

# Analysis Added-Value And Development Strategic of Gayo Coffe Products in Bener Meriah Aceh

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**Abstract:** *Economic globalization and free trade are signified by hard competition that pushing the industries to increase their product quality result and added value of their product. The purposes of this study are (1) To analyze the added value and (2) to identify the internal and external factors influencing the Gayo coffee Products development strategiest. This research proof that processing can increase the value added of product coffee. Based on the industry, coffee can be divided into three categories, namely premium green bean, specialty green bean coffee and coffee powder as processed coffee. This research showed that cluster products of coffee powder contributed for the largest added value when compared to other cluster products, which is Rp102 469 per Kg. The results of SWOT analysis for coffee products showed that all cluster product was located in quadrant I which means that all cluster products have high good possibilities to be developed by S-O strategy.*

**Keywords:** Coffee Product, development strategic, eksternal factor, Internal Factor, Value added

## 1. Introduction

Indonesia is known as the fourth-largest coffee exporter after Brazil, Vietnam and Colombia. Brazil is known as the biggest coffee producer during the period 2008 to 2013 with 34.28 per cent of coffee product in the world, with a tendency to increase every year. While Indonesia was ranked fourth during the period 2008 to 2013 with total production of the average 6:44 percent of the world's total exports. Indonesia has been able to export processed coffee in the form of instant coffee, extracts and roasted coffee. But until now, the greatest value of commodity exports of coffee from Indonesia lies in a green coffee beans product. Ekspor Indonesia is still experiencing difficulties in the development products (AEKI 2015).

Agro-industry condition in Indonesia has not been able to produce competitive products. Some reason that Indonesian coffee is still a lot that does not meet international quality standards. Besides the presence of the producer countries as well major exporters such as Brazil and Colombia also posed a threat and a challenge for Indonesia's coffee exports (AEKI 2015). Today's, the conditions of competition is getting tougher which each country will increase their market value. The development strategic of Gayo coffee arabica has currently expected not only to increase production, but how a commodity able to be processed in order to obtain value added.

Saragih (2010) reveals that the processing of some product will gained the higher added value than primary products. Today's, The development agricultural approach is directed at product development, and no longer focused on the commodity development. The products development now is currently focused in adding value through the development of industry which is process agricultural products primer into refined products (intermediate product and semi-finished product) and final product. The value added of coffee is expected to produce diversification products based on processed, such as roasted coffee, instant coffee, coffee mix, decaffeinated coffee, soluble coffee, coffee

beer (coffee beer), and ice coffee which has significant importance, because that product has high competitiveness in the international market.

Aceh is known as one of the biggest coffee producer in Indonesia. BPS data showed that there are six districts as the coffee producer center in the Aceh. Aceh Tengah and Bener Meria his the main coffee producer center with the highest planting area of coffee. the development of planting area in Aceh Tengah over the last five years is only 0.23 percent per year, while in the Bener Meriah is 4:56 per cent per year. This means that the development of the coffee planting area is more dominant in the Bener Meriah (BPS Bener Meriah 2015).

Gayo coffee has a strong position in international market because it have strong flavour and fragrance, but during this period gayo coffee is only traded as raw materials (grain coffee). The production of Gayo arabica coffee should be focused on increasing the value-added products. Increasing the value added are expected to support the development of processed coffee to compete the system of international market. This processing would be expected to increase the value-added of Gayo coffee products consisting of green bean premium, specialty, and a specialty coffee powder. The calculation of value added and development strategic should be based on cluster product, since each cluster product certainly has a different level of value-added and need the different development strategic. Based on the above, the purpose of this study are:

- 1) Assess the value-added of Gayo Arabic Coffea products in the Bener Meriah.
- 2) Assess and formulate the development strategic of Gayo coffee products in Bener Meriah.

## 2. Research Methods

This research is taken in Bener Meria has center of coffee produces in Aceh on January - Oktober 2016. The Data in this research collected by in-depth interviews and FGD (Focused Group discussion) with some Key person

namely: The forest service trade, the department of agriculture, department of estates, Staff coffee experts as well as four agro-industry green has been the biggest green bean coffee and coffee powder exporter in BenerMeriah (KBQ Baburrayan, KatiaraGayo, PermataGayo, and GayoMandiri).

