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VALUE ADDED OF BIRD'S EYE CHILI (CAPSICUM FRUTESCENS L.): A CASE STUDY OF THE INTEGRATED VILLAGE ECONOMIC TRANSFORMATION PROGRAM IN GOLO ROPONG VILLAGE, WEST SATARMESE DISTRICT, MANGGARAI REGENCY

(Nilai Tambah Cabai Rawit (*Capsicum Frutescens* L): Suatu Studi Kasus Pada Program Transformasi Ekonomi Kampung Terpadu Di Desa Golo Ropong Kecamatan Satarmese Barat Kabupaten Manggarai)

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ABSTRACT

Bird's eye chili (Capsicum frutescens L.) is a horticultural commodity that plays an important role in influencing inflation and is classified as a leading commodity with high economic value. This study aimed to analyze the added value of bird's eye chili powder as part of the Integrated Village Economic Transformation Program (TEKAD) in Golo Ropong Village, West Satarmese District, Manggarai Regency. Specifically, this study identified the additional economic value generated by processing fresh chili into chili powder and evaluated its contribution to increasing the income of farmers and local business actors. Data were collected through direct observation, interviews, and questionnaires. The data were analyzed using the Hayami method, supported by calculations of labor days (HOK) and depreciation costs to obtain a comprehensive estimate of added value. The results show that the processing of bird's eye chili into chili powder generated positive added value. The added value from this processing reached IDR 236,630, indicating that converting fresh chili into powdered chili provided a significant increase in economic value. The value-added ratio was 48.75%, while profit from sales reached IDR 66.87, with a profit rate of 70.65%. These findings indicate that the TEKAD program has an important role in promoting village economic transformation through horticultural product processing, although farmers still face challenges in profit distribution and production facilities.
Keywords: value added, bird's eye chili, Capsicum frutescens, Hayami method, TEKAD program

ABSTRAK

Cabai rawit (*Capsicum Frutescens* L.) merupakan salah satu komoditas hortikultura yang memiliki peranan penting dalam memengaruhi laju inflasi, serta termasuk ke dalam kelompok komoditas unggulan yang bernilai ekonomi tinggi. Penelitian ini bertujuan untuk menganalisis nilai tambah dari produk bubuk cabai rawit sebagai bagian dari program Transformasi Ekonomi Kampung Terpadu (TEKAD) di Desa Golo Ropong, Kecamatan Satarmese Barat, Kabupaten Manggarai. penelitian ini bertujuan untuk mengidentifikasi nilai tambah ekonomi yang diperoleh dari proses pengolahan cabai segar menjadi bubuk cabai, serta mengevaluasi kontribusinya terhadap peningkatan pendapatan petani dan pelaku usaha lokal. Pengumpulan data dilakukan melalui observasi langsung, wawancara, dan penyebaran kuesioner. Data yang diperoleh dianalisis menggunakan metode Hayami, serta perhitungan Hari Orang Kerja (HOK) dan biaya penyusutan untuk memperoleh nilai tambah secara komprehensif. Berdasarkan hasil analisis Nilai Tambah menggunakan Metode Hayami, bubuk cabai rawit yang dihasilkan menunjukkan nilai tambah yang positif. Nilai tambah yang dihasilkan dari proses pengolahan ini mencapai Rp 236,630, yang menunjukkan bahwa pengolahan cabai segar menjadi cabai bubuk memberikan peningkatan nilai ekonomi yang signifikan. Persentase nilai tambah yang dihasilkan adalah 48.75%, sementara keuntungan yang diperoleh dari penjualan mencapai Rp 66.87, dengan tingkat keuntungan sebesar 70.65%. Penelitian ini menunjukkan bahwa program TEKAD berperan penting dalam mendorong transformasi ekonomi desa melalui pengolahan produk hortikultura, meskipun petani masih menghadapi tantangan dalam distribusi keuntungan.
Kata Kunci: Nilai tambah, Capsicum Frutescens, Metode hayami

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INTRODUCTION

The agricultural sector contributes significantly to Indonesia's national economy. Agricultural subsectors include food crops, horticulture, fisheries, livestock, and forestry. Based on data from the Coordinating Ministry for Economic Affairs of the Republic of Indonesia, the agricultural sector contributed 13.28% to the Indonesian economy in 2021 and 12.98% in the second quarter of 2022 (Coordinating Ministry for Economic Affairs of the Republic of Indonesia, 2022).

