

Nutmeg (*Myristica fragrans*) Farming Development Strategy in Kodeoha Sub-district, North Kolaka Regency

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Abstract

*This research aims to determine the strategy for developing nutmeg (*Myristica fragrans*) farming in Kodeoha Kistrict, North Kolaka Regency. Determining the research location was carried using simple random sampling with a total of 52 respondents. The analytical tool used is SWOT analysis (strengths, weaknesses, opportunities, threats). Based on the results of the study, the results of the coordinate point of the internal factor were 1.11 and the coordinate point of the external factor werw 1.78. It can be seen that the position of nutmeg farming is in quadrant I which shows that nutmeg farming is in a favorable situation. Pineapple farming has opportunities and strengths so that they can use their strengths and take advantage of existing opportunities. The strategy that must be applied in this condition is to support an aggressive growth policy. In quadrant I of the SO strategy, utilizes transportation facilities and infrastructure to expand the marketing area, maximize promotion of products that are already known and unitize government support to reduce competition for similar products.*

Keywords: *SWOT analysis, Nutmeg, development strategy.*

INTRODUCTION

Agricultural development in Indonesia is still considered the most important of all economic development, especially since the agricultural sector has become the savior of the national economy because its growth has increased, while other sectors have grown negatively (Asmara, 2004). One agricultural sector that has potential is the plantation sector. Indonesia is rich in high-value plantation crops that can compete in the world market. Spices are one type

of plantation crop that has the potential to be traded. Indonesia is quite reckoned internationally because it is one of the spice-producing countries originating from Indonesia is nutmeg.

Nutmeg or *Myristica fragrans* is a spice plant and is a superior plantation commodity that has long been recognized by the world (Hartati *et al.*, 2020). This plant has a fairly high economic value (Lawalata *et al.*, 2018; Liunokas & Karwur, 2020; Woriwun *et al.*, 2021). Nutmeg plants are typical of Maluku, and have an important role in the economy of the community, especially in eastern Indonesia (Woriwun *et al.*, 2021). Nutmeg plants from Indonesia are excellent in traditional markets because of the distinctive aroma of nutmeg, and the high content of essential oils and products that allow them to be processed into other products so that they are of higher economic value. Currently, nutmeg is cultivated in almost all regions of Indonesia, including Sulawesi, Java, Kalimantan and Sumatra. Currently, the productivity of nutmeg in each region is not the same (Astanu *et al.*, 2013).

One of the regions in Southeast Sulawesi that is the center of nutmeg production is North Kolaka Regency. North Kolaka Regency, especially in Kodeoha Sub-district, has the potential to develop nutmeg farming. Kodeoha sub-district is one of the areas where some of the population cultivates nutmeg. Kodeoha is located in North Kolaka Regency, Southeast Sulawesi Province. Although the cultivation of this crop has not used a large area of land, the farming business has begun to develop. For that reason, here is a list of the 5 largest nutmeg-producing sub-districts in North Kolaka Regency.

Table 1 Nutmeg Crop Production in North Kolaka Regency in 2021 and 2022 in Data Year 2023

District	Land Area (Ha)		Production (Ton)	
	2021	2022	2021	2022
Ranteangin	12,50	22,50	3,60	250,00
Lasusua	51,00	61,00	-	-
Kodeoha	157,10	167,50	24,50	23,00
Ngapa	109,30	119,30	9,10	9,00
Pakue Tengah	282,10	292,10	70,50	69,50

Source: Statistics Agency of North Kolaka Regency 2023

Table 1 shows that the largest nutmeg production in North Kolaka Regency is in Pakue Tengah Subdistrict in 2022 with a land area of 292.10 ha and production reaching 69.50 tons.



However, the location of this research will focus on Kodeoha Sub-district, which based on the data in the table above in 2021 has a land area of 157.10 ha and then increases to 167.50 ha but its production tends to decrease, namely in 2021, 24.50 tons and then decreases in 2022 to 23.00 tons. In addition, nutmeg from Kodeoha tends to be known by the community as the center of nutmeg production in North Kolaka Regency.