**Data analysis**

This research use two tools analysis to answer the main issue which is Hayami method and SWOT matrix. Hayami method is use to analyze the value added of Gayo coffee product and SWOT matrix is use to formulate the development strategic of Gayo coffee product. the form of information which generated through. The procedur of hayami method are as follows:

**Table 1: Hayami Method**

Variabel	Satuan	Notasi
Output, Input and Price		
Output	kg/process	A
Input	kg/process	B
Labour Input	HOK/process	C
Conversion Factor	Kg output/Kg input	$D = a/b$
labour coefisien	Man/ days/ Kg input	$E = c/b$
Price if Output	Rp/Kg	F
Wages	Rp/process	G
Income and Profit		
Price Input	Rp /Kg	H
Contribution of other input	Rp /Kg	I
Value of Output	Rp /Kg	$J = d \times f$
Added Value	Rp /Kg	$K = j-h-i$
Addedvalue ratio	%	$L = k/j \times 100 \%$
Labour income	Rp /Kg	$M = e \times g$
Labour share	%	$N = m/k \times 100\%$
Profit	Rp /Kg	$O = k - m$
Profit share	%	$P = o/j \times 100 \%$
Rumeneration of input		
Margin	Rp /Kg	$Q = j-h$
a. labour income	%	$R = m/q \times 100 \%$
b. other input	%	$S = i/q \times 100 \%$
a. Profit	%	$T = o/q \times 100 \%$

Hayami methods is (a) value added (IDR), (b) the ratio of value added (%), showing the percentage of remuneration of labor (%), (c) the remuneration of labor (RP), great show wages received by direct labor, (d) labor's share (%), showing the percentage of remuneration of labor of added value, (e) profit (USD), shows the share of the employer, (f) the rate of profit (%), shows the percentage of profits to value added (Hayami, 1987).

The SWOT analysis is a method for identification the internal and eksternal factor of Gayo coffee product which used to formulate development strategic. The analysis is based on logic to maximizes strenghts and opportunities, but simultaneously can minimize the weaknesses and threats (David 2001).

**Table 6: The analysis of Internal-External Factor Evaluation**

NO.	Internal	Score	BOBOT	TOTAL
<b>Strenght</b>				
1.				
2.				
Total				
<b>Weakness</b>				
1.				
2.				
S-W				
<b>Opportunity</b>				
1.				
2.				
Total				
<b>Treath</b>				
1.				
2.				
O-T				

Sumber :David, 2001

The next step is formulate the internal-external factor to find the best of development strategy of coffee product by using SWOT matrix.

**Table 8: SWOT (Strength, Weaknesses, Opportunities, Threats) matrix**

External Internal	Strenght Factor	Weakness Factor
Opportunity factor	S – O Strateegy Maximizes strenghts and opportunities	W – OStrateegy Facing weakness by using Opportunity
Threats factor	S – TStrateegy Facing threats by using strenght	W – TStrateegy Minimize the weaknesses and threats

Sumber: David, 2001

**3. Result**

**3.1 Value Added of GayoArabica coffeeProducts Processed in the BenerMeriah District.**

The processing can increase the added value of a coffee product. Gayo arabica coffee was produce withtwo method which is dry and wet processing. The main difference from the both method is only at the stage of stripping the coffee crusted horn or coffee grain. Wet processing require water in relatively large amount, especially in the process of stripping the skin red and washing process after fermentation to clear mucus that sticks to the surface of the coffee grain.The processing of Gayo arabica in Bener Meriah is generally processed by wet processing which consisting of harvesting, stripping the skin of the fruit, fermentation, washing, drying, peeling skin grain coffee, sifting (grading)- polishing, and packaging.