Bird's eye chili (Capsicum frutescens L.), as one of the horticultural subsector commodities, also plays an important role in influencing inflation and is one of the leading commodities with high economic value. Chili export development in Indonesia increased at a growth rate of 7.42% from 2000 to 2019, while chili imports also increased at a higher growth rate of 28.73%.

The high import growth compared with export volume occurs because Indonesia still imports processed chili products, such as chili sauce, whereas exports are mostly in the form of fresh chili. Chili production in the next five years is predicted to increase at a growth rate of 8.96%, from 2.59 million tons in 2019, 1.52 tons in 2020, 1.098 tons in 2021, 1.28 tons in 2022, and 1.34 tons in 2023 to 3.97 million tons in 2024. Based on this projection, chili production is expected to exceed consumption needs, resulting in a significant production surplus. The chili balance projection shows a surplus of 1.42 million tons in 2019, increasing to 1.61 million tons in 2020 and expected to reach 2.59 million tons in 2024. This surplus can be utilized for export to several countries (Center for Agricultural Data and Information Systems, 2020).

The Indonesian Central Statistics Agency shows that bird's eye chili production from 2019 to 2023 fluctuated due to harvesting season conditions. In 2019, bird's eye chili production reached 1,374.217 thousand tons; in 2020 it reached 1,508.404 thousand tons; in 2021 it increased to 1,386.447 thousand tons; in 2022 it reached 1,544.441 thousand tons; and in 2023 it reached 1,506.762 thousand tons. This commodity not only contributes to Indonesia's Gross Domestic Product (GDP), but also becomes one of the contributors to food inflation when production declines significantly.

Meanwhile, according to BPS NTT (2024), bird's eye chili production in East Nusa Tenggara (NTT) during 2019-2023 showed a dynamic fluctuation pattern. In 2019, production was recorded at 117,361 tons and increased to 137,394 tons in 2020. However, in 2021, production decreased to approximately 122,453 tons. The year 2022 recorded the most significant production achievement, increasing to 235,639 tons. In 2023, production again declined sharply to 122,666 tons, almost equal to the production level in 2021. The very high production increase in 2022 indicates the possibility of special influencing factors, such as favorable weather conditions, particular agricultural policies, or temporary expansion of planted area.

Price fluctuations occur because postharvest technology has not been optimally applied. In addition, bird's eye chili is still sold mainly as fresh chili without treatment and only in traditional markets. This condition is caused by limited facilities and knowledge. Therefore, postharvest technology needs to be introduced as a primary requirement for maintaining and increasing the selling price of bird's eye chili. Agricultural commodities such as bird's eye chili are also perishable and therefore require proper handling or treatment so that the product is ready for consumption by consumers (Anjani, 2023).

Golo Ropong Village is a village that processes bird's eye chili into chili powder and is located in West Satarmese District. Based on the Central Statistics Agency of Manggarai Regency (2023), bird's eye chili production in West Satarmese District was 66 quintals in 2019, then decreased by 20 quintals in 2020, reached 3 quintals in 2021, 9 quintals in 2022, and increased significantly to an estimated 502.80 quintals in 2023.

The main problem of agricultural commodities such as bird's eye chili is their perishable and bulky characteristics, which require appropriate handling or treatment before the product is consumed. Such treatments include processing, packaging, preservation, and quality management to increase utility and create added value so that the price of chili powder products becomes higher (Sudiyono, 2004). The objectives of this study were to determine the income from fresh bird's eye chili and chili powder and to estimate the added value obtained from processing fresh bird's eye chili into dried chili and dried bird's eye chili into chili powder.

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METHODS

This research was conducted from April 2025 until completion in Golo Ropong Village, West Satarmese District, Manggarai Regency. The sample was selected purposively from 250 farmers involved in the bird's eye chili powder processing group. According to Arikunto (2017), if the population exceeds 100, the sampling proportion may be 20-25%; therefore, 250 x 20% = 50 people, and the total sample used in this study was 50 respondents.

