Teknika : Engineering and Sains Journal
Volume 2, Nomor 2, Desember 2018, 115-118

ISSN 2579-5422 online
ISSN 2580-4146 print

VALUE ADDED ANALYSIS OF WATER HYACINTH BAGS AS REGIONAL FEATURED PRODUCT

Khoirul Hidayat[1], **M Yaskun**[2], **M Adhi Prasnowo**[3]

[1]Department of Agroindustrial Technology
Trunojoyo University, Indonesia
e-mail : irul_ie@yahoo.co.id

[2]Department of Management
University of Islam Lamongan, Indonesia
e-mail : m.yaskun@unisla.ac.id

[3]Department of Industrial Engineering
UniversitasMaarif Hasyim Latif, Indonesia
e-mail : prasnowoadhi@dosen.umaha.ac.id

Received: September 19, 2018. Approved: December 5, 2018. Published: December 10, 2018

ABSTRACT

Research has a purpose and direction to maximize the value of water hyacinth. The condition of water hyacinth which has a high growth speed so that this plant is considered as a weed that can damage the aquatic environment. Water hyacinth is easily spread through water channels to other water locations, so the growth of water hyacinth can develop rapidly. So far, water hyacinth has become a problem for the community, because the presence of water hyacinth is not smooth, reservoirs and swamps are dirty. One of the processed products of water hyacinth is the bag. Thereforethe implementation of research leads to an analysis of the added value (added value) of water hyacinth into the water hyacinth bag. This study uses the Hayami method and descriptive analysis. The use of descriptive analysis to obtain data about raw materials and the use of additional materials to produce water hyacinth bags, then the results go to the value-added analysis with the Hayami method. The results of this study indicate that the added value (added value) obtained from the processing of water hyacinth into the water hyacinth bag in Ghandis Craft is Rp. 10,000/kg or IDR. 50,000/product, with a ratio of value added to the output value of 50% which has a value of greather than or equal to 40% so that it has a high value-added category with a workforce income of 53,333%, the contribution of other inputs 33,333%, and the profit of entrepreneurs is 13,333%. Whereas in R & D Handicraft is IDR. 8,000/kg or IDR. 40,000/product, with a ratio of value added to the output value of 44,444% which has a value of greather than or equal to 40% so that it has a high value-added category with a workforce income of 53,846%, the contribution of other inputs 38,462%, and the entrepreneur's profit of 7,692%. Therefore, the manufacture of water hyacinth bag products provides high added value because of more than 40%.

Keywords : enceng gondok bags, hayami method, value added

INTRODUCTION

Water hyacinth (Eichhornia Crassipes/ Enceng Gondok) is one type of water plant that floats, usually grows in reservoirs, swamps, and rivers. Water hyacinth has a high growth speed, so this plant is included in the type of weed that can damage the aquatic environment. Water hyacinth is easily spread through water channels to other water locations, so the growth of water hyacinth can develop rapidly. All this time water hyacinth has become a problem for the community because with the water hyacinth the river flow is not smooth, reservoirs and swamps become dirty. One of the processed products of water hyacinth is to become a bag, so the urgency of researching the analysis of added value (value added) of water hyacinth into water hyacinth bags is imperative.

Value added is the difference between the output value with material costs and input processing. Value added is an economic parameter that describes the difference between the amount of production (output) and the average costs (costs spent during the production process) of a product,

both goods, and services. According to Hayami et al. (Kawagoe, Morooka, & Siregar, 1987), the Hayami method is a way to determine the amount of added value, the output value and productivity value of the product. The advantage of this method is that it can determine the value of the service to the production factor. The modified Hayami calculation formula model is made to adjust to the study regarding the number of business actors, the number of commodities handled, and the cycle of business activities to be long-term or multi-year and sustainable (Hidayat, 2012).

