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Ngawi Regency based on statistical data has the potential for horticultural commodities that have the 3 highest rankings, namely red onion, cayenne pepper, and big chilies . Based on these data, further studies need to be carried out to provide recommendations to further increase the optimization of one of the horticultural commodities so that it can become one of the leading commodities for Ngawi Regency. Increasing food security and sustainability of the agricultural sector is a major focus in developing agribusiness in various countries. In this context, horticultural commodities play an important role, considering their strategic role in providing nutrition and improving the local economy. The selection of superior horticultural commodities, that can provide optimal results and meet market needs, is a crucial step to ensure sustainable growth in this sector. The SWOT method helps in evaluating internal and external factors that affect the potential of a horticultural commodity. The AHP method offers a quantitative approach to overcome the complexity in decision-making.

The combination of these two methods provides a comprehensive and data-based approach in determining superior horticultural commodities and strategies that can be carried out by Ngawi Regency to improve their quality and quantity. The SWOT method provides a framework for understanding the internal and external context, while AHP offers a tool for making more structured decisions based on comprehensive criteria evaluation.

Horticultural commodities from Ngawi Regency that are considered to be superior horticultural commodities are large chili commodities with an AHP value of 0.659, and the strategy that can be carried out to maintain the sustainability of this commodity is to increase production with an AHP value of 0.558. This can be a recommendation for Ngawi Regency to be able to increase attention to large chili commodities so that they can survive as superior horticultural commodities by maintaining and improving both in terms of quality and quantity.

1. Introduction

Increasing food security and sustainability of the agricultural sector is a major focus in developing agribusiness in various countries. In this context, horticultural commodities play an important role, considering their strategic role in providing nutrition and improving the local economy(Berlianantiya,

2017). The selection of superior horticultural commodities, that can provide optimal results and meet market needs, is a crucial step to ensure sustainable growth in this sector (Junari et al., 2020).

Determining superior horticultural commodities in Ngawi Regency that are by market potential and needs requires a systematic and objective approach. The SWOT (Strengths, Weaknesses, Opportunities, Threats) and AHP (Analytic Hierarchy Process) methods are two effective analysis tools in this process (Nurjannah & Mashuri, 2020) .

Ngawi Regency based on statistical data has the potential for horticultural commodities that have the 3 highest rankings, namely shallots, cayenne pepper, and large chilies (BPS Ngawi, 2024). Based on these data, further studies need to be carried out to provide recommendations to further increase the optimization of one of the horticultural commodities so that it can become one of the leading commodities for Ngawi Regency.

The SWOT method helps in evaluating internal and external factors that affect the potential of a horticultural commodity (Sylvia & Hayati, 2023). Through SWOT analysis, we can identify internal strengths and weaknesses as well as external opportunities and threats that can affect the success of the commodity. Internal strengths and weaknesses include aspects such as product quality, cultivation technology, and farmer skills, while external opportunities and threats include factors such as market demand, climate conditions, and competition.

On the other hand, the AHP method offers a quantitative approach to overcome the complexity in decision-making. By using AHP, various relevant criteria can be systematically assessed and weighted according to their importance. This process allows decision-makers to determine commodity priorities based on various aspects that have been identified in the SWOT analysis, such as market potential, production costs, and technological capabilities (Rachman, 2019).

The combination of these two methods provides a comprehensive and data-based approach in determining superior horticultural commodities and strategies that can be carried out by Ngawi Regency to improve their quality and quantity. The SWOT method provides a framework for understanding the internal and external context, while AHP offers a tool for making more structured decisions based on comprehensive criteria evaluation (Rachman, 2019; Sylvia & Hayati, 2023).

This article aims to explain the process and application of the SWOT and AHP methods in determining superior horticultural commodities in Ngawi Regency. Thus, it is hoped that readers can understand how these two methods complement each other in producing more precise and effective decisions in horticultural development (Rachman, 2019; Sylvia & Hayati, 2023).

2. Research Method

In this study, the determination of superior horticultural commodities is carried out through a systematic approach by utilizing the SWOT (Strengths, Weaknesses, Opportunities, Threats) and AHP (Analytic Hierarchy Process) methods. This research method consists of several main steps, which involve data collection, analysis, and evaluation based on relevant criteria (Rachman, 2019; Sylvia & Hayati, 2023).

1.1. Data Analysis Methods

1.1.1. Internal Factor Analysis Matrix/ IFE

Internal Factor Analysis Matrix / IFE

Internal environmental analysis can be analyzed using the Internal Factors Evaluation (IFE) Matrix to formulate internal factors that have been identified within the framework of the company's strengths and weaknesses (Annisa Nowira et al., 2021) .

2.1.2 External Factor Analysis Matrix / EFE

An external environmental analysis can be analyzed using the External Factors Evaluation (EFE) Matrix to formulate external factors that have been identified within the framework of the company's opportunities and threats (Dosen FEBI IAIN Purwokerto, 2019) .