Operational definitions are explanations of research variables that are translated into indicators that can be measured concretely. These definitions explain how a variable is measured or operationalized in the research context. In the added-value analysis of bird's eye chili powder using the Hayami method, the main operational variables were defined as follows: (1) total output or production is the quantity of bird's eye chili powder produced in kilograms per production period; (2) output price is the selling value of bird's eye chili powder per kilogram at the market or producer level; (3) input is the main raw material required in one production process; (4) raw material is the quantity of fresh bird's eye chili used in the production process, measured in kilograms; (5) production costs are costs required in the production process, consisting of variable costs and fixed costs; (6) labor is the number of workers involved in the production of bird's eye chili powder, measured in labor days (HOK); (7) labor wages are compensation received in monetary form; (8) depreciation costs are the costs allocated to fixed assets over a certain period; (9) revenue is the quantity of products multiplied by selling price; (10) income is total revenue minus costs incurred; and (11) added value is the increase in commodity value due to processing, transportation, or storage in one production process.

To answer the first objective, income analysis was used to determine the income or profit obtained by the farmer group in processing chili powder. Before calculating income, total costs (TC) during the production process and revenue were calculated. Total cost is the sum of fixed costs and variable costs. According to Soekartawi (2002), total cost is calculated as TC = FC + VC, where TC is total cost, FC is fixed cost, and VC is variable cost. Total revenue is calculated as TR = P x Q, where TR is total revenue, P is product price, and Q is quantity produced. Income is calculated as π = TR - TC, where π is net income, TR is total revenue, and TC is total cost.

To answer the second objective, the added value obtained from processed bird's eye chili powder was estimated using the Hayami method. The Hayami method is an added-value analysis method that considers input, output, price, income, and returns to production factors. The calculation framework is presented in Table 1.

Table 1. Hayami calculation method

No	Variable	Value/Formula
Output, Input, and Price		
1	Output (kg)	A
2	Input (kg)	B
3	Labor (HOK/day)	C
4	Conversion factor (kg output/kg raw material)	D = A/B
5	Labor coefficient (HOK/kg raw material)	E = C/B
6	Output price (IDR/kg)	F
7	Average labor wage (IDR/HOK)	G
Revenue, Income, and Added Value		
8	Raw material price (IDR/kg)	H
9	Contribution of other inputs (IDR/kg output)	I
10	Output value (IDR/kg)	J = D x F
11a	Added value (IDR/kg)	K = J - H - I
11b	Added-value ratio (%)	L = K/J x 100%
12a	Labor income (IDR/kg)	M = E x G
12b	Labor share (%)	N = M/K x 100%
13a	Profit (IDR/kg)	O = K - M
13b	Profit rate (%)	P = O/K x 100%
Returns to Production Factors		
14	Margin (IDR/kg)	Q = J - H
14a	Other input contribution (%)	R = I/Q x 100%

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No	Variable	Value/Formula
14b	Labor income (%)	S = M/Q x 100%
14c	Profit (%)	T = O/Q x 100%

RESULT AND DISCUSSION

General Description of the Research Location

Golo Ropong Village is located in West Satarmese District and is characterized mostly by agricultural and plantation land. The village is inhabited by communities whose livelihoods are largely traditional farming, with agricultural systems that still rely on conventional cropping patterns. The hilly geography and fertile soil of Golo Ropong provide substantial potential for the development of integrated agriculture, plantation, and livestock sectors.

Socioeconomically, the community of Golo Ropong Village remains in the lower-middle economic category with relatively limited income levels. This condition is caused by several factors, including the low added value of agricultural products, limited market access, minimal mastery of modern agricultural technology, and limited business diversification at the household level. Village infrastructure is also a constraint, particularly road access connecting the village with economic centers at the district and regency levels.

Use of Materials and Equipment

The raw material used in the bird's eye chili powder business in Golo Ropong Village is dominated by bird's eye chili, which was selected because it has high and relatively stable market demand. The availability of raw materials is generally adequate, although it is still influenced by harvest season and climate conditions. When production declines, the farmer group usually purchases bird's eye chili from neighboring villages to ensure production continuity.