Kodeoha sub-district is one of the areas where some people cultivate nutmeg. Kodeoha is located in North Kolaka Regency, Southeast Sulawesi Province. Although the cultivation of this crop has not used a large area of land, this farming has begun to develop. Generally, nutmeg farmers do not plant according to the recommended planting distance, because the nutmeg farming system in this place is not a monoculture or as the main crop, but as a crop mixed with coconut, clove, and cocoa. Thus, it is possible that it will affect the productivity of nutmeg obtained, because it is a side source of income. Therefore, the researcher chose the Kodeoha sub-district as the research location because this area is experiencing a downward trend in production, and is therefore interested in researching development strategies so that the increase in land area can be followed by an increase in production.

METHOD

The population in the study were nutmeg farmers in 2 villages in Kodeoha District. Where in Jabal Kubis Village as many as 60 farmers and Mala-Mala Village as many as 50 farmers so that the entire population of 110 farmers. Sampling was done by *simple random sampling*. The method used to determine the number of samples is using the Slovin formula (Rianse and Abdi, 2009), so obtained as many as 52 farmers.

Data collection techniques were carried out by observation, interviews, and documentation. The data analysis method in this research is SWOT analysis, which is a method that contains strategic planning to evaluate strengths, weaknesses, opportunities and threats that can be used in a project or business speculation. To find out possible opportunities and threats, researchers use IFAS (*Internal Factory Analysis Summary*) internal environmental analysis to determine possible strengths and weaknesses. External environment analysis EFAS (*External Factory Analysis Summary*).



RESULTS AND DISCUSSION

SWOT Analysis

Evaluation of Internal Factors

Internal factors are external factors that can influence the choice of direction and action to develop nutmeg farming itself, which consists of *strengths* and *weaknesses*. A number of strengths and weaknesses can be described as follows:

1. Strength Aspect

Strengths are favorable farming conditions. By looking at the strengths of the farm, it can be seen to what extent the position of the farm is juxtaposed with the strengths of competitors. Strength factors can be described as follows:

- a) Experienced in Nutmeg Farming, 81% of nutmeg farmers in Kodeoha Sub-district have more than 10 years of experience, while 19% have 5-10 years of experience. The dominance of experienced farmers indicates that high knowledge in managing nutmeg farming contributes significantly to the success of the business. The results of Mahatani's study (2023) stated that farming experience is one of the factors in developing farming. Thus, the experience factor in farming is also a strong aspect in this study.
- b) Available Labor, based on the results of the study, it is known that 12 respondents (43%) each employ 4 workers, then 20 respondents (38%) who have 2 workers, and 8 respondents (16%) who have 1 worker. The results of the study by Dyah W, (2014) said that labor is one of the most important production factors in farming. Thus the availability of labor is relatively abundant, so that the availability of labor is considered as an aspect of strength in developing farming.
- c) Productive age, the results showed that the age of productive farmers 15-64 years as many as 50 people or 96.2% of the total respondent farmers, while for the age of 64 years as many as 2 people or 3.8% of the total respondents. According to Kurniati (2015), that farmers who have productive age affect the physical ability of farmers in managing their farms.
- d) Government policy support, Research shows that government policy support for nutmeg farming was rated very strong (rating 4) by 41% of respondents, strong (rating 3) by 44%, and somewhat strong (rating 2) by 15%, with no respondents rating it slightly strong. In terms of weight, 60% of respondents considered the policy to be very significant, 40% somewhat significant, and no one rated it as significant only. This policy support includes subsidies for farmers as well as agricultural training and extension. According to Hendrawan (2018), government policies should include training programs that focus on

modern agricultural technology, such as the use of agricultural machinery, as well as applying more efficient and environmentally friendly cultivation techniques.

2. Weakness Aspect

Weaknesses are shortcomings that the farm has. The main function of this analysis is to see the weaknesses that the farm has internally so that these weaknesses can be overcome properly. The weakness factors can be described as follows:

- a) Limited Capital, Research shows that limited capital in nutmeg farming was rated weak (rating -3) by 27% of respondents and very weak (rating -2) by 73%, with no respondents rating it very weak (-4) or strong (1). In terms of weight, 20% of respondents rated capital as very significant, 79% rated it as somewhat significant, and none rated it as significant only. Capital in this context is the production proceeds set aside to support the next production process. According to Burhansyah (2014), capital is one of the most important production factors in agricultural businesses. However, in the process of business operations not all farmers have sufficient capital.
- b) Low Technological Innovation, Research shows that technological innovation in nutmeg farming was rated weak (rating -3) by 23% of respondents and somewhat weak (rating -2) by 77%, with no respondents rating it very weak (-4). In terms of weight, 10% of respondents rated the innovation as very significant, 80% rated it as somewhat significant, and 10% rated it as significant. This reflects the low application of technological innovations in supporting nutmeg farming. Sutaryo. (2015), argued that one of the main factors hindering the application of technological innovations in agriculture is the difficulty of farmers in accessing new technologies.
- c) Low quality of nutmeg, the research showed that the condition was rated as weak (-3) by 19% of respondents, somewhat weak (-2) by 81%, with no respondents rating it as very weak (-4) or slightly weak (-1). In terms of weight, 33% of respondents rated the condition as very significant, 64% rated it as somewhat significant, and none rated it as significant only. These results indicate a significant dominance of perceived weaknesses in the aspects studied. According to Simatupang *et al*, (2015). said that the low quality of nutmeg is often caused by poor cultivation practices, such as the use of mini superior seeds, lack of plant care, and limited understanding of modern cultivation techniques.

Table 2 IFAS Matrix (Internal Factory Analysis Summary)

No.	Internal Strategy Factors	Weight	Rating	Score
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Strength				
1	Experience in Farming	0,16	3,62	0,58
2	Labor Available	0,14	3,52	0,49
3	Productive Age	0,16	3,54	0,57
4	Government Support	0,15	3,25	0,49
Subtotal				2,13
No.	Weaknesses			
1	Limited Capital	0,13	-2,27	-0,30
2	Low Tech Innovation	0,12	-2,23	-0,27
3	Low Nutmeg Quality	0,13	-2,19	-0,28
Subtotal				0,85
Total				2,98

Source: Primary data processed

Table 2 shows that the total internal score is 2.98, which consists of a strength score of 2.13 and a weakness score of 0.85. The score value is obtained from the multiplication of weight and rating. For the weight value obtained from the weighting between items contained in the internal factors referred to in this study, the rating is obtained from the answers to the questionnaire given to respondents, namely nutmeg farmers in Kodeoha District, North Kolaka Regency. Based on these results, it shows that in general, internal factors have a positive effect on nutmeg farmers in Kodeoha District, North Kolaka Regency because the total score of strength factors is greater than the total score of weakness factors.

Evaluation of External Factors

External factors are external factors that can influence the choice of direction or action to develop nutmeg farming which consists of *opportunities* and threats. The opportunity and threat factors can be described as follows:

1. Opportunity Aspect

Opportunities are a situation where farms can take advantage of existing conditions to make a profit. The opportunity factor can be described as follows:

- a) Increased consumer demand for nutmeg, the results showed that increased consumer demand for nutmeg was rated as very likely (rating 4) by 44% of respondents, likely (rating 3) by 54%, and somewhat likely (rating 2) by 2%, with no respondents rating it less likely (rating 1). In terms of weight, 62% of respondents considered it very significant,



38% somewhat significant, and no one considered it significant only. Nutmeg from Kodeoha Sub-district is sold widely to various cities, reflecting the high market demand. According to Gunarso (2017), nutmeg is one of Indonesia's leading commodities with a large contribution to spice exports. High demand from the export market encourages the development of nutmeg farming, especially in major producing areas such as Maluku, North Sulawesi and Aceh.

- b) The results showed that the availability of transportation facilities and infrastructure was rated as likely (rating 3) by 59% of respondents, very likely (rating 4) by 32%, and somewhat likely (rating 2) by 9%, with no respondents rating it less likely (rating 1). In terms of weight, 48% of respondents considered it very significant, 52% somewhat significant, and none considered it significant only. According to Tadoko and Smith (2015), good transportation infrastructure is one of the important elements in economic development, including the agricultural sector. Adequate transportation improves the efficiency of crop and input distribution, thereby reducing production costs and increasing farmers' income.
- c) The results showed that the known production type of nutmeg was rated as likely (rating 3) by 67% of respondents, very likely (rating 4) by 31%, and somewhat likely (rating 2) by 2%, with no respondents rating it less likely (rating 1). In terms of weight, 75% of respondents considered it very significant, 25% considered it somewhat significant, and none considered it significant only. Based on interviews with farmers, the type of quality nutmeg production in Kodeoha Sub-district is an important factor supporting the success of the farm.