According to Sudiyono (Sudiyono, 2002), the implementation of value-added calculations could also coincide with the process of product processing and marketing. Value added to the processing process is a reduction in the cost of raw materials and other inputs to the results of product value and does not include labor. Several factors can affect the added benefit of the processing process, namely technical factors, and market factors. Technological factors include production capacity, raw material supply, and labor. Market factors include output prices, labor wages, prices of raw materials and other output values except for fuel and labor. There are two ways to calculate the added value, namely value added for processing and value added for marketing. Factors that influence value added for processing have two categories, including technical factors and market factors. Influential technical factors are production capacity, the amount of raw material use and labor. While the influential market factors are output prices, labor wages, raw material prices, and other input values (Kawagoe et al., 1987).

METHODS

The implementation of research activities in the water hyacinth processing UKM is in Lamongan City, East Java, Indonesia. This study uses the Hayami method and descriptive analysis. The study uses descriptive analysis to obtain data on raw materials and the use of additional materials to produce water hyacinth bags, after obtaining results in the previous stages then the research leads to the analysis of value added with the Hayami method as follows on Table 1.

According to Hubeis (Hubeis, 1997) the value added parameters that can determine an industrial product include; if the added value is less than 15% then it falls into the category of short added value, if the added value is 15% -40% then the added value is in the medium category, and if the added value of more than 40% the added value is in the high category.

Table 1. Procedures of the Added Value Calculation of Hayami Method

No	Variable		Value
	Output, Input, and Price		
1	Output	Kg	1
2	Input	Kg	2
3	Labor	Man	3
4	Conversion Factor		(1/2)=(4)
5	Labor Coefisien		(3/2)=(5)
6	Ioutput Price	Rp/Kg	6
7	Direct Labor	Rp/Man	7
	Reveneu and Profit		
8	Raw Material Price	Rp/Kg	8
9	Another Input Contribution	Rp/Kg	9
10	Output Value	Rp/Kg	(4x6)=(10)
11	a. Value Added	Rp/Kg	(10-9-8)=(11a)
	b. Value Added Ratio	%	(11a/10)x100%)=(11b)
12	a. Direct Labor Income	Rp/Kg	(5)x(7)=(12a)
	b. Labor Contribution	%	(12a/11a)x100%=(12b)
13	a. Profit	Rp/kg	(11a-12a)=(13a)
	b. Procentage Profit	%	(13a/11a)x100%=(13b)
	Reply Services to Owners of Factors of Production		
14	Margin	Rp/Kg	(10-8)=(14)
	a. Direct Labor Income	%	(12a/14) x 100% = (14a)
	b. Another Input Contribution	%	(9/14) x 100% = (14b)
	c. The Benefit of the Company Owner	%	(13a/14) x 100% = (14c)

Notes :

1. Output is the sum of product / output results for one period and is measured in units of kg of products.
2. Input is the sum of the use of raw materials for one period to process raw materials to become processed products.
3. Workforce is a multiplication between the amount of direct labor needed to process water hyacinth into processed products with the number of working days to process water hyacinth for one period.
4. Conversion factor, shows the number of outputs from one input unit.
5. The labor coefficient shows the amount of labor output needs to process one unit of input.
6. The output price is based on the average selling price in a given year, where the average selling price is the division between the total value of the sales output and the total output sold. The unit of measurement of output prices is rupiah per kg of processed products.
7. The contribution of other inputs is all contributions other than raw materials and direct labor used during the production process. The unit of measurement for the contribution of other inputs is rupiah per kg of raw material.
8. The price of raw materials is determined by dividing the total cost of raw materials with the total raw material used (Rp / kg).
9. The average wage of direct labor is based on the daily wages received by each workforce that is directly involved in processing activities, measured in units of rupiah per person working day.
10. The output value shows the output value of one unit of input and measurement in units of rupiah per kg of processed products.
11. Added value is the difference between the value of output and the price of raw materials and the contribution of other inputs in units of Rp.
12. Value added ratio shows the percentage of added value from the output value and expressed in percent (%).
13. Direct labor income shows the wages received by direct labor to process one unit of raw material measured in units of rupiah per kg of raw materials and processed products.
14. The workforce share shows the percentage of direct labor benefits from added value and expressed in percent.
15. Profit shows the portion received by the company because it carries business risks, measured in units of rupiah per kg of processed products.
16. The rate of profit shows the percentage of profit against added value and expressed in percent.
17. Margin shows the amount of the contribution of the owner of the factors of production other than the raw material used in the production process and the size of the unit of rupiah per kg of processed products.
18. Labor income (from margin) is the percentage of labor income to margin (%).

