The Feasibility Analysis of Business and Marketing of Processed Seaweed Products: A Case Study at UD Ares In Mataram City

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Abstract: **The research aims: to analyze production costs and production value of seaweed processing at UD. Ares; analyzing the added value of the seaweed processing business at UD. Ares; analyzing the feasibility of the seaweed processing business at UD. Ares; identifying channels and knowing the marketing margins of processed seaweed products at UD. Ares.The research method is a case study method. The unit of analysis is UD. Ares processes seaweed in the form of chips, rengginang, and ginger sherbet. The technique of determining entrepreneur respondents is by** *purposive sampling technique*. **While respondents for marketing agencies with** *snowball sampling*. **The type of data used is quantitative and qualitative data. Data sources include primary data and secondary data. Data collection techniques with survey techniques.The results showed that: Production costs and production value per month in the seaweed processing business at UD. Ares is IDR 28,389,419 and IDR 47,560,000. The added value per month is IDR 58,890,586, with the highest added value being chips products IDR 45,149,845. The labor wage is IDR 14,000,000 per month. Business feasibility using** *the Gross B/C Ratio* **is obtained for chips products of 2.93. Rengginang is 1.72 and ginger sherbet is 2.26, meaning that the business is declared feasible because** *the Gross B/C Ratio* **is > 1.05. The marketing channel used by UD. Ares ie zero levels (producers to consumers) and one level (producers, retailers, and consumers). The marketing margin for chip products is IDR 12,000 or 44%, for rengginang products is IDR 11,000 or 42% and for ginger sherbet products is IDR 14,000 or 45%.**

Keywords: **chips, enterpreneur, gingger sherbet, margin.**

I. INTRODUCTION

Indonesia is an archipelagic country, with two-thirds of its territory, namely the sea, around 13,667 large and small islands, and has the widest coastline in the world, which is approximately 80,791.42 km. In addition, the natural wealth in it is very abundant, especially the diversity of animals (fauna), plants (flora), even minerals and minerals. Therefore, Indonesia is said to be an archipelagic country with considerable potential as a producer of seaweed [1]

Seaweed is microalgae that is included in the *Thallophyta division* and is a plant that has a skeletal structure consisting of a stem/ *thallus* without leaves and roots. In Indonesia, seaweed has long been consumed by people, especially in coastal areas. In general, the seaweed used at that time was for consumption and eaten directly. Known for its high quality, Indonesian seaweed is in great demand by the industry because of its relatively high carrageenan, agar and *alginate sources*, which are suitable for use as raw materials for the food industry, flavor softeners, ice cream crystallization preventers, and medicines [2].

West Nusa Tenggara (NTB) is an area that is one of the largest centers for seaweed production in Indonesia with a production potential of 702,844.30/ton in 2021 (National Marine Affairs and Fisheries Office of NTB Province 2022). The development of the seaweed production process in West Nusa Tenggara continues to be carried out so that it can make a positive economic contribution to society, especially in the coastal areas.

Seaweed, which has been processed into food for a long time and is available for consumption by the public, certainly provides considerable added value, especially for producers who process the raw material into products with higher selling value. Value added refers to an added value to a commodity due to processing, transportation, or storage during the production process (Center for Macroeconomic Policy, Study of Value Added Agricultural Products, 2012 in [3].

One of the small and medium industries that manage seaweed in Mataram City is the Ares Trading Business. This industry uses seaweed as a raw material in its business to generate added value. The products produced by UD. Ares is in the form of seaweed chips, seaweed crackers, seaweed rengginang, seaweed ginger sherbet, seaweed coffee and seaweed *cookies.* This business was founded in 2011 located on Jalan Dr. Sutomo, KarangBaru Village, Selaparang District, Mataram City and is a business that is well known so many people often use this product as a unique souvenir from the island of Lombok.

The aims of the study were (1) to analyze production costs and production value of seaweed processing at UD. Ares; (2) Analyzing the added value of the seaweed processing business at UD. Ares; (3) Analyzing the feasibility of the seaweed processing business at UD. Ares; (4) Identifying channels and knowing the marketing margins of processed seaweed products at UD. Ares.

II. RESEARCH METHODS

The method used in this research is the case study method. The unit of analysis in this research is UD. Ares processes seaweed in the form of seaweed chips, seaweed rengginang, and seaweed ginger sherbet. Determination of the research area is determined by *the purposive sampling method*. There were two respondents in the study, namely producer respondents and marketing agency respondents. The producer respondents in this study were UD owners. Ares. The respondents for marketing agencies were collected using *Snowball Sampling*, which obtained as many as 7 (seven) marketing agency respondents. The type of research data includes quantitative data and qualitative data while the data sources include primary data and secondary data. Data collection techniques were carried out using survey techniques, in which interview techniques and observation techniques were used.

