Distribution development strategy of corn processed (corn stick and corn dodol) production to achieve corn competitive product market in Gorontalo Province

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Abstrak.

Penelitian ini bertujuan untuk; 1) Mengetahui profil petani jagung di Kabupaten Gorontalo; 2) Mengetahui karakteristik pelaku industri rumah tangga di Desa Todito, Kecamatan Pulubala; 3) Analisis ekonomi dodol jagung manis. Analisis data menggunakan analisis deskriptif, SWOT, dan analisis ekonomi. Hasil peneltian: 1) Kelompok, jumlah anggota dan luas tanaman jagung terbanyak di Kecamatan Batudaa terdapat di Desa Dunggala. Di Kecamatan Pulubala kelompok petani jagung terbanyak dan lahan terluas terdapat di Desa Puncak, dan jumlah anggota kelompok terbanyak terdapat di Desa Toidito; 2) Keuntungan industri stik jagung rasa udang di Danau Limboto dengan pendapatan di atas BEP (*Break Even Point*) sebesar Rp. 120.000,-dengan BEP produksi sebesar 11,975 gram dan BEP harga Rp. 52.500. Keuntungan industri dodol jagung manis dengan pendapatan di atas BEP sebesar 170,174, dengan BEP produksi sebesar 6,90 keranjang, dan BEP harga sebesar 19.550. 3) Strategi utama pengembangan distribusi stik jagung dan dodol jagung adalah mengembangkan produk distribusi jagung, meningkatkan volume produksi, untuk mencapai target pasar, dan meningkatkan promosi produk dan informasi harga.

Kata Kunci: Produksi Jagung, Strategi Pengembangan Distribusi

Abstract

Reseach object are; 1) to know about the profile of maize farmer enterprise in Gorontalo regency; 2) to know the people characteristic at home industry group in Todito village at Pulubala sub-district; 3) Economics analysis for Sweat Maize Dodol. Data analysis used is descriptive method, SWOT and economics analysis. The result of this research is 1) Groups of farmers enterprise, the more much of members and land is worked on by maize farmer found at Dunggala village in Batudaa sub-district. At Pulubala Sub-district the more much of groups of farmer enterprise at Puncak Village, and the members is more much found at Toidito, but the largest land worked on by maize farmer is at Puncak village; 2) Production analysis for home industry for Maize Stict with tasted by Shrimp from limboto Lake will get profit if the in-come above of break event is Rp 120.000,- if production is over of break even point is 11,975 gram and will follow of the price over of break even point about Rp 52.500. Production analysis for home industry for Dodol sweat maize will get profit if the in-come earned over of break even point is Rp 170,174, if production is earned over of break even point 6,90

basket and if the price is over of break even point is about 19.550; 4) Main distribution development strategy of corn stick and corn dodol are developing corn distrbution product, increased the volume of production, to reach the market target, and increased the promotion of product and price information.

Key words: Corn Production, Distribution Development Strategy

INTRODUCTION

Since Gorontalo became a Province on February 12nd 2000, the government has put the position of agriculture as the entry point of corn that prospected for export but has not been cultivated optimally by using technological inputs, without ignore the aspects of sustainable corn farming.

Maize has always been preferred to any other crop, including cassava because most of the worlds civilizations developed around around grains rather than tuber crops (Olaniyan, 2015). It is grown in a range of agro-ecological environments, and more maize is produced annually than any other grain. In contrast, the area planted to maize in South Sulawesi declined from 0.27 million ha in 1991 to 0.22 million ha in 2000 (a growth rate of -2.11% per year). The decline in area planted to maize was due to price disincentives. During the harvesting season, maize grain price often dropped to a level below the average cost of production. Therefore, some farmers changed from maize to other crops, such as cotton or soybean. Similarly, the proportion of the total area planted to food crops also decreased. But In Gorontalo still have potential to make maize become other products to increase the income for farmers (Swastika, 2004).

Corn has many advantages beside as people daily needs and also can be process to some products such as corn sticks, corn oil, corn starch, poultry feed, fish feed, and other function as food. In addition, corn grain can process for a variety of products, corn waste can make variety of products such as corn waste into ruminant feed, corn waste into organic fertilizer, corncob into charcoal, and corn husk can process become flower, pad dodol, the basic material of clothes, table cloth and someof unique products.

