# Development Strategy of Cat's Eye Resin Business in Pesisir Barat Regency, Lampung Province

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*Abstract:* - This research aims to find out what strategies can be applied to develop the cat's eye resin business in Pesisir Barat Regency. The analysis method used is SWOT analysis and Quantitative Strategy Planning Matrix (QSPM) analysis. The results of the research show that based on the SWOT matrix analysis there are 12 development strategies for the cat's eye resin business in Pesisir Barat Regency. There are 4 priority strategies for developing the cat's eye resin business in Pesisir Barat Regency based on the QSPM analysis, namely, 1) Increasing the production of cat's eye resin which is of high quality & following market standards as an alternative strategy with a Total Attractiveness Score (TAS) of 6.83, 2) Establishment of an information & partnership network by stakeholders related to technology and marketing of cat's eye gum resin in Pesisir Barat Regency obtaining a Total Attractiveness Score (TAS) of 6.51, 3) Implementing optimal agricultural practices, including selecting the right seeds, management good soil, as well as pest and disease control obtained a Total Attractiveness Score (TAS) of 5.83, 4). The government took part in procuring technology for processing cat's eye resin. This became an alternative strategy with a Total Attractiveness Score (TAS) of 5.75.

Key-Words: - Pesisir Barat Regency, Cat's eye resin, Development Strategy, Business, SWOT, and QSPM.

Received: September 4, 2024. Revised: March 11, 2025. Accepted: April 15, 2025. Published: May 14, 2025.

# 1 Introduction

Indonesia as a developing country has challenges in developing its entire region evenly. One of the main issues facing Indonesia is the development gap between urban and rural areas, as well as between developed and underdeveloped areas. Underdeveloped districts in Indonesia are often located in rural, remote, and isolated areas. Underdeveloped regions or disadvantaged districts are districts whose territory and society are less developed than other regions on a national scale, according to Presidential Regulation No. 3 of 2020 concerning the Determination of Disadvantaged Areas for 2020-2024, [1]. Based on the criteria for disadvantaged areas carried out by the Ministry of Development of Disadvantaged Regions using an approach based on calculating 6 (six) basic criteria, namely: 1) community economy, 2) human resources, 3) infrastructure, 4) financial capacity area, 5) accessibility and, 6) regional characteristics. Development of underdeveloped areas is different from poverty alleviation in terms of the scope of development, which not only includes economic aspects of development but also social, cultural, and security aspects. Based on these criteria, the Pesisir Barat Regency is a disadvantaged area.

One aspect that can support the economy of a region is utilizing superior sectors as regional economic potential. A leading sector is a sector whose current existence has played a major role in the economic development of a region because it has advantages or criteria. The leading sector has four criteria, including 1) the leading sector has a high rate of economic growth, 2) the leading sector has a relatively large labor absorption rate, 3) the leading sector has high linkages between sectors both forward and backward, 4) the leading sector which is able to create high added value, [2]. Apart from superior sectors, superior commodities also have an important role in the regional economy, especially in driving economic growth and creating jobs. By developing superior commodities, it is hoped that it can increase production, investment, consumption, and exports, which can encourage regional economic growth.

Pesisir Barat Regency has several reliable economic sectors and has geographical advantages and potential resources which, if managed well, will improve the economy and community welfare. Pesisir Barat Regency has a very large forest area, even more than 60% of its area, so the forestry sector has a fairly large contribution to the economy. A forest is a unified ecosystem in the form of an expanse of land containing biological natural resources dominated by trees in a natural environment, one of which cannot be separated from the other. Forest areas are certain areas designated and/or determined by the government to be maintained as permanent forests (UU N0. 41 of 1999). Based on the RTRW 2017-2037 or Spatial Planning of Pesisir Barat Regency [3], the designated production forest area consists of limited production forests with an area of approximately 28,920 ha spread across sub-districts in Pesisir Barat Regency. Designated production forest areas are developed with a cooperative pattern in order to increase the productivity of forest products in the form of wood and non-wood which can be utilized by the community. Forest products in the Forest Management Unit (KPH) area in Pesisir Barat Regency are dominated by Non-Timber Forest Products (NTFPs) such as resin, coffee, jengkol, petai, durian, and rubber. Production of non-timber forest products in Pesisir Barat Regency can be seen in Figure 1 (Appendix).

