raw materials, producing 2,5 kg og pineapple chips, by using 2-6 labors that came from inner family.

The production cost of pineapple chips business including pineapple raw materials cost, supplementary raw materials cost, labor cost, equipment depreciation cost, packaging cost, electricity and transportation cost. The average production cost of pineapple chips business is Rp.15.514.749 by using 1 machine; Rp. 34.199.267 by using 2 machines; Rp. 62.515.120 by using 3 machines; and Rp. 57.478.340 by using 4 machines. The biggest component of the production cost is the pineapple raw materials cost, followed by labor cost.

The entrepreneur's gross income ranges from 21 billions rupiah per month (for 1 unit machine) up to 100 billions rupiah per month (for 4 unit machines), depended on number of machine unit used by the entrepreneurs. The entrepreneur's net income ranges from 6 billions rupiah up to 39 billions rupiah per month. The added value per unit machine is 9 billions rupiah or 38 thousands rupiah per kilogram. The higher the production capacity trend, the more efficient and the higher business vaue added.

The entrepreneur accessibility to financial institution describes that the entrepreneur has been able to obtain the capital assistance from the government, PNM, BUMN and Banking.

Pineapple chips entrepreneur business group, called Mega Kampar, has not able to help the entrepreneur in developing the business, so does Pelita Negeri coop whose member consist of pineapple farmes, has not able to sinergize with the entrepreneur business. Therefore, the business group and coop still need further coachig.

In improving and developing the pineapple chips agroindustry, it needs the following strategy approached : improving pineapples plantation productivity accompanied by managing the land owned by the village and preventing pineapple plantations land conversion, improving the production capacity consistent with the community demands, promoting the university and BTPT role in technology to get an optimal production process, designing the processing location and the marketing showroom in order to attract consumer buying pineapple chips products, utilizing the entrepreneur groups and cooperations as a marketing joint forum, restructuring the entrepreneur groups institution as a corporation place that bridging the government and private party partnership, and mentoring for the entrepreneur group that fostering pineapple chips entrepreneurs in developing their business capacity.

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