The production of fresh bird's eye chili, dried bird's eye chili, and powdered bird's eye chili is a continuous process aimed at increasing the utility and added value of this agricultural commodity. In the initial stage, fresh bird's eye chili production involves the use of land, labor, and agricultural inputs to produce good-quality chili. Fresh chili can then be processed into dried chili through drying, either naturally using sunlight or with drying equipment. The drying process reduces moisture content so that chili becomes more durable, easier to store, and has a more stable selling price.

Furthermore, dried bird's eye chili can be processed into chili powder by grinding it until smooth. This powder product has higher added value because it is more practical to use and easier to package, distribute, and store. Thus, transforming fresh bird's eye chili into dried chili and then chili powder not only increases utility but also creates greater economic opportunities for farmers and business actors, provided that the production process is carried out effectively, efficiently, and with attention to costs incurred. The equipment components used in bird's eye chili powder production are presented in Table 2.

Table 2. Equipment components used in bird's eye chili powder production

No	Equipment component	Quantity (unit)	Unit price (IDR)	Total (IDR)	Function
1	Hot over (hot air gun)	1	50,000	50,000	Chili drying tool
2	Blender	1	185,000	185,000	Grinding chili into powder
3	Large basin	2	50,000	100,000	Washing and draining chili
4	Stove	1	250,000	250,000	Manual roasting of chili
5	Wok	1	150,000	150,000	Used with the stove for roasting
6	Frying spoon	1	10,000	10,000	Production aid for stirring chili
7	Tablespoon	1	5,000	5,000	Measuring during packaging
8	Electricity and water costs	1 month	100,000	100,000	Monthly operation

No	Equipment component	Quantity (unit)	Unit price (IDR)	Total (IDR)	Function
	Total cost			850,000	

Production Process

The production process is a series of activities carried out to transform raw materials into finished products that have utility and can be used or sold to consumers. This process includes various stages, from chili selection and sorting to storage. Before production begins, the required raw materials, auxiliary materials, labor, and production equipment are prepared and provided to ensure production continuity. The production process of bird's eye chili powder by the farmer business group in Golo Ropong Village is as follows:

1. **Main raw material:** Fresh bird's eye chili is selected and sorted to ensure that only good-quality chili is used. Rotten, moldy, or damaged chili is removed to prevent it from affecting the quality of the final product. The chili used in production comes from farmers' harvests in the village itself. If the harvest in the village declines, the group purchases fresh bird's eye chili from neighboring villages.
2. **Washing:** The sorted chili is washed using running water to remove dirt, dust, and pesticide residues that may adhere to the surface. This washing stage uses a large basin.
3. **Draining:** After washing, the chili is drained using a perforated basin or strainer to reduce water content before drying.
4. **Drying:** The chili is dried to reduce moisture content so that it becomes more durable and easier to grind. Drying can be done manually by roasting the chili using a stove and wok or by using a hot air gun dryer.
5. **Grinding or pulverizing:** Dried chili is crushed using a blender until it becomes a fine powder according to the desired level of fineness. Grinding 8 kg of dried chili produces 8 kg of fine chili powder without additives.
6. **Packaging:** The fine chili powder, after being mixed with additional ingredients such as salt, sugar, shallots, and garlic, is packaged in bottles to make it safe and easy to distribute.
7. **Labeling:** After packaging, bottles are labeled with important information such as product name, composition, production date, and expiration date.
8. **Storage:** The packaged products are stored in a dry and clean place so that the quality of chili powder is maintained until it reaches consumers.

Production Costs

Fixed costs in this study include equipment depreciation, location rent, and investment interest. In producing bird's eye chili powder, several pieces of equipment experience depreciation over time with different values depending on use. To determine the depreciation value of equipment used in bird's eye chili powder production, the straight-line method was used.