The data in Figure 1 (Appendix) shows that the highest production of NTFPs in Pesisir Barat Regency is the production of cat's eye resin. Production of cat's eye resin in 2020 reached 10,000 tons and increased to 18,625 tons in 2021. The next highest production was coffee, coffee production in

Pesisir Barat Regency in 2020 reached 3,446 tons and decreased slightly to 3,372 tons in 2021. Next, The latest production of jengkol, petai, durian, and NTFPs, namely rubber plants, in 2020 was 218 tonnes and increased in 2021 to 303 tonnes. The commodity that is the flagship of the forestry sector in Pesisir Barat Regency and is known to the international world is cat's eye gum (Shorea Javanica) with an area of 17,160.75 ha with an average production in 2020-2021 of 14,313 tons/year, and It is said to be the best resin in the world. Cat's eye resin (Shorea javanica) is a tree species that producing a high-value resins which is widely used as raw material of paint industry, ink and beverage stabilizer. This species is widespread in repong damar (dammar agroforestry) in Pesisir Barat District, Lampung . The economic potential of resin has been known for a long time. [4], said that the resin trade has been going on since the early 10th century in China and countries in Southeast Asia, which then expanded to Europe and America in the early 19th century. The cat's eye resin plant grows abundantly in community gardens, in the local language it is called "repong damar" (agroforestry resin), which is widespread in Pesisir Barat Regency.

Repong Damar as an agroforest and community forest has attracted the attention of researchers. According to them, Repong Damar has been able to make a very important contribution to the preservation of the forest and the increasing genetic erosion. Furthermore, it was explained that the system of management and utilization of trees and their products, the structure of the forest and the mechanism of regeneration processes developed by this traditional system are very valuable examples, which can be used to harmonize conservation efforts with the utilization of tropical land for economic purposes, [5]. The resin produced by repong damar from the Regency, especially the Krui area, is of high quality and very Importers are interested in it, so its existence and sustainability are very important in the cat's eye gum trade chain in Indonesia. The research location map can be seen in Figure 2 (Appendix).

## 2 Research Methods

This research was conducted in Pesisir Barat Regency, Lampung Province.. The research was carried out from July to August 2023. The data collection method was carried out using a survey method. The survey method was carried out using questionnaires and in-depth interviews. Respondents in this research were 5 people representing various *stakeholders*, consisting of 1 person from the West Pesisir Regency Food and Agriculture Security Service, 1 person from the Technical Implementation Unit of the West Pesisir Regency Forest Management Unit (UPTD KPH), 1 resin farmer. cat, and 2 lecturers as experts or experts in research.

Strengths. Weaknesses, Opportunities and Threats (SWOT) analysis is used as a tool for evaluation of strategic position of any business in the market. It is finest technique to examine the performance of any business activity by focusing on its strenght and weaknesses, [6]. SWOT analysis is a strategic planning method used to evaluate the strengths, weaknesses, opportunities and threats involved in any venture, [7]. As far as reviewed literature is concerned, it has been used in different fields such as management, education, marketing, social media, health, and agriculture, [8], [9]. Many establishments carry out SWOT analysis at strategic planning. quality control while formulating government policies and legislations, [10]. Data from observations and interviews analysed, using SWOT model, then based on the above analysis, a questionnaire was given to determine the weight and rating of the entrepreneurship experts and finally the matrix of strengths, weaknesses, opportunities and threats in four different states: SO, WO, ST, WT were considered to provide adaptation, defensive, aggressive and contingency strategies, [11].