Based on the survey that the cornseed (yield) in Gorontalo only used for daily meal also sold to other places like export to another city in Indonesia or to another countries. Seed corn (yield) is not process into processed products that enhance the economic value of products. The price comparison corn kernels 1 kg Rp. 3,200 if it has been processed into animal feed prices reached 5 times from the original price when unprocessed. Processing the kernels into a basic ingredient of animal feed will increase the economic value of the product.

The role of the agricultural sector contributed most (28%) to the GDP of Gorontalo District, together with the services sector (23%). Because most people in Gorontalo district worked in the agricultural sector of food crops (rice and corn), plantation crops (coconut) and fisheries. The developing of agribusiness corn in Gorontalo district need to improved because of the potential for development is big enough and has wide land. The steps to solved problem of maize plantations must be in accordance with local characteristics, social, economic and institutional capacities in the community because almost 90% of corn plantation is smallholder agriculture.

Baruwadi (2009), suggest that household contribution income farmers from maize farming in Gorontalo Province is 64.03%, which proved the high dependence of farmers on corn as a source of household income. In Anonymous (2012) explained that in the last five years, the national corn demand for industrial materials feed, food and beverages increased by $\pm 10\%$ -15% / year. In 2010 corn in Gorontalo mostly exported

to several countries such as Malaysia, South Korea, Japan, and Philippines amount of 34,200 tons. To export, Gorontalo corn production is also absorbed by the local market through between regions amount 104,810 tons of which 88,225 tons Surabaya and Jakarta 16,858 tons.

Friedmann (1990), showed that empowerment is a believed to be a " alternative development" on the model of development center to growth. At the first the development of alternative put forward some trusts: first, country is the problem of development showed development of alternatives to eject even against the country; second, people could did no wrong and the public is an independent association; Third, community actions had capable and sufficient to realize the alternative development without state interference. Kartasasmita, 2009 suggested that community empowerment: The development concept is rooted in the community, said that the concept of community empowerment includes the notion of community development (community development) and development focused on the community (community based development).

Marketing and distribution channels are important characteristics in the process of getting produce from source to consumers. Olukosi and Isitor (1990) in (Edward, 2011) categorized marketing channels into centralized and decentralized channels. Centralized channels deals with agents who serve as middlemen between producers and consumers while decentralized is a kind of channel where both consumers and agents can buy directly from the producers.

METHOD

This research done in the district and sub district Bongomeme Tibawa Gorontalo regency and to the research start from January 1 to December 2016. Furthermore, the method of selecting respondents was conducted using different methods in the two groups of respondents (group home and organization groups). For households, the method used is simple random sampling method, while the agency unit used purposive method. Total sample of households take 200 respondents consist of 40 respondents from each sample location. While the organization groups interviewed unit adapted to the number of units existing organization in each country, it is estimated the number of units of organization interviewed about 15-20 organization for each sample location.

The research method will used in the program, activities and output produced for each year of implementation of activities. In the first year of 2016 because the output are: 1) Potential socio-economic household profile, institutional corn farmer. 2) Formulation Hierarchical strategy and on the development of government policy on product development ofcorn processed. 3) Output products and their sales outlets in refined product sales. Meanwhile output in 2017: 1) Control the use of tools / technology products processing corn. 2) Increased insight and institutional work team development. 3) Developing the ability to access the market. And output in 2018: 1) Products Processed competitive. 2) Model of Institutional Agribusiness Corn. 3) Skills to access market information.

1. Observation

Observation techniques used to obtain data and information on the resource potential of agriculture to research data and other relevant information. 2. Interview Interview techniques used to obtain data and information, formulate strategies and corn farmer empowerment activities to increase the income of corn farmers data and other relevant information.

3. Questionnaire

Mechanical questionnaire used to obtain data and information on the resource potential analysis of maize agriculture based on comparative advantage, competitive and influence to empower farmers through processing corn maize and corn waste into productive economic commodity corn to increase farmers income.

4. Focus Group Discussion (FGD).

Techniques Focus Group Discussion (FGD) was used to complete the data and research information, during the conduct data collection and information the draft of research reports.

RESULT AND DISCUSSION

Maize farmer profile in Gorontalo District

Subdistrict of Batudaa, Gorontalo District

Table 1 showed that the number of groups in each village is different, there are composed of two groups of farmers of corn, even up to 8 groups of farmers of corn, with an average of 4 groups of crop farmers to every village in the Batudaa village. The groups that exist in each of these villages have the members of the group which is quite diverse and numerous, ranging from 49 members of the group, up to 187 members of the group to the village. Dunggala village district.Batudaa has a number of groups, include 8 corn farmer groups and also the number of group members, include 187 members of farmers of maize compared with other villages in the district Batudaa. Total corn farmer groups contained in the smallest villages and the village BuaandIluta which only consisted of two corn farmer groups, while the number of group members at least are in the village Payunga the 49 members of the group. On average, the number of members of maize farmer groups in 8 villages in the district Batudaa is reached 87 people, with total members is 693.