Based on the 2024 total cost data, the total fixed cost incurred by the farmer group in Golo Ropong Village during 2024 was IDR 664,500. This cost consisted of two main components, namely depreciation costs of IDR 124,500 and electricity costs of IDR 540,000. Depreciation represents the decline in the value of fixed assets during one year of use, while electricity costs are operational expenditures related to energy needs in the production process.

According to Lodia et al. (2022), variable costs are costs that increase as production activity increases and decrease when production activity declines. In other words, variable costs are expenditures arising from the use of production factors whose amount changes according to the level of output produced. In this study, variable cost components included raw materials, auxiliary materials, labor, water and fuel, transportation, bottles, and product packaging stickers.

Table 3. Fixed costs

Fixed cost component	Quantity	Cost (IDR)
Depreciation cost	1	124,500
Electricity cost	5	540,000
Total		664,500

Table 4. Total variable costs in 2024

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Variable cost component	Cost (IDR)
Raw materials	240,000
Labor	400,000
Auxiliary materials	370,000
Stickers and plastic	300,000
Packaging bottles	240,000
Fuel, water, and transportation	299,327
Total	1,849,327

The bird's eye chili powder business incurred fixed costs of IDR 664,500, or 26% of total costs, consisting of equipment depreciation and electricity costs. Meanwhile, variable costs amounted to IDR 1,849,327, or 74% of total costs, including the purchase of raw materials, labor, auxiliary materials, packaging, and transportation. Thus, total annual production costs reached IDR 2,513,827. This indicates that there is uniformity in the use of production inputs among farmers.

Revenue and Income

According to Soekartawi (1995), revenue is the product of output and selling price. The revenue generated by the farmer business group in Golo Ropong Village is presented in Table 5.

Table 5. Total revenue of the Golo Ropong farmer group in 2024

Quarter	Period	Units sold	Selling price/unit (IDR)	Total revenue (IDR)	Total grams	Total kilograms (kg)
I	Jan-Mar	45	25,000	1,125,000	2,925	2.93
II	Apr-Jun	50	25,000	1,250,000	3,250	3.25
III	Jul-Sep	47	25,000	1,175,000	3,055	3.06
IV	Oct-Dec	46	25,000	1,150,000	3,055	2.99
Total		188	25,000	4,700,000	12,220	12.22

In terms of revenue, the farmer group obtained a total of IDR 4,700,000 from the sale of 188 bottles of chili powder at a price of IDR 25,000 per bottle. After deducting total production costs, net income was IDR 2,186,173. This shows that the bird's eye chili powder business can generate a relatively large profit margin of approximately 46.51% of total revenue.

Income is calculated as the difference between revenue and total cost (Soekartawi, 2002). In calculating the income of the farmer group in Golo Ropong Village, annual total revenue from bird's eye chili was reduced by the total annual production cost of bird's eye chili powder.

Table 6. Income of the Golo Ropong farmer group in 2024

Description	Amount (IDR)
Revenue	4,700,000
Fixed and variable costs	2,513,827
Income	2,248,443
Total	2,186,173

The net income obtained by the farmer group was IDR 2,186,173. This result indicates that chili powder production provides a positive profit for the farmer group, with income reaching approximately 46.51% of total revenue. This means that almost half of the sales value becomes net profit after deducting all production costs. The production cost structure of the farmer group is dominated by variable costs, which account for approximately 75% of total costs.

Added Value

Added-value analysis using the Hayami method shows that processing fresh bird's eye chili into chili powder generates positive added value. Factors influencing the formation of added value include conversion of raw materials into final products, selling price of chili powder, labor involvement, and the

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use of additional inputs such as spices, packaging, and transportation. With positive added value, this business not only increases profit for the farmer group, but also provides broader economic contributions through optimization of agricultural products (Nuzuliyah, 2018).