Assist strategists in determining the best strategy among many available strategy alternatives through an analytical tool called quantitative strategic planning matrix (QSPM), [12] and [13]. QSPM helps many strategists consider critical success factors that have been formulated in determining the strategic priorities of the alternative strategies formulated, [14]. The working principle of QSPM is to consider the critical success factors of business organizations (external and internal) as criteria for assessing the success rate ranking of each formulated alternative strategy, [15].

# **3** Results and Discussion

## 3.1 SWOT Analysis

Non-timber forest products are vegetable and animal forest products and their derivative products, the use of NTFPs is the main source of livelihood and fulfillment of daily needs for most communities around the forest. Utilization of NTFPs can help people to get various sources of livelihood without having to damage the forest, [16] and [17].

Based on the results of the identification of the cat's eye resin business in Pesisir Barat Regency, strategic factors were obtained that came from internal (strengths and weaknesses) and external (opportunities and threats) elements. The following is an analysis of the strategy for developing the cat's eye resin business in Pesisir Barat Regency.

## **3.1.1 Internal Elements** Strength

Strength factors in the cat's eye resin business in Pesisir Barat Regency are based on the following identification results: 1) almost 80% of Indonesian cat's eye resin products come from Pesisir Barat Regency (0.86), 2) soil and climate conditions throughout the region Pesisir Barat Regency strongly supports the development of cat's eye resin cultivation (0.60), 3) cat's eye resin gardens are managed traditionally using local wisdom acquired from generation to generation (0.53), and 4) cat's eye resin production is relatively stable from year to year (0.34).

The factor that almost 80% of cat's eye resin products in Indonesia come from Pesisir Barat Regency is the factor with the highest score (0.86) compared to the scores of the other three strength factors. This is supported using areas in the Pesisir Barat Regency area where 60% of the area is forest area and where the highest production of non-timber forest product (NTFP) is the production of cat's eye resin with an average production from 2020 to 2021 of 14,312. 5 tons. The production of cat's eye resin is the largest production of NTFP commodities in Pesisir Barat Regency compared to other NTFP commodities such as coffee, jengkol, petai, durian, and rubber.

Furthermore, the soil and climate conditions throughout the Pesisir Barat Regency area are very supportive in the development of cat's eye resin cultivation, receiving a score of (0.60). Damar gardens in Pesisir Barat Regency are dominant, grow normally, flower, bear fruit, and produce sap continuously. This shows that Pesisir Barat Regency is a suitable area for growing resin trees. The suitability of the growing location influences the resin repong management system. [18], said that the development phase of repong damar takes place in ecological conditions that are appropriate and mutually supportive of each other.

The cat's eye resin garden is managed traditionally based on local wisdom obtained from generation to generation (0.53). Inheritance institutions regulate that the eldest male child has the right to inherit inheritance. Repong Damar as an inheritance that he obtained, cannot be sold for any reason. Selling inheritance is taboo because it is considered to sever the heir's good deeds to the next generation. This factor is a strength in the cat's eye resin business in Pesisir Barat Regency where there is certainty that the inheritance system is well preserved. Apart from the hereditary system, the knowledge of managing the repong damar system is also passed on by parents to their children so that the system that has been built continues to function and function sustainably.

Production of cat's eye resin is relatively stable from year to year (0.34). Damar gum as the main product from Repong Damar has a relatively stable and well-established trading system. Resin sap from farmers is sold to village level collectors. Resin gum from village-level collecting traders is sold to large traders at Krui Market. Then from large traders at Krui Market, resin resin is sold directly to industry and/or sold to exporters. Management of Repong damar requires relatively low costs and labor, this is partly due to the production process involved in all stages of its development which can produce efficient use of production factors.

### Weakness

Another element of internal factors is weakness, which includes 1) the lack of technology for processing cat's eye resin (0.43), 2) dependence of cat's eye resin farmers on collectors (0.20), 3) the age of cat's eye resin production > 20 years (0.12), and 4) a limited number of human resources for processing cat's eye resin (0.02).