Number	Village Name	Total Group of Village	Total of members in Group	Land Area (Ha)
1	Barakati	3	69	62
2	Iluta	2	49	41.5
3	Bua	2	53	40.1
4	Huntu	5	101	103.6
5	Pilobuhuta	5	112	105.9
6	Payunga	3	47	39.75
7	Dunggala	8	187	157.3
8	Ilohungayo	4	75	65.5
Total		32	693	615.65
Average		4	87	76.96

Table 1. Group, member total, and land area in Subdistrict of Batudaa, Gorontalo District

Beside number of groups and group members the high total compared to other villages in the district Batudaa, corn farmers Dunggala, Pilobuhuta, and Huntu which the corn cultivated is the most wide reached 157.3 Ha; 105.9 Ha; and 103.6 Ha. The smallest corn crop in Bua Village area of 40.1 hectares. The total area of cultivated corn crop in the district. Batudaa can be reached 615.65 Ha; with an average area of arable corn crop is 76.96 hectares for every village in the district Batudaa.

Subdistrict of Pulubala, Gorontalo District

Table 2 showed that the villages in Pulubaladistrict have a lot corn farmer, from 13 to 32 groups in the village. This indicates that the majority of people work in PulubalaDistrictare corn farming. The members in each group in each village to approximately 300 members of the group, even some villages has 500 more members of the group. The high of the village in the district.Pulubala has a number of groups, include 30 maize farmer groups with a total membership of the second largest group after the 563 members of the village Molamahu corn farmer groups. Corn farmer groups premises smallest number in a neighboring village and village TridarnaMaolalahuie, each consisting of 13 corn farmer groups, while the number of members of each group 295 group members and 318 members of the group. The average number of members of cornfarmer groups in 11 villages inPulubaladistrict are462 people, with total members are 5077 members.

Number	Village Name	Total Group of Village	Total of members in Group	Land Area (Ha)
1	Pulubala	20	400	427.5
2	Tridarma	13	295	300.93
3	Molalahu	13	318	276
4	Toyidito	25	705	579.5
5	Molamahu	30	584	624.71
6	Bakti	28	529	640.5
7	Pongongaila	21	495	504.5
8	Mulyonegoro	20	405	439
9	Puncak	32	563	701.21
10	Ayumolingo	21	406	435.25
11	Bukit Aren	20	377	391
Total		243	5077	5320.1
Average		22	462	483.65

Table 2. Group, member total, and land area in Subdistrict of Pulubala, Gorontalo District

The village which has the largest corn crop cultivated in the district is located in the village Pulubala with the land area is 701.21 hectares. Bakti and Molamahu with corn crop the second largest and third, respectively in the amount of 640.5 Ha; and 624.71 Ha. The average area of cultivated corn crops in villages in the district Pulubala is 483.65 Ha; with the total area cultivated corn crop reached 5320.1 hectares.

Production analysis of Limboto Lake shrimp corn stik

Variable cost

Variable cost is change in proportion to the business activity or the amount of the marginal cost of all units produced. Based on the above table it can be seen that the number of variable limboto lake shirmp corn stick is Rp. 61,500 with a raw material that is 1 Kg of local corn for Rp. 12,000.

Number	Description	Total (Rp)
1	1 Kg Lokal Corn/Motorokiki	12.000
2	1 Kg Lake Shrimp	15.000
3	500 Gr Tapioca Flour	9.000
4	100 Gr Garlic	5.000
5	1 Sdm salt	500
6	250 Gr Sugar	4.000
7	2 Kg Fried Oil	26.000
	Total	61.500

Table 3. Limboto Lake shirmp corn stick variabel cost

Fixed cost

Fixed Cost are the costs that does not depend on the level of goods or services output that produced by the business. The table shows that the total of fixed costs of shrimp corn is Rp. 96,000 which consists of the cost of plastic packaging, labor, gas, rental equipment for a grinders and electric.