According to Hayami et al. (1987), the addedvalue is the difference between the selling price and the cost during the process. The sources of added value are the utilization of factors such as labor, capital, human resources and management. Terms of added value (value added) itself is actually a value that occurs on a commodity because the commodity has undergone processing, transport and

storage in a production process. The added value resulting from the processing of the Gayo arabica coffee products are as follows:

**Table 1:** The value added of Gayo Arabica Coffee

Variable	Unit	Coffee Grain	Premium Green Bean	Specialty Green Bean	Coffea Powder
Output, input and Price					
Output (A)	kg/process	3 579	2168	333	44
Input (B)	kg/procesec	14 275	3306	507	50
Labour Input (C)	HOK/proses produksi	102	1113	419	93
Conversion Factor (D=a/b)	Kg output/Kg input	0.25	0.66	0.66	0.66
labour coefisien (E=c/b)	Man/ days/ Kg input	0.01	0.34	0.83	1.88
Price if Output (F)	Rp/Kg	27 000	66813	97000	231250
Wages (G)	Rp/process	15 000	15000	15000	15000
Income and Profit					
Price Input (H)	Rp/Kg	5 313	27000	27000	97000
Contribution of other input (I)	Rp/Kg	0	400	400	883
Value of Output (J=dx)	Rp/Kg	6 779	43926	63755	200351
Added Value (K=j-h-i)	Rp/Kg	1 467	16526	36355	102469
Addedvalue ratio (L=k/jx100%)	%	21.60	37.58	57.01	51.00
Labour income (M=exg)	Rp/Kg	109	5152	12478	28144
Labour share (N=m/kx100%)	%	7.50	31.26	34.34	27.54
Profit (O=k-m)	Rp/Kg	1 358	11373	22449	74324
Profit share (P=0/jx100%)	%	20.00	25.85	39.25	36.97
Rumenaration of input					
Margin (Q=j-h)	Rp/Kg	1 467	16926	36755	103351
a. labour income (R=m/qx100%)	%	7.50	30.51	33.97	27.30
b. other input (S=i/kx100%)	%	0	2.37	1.09	0.87
a. Profit (T=o/qx100%)	%	92.5	67.11	64.94	71.83

Coffea Grain is the main ingredient of Gayo arabica coffee products. Input and output prices of coffee products in BenerMeriah depending on the processing activity performed. The higher processing will generating higher output. The highest price of output obtained bythe most processing products (coffee powder). The defferent output value is due to defference cost in processing.

The output value describes the ability processing managementof Gayo coffee products. Processingwith higher technology will increase the conversion factor and theoutput value. The value of this output will affect the added value of a product. There was variation in the output value of Gayo arabica product because of differences in selling prices and input-output conversion factor. The highest output value is obtained by coffee powder product. While the lowest output value obtained by the grain coffee products. This proves that the processing can increase the output value of arabica coffee products gayo.

Added-value of coffee product in thisresearch was calculated based on the three types coffee product whic is premium green beans, specialty green beans, and coffee powder. This reasearch showed that cofee powder has the highest added valueand specialty green coffee bean is the second largest added value product. The added value can be increase through the diversification product activity of Gayo arabica coffee. This clearly proves that processing will increase added valueof coffee product. This result are consistent with a research by KurniaDewiet al (2013), which proven that processing coffee powder into the sea cucumber ginger coffee powder will increase their added value.

Profit in Hayami methode showed the difference between value added bylabor income and other inputs. The results of this research showed that coffee powder contributed a greater advantage than specialty and premium products. Green bean speialtyhas the second ranksafter the coffee powder. The results are consistent with a research by Dewiet al. (2015) which proves that the processing of coffee powder is able to generate higher profits than the coffee processing HS in Bangli regency.

**3.2 Internal and External Factors of Gayo Coffee**

Pearce and Robinson (1997) suggest that the formulation of strategies of an organizationhave been initiated with the analysis of internal and external environment analysis. The internal environment is meant to assess whether the activities of the organization in a position of strength or weak, while the external analysis shows how to facedthe challenges andheld the opportunities in an effort to achieve the goal.

Internal factors priority which impact the develop of Gayo premium coffee beans as strenght factor is“The quality of arabicaGayo coffee beans that has already achieve in SOP of coffee trade from trading agencies (SNI or SCAA)”. While the internal factor which impact the develop of Gayo premium coffee beans as weakness factor is “ The unstructured Post-harvest processing”. it would generate bad quality and taste of Gayo premium green beans coffee that could reduce market demand.