Based on the results of the identification of the cat's eye resin business in Pesisir Barat Regency, the lack of technology for processing cat's eye resin is a weakness factor with the highest score (0.43). Farmers' mastery of post-harvest technology is very minimal. In general, they sell newly harvested resin resin to collectors at the village level, in the form of random resin that has not been sorted based on its quality, so that farmers do not gain additional value from the resin resin they produce. Sorting resin based on quality is only done at the wholesaler level.

The dependence of cat's eye resin farmers on collectors is the next weak factor with a score of (0.20). The large dependence of farmers on resin traders is caused, among other things, by 1) the absence of economic institutions in the farming community, 2) farmers' limitations in capital and access, and 3) farmers' limitations in information and access. Currently, Repong Damar's management system is still individual. A strong and independent organization does not yet exist. This condition also has an impact on the absence of a strategic plan.

The production age of cat's eye resin is > 20 years (0.12). Provide training and education to farmers on best agricultural practices, resin crop management, and how to increase yields. Better

knowledge can help farmers manage their crops efficiently.

Limited number of human resources for processing cat's eye resin (0.02). This is shown by the lack of proper association of farmers in an organization. Currently, in Pesisir Barat Regency, facilitated by the Krui Team (NGO forum), the Repong Damar Farmers' Community Association (PMPRD) has been formed, but its activities have not yet developed and the farmers have not yet experienced the program of activities they carry out in real terms. It is hoped that a strong and independent farming community organization will be able to overcome and minimize strategic changes, and other elements of weakness, so that opportunities to increase the role and function of the Repong Damar management system will be increasingly wide open.

# **3.1.2 External Elements Opportunity**

The opportunity factors for the cat's eye resin business in Pesisir Barat Regency are based on the identification results as follows: 1) infrastructure access in Pesisir Barat Regency is good (1.00), 2) the market is very wide for selling cat's eye resin. national and international (0.43), 3) there is support from the government in creating programs or policies that support the development of the cat's eye resin business (0.41), 4) the demand for cat's eye resin is quite high (0.33).

Access to infrastructure in Pesisir Barat Regency is good (1.00), the role and function of the Repong Damar management system can be improved because it has various very open opportunities. The biggest opportunity it has is the availability of road infrastructure (Western crossing). The availability of this infrastructure will open up opportunities for various other forms of opportunities.

There is a very wide market for the sale of cat's eye resin both nationally and internationally (0.43). The target market for the distribution of cat's eye resin in Pesisir Barat Regency can vary depending on market various factors. such as demand accessibility, and existing distribution networks. Damar gum can be distributed through several channels such as local markets, regional markets, national markets, and exports. The results of Pesisir Barat Regency's cat's eve resin are usually exported to several countries such as China, India, and Europe. This result is in line with researcher [19] who stated that the PKM results show that the marketing of resin which has been carried out by the community is still conventional.

There is support from the government in creating programs or policies that support the development of the cat's eye resin business (0.41). Support for research results from research institutes and universities is expected to increase repong productivity, provide incentives for farmers, and increase the added value of resin and other products from Repong Damar. It is hoped that the government's awareness of the importance of the existence of Repong Damar will create full support from the community for the sustainability of the Repong Damar management system. Another support that the community hopes for from government institutions is various information that can continue to encourage the community to defend Repong Damar. This information includes, among other things, the market and prices of resin gum and other products from Repong Damar, both for national and international trade.

The demand for cat's eye resin is quite high (0.33). Resin gum is used in various industries, including adhesives, paints, inks, cosmetics, and pharmaceuticals. Demand from these sectors may increase along with industrial growth and the need for high-quality raw materials. Damar gum has also been researched for its possible uses in the medical and pharmaceutical fields. If this research results in new products, demand may increase.

#### Threat

The threat factors for the cat's eye resin business in Pesisir Barat Regency are based on the following identification results: 1) farmers' limitations in terms of information and access in the distribution of cat's eye resin (0.41), 2) the selling price of cat's eye resin is fluctuating from year to year (0.31), 3) there are pest attacks on cat's eye resin plants (0.10), 4) there is theft of cat's eye resin products (0.02).