2. Threat Aspect

Threats (*thearts*) are challenges that come from outside and will be faced by farms that can hinder development. Threat factors can be described as follows:

- a) Erratic Weather Conditions, The results showed that erratic weather conditions were rated as threatened (rating -3) by 54% of respondents, somewhat threatened (rating -2) by 44%, and slightly threatened (rating -4) by 2%, with no respondents rating it slightly threatened (rating -1). In terms of weight, 13% of respondents considered it very significant, 70% somewhat significant, and 17% rated it significant. This study shows that the rainy season, which occurs between May and September, as well as the frequent weather changes, have a significant impact on nutmeg farming. According to the IPCC (Intergovernmental Panel on Climate Change), weather uncertainty causes the risk of



crop failure, especially in areas that are highly dependent on rainy season patterns. This occurs due to shifts in the growing season, increased frequency of droughts, or extreme rainfall.

- b) The results showed that the absence of nutmeg price fixing policy was rated as threatened (rating -3) by 56% of respondents, somewhat threatened (rating -2) by 42%, and slightly threatened (rating -4) by 2%, with no respondents rating it slightly threatened (rating -1). In terms of weight, 19% of respondents considered it very significant, 70% somewhat significant, and 11% rated it significant. A sudden drop in nutmeg prices may cause farmers to delay sales or even incur losses, especially due to a lack of knowledge on how to store farm produce. This needs to be anticipated so that farmers in Kodeoha Sub-district do not suffer .

Table 3 EFAS Matrix (External Factors Analysis Summary)

No.	External Strategy Factors	Weight	Rating	Score
Opportunity				
1	Increased consumer demand for nutmeg	0,22	3,13	0,69
2	Availability of Transportation Facilities and Infrastructure	0,21	2,98	0,59
3	Production Type Already Known	0,23	3,15	0,72
Subtotal				2,00
Treath				
1	Erratic Weather Conditions	0,16	-2,63	-0,42
2	Absence of Nutmeg Price Fixing Policy	0,18	-2,63	-0,47
Subtotal				0,89
Total				2,89

Source: Primary data processed

Table 3 shows that the total external score is 2.89, which consists of an opportunity score of 2.00 and a threat score of 0.89. The score value is obtained from the multiplication of weight and rating. For the weight value obtained from the weighting between items contained in the external factors referred to in this study, the rating is obtained from the respondents' answers to the questionnaire given to nutmeg farmers in Kodeoha District, North Kolaka Regency. Based on these results, it shows that in general, external factors have a fairly good effect on nutmeg farmers in Kodeoha District, North Kolaka Regency because the total score of the opportunity factor is greater than the total score of the threat factor.

SWOT Strategy Quadrant

After the internal factors and external factors are analyzed using the IFAS and EFAS matrix, they are then analyzed into the SWOT quadrant to see the position of nutmeg farming development in Kodeoha District, North Kolaka Regency. Based on the calculation of the IFAS and EFAS evaluation values, it is known that the total strength score is 2.13, the total weakness score is 0.85, the total opportunity score is 2.00 and the total threat score is 0.89. The calculation of the IFAS and EFAS tangent points can be seen in the following table

Table 4 Calculation of IFAS and EFAS tangent points

Quadrant	X	Y	Point Position	Matrix area	Ranking
Quadrant I (SO)	2,13	2,00	2,13 ; 2,00	4,26	1
Quadrant II (ST)	2,13	-0,89	2,13 ; -0,89	-1,8957	3
Quadrant III (WO)	-0,85	2,00	0,85 ; 2,00	-1,70	4
Quadrant IV (WT)	-0,85	-0,89	0,85 ; -0,89	0,7565	2

Source: Primary Data Processed

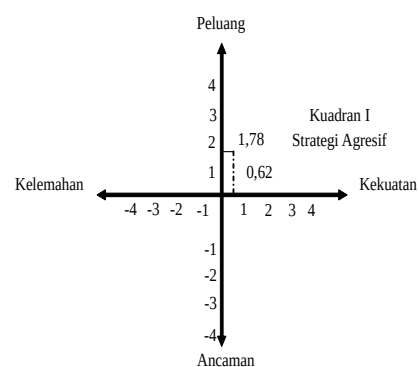


Figure 1 SWOT Diagram of Nutmeg Farming Development Strategy in Kodeoha District, North Kolaka Regency