2.1.3 SWOT Matrix

The SWOT matrix is compiled after the IE matrix is compiled. The SWOT matrix is an analysis tool to develop 4 types of alternative strategies. The types of alternative strategies are SO (Strength-Opportunity) strategy, WO (Weakness-Opportunity) strategy, ST (Strength-Threat) strategy, and WT (Weakness-Threat) strategy. Compiling a SWOT matrix requires several stages. (Dosen FEBI IAIN Purwokerto, 2019) including the following:

a. Matching internal strengths with external opportunities is then recorded in the SO strategy cell.
b. Matching internal weaknesses with external opportunities and then recording the results in the WO strategy cell.
c. Matching internal strengths with external threats is then recorded in the ST strategy cell.

Match external weaknesses with external threats and then record the results in the WT strategy cell.

2.1.4. AHP Analysis

a. Determination of Criteria and Sub-Criteria:
   Determine the main criteria relevant to the assessment, such as market potential, production costs, and environmental sustainability. These criteria are then divided into sub-criteria if necessary.
b. Criteria Weight Assessment:
   Using the AHP method to assign relative weights to each criterion and sub-criteria. This involves creating a pairwise comparison matrix where each criterion is compared with each other in terms of relative importance.
c. Assessment Data Collection:
   Collecting assessment data for each commodity based on predetermined criteria. This assessment can be done through interviews with experts, surveys, or field evaluations.
d. AHP Data Processing:
   Calculate the final weight for each commodity using the AHP method to determine the ranking or priority based on predetermined criteria.

2.2 Integration and Evaluation of Results

a. Integration of SWOT and AHP Results:
   Integrating the results of the SWOT analysis with the ranking of the AHP method to determine superior horticultural commodities. The results of the SWOT will provide context to the weight values generated by the AHP.
b. Evaluation and Recommendations:
   Using the results of integration to provide recommendations on the most superior horticultural commodities. Evaluation is carried out based on the final results and practical considerations of the recommendations

3. Results and Discussion

Based on documents, literature reviews, news published in local media, and conducting a preliminary survey in the research environment, the following internal and external factors were obtained:

1) Internal Factors Are internal conditions within a company or business that can give rise to a company's strengths and weaknesses that the company can fully control or overcome known weaknesses to be fixed. Some internal factors of Ngawi Regency that influence superior horticultural commodities are as follows:
   a. Product quality
   b. Cultural superiority
   c. Market demand
   d. Farmer's experience
   e. Seasonal dependency
   f. Technology limitations
   g. Market limitations
   h. Management and Organization
2) External Factors

It is an external condition outside the company that leads to the emergence of a business opportunity or opportunity and can even threaten the company or entrepreneur. Some external factors of Ngawi Regency that influence the superior horticultural commodities are as follows:

   a. Market demand is increasing
   b. Consumption trends
   c. Regulatory support
   d. International market access
   e. Diseases and pests
   f. Climate change and extreme weather
   g. Commodity price fluctuations

Furthermore, internal factors are grouped into strengths and weaknesses, and external factors are grouped into opportunities and threats. The next step is to weight IFAS - EFAS and compile a SWOT matrix with the results presented in Table 1. Furthermore, the results of the SWOT strategy priorities are presented in Table 2.

Table 1. IFAS – EFAS Matrix

IFAS / EFAS	**Strength** 1. Product Quality 2. Cultural Excellence 3. Farmer Experience 4. Market Demand 5. Natural Resource Potential **Weight: 1,762**	**Weakness** 1. Seasonal Dependence 2. Technology Limitations 3. Market Limitations 4. Management and Organization. **Weight : 0.641**
Opportunity 1. Market Demand Increases 2. Consumption Trends 3. Regulatory Support 4. International Market Access **Weight: 1,941**	**SO Strategy** 1. **Increasing** horticultural production by utilizing farmer experience, regulations, and supporting resources (S1, S2, S3, O2, O4) **Weight: 3,703**	**WO Strategy** 1. **Developing superior varieties** by utilizing efficient technology and marketing (W1,W2,W3,W4,O1,O2,O3) **Weight: 2,582**
Threat 1. Diseases and Pests 2. Climate change and extreme weather 3. Commodity price fluctuations **Weight : 0.679**	**ST Strategy** 1. Maintaining the culture and experience of farmers to **maintain product quality** by utilizing the potential of Natural Resources (S1, S4, S5, T1, T2) **Weight: 2,441**	**WT Strategy** 1. **System improvement** by improving technology, management, and organization at the farmer level. (W2,W3,W4,T1,T2) **Weight: 1,320**

Table 2. SWOT Strategy Alternative Priority Order

Priority	Strategy	Weight of Value
I	*Strength – Opportunity (SO)*	3,703
II	*Weakness – Opportunity (WO)*	2,582
III	*Strength – Threat (ST)*	2,441
IV	*Weakness – Threat (WT)*	1,320

The results of the combination of internal and external factors show the results with the highest value, namely the combination of Strengths and Opportunities with a strategy to increase horticultural commodity production by utilizing farmer experience, regulations, and various supporting resources. This strategy is considered the most optimal because Ngawi Regency has environmental conditions that support horticultural plant cultivation.