Number	Description	Total(Rp)
1	Plastic packaging	11.000
2	Labor	50.000
3	Gas	10.000
4	Rental equipment for a grinders /hour	15.000
5	Electric/hour	10.000
	Total	96.000

Table 4. Shrimp corn stick fixed cost

Total cost

The total cost was the the amount of variable costs and fixed costs. Based on the Table 3 and 4, the shrimp corn stick total costs is Rp. 157 500.

Revenue

The Revenue is all income received from economic activities without deducting the total production expenditure. Based on the table the shrimp corn stick total revenue is Rp. 300,000

Table 5. Shrimp corn stick revenue					
Description	Production	Price	Total		
Revenue	3.000 gr	10.000/ 100 gr	300.000		

Profit

Profit is the total revenue after deducting the total cost of production. Based on the Table 3, 4 and 5, the shrimp corn stick profit is Rp. 142 500.

BEP Revenue

BEP Revenue
$$(Rp) = \frac{FC}{1 - \frac{VC}{TR}} = \frac{96.000}{1 - \frac{61.500}{300.000}} = 120.000$$

The domestic industry would benefit if acceptance is obtained exceeds the limit of USD 120,000 of the BEP, otherwise households industry will losses if the receipts obtained less than the BEP.

BEP Production

BEP production (gram) =
$$\frac{FC}{P - \frac{VC}{Q}} = \frac{119.500}{10.000 - \frac{61.500}{3.000}} = 11.975$$

The domestic industry would benefit if production were obtained exceeds the limit BEP is 11.975 Gram sebalikya domestic industry would losses if production gained less than the BEP.

BEP Price

BEP price $(Rp) = \frac{TC}{Q} = \frac{157.500}{3.000} = 52.500$

The domestic industry would benefit if the price obtained exceeds the limit BEP is Rp. conversely 52,500 domestic industry would losses if prices gained less than the BEP. The break event point corn stick curve taste shrimp Limboto Lake, below:

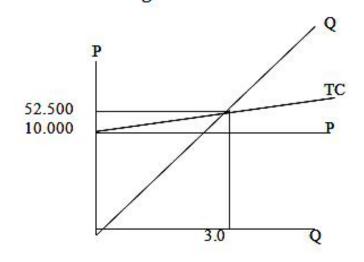


Figure 1. Break event point curve of Limboto Lake shirmp corn stick

Production analysis of sweet corn dodol

Variable cost

Variable costs is the costs that change proportionally to the business activity or the amount of the marginal cost of all units produced. The table above shows that the number of variables corn dodol is Rp. 76,000 based on the main material is 1 kg of sweet corn for Rp. 20,000.

Number	Description	Total (Rp)
1	1 Kg Sweet Corn	20.000
2	500 ml coconut milk	8.000
3	650 Gr sugar	12.500
4	300 Gr brown sugar	5.000
5	2 pack Full Cream milk	7.000
6	125 Gr butter	4.000
7	250 Gr Sticky Rice	5.000
8	1 packFoodColour	500
9	50 Gr rice	2.000
10	3 pack Vanila	2.000
11	Gas	10.000
	Total	76.000

Table 6.Variabel cost corn dodol

Fixed cost

Fixed Cost are the costs that does not depend on the level of goods or services output that produced by the business. The table shows that the total of fixed costs of corn dodol is Rp. 96,000 which consists of the cost of plastic packaging, Plastic Binding, labor and bucket.

Number	Description	Total(Rp)
1	Plastic packaging	10.000
2	Plastic binding	7.500
3	Labor	50.000
4	15 Bucket	52.500
	Total	119.500

Table 7.Corn dodol fixed cost

Total cost

The total cost was the the amount of variable costs and fixed costs. Based on the Table 6 and 7, the corn dodol total costs is Rp. 195.500

Revenue

The Revenue is all income received from economic activities without deducting the total production expenditure. Based on the table the corn dodol total revenue is Rp. 250.000

Table 8. Table maize dodol revenue

Description	Production	Price	Total	
Revenue	10 Bucket	25.000/	250.000	
		Bucket		

Profit

Profit is the total revenue after deducting the total cost of production. Based on the Table 6, 7 and 8, the corn dodol profit isRp. 130.500

BEP Revenue

BEP Revenue
$$(Rp) = \frac{FC}{1 - \frac{VC}{TR}} = \frac{119.500}{1 - \frac{76.000}{250.000}} = 170.714$$

The home industry will get a profit when the revenue more than break event point value Rp. 170.174 otherwise home industry would suffer losses if the revenue obtained less than the break-even point