A. *Data Analysis*

a) Analysis of Production Costs and Production Value

The production costs of a seaweed processing business consist of raw material costs, direct labor costs, and factory *overhead costs.* According to [4] to find out the total cost of a business can be calculated using the following formula:

$$TC = CRM + DLC + FOC$$

Information:

TC	= Total cost of production
CRM	= Cost of raw materials
DLC	= Direct labor costs
FOC	= Factory *overhead costs*

To analyze a seaweed processing business's production value, this value can usually be calculated by multiplying the product volume and the price per unit of each of these products or commodities. For more details, it can be seen the following formula [5]

$$PV = P \times Q$$

Information:

PV	= Production value
P	= Product price
Q	= Production quantity

b) Value Added Analysis

The calculation process with added value can be interpreted as a margin method, namely the difference between the value of a product and the cost of consumables and *overhead costs*, labor costs are not included. To analyze the added value, you can use the following formula [5]

$$\Sigma TAVki = \Sigma TPVki - \Sigma CRMki - \Sigma FOCki \qquad \dots\dots\dots\dots\dots\dots (1)$$

$$\Sigma TPVki = \Sigma Pki. \Sigma Qki \qquad \dots\dots\dots\dots\dots\dots\dots (2)$$

$$\Sigma TVAki = \Sigma ALWki + \Sigma AOPki \qquad \dots\dots\dots\dots\dots\dots\dots (3)$$

Information:

ΣTAV	= Total added value	ΣTPV	= Total production value
P	= Price per unit of production	Q	= Production quantity
ΣCRM	= Cost of consumables	ΣFOC	= *Overhead costs*
AVA	= Average value added	ALW	= Average labor wage
AOP	= Average operating profit	k	= k-th business unit

Eligibility Criteria:

If TVA > ALW ➔ the business is declared feasible

If TVA ≤ ALW ➔ the business is declared inappropriate

c) Business Feasibility Analysis

Business feasibility analysis aims to determine the level of appropriateness or whether something is run from a business, by looking at various parameters or certain eligibility criteria. The eligibility criteria using the Gross B/C ratio are as follows [5].

$$\text{Gross B/C ratio} = \Sigma TPV / \Sigma TC = TPV / TC \qquad \dots\dots\dots\dots\dots\dots.. (4)$$

$$\Sigma TPV = \Sigma Pk.Qk \qquad \dots\dots\dots\dots\dots\dots.. (5)$$

$$\Sigma TC = \Sigma CRM + \Sigma FOC + \Sigma TLW \qquad \dots\dots\dots\dots\dots\dots (6)$$

Information:

ΣTPV	= Total production value per business unit
TPV	= Average value of production per business unit
TC	= Average cost of production
Pk	= Price per product unit in the business unit
Qk	= Total production quantity per business unit
ΣTC	= Total cost of production
ΣRMC	= Total cost of consumable materials
ΣFOC	= Total overhead costs
ΣTKW	= total labor wages
i	= Credit interest (interest)

Eligibility Criteria: (bank interest rate)

If the Gross B/C Ratio > 1+i ➔ the business is declared feasible

If the Gross B/C Ratio ≤ 1+i ➔ the business is declared not feasible

d) Product Marketing Channel and Margin Analysis

Descriptive marketing channel analysis is a type of research by looks at the flow of institutions participating in the marketing process of processed seaweed products from producers to final consumers. To analyze marketing channels descriptively, which is presented in the form of pictures. Then to find out the marketing margin within the Mataram City area can be known by calculating the following formula [6].

$$M = Pr - Pf$$

Information:

M = Marketing margin (Rp)

Pr = Price at the relailer level

Pf = Price at the producer level

III. RESULTS AND DISCUSSION

3.1. Characteristics of Respondents

The characteristics of the respondents in this study included age, gender, education level, number of family members, and business experience. The number of respondents in this study was 10 respondents consisting of 3 businessmen respondents and 7 traders from intermediary institutions in the Mataram City.

1. Age of Respondents

Based on Table 1, shows the age of respondents for processed seaweed producers at UD. Ares ranged from 44-53 years. Meanwhile, the age of the middleman trader respondents is mostly in the age range of 24-43 years. This shows that respondents from entrepreneurs and marketer agencies are in the productive age group physically and mentally [7]. Age affects physical strength at work, mindset, and willingness to embrace new ideas in developing a business [8].

2. Gender

Based on Table 1, shows that the sex of the producer respondents tends to be female with a percentage of 67%. Meanwhile, respondents who are middlemen tend to be male with a percentage of 57%.

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Table 1 Characteristics of Respondents' Age of Producers and Marketing Institutions for Processed Seaweed Products in Mataram City in 2023

No	Description	Amount		Percentage (%)	
		Producer	Trader	Producer	Trader
1	Age Range (Years)				
	a. 24-43	0	4	0	57
	b. 44-53	3	2	100	29
	c. 54-63	0	1	0	14
	Amount	3	7	100	100
2	Gender				
	a. Man	1	4	33	57
	b. Woman	2	3	67	43
	Amount	3	7	100	100
3	Level of education				
	a. Graduated from elementary school	0	0	0	0
	b. Middle school graduate	0	0	0	0
	c. Graduated from high school	2	1	67	14
	d. Diploma	0	2	0	29
	e. Bachelor	1	4	33	57
	Amount	3	7	100	100

No	Description	Amount		Percentage (%)	
		Producer	Trader	Producer	Trader
4	Family Dependents (Person)				
	a. 1-2	0	0	0	0
	b. 3-4	3	7	100	100
	Amount	3	7	100	100
5	Business Experience (Year)				
	a. 1-10	1	4	33	57
	b. 11-20	2	2	67	29
	c. >20	0	1	0	14
	Amount	3	7	100	100

Source: Primary Data Processed, 2023

4. Level of education

Based on Table 1, shows that the level of education for producer respondents is at the high school level (SMA), with a percentage of 67%. Meanwhile, the education level of the middleman respondents was dominated by the undergraduate level (S1), namely 4 people with a percentage of 57%. Education level influences one's attitude and behavior. Therefore, the high level of education pursued can make it easier for someone to absorb a lot of information [9].