Added Value of Fresh Bird's Eye Chili

Table 7. Added value of 1 kg fresh bird's eye chili

Variable	Formula/Unit	Value
Output, Input, and Price		
Output (fresh bird's eye chili)	A / kg	30.00
Input	B / kg	3.00
Labor	C / HOK	2.00
Conversion factor	D = A/B	10.00
Labor coefficient	E = C/B	0.67
Output price	F / IDR	25,000.00
Labor wage	G / IDR/HOK	50,000.00
Revenue and Profit		
Input/raw material price	H / IDR	20,000.00
Other input contribution	I / IDR	13,386.06
Output value	J = D x F	250,000
Added value	K = J-H-I	216,614
Added-value ratio	L = K/J x 100%	86.65%
Direct labor income	M = E x G	33,333
Direct labor share	N = M/K x 100%	15.39%
Profit	O = K-M	183,281
Profit ratio	P = O/K x 100%	84.61%
Returns to Production Factors		
Margin	Q = J-H	230,000.00
Direct labor income	R = M/Q x 100%	14.49%
Other inputs	S = I/Q x 100%	5.82%
Profit	T = O/Q x 100%	79.69%

The first process, processing fresh chili into dried chili, is the initial stage that transforms fresh raw material into an intermediate product by reducing moisture content. This process generates added value and margin, although the profit ratio is relatively lower than processing it further into powder.

Processing fresh bird's eye chili into chili powder demonstrates a transformation process that produces significant added value. The data show that 3 kg of fresh chili were processed using 2 HOK of labor to produce 30 kg of bird's eye chili powder. The conversion factor of 10 indicates that each kilogram of raw material can produce 10 kg of output. The labor coefficient of 0.67 HOK per kg of raw material indicates the level of labor involvement in production.

The output price per kilogram of bird's eye chili powder was IDR 25,000, and the labor wage was IDR 50,000 per HOK. After considering the raw material price of IDR 20,000 per kg and other input contributions of IDR 13,386, the output value per kg of bird's eye chili powder reached IDR 250,000. Thus, the added value obtained was IDR 216,614 per kg, or 86.65% of the output value.

Direct labor income was recorded at IDR 33,333 per kg, accounting for 15.39% of added value, while profit reached IDR 183,281 per kg, or 84.61% of added value. The margin for production factors was IDR 230,000, with the contribution divided into labor income of 14.49%, other inputs of 5.82%, and profit of 79.69%.

Added Value of Fresh Chili into Dried Chili

The second process, processing fresh chili directly into bird's eye chili powder, shows higher added value because the conversion efficiency of raw materials is better and the output price per kilogram is higher.

Processing fresh chili into dried chili provides significant added value for farmers. From the data, 5 kg of fresh chili were processed using 3.33 labor days (HOK) to produce 1 kg of dried chili, resulting in a conversion factor of 0.20. The labor coefficient per kg of raw material was 0.67 HOK, indicating the level of labor involvement in production. The output price of dried chili was IDR 25,000 per kg, with a raw

material price of IDR 20,000 per kg and other input contributions of IDR 7,500 per unit of output. Labor wages were set at IDR 50,000 per HOK. Based on the calculation, the output value per kilogram of dried chili reached IDR 125,000, resulting in added value of IDR 97,500 or 78% of output value. Direct labor income was IDR 33,333 per kg, contributing 34.15% of added value, while profit was IDR 64,200 per kg or 65.85% of added value. The margin for production factors was IDR 105,000, consisting of labor income of 31.71%, other inputs of 7.14%, and profit of 61.14%.

The processing of fresh chili into dried chili shows that, although the amount of raw material required per unit of output is relatively large, this activity still provides significant economic benefits. The added value generated helps increase farmer income, while the high profit ratio indicates efficient use of production factors. This finding is consistent with Nugroho et al. (2020), who stated that postharvest chili processing, including drying, can significantly increase farmers' profit margins.

Added Value of Dried Chili into Chili Powder

Processing bird's eye chili into chili powder provides significant added value for farmers and business actors. The data show that producing 1 kg of chili powder requires 6.25 kg of fresh bird's eye chili and 2.08 labor days (HOK). The conversion factor from raw material to finished product is 0.16, indicating that only a small portion of the raw material becomes the final product. The selling price of chili powder reached IDR 1,687,599 per kilogram, while the raw material price was only IDR 20,000 per kilogram. Other input contributions, such as energy and additional ingredients, amounted to IDR 13,386.10 per unit of output. Thus, the output value per kilogram of chili powder was IDR 270,016. After deducting raw material and other input costs, the added value obtained was IDR 236,630, or approximately 48.75% of output value.