The external factor priority which impact the developof Gayo premium coffee beans is“How to increase quality coffee beans with the application of Good Agricultural



Practice (GAP).GAP is a technical structured farming activities which ensures Gayo coffee cultivation in organic and environmentally friendly system to produce good quality supply (coffee beans). While the main priority as a threat factor of Gayo Premium coffee development is “The unstable climate that change the led of production and the quality impaired. The uncertain climate change would produce unstable quality and taste of Gayo premium beans coffee that will reduce market demand.

Internal factors priority as strength factor of Gayo specialty green coffee beans is “The flavor of arabica coffee beans which are well known in the world market with a cupping score above 80”. The unique taste is the hallmark of Gayo Specialty coffee beans. Coffee with the highly taste desirable to have a score above 80 in cupping test. Gayo Specialty green coffee bean coffee has great market demand because it has a sweet citrus taste, aroma and flavor of honey, and the thick body with a long lags sense in the mouth (after-taste). While the top priority factors which inhibiting the development of specialty beans is “The raw materials (supplay) which are difficult to obtain because specialty beans should achieve international standards by customer association. Raw materials for specialty coffee beans is quite difficult to get because the criterion of specialty coffee itself is very complex. Gayo arabica coffee beans are called specialty if they have score above 80 in cupping test. Specialty coffee beans are grown in special plantation system by special people who have been trained. Specialty coffee beans usually require rigorous sorting activity.

The external factor priority as opportunity factor of Gayo specialty green coffee beans is “International market is very concerned with environmental issue”. Gayo specialty coffee beans are produced using environmentally friendly system (organic). While the main priority as a threat factor of Gayo Premium coffee development is “Coffe in this are planted with a variaty types of coffee”. It will produce the unstable quality of specialty coffee beans.

Internal factors priority which impact the develop of Gayo coffee powder as strength factor is “ Gayo coffee powder have a lot of varieties with unique taste”. Some of Gayo coffee bean varieties have a sour taste with a stong body. Variety product is produced by several coffee industry in BenerMeriah. While the internal factor which impact the develop of Gayo coffee powder as weakness factor is “The limited facilities and the ability to master technology in produce coffee powder (roasting machine, Blanding and grinder). Facilities to produce coffee powder is relatively expensive and scarce in BenerMeriah.

The external factor priority which impact the develop of Gayo coffee powder as opportunity factor is “The government policies which support agro-industry sector to produce Gayo powder coffee”. While the external factor priority which impact the develop of Gayo coffee powder as threat factor is “Every consumer want a diverse spesification taste of coffe powder. Some consumers in Japan wants a coffe powder with medium roasting level, while consumers in Europe are likely to have a coffe powder with medium to dark roasting level. Consumer tastes is the main reason consumers choose to buy green coffee bean form rather than coffee powder.

3.3 The Development Strategy of Gayo Coffee

Strategy is a long-term goal of an enterprise, as well as the utilization and allocation of all resources necessary to achieve these objectives (David 2001). Each product certainly has different strengths, weaknesses, opportunity and threats and thus require different development strategies. The IFE-EFE value in development strategie of Gayo arabica coffee products can be seen in the following table:

Table 2: IFE-EFE value in development strategie of Gayo arabica coffee products

Cluster of Product	IFE	EFE	Matriks Space	Strategy
Green bean Premium	2.545	2.645	quadrant I	S-O
Green bean Specialty	2.902	2.918	quadrant I	S-O
Coffea powder Specialty	1.899	1.955	quadrant I	S-O

The difference in scores between the internal and external factors on the matrix position of the three clusters coffee products showed a positive value. This means that all product have strength and potential factor which stronger than the weakness and threats factor in developing Gayo Arabica coffee. But among the three clusters of products, it is seen that the Gayo specialty green coffee beans has a highest potential than other product to be developed. This is evident from the score in the matrix position for specialty grains higher than the other products.