Limited farmers in terms of information and access to the distribution of cat's eye resin (0.41). Farmers get information about the price of resin gum only from traders, whereas in general, they do not get information about the resin gum market, so that farmers' bargaining position with traders is low. Farmers who do not have access to information about markets and prices of cat's eye resin may find it difficult to plan the sales and marketing of their products and limited physical access to markets or constraints in distribution can make it difficult for farmers to sell their products. This can result in economic uncertainty and reduced income.

The selling price of cat's eye resin fluctuates from year to year (0.31). The selling price of cat's eye gum fluctuates from year to year. The selling price of resin can fluctuate from year to year because it is influenced by several economic, environmental, and industrial factors. Changes in government policy related to exports, imports, or forest management can affect the availability and price of resin. New regulations or policy changes may cause price fluctuations. The price of resin is also influenced by demand from certain industries. If there is an increase in the use of rosin in certain products (for example, in the cosmetic or pharmaceutical industry), this could trigger a price increase.

The presence of pest attacks on cat's eye resin plants (0.10). According to respondents, plant pests and diseases are a threat to resin gum production. Pests and diseases that attack resin trees will reduce the amount of resin sap production. Pest attacks on cat's eye resin plants can cause several detrimental impacts on plants and resin resin production. Pest attacks can affect the quality of resin sap. Damage to plant stems or leaves can cause contamination or changes in the composition of the sap, which in turn can affect its economic value.

There was theft of cat's eye resin (0.02). There was a theft of cat's eye resin. Rubber theft may increase in areas with high levels of poverty or where economic opportunities are limited. People may look for ways to earn additional income or meet their economic needs by stealing resin products.

The IE (Internal-External) matrix positions the various divisions of an organization in a nine-cell view. The total value in the IFAS matrix is mapped on the X (horizontal) axis, while the total value in the EFAS matrix is mapped on the Y (vertical) axis. The I-E matrix of the cat's eye resin business in Pesisir Barat Regency is presented in Figure 3 (Appendix).

Figure 3 (Appendix) explains that the IFE value is 3.09 and the EFE value is 3.02. If each of the total IFE and EFE scores is mapped in the I-E matrix, the position of the cat's eye resin business in Pesisir Barat Regency is currently in cell 1, namely growth. This means that the response of the cat's eye resin business to the internal and external factors faced is high. The strategy that can be applied in cell 1 is a growth strategy through vertical integration and horizontal integration strategies. This situation can be achieved by the cat's eye resin business by increasing the production of high-quality cat's eye resin & following market standards, forming information networks & partnerships by stakeholders related to technology and marketing of cat's eve resin in Pesisir Barat Regency, implementing optimal agricultural practices, including proper seed selection, good soil management, and pest and disease control

From the identification of several internal factors (strengths and weaknesses) and external factors

(opportunities and threats), they are then included in the SWOT matrix. The SWOT matrix can be seen in Figure 4 (Appendix). There are 12 strategies for developing the cat's eye resin business in Pesisir Barat Regency based on the SWOT matrix, as follows:

- 1. Increasing the production of high-quality resin resin & in accordance with market standards.
- 2. Identifying market demand & potential, paying attention to market trends & consumer preferences.
- 3. Improving infrastructure access to increase production and marketing of cat's eye resin in Pesisir Barat Regency.
- 4. The government took part in procuring technology for processing cat's eye resin.
- 5. Form an education or training program for local communities about sustainable forest management practices and the benefits of resin.
- 6. Conduct training for farmers to improve their skills in processing cat's eye resin.
- 7. Establishment of an information network & partnership by stakeholders regarding technology and marketing of cat's eye resin in Pesisir Barat Regency.
- 8. Implement optimal agricultural practices, including selecting the right seeds, good soil management, and controlling pests and diseases.
- 9. Building an efficient distribution network to spread products to various markets, both local and international.
- 10. The use of identification tags on agricultural products makes it easier to track and identify if theft occurs.
- 11. Innovating agricultural techniques to extend the production life of cat's eye resin.
- 12. Conduct training for farmers on efficient sap tapping so that cat's eye resin production increases.