5. Family Liability

Based on Table 1, shows that the average number of dependents of producer and intermediary respondent families ranges from 3-4 people. This shows that the respondent's family is moderate. According to [10], the size of a family is determined by the members of the family. Families with 3 members are small families, families with 3-5 members are medium families, and families with >5 members are large families.

6. Business Experience

Based on Table 1, shows that the average length of business for producer respondents is 12 years. As for middlemen respondents, namely 1-10 years with a percentage of 57%. This shows that most of the respondents are quite experienced in running a business [11].

3.2. Ares Trading Business Profile

Trading business (UD) Ares is one of the businesses that process seaweed raw materials into various types of products in the Mataram City. UD. Ares is a group business consisting of three people, chaired by Mrs. Baiq Rokh Hilmi, secretary Mrs. Baiq Yusmini and another member named Mrs. Ira. The business has been established since 2011 and is located on Jln. Dr. Soetomo, Gang Gili Gede 1, No. 3 Karang Baru Village, Selaparang District, Mataram City. UD. Ares has participated in a lot of coaching and training and received an award from the West Nusa Tenggara Province UKM Cooperative Office. For more details, the profile of UD. Ares can be seen in Table 2.

Table 2 Profile of Ares Trading Business (UD).

Company name	UD. Ares
Address	Jalan Dr. Soetomo, Gang Gili Gede 1, No. 3 KarangBaru Village, Selaparang District, Mataram City.
Name of the owner	Chairman : Baiq Rohk Hilmi Secretary : Baiq Yusmini Member : Ira
Business fields	Processing and marketing of seaweed-based products and other agricultural products.
➢ TDI	Number: 034/TDI/MTR-10794/III/13
➢ SIUP	Number: 23-07/2014-07/0413
➢ TDP	Number: 23.07.5.10.06784
➢ NPWP	Number: 08.422.987.1-911.000
➢ P-IRT	Number: 802527106036723
➢ NIB	Number: 9120000452415
➢ BPOM	Number: 090517.5271.IRTP.022
➢ Halal Certificate	Number: 27120003620713

Source: Primary Data Processed, 2023

Table 2 shows the business profile of UD. Ares is very diverse, starting from the existence of an industrial registration mark to the product halal certificate that has been obtained by the manufacturer. The Industrial Registration Certificate (IRC) was established in Mataram in 2013 by the Mataram City Office of Cooperatives, Industry, and Trade. This was followed by a Trading Business License (TBL), Company Registration Certificate (CRC), and Taxpayer Identification Number (NPWP) in 2014 by the Mataram City Investment and Integrated Licensing Services Agency. The Household Industry Food Production Certificate was issued in 2014 by the Mataram City Health Office. In 2019 UD. Ares has a Micro Small Business License (MSBL) and a Business Identification Number (BIN) issued by the Government of the Republic of Indonesia. Furthermore, the Food and Drug Supervisory Agency (FDSA) and a halal certificate were issued in 2019 by the Indonesian Ulema Council of West Nusa Tenggara Province.

3.3. Production Frequency

There are three types of processed seaweed products. First chips, rengginang, sherbet. Processed seaweed products are produced from dried seaweed. Through a process, a product is produced that is ready for consumption.

Table 3 Production Frequency

No.	Types of products	Time		
		1x Production (hours/day)	1 week (time)	1 month (time)
1	Seaweed chips	14	4	16
2	Rengginang seaweed	10	3	12
3	Seaweed Ginger Sherbet	6	-	2

Source: Primary Data Processed, 2023

The production process requires different times and frequencies between products. Seaweed chip products are produced relatively more often every week compared to ringginang and sherbet. The time required and frequency of the production process can be seen in Table 3.

3.4. Analysis of Production Costs and Production Value

1. *Production cost*

Production costs are the total of all costs incurred by entrepreneurs in processing seaweed into finished products and semi-finished products. Production costs can be known during the production process, starting from the material preparation process to product marketing. According to [4], production costs are divided into raw material costs (RMC), labor and factory overhead. The production costs referred to in this study are the costs of raw materials or consumable materials (RMC), direct labor costs (DLC), and factory *overhead costs (FOC).*

Average production costs are kept to a minimum in order to increase efficiency. Efficiency occurs when labor costs are minimal when using certain raw materials. Labor costs are the largest production costs, followed by raw material costs and factory overhead costs. Comparison of production costs for each type of product studied is as follows on Table 4.