The scores of the strengths and weaknesses factors are 2.13 and -0.85 respectively with a difference of 1.28, while the scores of the opportunities and threats factors are 2.00 and -0.89 respectively with a difference of 1.11, thus forming coordinates (1.28; 1.11) which show the position in quadrant I in the SWOT matrix. This position indicates that nutmeg farming in Kodeoha Sub-district has more strengths than threats and opportunities that can be optimally

utilized. The appropriate strategy in this condition is an aggressive strategy (SO Strategy), which utilizes all internal strengths to optimize external opportunities. Government support is needed to develop nutmeg farming, improve product quality, and attract consumers to achieve greater success.

Nutmeg Farming Development Strategy in the Subdistrict

The tool used to develop strategic factors for nutmeg farming in Kodeoha Sub-district is the SWOT matrix. The SWOT matrix of nutmeg farming in Kodeoha Sub-district, North Kolaka Regency can be seen in Table 5.

Table 5 SWOT Matrix of Nutmeg Farming in Kodeoha District, North Kolaka Regency

Internal Factors External Factors	Strengths	Weaknesses
	1. Experienced in farming 2. Labor available 3. Productive age 4. Government support	1. Limited capital 2. Low technological innovation 3. Low quality of nutmeg
Opportunity 1. Increased consumer demand for nutmeg 2. Availability of transportation facilities and infrastructure 3. Production types are well known	S-O strategy: 1. Using experienced farmers to increase consumer demand 2. Improving human resources and increasing the added value of nutmeg 3. Utilize government support to make nutmeg production known	W-O strategy: 1. Develop farming by utilizing available credit facilities to obtain farming capital. 2. Increase knowledge and insight into agricultural technology.
Threat 1. Erratic weather conditions 2. There is no base price for nutmeg	S-T Strategy: 1. Maximize promotion of familiar products 2. Utilize government support to reduce	W-T Strategy: 1. Conduct market observations to facilitate promotion



	competition from similar products.	2. Personalized marketing is a strategy for product competitiveness by establishing good relationships with customers so as to increase customer loyalty from similar market competitors.
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Source: Processed Primary Data

Based on the SWOT matrix table above, it can be obtained four alternative strategy cells that can be applied in the strategy to increase the productivity of nutmeg farming in Kodeoha District, North Kolaka Regency, namely strategy (S-O), strategy (W-O), strategy (S-T) and strategy (W-T).

1. S-O Strategy

This strategy is a strategy that uses all internal strengths to take advantage of all external opportunities as much as possible.

- Using experienced farmers to increase consumer demand.
- Improving human resources and increasing the added value of nutmeg
- Utilize government support to make nutmeg production known

2. W-O Strategy

This strategy is a strategy that is implemented based on the utilization of existing opportunities by minimizing its weaknesses.

- Develop farming by utilizing available credit facilities to obtain farming capital.
- Increase knowledge and insight into agricultural technology.

3. S-T Strategy

This strategy is a strategy that uses the strengths possessed to overcome existing threats.

- Maximize the promotion of familiar products.
- Utilize government support to reduce competition from similar products.

4. W-T Strategy

This strategy is based on defensive activities and seeks to minimize existing weaknesses and avoid existing threats.



- a) Conduct market observations to make promotion easier.
- b) Personalized marketing is a strategy for product competitiveness by establishing good relationships with customers so as to increase customer loyalty from similar market competitors.

CONCLUSION

Based on the description of the results and discussion, it can be concluded that the internal factors that influence the development of nutmeg farming in Kodeoha District are the availability of experienced farmers, productive age, available labor, government support, limited capital, low technological innovation and low nutmeg quality. External factors influencing the development of nutmeg farming in Kodeoha Sub-district are the increase in consumer demand for nutmeg, the availability of transportation facilities and infrastructure, the type of production is well known, uncertain weather conditions, the absence of a nutmeg base price setting policy.

The development strategy of nutmeg farming in Kodeoha District, North Kolaka Regency is in quadrant I, namely implementing an aggressive growth strategy, namely utilizing existing strengths and opportunities to minimize weaknesses and threats, so that the right strategy is that the local government together with farmers continues to contribute to implementing existing strategies (*S-O strategy*) to improve nutmeg farming.

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