## 3.2 QSPM Analysis

Quantitative Strategic Planning Matrix (QSPM) is the final stage of strategy formulation analysis in the form of selecting the best alternative. implementation of alternative strategies well and conduct periodic evaluations, then for future researchers can be used as a reference for conducting research on the topic of SWOT and QSPM and can add innovations to the research. QSPM and can add innovation to research with the addition of statistical tests. Then for readers can be used as insight in the field of industrial management, [20], [21], [22], [23].

Based on the alternative strategy choices compiled in the QSPM matrix, it can be seen from the highest TAS (Total Attractiveness Score) value, which is the most suitable alternative strategy to be implemented as a development strategy. The TAS values and priority order of alternative strategy options are presented in Table 1 (Appendix).

Based on determining the recommended strategic priorities for developing the cat's eye resin business using the Quantitative Strategic Planning Matrix (QSPM) method, 4 (four) main strategic alternatives were taken from a total of 12 strategic alternatives which will be discussed in more detail based on the highest Total Attractiveness Score (TAS). Four priority strategies that can be applied in developing the cat's eye resin business in Pesisir Barat Regency are presented in Table 2 (Appendix).

Increasing the production of cat's eye resin which is of high quality & in accordance with market standards is an alternative strategy with the highest Total Attractiveness Score (TAS), namely 6.83. This alternative strategy could be an approach that farmers can take as this can have a positive impact on the local economy and support environmental sustainability. Cat's eye resin is used in various industries such as pharmaceuticals, food, and cosmetics. Manufacturers in these industries often seek high-quality resin gum to ensure their final products meet quality and safety standards. With the increasing demand for natural and quality raw materials, good resin gum production will meet market needs. High-quality cat's eye resin usually has higher added value than low quality, this means that farmers or producers of cat's eye resin who succeed in producing high-quality products can generate more income. Production of high-quality cat's eye resin can be a significant source of income for local communities in areas that produce resin. This can improve living standards and promote economic development in the Pesisir Barat Regency area. In a competitive global market, high-quality products have greater competitiveness, by increasing the production of high-quality cat's eye resin, local producers can compete better in local and international markets.

The formation of an information network & partnership by stakeholders related to technology and marketing of cat's eye resin in Pesisir Barat Regency obtained the 2nd highest Total Attractiveness Score (TAS), namely 6.51. In the modern agricultural industry, technology has a very important role. By forming an information network, stakeholders can learn and apply the latest technology in the cultivation, processing, and marketing of resin sap. This will help in increasing efficiency and productivity. Through partnerships, stakeholders can have better access to resources such as training, equipment, and funding, this will help farmers

develop the skills and knowledge needed to increase resin gum production and marketing. Bv collaborating and sharing information, stakeholders such as damar gum farmers, collectors, and parties involved in technology can work together to increase the production and quality of cat's eye resin gum. This will help meet market demand for greater and higher quality. Overall, establishing an information network and partnerships is an important step to increase the success and sustainability of the cat's eve resin business in Pesisir Barat Regency. This will provide benefits to all stakeholders and the local community.

Implementing optimal agricultural practices, including choosing the right seeds, good soil management, and controlling pests and diseases obtained the 3rd highest Total Attractiveness Score (TAS), namely 5.83. Adopting this strategy is important because it has a number of positive impacts that have a wide impact. By choosing the right seeds, farmers can ensure that the cat's eye gum plants they plant have high productivity potential, this will help increase the production of resin gum, which is the main source of income for many farmers in Pesisir Barat Regency. Optimal agricultural practices can improve the quality of resin gum because product quality has a direct impact on price and competitiveness in the market. Furthermore, good soil management can help maintain soil fertility and prevent land degradation, this is related to the long-term sustainability of cat's eye gum cultivation and preventing soil erosion which can damage the environment.