Table 4 Calculation of Production Costs Per Month in Seaweed Processing Business at UD. Ares Mataram City in 2023

No.	Description	Chips (IDR)	Rengginang (IDR)	Ginger sherbet (IDR)	Total (IDR)
1	RMC	6,086,400	1,528,800	2,140,000	9,755,200
2	DLC	9,600,000	3,600,000	800,000	14,000,000
3	FOC	2,763,755	748,391	1,122,068	4,634,214
	Amount	18,450,155	5,877,191	4,062,068	28,389,414

Source: Primary Data Processed, 2023

2. *Raw material costs*

Raw material costs are expenditures by entrepreneurs for the purchase of raw materials used to manufacture products. The cost of raw materials is said to be the cost of consumables that cannot be separated from products such as seaweed which is the main ingredient and the cost of auxiliary materials. The type of seaweed that is often used by UD. Ares for production activities is sorrel seaweed (Eucheuma cottonii)**.** The following details the cost of raw materials per product in the seaweed processing business at UD. Ares in Mataram City.

Table 5(a) Details of Raw Material Costs for Chip Products in Seaweed Processing Businesses at UD. Ares Mataram City in 2023

No.	Cost component	Price (IDR/unit)	Per Production Process		Per Month	
			Amount	Value (IDR)	Amount	Value (IDR)
1	Raw Material Cost: Seaweed (kg)	18,000	6.00	108,000	96.00	1,728,000
2	Cost of auxiliary materials					
	Cassava (kg)	8,000	12.00	96,000	192.00	1,536,000
	Rice Flour (kg)	14,000	3.00	42,000	48.00	672,000
No.	Cost component	Price (IDR/unit)	Per Production Process		Per Month	
			Amount	Value (IDR)	Amount	Value (IDR)
	Garlic (kg)	20,000	0.75	15,000	12.00	240,000
	Masako (Pcs)	500	10.00	5,000	160.00	80,000
	Large Chili (kg)	85,000	0.06	5,100	0.96	81,600
	Cayenne Pepper (kg)	80,000	0.03	2,400	0.48	38,400
	Sugar (kg)	14,000	1.50	21,000	24.00	336,000
	Salt (Pcs/Gram)	3,000	0.30	900	4.80	14,400
	Cooking oil (kg)	17,000	5.00	85,000	80.00	1,360,000
	RMC number			380,400		6,086,400

Source: Primary Data Processed, 2023

Table 5(b) Details of Raw Material Costs for Chip Products in Seaweed Processing Businesses at UD. Ares Mataram City in 2023

No.	Cost component	Price (IDR/unit)	Per Production Process		Per Month	
			Amount	Value (IDR)	Amount	Value (IDR)
1	Raw Material Cost: Seaweed (Kg)	18,000	6.00	108,000	96.00	1,728,000
2	Cost of auxiliary materials					
	➤ Cassava (Kg)	8,000	12.00	96,000	192.00	1,536,000
	➤ Rice Flour (Kg)	14,000	3.00	42,000	48.00	672,000
	➤ Garlic (Kg)	20,000	0.75	15,000	12.00	240,000
	➤ Masako (Pcs)	500	10.00	5,000	160.00	80,000
	➤ Large Chili (Kg)	85,000	0.06	5,100	0.96	81,600
	➤ Cayenne Pepper (Kg)	80,000	0.03	2,400	0.48	38,400
	➤ Sugar (Kg)	14,000	1.50	21,000	24.00	336,000
	➤ Salt (Pcs/Gram)	3,000	0.30	900	4.80	14,400
	➤ Cooking oil (Kg)	17,000	5.00	85,000	80.00	1,360,000
	RMC number			380,400		6,086,400

Source: Primary Data Processed, 2023

Table 6 Details of Raw Material Costs for Rengginang Products in Seaweed Processing Businesses at UD. Ares Mataram City in 2023

No.	Cost component	Price (IDR)	Per Production Process		Per Month	
			Amount	Value (IDR)	Amount	Value (IDR)
1	Raw Material Costs Seaweed (Kg)	18,000	0.50	9,000	6.00	108,000
2	Cost of auxiliary materials					
	Sweet Potato (Kg)	7,000	2.00	14,000	24.00	168,000
	Tapioca Starch (Kg)	10,000	4.00	40,000	48.00	480,000
	Garlic (Kg)	20,000	0.20	4,000	2.40	48,000
	Masako (Pcs)	500	5.00	2,500	60.00	30,000
	Coriander (Pcs)	1,000	4.00	4,000	48.00	48,000
	Pepper (Pcs)	1,000	2.00	2,000	24.00	24,000
	Cooking Oil (Kg)	17,000	3.00	51,000	36.00	612,000
	Salt (kg)	6,000	0.15	900	1.80	10,800
	RMC number			127,400		1,528,800

Source: Primary Data Processed, 2023

Table 7 Details of Raw Material Costs for Ginger Serbat Products in Seaweed Processing Businesses at UD. Ares Mataram City in 2023