All cluster product of Gayo arabica coffee are located in first quadrant (quadrant 1) in SWOT matrix position. Quadrant I which bounded by the X axis and Y axis is positive that all alternatives strategy suggested in Comparative Advantages strategy (S-O). it means that Gayo coffee has the good strength factors but the industry is not taking advantage of opportunities to develop optimally. The S-O strategy for cluster development Gayo coffee based products are as follows:

Table 4: The S-O strategy for cluster development Gayo coffee based products

Green Bean Premium	Green Bean Specialty	Bubuk Kopi Specialty
1. Using the IG certificate to optimize the potential market / Asian market demand	1. Using the certificate IG, Organic and Fair trade to optimize the market potential/ demand.	2. Drawing attention of international market by developing a variety of unique and innovate products (diversification product) to enrich the taste of Gayo coffee powder.
2. Implementation Good Agriculture Practice (GAP) by monitoring network processing arabica coffee beans to continuously improve the quality of the taste and quality of coffee beans.	2. Enhancing the unique taste based on customer desires.	3. Introduction the advantages of Gayo coffee powder that has a good quality and taste through exhibitions events
3. Developing regions Gayo coffee production	3. Conducting some innovative research on develop the diverse flavors through blanding system to enrich the taste of	4. Increase the domestic consumption by

<p>center in BenerMeriah through the coffee agro-industry policy support.</p> <p>4. Drawing the attention of the market by using produce the eco-friendly technologies coffee beans product.</p>	<p>Gayo specialty green coffe beans.</p> <p>4. Drawing the attention of international market by producing specialty coffee beans whichachieve trade standart with environmentally friendly technology</p>	<p>develope the brand image through cafes.</p>
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The results are consistent with a research by Zaputra (2015) which has formulatea development strategy for coffee comodityAceh tengah district. This research has proved that the some of coffee industry has started to increasetheir processingbased on cluster products. The SWOT analysis result suggested the S-O strategies which is to increase coffee production, develop business by partnership and maintaining good relationships with steakholther and stockholder.

- [8] NL Dewi, IW Budiasa,IAL goddess. 2015. Analysis of financial and value-added processing in the arabica coffee farmers cooperative bead SedanaBangli regency. *J Agrib.*4(2).
- [9] Y. Hayami, T Kawagoe, Y. Morooka, Siregar M .1987. *Agricultural Marketing AndProcessingin Upland Java, A Perspective From Sunda Village.* Bogor: CGPRT Center.

## 4. Conclusions And Suggestion

### 4.1 Conclusion

The research proves that the processing would be able to increase the added value of a product. The coffee powder products accounted for the largest added value when compared to other products.All cluster product of Gayo arabica coffee are located in first quadrant (quadrant 1) in SWOT matrix position. Quadrant I which bounded by the X axis and Y axis is positive that all alternatives strategy suggested in Comparative Advantages strategy (S-O).But among the three clusters of products, it is seen that the Gayo specialty green coffee beans has a highest potential than other product to be developed. This is evident from the score in the matrix position for specialty grains higher than the other products.

### 4.2 Suggestion

The suggestion of this research program is coffee industry need toprioritizedin diversification activity of coffee product for adding the value especially in specialty green coffee beanand coffe powder product.

## References

- [1] [AEKI] AsosiasiEksporitir Kopi Indonesia. 2014. *The report of coffee market in Indonesia.* JuliEdition. Jakarta (ID): AEKI.
- [2] A. Zaputra, Ismayani, Romano. 2015. The development strategy cluster of coffee and sugar cane plantations to the economic development of central Aceh district. *J Agris.*16 (2).
- [3] B.Saragih. 2010. *Sound Sustainability cluster : Thinking BungaranSaragih.* Jakarta (ID): PT Permata Lestari Discourse.
- [4] BPS. BenerMeriah, 2015.*Production of coffee, in the central highlands.Redelong:* BPS.
- [5] F.R David. 2001. *Strategic Management: Concepts and Cases.* New Jersey (US): Prentice Hall Inc.
- [6] Indonesian Coffee Exporters Association. 2014 *Coffee Market Report.*July edition. Jakarta (ID): AICE.
- [7] KH Dewi, HNusril,, YRosalina, P. Sarumpaet . 2013. Analysis of value-added pre-mixed coffee sachets sea cucumber ginger. *J Agris.* 12 (2): 209-216.