Direct labor income from the production process was IDR 69,444 per kilogram, contributing 29.35% to added value. Net profit obtained was IDR 167,185 per kilogram, contributing 70.65% of added value. The margin for production factors, calculated as the difference between output value and raw material cost, reached IDR 250,015.84 per kilogram. Of this margin, direct labor income contributed 27.78%, other inputs 5.35%, and profit 66.87%.

Research by Setiawati et al. (2020) in the Gorontalo Agriculture Technology Journal shows that processing chili into derivative products such as chili powder can increase efficiency and improve the distribution of added value among business actors, as well as strengthen farmers' bargaining position in the chili supply chain. This is consistent with the finding that postharvest chili processing, including making chili powder, can significantly increase farmers' profit margins.

Table 8. Added value of 1 kg chili powder

Variable	Formula/Unit	Value
Output, Input, and Price		
Output (bird's eye chili powder)	A / kg	1.00
Input	B / kg	6.25
Labor	C / HOK	2.08
Conversion factor	D = A/B	0.16
Labor coefficient	E = C/B	0.33
Output price	F / IDR/kg	1,687,599.00
Labor wage	G / IDR/HOK	208,333.33
Revenue and Profit		
Input/raw material price	H / IDR/kg	20,000.00
Other input contribution	I / IDR	13,386.10
Output value	J = D x F	270,016
Added value	K = J-H-I	236,630
Added-value ratio	L = K/J x 100%	48.75%
Labor income	M = E x G	69,444
Direct labor share	N = M/K x 100%	29.35%
Profit	O = K-M	167,185
Profit ratio	P = O/K x 100%	70.65%
Returns to Production Factors		
Margin	Q = J-H	250,015.84
Direct labor income	R = M/Q x 100%	27.78%
Other inputs	S = I/Q x 100%	5.35%

Variable	Formula/Unit	Value
Profit	T = O/Q x 100%	66.87%

CONCLUSION AND RECOMMENDATION

Conclusion

1. Based on the results of the analysis, income obtained from processing bird's eye chili into chili powder was much higher than income from selling fresh bird's eye chili. Income from fresh bird's eye chili was limited to the market price of around IDR 20,000 per kilogram, without added value from processing. Meanwhile, income from selling chili powder reached IDR 250,000 per kilogram of product, with net income or profit of IDR 200,759 per kilogram after deducting labor and other input costs. This shows that processing chili into derivative products provides significant income improvement opportunities for farmers or business actors in the agricultural sector. The business of producing bird's eye chili powder was able to create positive added value, although the group faced constraints in procuring production equipment due to limited resources.
2. The added value generated from bird's eye chili was IDR 216,614 per kilogram; the processing of dried bird's eye chili reached IDR 97,500 per kilogram; and the added value of chili powder was IDR 236,630 per kilogram, with an added-value ratio of 48.75% of total output value. This means that a substantial portion of the product's economic value was created through processing, not merely from the raw material. Processing not only increased the selling value of the product, but also created efficiency in the use of labor and inputs, thereby generating high profit. Therefore, processing bird's eye chili into powder is an effective downstream strategy for increasing economic value and farmer welfare.

Recommendations

1. For researchers, this study can serve as an additional reference to enrich knowledge and experience in agribusiness, particularly in the analysis of added value of processed agricultural products. The findings can also be considered as an academic contribution and a basis for preparing scientific studies or policy recommendations related to the development of the agricultural sector and rural agro-processing industries.
2. For MSME actors, the results provide useful information regarding the income and added value generated from processed products, particularly bird's eye chili powder. This information can be used as a consideration and evaluation material for business decision-making. By understanding production efficiency and the economic value of each product, MSMEs are expected to increase income, expand their businesses, and create higher-value processed products in the market.
3. For the government, the findings can be used as a basis for designing and promoting farmer empowerment programs through agricultural product processing. The government should also direct assistance, training, and incentives to sectors proven to increase farmer income, particularly support for downstream processing and the development of processed agricultural products. Such measures can strengthen village economic resilience and expand business opportunities in the agricultural sector.

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