No.	Cost component	Price (IDR)	Per Production Process		Per Month	
			Amount	Value (IDR)	Amount	Value (IDR)
1	Raw Material Costs					
	Seaweed Flour (kg)	300,000	0.50	150,000	1.00	300,000
2	Auxiliary Material					
	Ginger (kg)	24,000	8.00	192,000	16.00	384,000
	White Sugar (kg)	14,000	25.00	350,000	50.00	700,000
	Brown Sugar (kg)	15,000	5.00	75,000	10.00	150,000
	Lemongrass (kg)	17,000	8.00	136,000	16.00	272,000
	Cinnamon (Kg)	70,000	2.00	140,000	4.00	280,000
	Cloves (kg)	150,000	0.10	15,000	0.20	30,000
	Pepper (kg)	120,000	0.10	12,000	0.20	24,000
	Orange Leaves (kg)	0	0.50	0	1.00	0
	Basil Leaves (kg)	0	0.50	0	1.00	0
	RMC number			1,070,000		2,140,000

Source: Primary Data Processed, 2023

3. Direct labor costs

Direct labor costs are costs incurred by employers to pay for the labor that assists in production process activities. The type of work carried out ranges from cleaning to marketing. The workforce used by employers is usually divided into intra-household and extra-household. In detail, direct labor costs can be seen in Table 8.

Table 8 Details of Labor Costs for Chip Products in Seaweed Processing Businesses at UD. Ares Mataram City in 2023

No.	Description	Use of Labor				Per Process		Per Month	
		LIF		LOF		Amount kindergarten (MD)	Cost kindergarten (IDR)	Amount kindergarten (MD)	Cost kindergarten (IDR)
		Total (MD)	Mark (IDR)	Total (MD)	Mark (IDR)				
1	Cleaning, Soaking, Processing	0.43	50,000	1.29	150,000	1.71	200,000	27,43	3,200,000
2	Drying	0.00	0	0.29	50,000	0.29	50,000	4.57	800,000
3	Seasoning Making	0.43	50,000	0.86	100,000	0.29	150,000	20.57	2,400,000
4	Frying	0.14	50,000	0.00	0	0.14	50,000	2,29	800,000
5	Packaging	0.29	50,000	0.29	50,000	1.57	100,000	9,14	1,600,000
6	Marketing	0.57	80,000	0.00	0	0.57	50,000	9,14	800,000
Total		1.86	250,000	2.71	350,000	4.57	600,000	73,14	9,600,000

Source: Primary Data Processed, 2023

MD=Man-Days

Table 9 Details of Labor Costs for Rengginang Products in Seaweed Processing Businesses at UD. Ares Mataram City in 2023

No.	Description	Use of Labor				per Process		Per Month	
		LIF		LOF		Amount kindergarten (MD)	Cost kindergarten (IDR)	Amount kindergarten (MD)	Cost kindergarten (IDR)
		Total (MD)	Mark (IDR)	Total (MD)	Mark (IDR)				
1	Cleaning, Soaking, Processing	0.00	0	0.86	100,000	0.86	100,000	10,29	1,200,000
2	Drying	0.00	0	0.29	50,000	0.29	50,000	3,43	600,000
3	Frying	0.14	50,000	0.00	0	0.14	50,000	1.71	600,000
4	Packaging	0.00	0	0.14	50,000	0.29	50,000	1.71	600,000
5	Marketing	0.57	50,000	0.00	0	0.57	50,000	6,86	600,000
Total		0.71	100,000	1.43	200,000	2.00	300,000	24.00	3,600,000

Source: Primary Data Processed, 2023

MD=Man-Days

Table 10 Details of Labor Costs for Ginger Serbat Products in Seaweed Processing Businesses at UD. Ares Mataram City in 2023

No.	Description	Use of Labor				Per Process		Per Month	
		LIF		LOF		Amount kindergarten (MD)	Cost kindergarten (IDR)	Amount kindergarten MD	Cost kindergarten (IDR)
		Total (MD)	Mark (IDR)	Total (MD)	Mark (IDR)				
1	Cleaning, Soaking	0.43	50,000	0.43	50,000	0.86	100,000	0.71	200,000
2	Processing	0.00	0	1.29	150,000	1.29	150,000	2.57	300,000
3	Packaging	0.00	0	0.57	100,000	0.57	100,000	1.14	200,000
4	Marketing	0.57	50,000	0.00	0	0.57	50,000	1.14	100,000
Total		1.00	100,000	2,29	300,000	3,29	400,000	6,57	800,000

Source: Primary Data Processed, 2023

Information:

LIF = Labor in the Family

LOF = Labor Outside the Family

4. *Factory Overhead Cost*

Overhead costs are costs incurred by employers during processing [12]. Factory management expenses include product equipment depreciation expenses, land and building tax expenses, electricity expenses, water expenses, other supporting material expenses, and transportation expenses for purchasing materials and product marketing. The following details the factory *overhead costs* per product type in the seaweed processing business at UD. Ares.

In one production process, factory overhead costs vary between products, the reason is that fixed costs are calculated using a proportional ratio, because each type of product uses almost the same equipment. In one production process, factory overhead costs vary between products, the reason is that fixed costs are calculated using a proportional ratio, because each type of product uses almost the same equipment.