19. Other input contributions (from margins) are income from other input contributions to margin (%).
20. Business profits (from margins) is the percentage of profit from processing owners to margin (%).

RESULT AND DISCUSSION

Water hyacinth bag is one of the processed products from water hyacinth waste which is produced by UMKM in Lamongan Regency. Wet hyacinth as much as 100 kg then through the drying process for 5-10 days to 8 kg of dry water hyacinth, or has an 8% rendment (Arifien, 2011). The craftsmen of water hyacinth bags utilize dry water hyacinth from dry water hyacinth collectors. The craftsmen then produce raw materials for dry water hyacinth into a form of bag work. The bag production process begins by choosing dry water hyacinth with good quality (stalk length of 40-60 cm, diameter of more than 12 cm, tensile strength 23.68, clean, white color, intact, and wide), then doing appropriate compliance with size and packing. The process of bathing water hyacinth into bags is carried out by experienced craftsmen in making various handicrafts from various materials. To produce one bag, Ghandis Craft requires 5 kg of raw water hyacinth, 0.25 seeds of yarn, 1 mg of glue, and 1 pack. IDR raw material total cost. 25,000, and other IDR inputs. 5,000. Following on the Table 2 is the calculation of value added analysis.

Table 2. Value Added Analysis of Ghandis Craft EncengGondok Bags Processing Based on Hayami Method

No	Variable		Value
	Output, Input, and Price		
1	Output	Kg	1
2	Input	Kg	5
3	Labor	Man	1
4	Conversion Factor		0,2
5	Labor Coefisien		0,2
6	Output Price	Rp/Kg	100.000
7	Direct Labor	Rp/Man	40.000
	Reveneu and Profit		
8	Raw Material Price	Rp/Kg	5.000
9	Another Input Contribution	Rp/Kg	5.000
10	Output Value	Rp/Kg	20.000
11	a. Value Added	Rp/Kg	10.000
	b. Value Added Ratio	%	50
12	a. Direct Labor Income	Rp/Kg	8.000
	b. Labor Contribution	%	80,000
13	a. Profit	Rp/kg	2.000
	b. Procentage Profit	%	20,000
	Reply Services to Owners of Factors of Production		
14	Margin	Rp/Kg	15.000
	a. Direct Labor Income	%	53,333
	b. Another Input Contribution	%	33,333
	c. The Benefit of the Company Owner	%	13,333

From the calculations in Table 2, shows that the processing of water hyacinth into water hyacinth bags at Ghandis Craft has value added is IDR. 10,000/kg or IDR. 50,000/product, with a ratio of value added to its output value of 50% which has a value of ≥ 40% so that it has a high value-added category with a workforce income of 53.333%, other input contributions 33.333%, and entrepreneur profits of 13.333%.

Whereas to produce one bag, R & D Handicraft requires 5 kg of raw water hyacinth, 0.25 seeds of yarn, 1 mg of glue, and 1 piece of packaging. IDR raw material total cost. 25,000, and other IDR inputs. 5,000. Following is the calculation of value added analysis:

Table 3. Value Added Analysis of R&D Handicraft EncengGondok Bags Processing Based on Hayami Method