Based on the SWOT analysis, the results show that the combination of SO strategies is a strategy with the highest value, but this strategy is not necessarily the best strategy that can be implemented sustainably. So, it is necessary to conduct further analysis using the AHP analysis method to determine the priority sequence of strategies that can be implemented to increase the superiority of horticultural commodities in Ngawi Regency and determine which commodities have the best potential to be developed in Ngawi Regency.

3) Hierarchical Arrangement

The arrangement of the hierarchy is the most important part of the AHP model, because it will be the basis for respondents to give assessments/opinions more simply. By using the hierarchy in the AHP model, it is expected to simplify and simplify complex problems.

The AHP hierarchy in this study is composed of 3 levels, with the highest peak of the hierarchy being the Superior Horticultural Commodity as the goal of AHP. The AHP hierarchy used as a whole is presented in Figure 3.1 below, and the results of the AHP analysis values are presented in Table 3.1.

Furthermore, at the target level, the 3 strategies with the highest values in the SWOT matrix are used, this is because the most optimal strategies that can be implemented are the three strategies with the highest values. While at the criteria level, the 3 superior horticultural commodities found in Ngawi Regency are used.

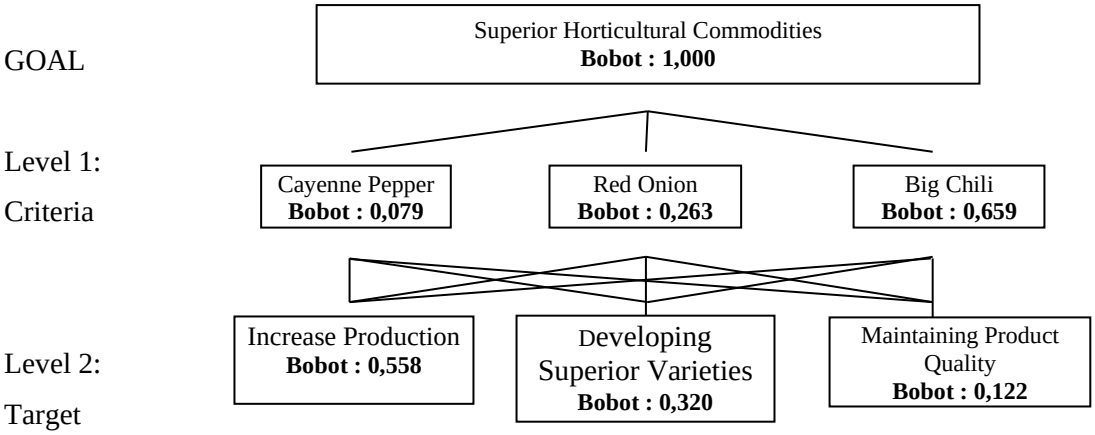

Figure 3.1 AHP Hierarchy and Values

Table 3.1 Target Priority with AHP Method

Level	DEFINITION	WEIGHT
1	**Criteria**	
	1. Cayenne pepper	**0.079**
	2. Red onion	**0.263**
	3. Big Chili	**0.659**
2	**Target**	
	1. Increase Production	**0.558**
	2. Developing Superior Varieties	**0.320**
	3. Maintaining Product Quality	**0.122**

Based on the results of the analysis using the AHP method, it can be concluded that the target that is the main priority is to increase the production of superior commodities with the commodity that is the main choice to be a priority is large chili. The AHP analysis value can be stated to have met the requirements with an Overall Inconsistency Ratio of 0.3, which means that the analysis and assessment are declared consistent. The Inconsistency Ratio value ≤ 0.1 means that the decision taken by the key person respondent in determining the priority scale is acceptable. The smaller the Inconsistency Ratio value, the more consistent the respondent is in determining the priority scale (Saaty, 2000).

Increasing production is the target that has the highest value so respondents assessed that in maintaining the sustainability of commodity superiority, it is expected to maintain and increase production with a value of 0.558, and for horticultural commodities that are considered to have the potential as superior commodities are large chilies with a value given by respondents of 0.659.

4. Conclusion

Horticultural commodities from Ngawi Regency that are considered to be superior horticultural commodities are large chili commodities with an AHP value of 0.659, and the strategy that can be carried out to maintain the sustainability of this commodity is to increase production with an AHP value of 0.558. This can be a recommendation for Ngawi Regency to be able to increase attention to large chili commodities so that they can survive as superior horticultural commodities by maintaining and improving both in terms of quality and quantity.

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