Table 11 Details of Labor Costs for Chip Product Factory *Overhead* Costs in Seaweed Processing Businesses at UD. Ares Mataram City in 2023

No	Cost component	Price (IDR/unit)	Per Production Process		Per Month	
			Amount	Value (IDR)	Amount	Value (IDR)
1	Tool Shrinkage			9,312		148,995
2	Property tax			1,250		20,000
3	Electricity cost			2,000		32,000
4	Water Fee			1,500		24,000
5	Supporting Materials:					
	➤ Seasoning Fuel	12,000	0.125	1,500	2.00	24,000
	➤ LPG Gas 3 kg	18,000	2100	18,000	16.00	288,000
	➤ Plastic gloves (Pcs)	10,000	0.25	2,500	4.00	40,000
	➤ Plastic packaging (Pcs)	200	225.00	45,000	3600.00	720,000
	➤ Sticker (Sheet)	300	225.00	67,500	3600.00	1,080,000
	➤ Wipes (Pcs)	8,000	0.25	2,000	4.00	32,000
6	Transportation costs:					
	➤ Purchase of Materials			3,750		60,000
	➤ Marketing			18,422		294,760
Number of BOPs				172,735		2,763,755

Source: Primary Data Processed, 2023

Table 12 Details of Rengginang Product *Factory Overhead* Costs in Seaweed Processing Businesses at UD. Ares Mataram City in 2023

No.	Cost component	Price (IDR)	Per Production Process		Per Month	
			Amount	Value (IDR)	Amount	Value (IDR)
1	Tool Shrinkage			6764		81168.98
2	property tax			1667		20,000.00
3	Electricity cost			2,000		24,000.00
4	Water Fee			1,500		18,000.00
5	Supporting Materials:					
➢	➢ LPG Gas 3 kg	18,000	1.00	18,000.00	12.00	216,000.00
➢	➢ Plastic gloves (Pcs)	10,000	0.25	2500.00	3.00	30,000.00
➢	➢ Plastic packaging (Pcs)	200	56.00	11200.00	672.00	134,400.00
➢	➢ Sticker (Sheet)	150	56.00	8,400.00	672.00	100,800.00
➢	➢ Tissue	8,000	0.25	2000.00	3.00	24,000.00
6	Transportation costs:					
	➢ Purchase of Materials			43,750.00		45,000.00
	➢ Marketing			4585.15		55,021.83
	Number of FOCs			62,365.90		748,390.82

Source: Primary Data Processed, 2023

Table 13 Details of Sherbet Product Factory *Overhead* Costs in Seaweed Processing Businesses at UD. Ares Mataram City in 2023

No.	Cost component	Price (IDR)	Per Production Process		Per Month	
			Amount	Value (IDR)	Amount	Value (IDR)
1	Tool Shrinkage			26,425		54,572
2	property tax			10,000		20,000
3	Electricity cost			2,000		4,000
4	Water Fee			1,500		3,000
5	Supporting Materials					
	LPG Gas 3 kg	18,000	1.00	18,000	2.00	36,000
	Plastic gloves (Pcs)	100	10.00	1,000	20.00	2,000
	Plastic packaging (Pcs)	2,000	230.00	460,000	460.00	920,000
	Tissue	8,000	0.25	2,000	0.50	4,000
6	Transportation costs:					
	Purchase of Materials			15,000		30,000
	Marketing			25.109		50,218
	Number of FOCs			561,034		1,122,068

Source: Primary Data Processed, 2023

The overhead costsseawood chipts per production process are multiplied by the number of production processes per month, then the value of factory overhead costs per month is obtained assuming that they produce a constant amount per week. Factory overhead costs per month are IDR2,763,755/month. The total cost of producing seaweed chips is more than treewice the overhead cost of ringginang, and twowice the overhead cost of sherbet (Table 12 and Table 13).

5. *Production Value*

Production Value is the total number of products produced by UD. Ares for one month. Production value is usually obtained from multiplying the production quantity by the selling price per unit of product/commodity. The price per unit is expressed at the price of producers who process certain commodities so that they become new products that add value to a commodity (BPS, 2022).

Table 14 Production and Production Value Per Month in Seaweed Processing Business at UD. Ares Mataram City in 2023

No	Description	Production Volume (Pcs)	Product Selling Price (IDR)	Production Value (IDR)	
				Per Process	Per Month
1	Chips	225	15,000	3,375,000	54,000,000
2	Rengginang	56	15,000	840,000	10,080,000
3	Ginger Sherbet	230	20,000	4,600,000	9,200,000
	Amount			8,815,000	73,280,000

Source: Primary Data Processed, 2023

Based on Table 14 shows that the total production value per month is IDR 73,280,000 obtained from the sum of the three products. Chips are produced 16 times per month, then rengginang products 12 times, and ginger sherbet products 2 times per month.

6. Value Added Analysis

Added value is the additional value of a product or commodity because it has undergone processing, transportation or storage in the production process. According to [13]. Added value can be measured using the margin method, namely the difference between the sales value of all products and the value of raw materials or consumables and other inputs, excluding labor costs [5]. The value of labor or labor wages is used to analyze eligibility criteria using the added value approach. The eligibility criteria are calculated through a comparison between the results obtained from added value and labor wages.