No	Variable		Value
	Output, Input, and Price		
1	Output	Kg	1
2	Input	Kg	5
3	Labor	Man	1
4	Conversion Factor		0,2
5	Labor Coefisien		0,2
6	Output Price	Rp/Kg	90.000
7	Direct Labor	Rp/Man	35.000
	Reveneu and Profit		
8	Raw Material Price	Rp/Kg	5.000
9	Another Input Contribution	Rp/Kg	5.000
10	Output Value	Rp/Kg	18.000
11	a. Value Added	Rp/Kg	8.000
	b. Value Added Ratio	%	44,444
12	a. Direct Labor Income	Rp/Kg	7.000
	b. Labor Contribution	%	87,500
13	a. Profit	Rp/kg	1.000
	b. Procentage Profit	%	12,500
	Reply Services to Owners of Factors of Production		
14	Margin	Rp/Kg	13.000
	a. Direct Labor Income	%	53,846
	b. Another Input Contribution	%	38,462
	c. The Benefit of the Company Owner	%	7,692

From the calculation of Table 3, shows that the processing of water hyacinth into water hyacinth bags in R & D Handicraft has value added of IDR. 8,000/kg or IDR. 40,000/product, with a ratio of value added to the output value of 44,444% which has a value of ≥40% so that it has a high value-added category with a workforce income of 53,846%, the contribution of other inputs 38,462%, and the profit of entrepreneurs of 7,692%.

General description of the calculation of the two MSMEs, that the manufacture of water hyacinth bag products at Ghandis Craft has higher added value compared to R & D Handicraft, and both MSMEs provide added value to workers and entrepreneurs with high value, so that the manufacture of water hyacinth bags can increase community income through labor intensive and empowerment of the surrounding community. Therefore, the regional government must support

MSMEs in water hyacinth bags to preserve regional specialties that will be used as superior products in Lamongan Regency. Government support can also be done through assistance to craftsmen, providing training to craftsmen, including water hyacinth bag products in each exhibition activity, and providing low interest credit assistance.

CONCLUSION

The conclusion of this study is that from the processing of water hyacinth to water hyacinth bags at Ghandis Craft has a value added of IDR. 10,000/kg or IDR. 50,000/product, with a ratio of value added to its output value of 50% which has a value of ≥40% so that it has a high value-added category with a workforce income of 53.333%, other input contributions 33.333%, and entrepreneur profits of 13.333%. While the R & D handicraft is IDR. 8,000/kg or IDR. 40,000/ product, with a ratio of value added to its output value of 44.444% which has a value of ≥40% so that it has a high value-added category with labor income of 53.846%, contribution of other inputs 38.462%, and entrepreneur profits of 7.692%. Therefore, the manufacture of water hyacinth bag products provides high value added value because more than 40%.

REFERENCES

Arifien, K. (2011). *Peluang Bisnis Anyaman Panduan Usaha Mandiri*. Bandung: Yrama Widya.

Hidayat, A. (2012). Analisis Kepuasan Mahasiswa terhadap Proses Belajar Mengajar Di Jurusan Kemaritiman Politeknik Negeri Samarinda. *JURNAL EKSIS*, *8*(1), 2060 2065.

Hubeis, M. (1997). Menuju industri kecil profesional di era globalisasi melalui pemberdayaan manajemen industri.

Kawagoe, T., Morooka, Y., & Siregar, M. (1987). *Agricultural marketing and processing in Upland Java: a perspective from a Sunda village.*

Sudiyono, A. (2002). Pengantar Pemasaran Pertanian. Fakultas Pertanian, Universitas Muhammadiyah Malang.

Suprapto. (2006). *Proses Pengolahan Dan Nilai Tambah*. Jakarta: Penebar Swadaya.

Syarif, H., Marimin, S. A., & Sukardi, Y. M. (2012). Modifikasi metode hayami untuk perhitungan nilai tambah pada rantai pasok industri kelapa sawit. *Jurnal Teknologi Industri Pertanian*, *22*(1), 22–31.

Trienekens, J. H. (2011). Agricultural value chains in developing countries; A framework for analysis. *International Food and Agribusiness Management Review*, *14*(2), 51–83.

Yujiro, H. (1987). The Value Added Method Through. Retrieved from http://community.gunadarma.ac.id/user/blogs/view/yudhistira/id_7389/title_%22-inputproses-output-usaha-business%22/