BEP Production

BEP production (bucket) =
$$\frac{FC}{P - \frac{VC}{Q}} = \frac{119.500}{25.000 - \frac{76.000}{10}} = 6,90$$

The home industry will get a profit when the production is more than break event point value 6.90 bucket, otherwise home industry would suffer losses if the production obtained less than the break-even point

BEP Price

BEP price
$$(Rp) = \frac{TC}{Q} = \frac{195.500}{10} = 19.550$$

The home industrywill get a profit when the price is more than break event point value Rp.19.550, otherwise home industrywould suffer losses if the price obtained less than the break-even point. Here is a corn dodol break event point curve

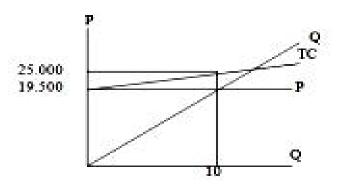


Figure 2. Corn dodol break event point curve

Factors and distribution development strategy of maize products

The way to find out more about the Distribution Development Strategy of Corn Products are identify alternative method how an organizations can use the strength or to use the opportunity to avoid threats and overcome weaknesses. SWOT matrix illustrates how the corn product can match opportunities and threats faced by its internal strengths and weaknesses. This can be seen in the following explanation:

1. Strength

Based on analysis of data, the Strength that can be used for the product development strategy are:

- a. Fresh and high quality raw materials such Local Maize (Motoro Kiki) and Limboto Lake Shrimp, Sweet Maize, Brown Sugar and Coconut Milk
- b. Having a good business prospect and environmentally friend
- c. Build a good working atmosphere between the home industry and managerial team
- d. Characteristically taste and quality of products

2. Weakness

Based on analysis of data, the weaknesses that can be used for product development strategy are:

a. Production Volume / supplies

- b. The ineffective of information media
- c. Small area product distribution

3. Opportunity

Based on analysis of data, the opportunities that can be used for the product development strategy are:

a. Good consumer responses

b. The wide market target for all people

c. The possibility to develop new product

4. Threats

Based on analysis of data, the threats that can be used for the product development strategy are:

a. New competitor

b. Unstable market taste

Table 9. Internal factors of maize product

No	Internal factor	Scale	Rating	Score	Description
Stre	nght				
1	Having a good business prospect and environmentally support	0.20	4	0.80	There is good business prospect
2	high quality raw materials of corn product	0.20	4	0.80	Using high quality raw materials
3	Build a good working atmosphere between the home industryand managerial team	0.15	3	0.45	Good teamwork
4	Characteristically taste and quality of products	0.15	3	0.45	having Characteristic products
	Score = 2.50				
Wea	kness				
1	Production Volume / supplies	0.10	2	0.20	Limited supplies volume
2	Ineffective of product information and price product information	0.10	2	0.20	Ineffective promotion
3	Small area product distribution	0.10	2	0.20	Small area product distribution
	Score = 0.60				
Tota	1	1	20	3.10	

Source: Primary Data After processed, 2016.

The table above shows that total strength value = 2.50 are bigger than total weakness value = 0.60, this situation indicates that the strength factor for the distribution product development strategy is greater than a factor of weakness as an inhibitor of the distribution product development strategy

Table 10. External factors of corn product

No	External factor	Scale	Rating	Score	Description
Opp	ortunity				
1	The wide market target for all people	0.30	4	1.20	Accessible to all levels of consumer
2	Good consumer responses	0.23	3	0.69	consumer has a good responses
3	The possibility to develop new product	0.22	3	0.66	There is a . The possibility to develop new product
	Score = 2.55				
Thre	at				
1	New competitor	0.13	2	0.24	There are New competitors
2	Unstable market taste	0.12	2	0.26	unstability of consumers taste
	Score = 0.50				
Total	1	1	14	3.05	
Sour	ce: Primary Data After processed, 2016.				