Table 15 Amount of Value Added Per Month in Seaweed Processing Business at UD. Ares Mataram City in 2023

No.	Description	Product Type (IDR)		
		Chips	Rengginang	Ginger Sherbet
1	Production Value (NP)	54,000,000	10,080,000	9,200,000
2	Cost of Consumables (BBH)	6,086,400	1,528,800	2,140,000
3	Factory Overhead Cost (BOP)	2,763,755	748,391	1,122,068
4	Value Added (NT)	45,149,845	7,802,809	5,937,932
5	Labor Wages (UTK)	9,600,000	3,600,000	800,000
	Information	NT>UTK	NT>UTK	NT>UTK

Source: Primary Data Processed, 2023

Table 15 shows that the added value per month for chips products is IDR 45,149,845 with a labor wage of IDR 9,600,000. then rengginang IDR 7,802,809 with a labor wage of IDR 3,600,000 and ginger sherbet IDR 5,937,932 with a labor wage of IDR 800,000 per month. From the results of these calculations, the added value is greater than the labor wage, which means that the business is feasible to develop. The amount of added value is due to the processing process which is obtained from the reduction of raw material costs and other input costs [14] (Kamisi, 2011). According to Rahman (2015), added value shows remuneration for capital, labor, company management and producers as business owners.

7. Business Feasibility Analysis

A business feasibility study is a series of analysis activities whether a business plan is feasible or not and when the business is operated routinely to achieve the desired goals. Business feasibility is very important because it affects income, especially with a business that is still in the development process [15] (Yulianti, 2020). Apart from calculating added value, business feasibility can also be measured by calculating the Gross B/C Ratio. Gross B/C Ratio is a comparison between the amount of revenue (Benefit) and the amount of production costs (Cost) per month from the seaweed processing business at UD. Ares. For further details on the feasibility of seaweed processing business at UD. Ares can be seen in Table 16.

Table 16 Business Feasibility Per Month in Seaweed Processing Business at UD. Ares Mataram City in 2023

No.	Description	Benefit	cost	B/C	(1+i)	Ket.
1	Chips	54,000,000	18,450,155	2.93	>1.05	Worthy
2	Rengginang	10,080,000	5,877,191	1.72	>1.05	Worthy
3	Ginger Sherbet	9,200,000	4,062,068	2,26	>1.05	Worthy

Source: Primary Data Processed, 2023

Table 16 shows that *the Gross B/C* of each product is > 1, then for the Indonesian bank interest rate, it is 0.64% per year or 0.05% per month. So 1+i = 1.05, meaning that this business is declared feasible because *the Gross B/C Ratio* is > 1.05. According to Fika, et al., (2014), gross costs are capital costs or investment costs, operational costs and maintenance costs. Meanwhile, gross benefit is the total value of production.

3.5. Product Marketing Channel and Margin Analysis

Every marketing activity can provide added value to the products produced. Processed seaweed products produced by UD. Ares is marketed directly to several souvenir shops around Mataram City. The following is an analysis of marketing channels and margins for processed seaweed products at UD. Ares, Mataram City.

1. *Marketing channel*

Marketing channels are a group of interdependent organizations that help distribute products from producers to final consumers. According to [16] Kotler (1997), there are three distribution channels that can be used to distribute products/goods. The types of distribution channels can be seen in Figure 1.
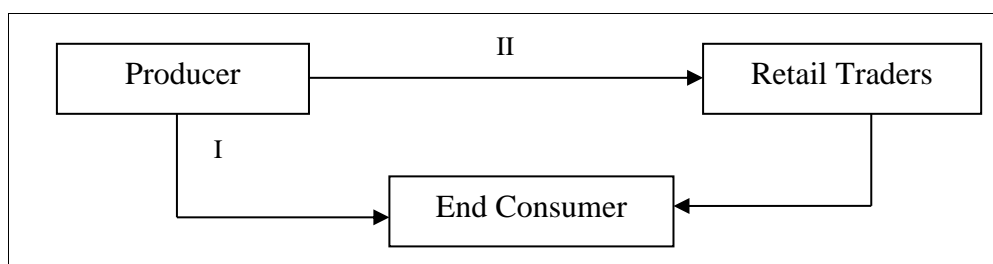
Note: ⟶ Marketing Channels

Figure 1 Product Marketing Channels at UD. Ares

Figure 1 shows that UD. Ares markets products using marketing channels I (zero level) and marketing channels II (one level). Chips and rengginang products are marketed with marketing channel II. While ginger sherbet with marketing channels I and II. More details can be seen in Table 17.

Table 17 Product Sales per Production Process at UD. Ares Mataram City in 2023

No.	Description	Marketing Channel I (not level)		Marketing channel II (one level)		Total Revenue (IDR)
		Number of Products (Pcs)	Value (IDR)	Number of Products (Pcs)	Value (IDR)	
1	Chips	0	0	225	3,375,000	54,000,000
2	Rengginang	0	0	56	840,000	10,080,000
3	Ginger Sherbet	10	200,000	220	3,740,000	7,820,000
	Amount		340,000		7,955,000	8,155,000

Source: Primary Data Processed, 2023

Table 17 shows that the sales volume per production process for 225 pcs chips and 56 pcs rengginang are not marketed through marketing channel I because producers sell them to retailers without saving to serve final consumer purchases. 230 pcs of ginger sherbets in each production process, producers sell 220 pcs of the product to retailers and set aside 10 pcs for the end consumer.

The selling price of processed seaweed products is adjusted to the total production costs. The most expensive selling price is ginger sherbet per sachet, while the price of seaweed and ringginang chips is relatively cheaper (Table 18.

Table 18 Types of Products and Product Selling Prices in Marketing Channel II (One Level) at UD. Ares Mataram City in 2023

No.	Company name	Selling Price on One Level Channel		
		Chips (IDR/Pcs)	Rengginang (IDT/Pcs)	Ginger Sherbet (IDR/Pcs)
1	Phoenix Food Showroom	18,000	18,000	20,000
2	Phoenix	18,000	18,000	20,000

3	Sasaku	33,000	33,000	40,000
4	sustainable	29,000	27,000	30,000
5	Vehicle	30,000	30,000	35,000
6	Anjani	30,000	30,000	35,000
7	home	30,000	30,000	35,000
Amount		188,000	186,000	215,000
Average		27,000	26,000	31,000

Source: Primary Data Processed, 2023

Table 18 shows that two retail institutions sell products at relatively cheap prices because the difference between the selling price of the producer and the buying price in the shop is not much different. Meanwhile, five other retail institutions sell products at almost double the purchase price at the manufacturer. This is because the locations of the five retail institutions are quite strategic and easy to attract consumers. Each institution involved in the product distribution process is grouped based on the function performed, control over the product, position in the market structure and form of business. Then the factors that influence variations in marketing margins include marketing costs, the level of competition in each trader, strategies shown by traders against risk, and the number of intermediaries (marketing institutions) involved in the process of distributing goods and services from producers to final consumers [17].

2. Marketing Margins

The trading/marketing margin is the difference between the price paid by the final consumer and the price received by the producer. Market margin thus marketing margin can be expressed as the value of services provided to the level of consumers and profits received by each of the actors in the trading system [18Marketing margin is the difference between the price paid by the final consumer and the price received by the producer or entrepreneur. To find out the marketing margin of processed seaweed products in each marketing channel, the most important thing to know is the selling price and buying price of consumers from the marketing agencies involved. The following are details of the marketing margin at UD. Ares can be seen in Table 19.

Table 19 Marketing Margins for Processed Seaweed Products at UD. Ares Mataram City in 2023

No	Store Name	Product Selling Price (IDR/Pcs)		
		Chips	Rengginang	Ginger Sherbet
1	Manufacturer's Purchase Price	15,000	15,000	17,000
2	Retail Traders			
	● Selling price	27,000	26,000	31,000
	● Marketing Margins	12,000	11,000	14,000

Source: Primary Data Processed, 2023

Table 19 shows that the selling price of retailers to end consumers is almost double the purchase price at producers and is considered very high. This is because the location of the marketing agency for retailers is quite strategic so that it can invite tourists outside the island of Lombok to shop. The marketing margin for chips is Rp 12,000 or 44%, rengginang is Rp 11,000 or 42% and ginger sherbet is Rp 14,000 or 45%. The marketing margin is said to be efficient if the maximum marketing margin is <40%. This is supported by [19], regarding marketing efficiency. If a marketing efficiency value of 0-33% means efficient, a marketing efficiency value of 34-67% means low efficiency and a marketing efficiency value of 68-100% means very low efficiency or not efficient.

IV. CONCLUSION AND RECOMENDTIONS

4.1 Conclusions

Based on the results of the research and discussion, the following conclusions can be drawn:

1. Production costs per month in the seaweed processing business at UD. Ares IDR 28,389,414, with costs for chips IDR 18,450,155, rengginang IDR 5,877,191 and ginger sherbet IDR 4,062,068 While the production value is IDR 73,280,000, with a product value of IDR 54,000,000 for chips, rengginang IDR 10,080,000, and ginger sherbet IDR 9,200,000.

2. The added value obtained in the seaweed processing business at UD. Ares is IDR 58,890,586 per month, with the greatest added value, which is chips products IDR 45,149,845 or 77%. The total labor wage per month is IDR 14,000,000, which means that the business is feasible to develop because the added value is greater than the labor wage.

3. Seaweed processing business at UD. Ares is declared eligible because *the Gross B/C Ratio* is >1+i. For chip products 2.93, Rengginang 1.72, and ginger sherbet 2.26. Then for the Indonesian bank interest rate is 0.64% per year or 0.05% per month. So that 1+i = 1.05.

4. The marketing channel used by UD. Ares ie zero level (direct producer to consumer) and one level (manufacturer, retailer, and consumer). One-level marketing margin for chips is IDR 12,000, Rengginang is IDR 11,000, and ginger sherbet is IDR 14,000. In a zero-level marketing channel, there are no margins because producers sell directly to final consumers, so the price to consumers is the same as the price to producers.

4.2 Recomendations

Based on the results of research conducted at UD. Ares and analysis results have been presented, then the following suggestions can be made:

1. Entrepreneurs are expected to be able to expand market share, especially for seaweed chips which have the greatest added value. Marketing is not only limited to Mataram City but also outside Lombok Island.

2. Producers are expected to continue to work on processed seaweed products because through this processing the added value received by producers is far more profitable.

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