The table above shows that total opportunity value = 2.55 are bigger than total threat value = 0.50, this situation indicates that the opportunity factor for the distribution product development strategy is greater than a factor of threat as an

inhibitor of the distribution product development strategy. To determine the distribution product development strategy by using SWOT analysis diagram, it can be seen in the figure below:

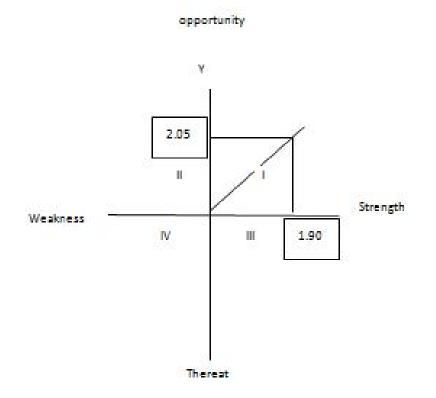


Figure 3. SWOT analysis diagram of distribution product development strategy

Based on the results of the analysis contained in the picture, it is known that the strength is greater than weakness and generates the X axis in the diagram SWOT. Likewise, an opportunity that will be faced greater than the threat and generates the Y axis SWOT diagram. These values shown that the difference between opportunity and threat is 2:05 while the difference between strength and weakness is 1.90.

1. <u>Strenght – Opportunity Strategy</u>

Fresh and high quality raw materials such a Local Corn (Motoro Kiki) and LimbotoLake Shrimp and the other additional raw material produced a good corn stick product and accepted by the various levels of the consumer. Similarly, raw material such as sweet corn and Palm Sugar and Coconut Milk used is still in a fresh and qualified that is processed into becoming Dodol sweet corn. Therefore, have good business prospects and environmentally friend generates the possibility of new product development as well as produced taste and quality products that have characteristics, thus the market target of all level consumer can be completed

- <u>Weakness Opportunity Strategy</u> An improvement in volume of production / supply of shrimp corn stick and corn dodol is important to fulfill the market target. increased the effectiveness of product and price information, and open market distribution are required to push the product be accepted by all level of consumers
- 3. Strength- Treat Strategy

Keep the fresh and high quality raw materials such a Local Corn (Motoro Kiki) and Limboto Lake Shrimp and the other additional raw material produces a unique corn stick taste so the product is hard to defeated by new competitors and can make the public taste remained stable

Strategi (W-T). Similarly, raw materials and Palm Sugar Sweet Corn and Coconut Milk used is still in a state of quality fresh and processed into becoming Dodo Sweet Corn with characteristic flavor and chewy softness is the main attraction for this product olehan

4. Weakness – Treat Strategy

An increasing of product and price information of shrimp corn stick and sweet corn dodol are necessary to do to know market taste development. Increasing product distribution are important to face the competitor.

These factors and the development strategy of product distribution of shrimp corn stick either Sweet Corn dodol is very important. In the distribution will occur or appear several factors, both threats or weakness while development strategy is necessary for the distribution of cornpeoduct in order to improve further the quality and distribution of refined products kuanititas of the corn itself.

Based on the analysis SWOT matrix, the factors and strategies for developing distrbusion corn product, namely 1)The high quality of material used are received well by the public, (2) has a good business prospects and environmentally friend, generates the possibility of new product development 3) flavor and quality of products that have characteristics reach the market target in all societies level

In the other hand the weakness of the factors and strategies for developing distrbusi corn product, namely (1)increased the volume of production / inventory to reach the market target (2) increased the promotion of product and price information, and open market distribution are required to push the product be accepted by all level of consumers

CONCLUSION

- 1. Data group, the number of members and the largest corn crop cultivated area in the district are in the village BatudaaDunggalais by 8 groups, 187 the number of members of the group, and 157.3 ha of arable area corn crop. As for the District Pulubala amount of data contained in the largest group, namely PuncakDesa some 32 groups, for the highest number of members in the village Toyidito there is a number of 705 members and the largest corn crop cultivated area located at Peak Village is an area of 701.21 ha.
- 2. Home industry of shrimp corn stick will be gained profit whene the revenue larger than the break event point value is Rp. 120.000, if the production obtained exceeds the limit break-even point is 11 975 grams and if the price obtained exceeds the limit break-even point is Rp. 52,500.
- 3. Home industry of corn dodol will be gained profit when the revenue larger than the break event point value Rp 170.174, if the production obtained exceeds the limit break-even point is 6.90 bucket and if the price obtained exceeds the limit break-even point is Rp. 19.550.
- 4. Based on the analysis SWOT matrix, the factors and strategies for developing distrbusion corn product, namely 1)The high quality of material used are received well by the public, (2) has a good business prospects and environmentally friend,

generates the possibility of new product development 3) flavor and quality of products that have characteristics reach the market target in all societies level In the other hand the weakness of the factors and strategies for developing distrbutionMaize product, namely (1)increased the volume of production / inventory to reach the market target (2) increased the promotion of product and price information, and open market distribution are required to push the product be accepted by all level of consumers

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