The government took part in procuring technology for processing cat's eye resin. This has become an alternative strategy with the 4th highest Total Attractiveness Score (TAS), namely 5.75. This value differs very slightly from TAS in the 3rd strategic priority. This strategy is important because it has a significant positive impact on various aspects, including economic. social. and environmental. The government can help gum resin farmers by providing access to the latest technology that can increase productivity and production quality. The right technology can help in processing resin to produce products of higher quality and higher value.

The government can help in developing technology for processing resin into various valueadded products such as varnish, wax, or other products that have high market demand and help create new business opportunities and increase farmers' income, by providing more sophisticated technology in processing gum resin can create jobs in the industry, including in management, machine maintenance, and product sales which has an impact on reducing the unemployment rate in Pesisir Barat Regency. Apart from that, the procurement of technology can trigger the development of the infrastructure needed to support the agricultural sector, including transportation networks and the supply of electricity. Thus, government involvement in procuring technology for processing cat's eye resin has the potential to significantly improve this agricultural sector, providing benefits to farmers, society, and the economy as a whole.

The four priority strategies that have been analyzed should be adapted by farmers and stakeholders related to the cat's eye resin business in Pesisir Barat Regency. By combining these strategies and focusing on sustainable and inclusive economic development, Pesisir Barat Regency has a good opportunity to change its status from a disadvantaged district to one that is economically and socially more advanced. It is important for the government to work together with all relevant stakeholders and implement policies that support economic growth, especially cat's eye resin farmers in Pesisir Barat Regency.

# 4 Conclusion and Recommendation

## 4.1 Conclusion

Based on the results of the research that has been carried out, it can be concluded that there are 12 strategies for developing the cat's eye resin business in Pesisir Barat Regency based on SWOT matrix analysis. Furthermore, there are 4 development strategies that are priorities for developing the cat's eye resin business in Pesisir Barat Regency, namely, 1) Increasing the production of cat's eye resin which is high quality & in accordance with market standards, becoming an alternative strategy with a Total Attractiveness Score (TAS) value (6.83), 2) Establishment of an information network and partnership by stakeholders regarding technology and marketing of cat's eve resin in Pesisir Barat Regency a Total Attractiveness Score (TAS) value (6.51), 3) Implement optimal agricultural practices, including selecting the right seeds, good soil management, and controlling pests and diseases a Total Attractiveness Score (TAS), value (5.83), 4) The government took part in procuring technology for processing cat's eye resin. This has become an alternative strategy by Total Attractiveness Score (TAS), value (5.75).

## 4.2 Suggestion

Based on the results of the research that has been carried out, the advice that can be given is that government agencies as stakeholders, namely the Pesisir Barat Regency Food Security and Agriculture Service and the Pesisir Barat Regency Forest (UPTD KPH) Management Unit Technical Implementation Unit, are expected to be able to support and improve, facilitating the development of the cat's eye resin business in Pesisir Barat Regency, Lampung Province and it is hoped that future researchers will be able to research the cat's eye resin business in Pesisir Barat Regency as a comparison.

#### Declaration of Generative AI and AI-assisted Technologies in the Writing Process

During the preparation of this work the authors used ChatGPT in order to help the authors for time efficiency, help in writing language and as a source of references. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

References:

- [1] The President of the Republic of Indonesia issued Decree No. 63 of 2020 regarding the Determination of the Leftover Regions for the vears 2020-20204 (Peraturan Presiden Republik Indonesia Nomor 63 Tahun 2020 Tentang Penetapan Daerah Tertinggal Tahun 2020-20204), [Online]. https://jdih.setkab.go.id/PUUdoc/176108/Perpr es Nomor 63 Tahun 2020.pdf (Accessed Date: June 26, 2024).
- [2] Ciptawaty, U., Aida, N., and Pratama, A. D. 2020. Analysis of Economic Potential and Base Sector of Seven Provinces in Sumatera. *JIAE*, 8(1): 8-12. <u>https://doi.org/10.21776/ub.jiae.2020.008.01.2</u>.
- [3] Spatial Planning of Pesisir Parat Regency 2017-2037 (Rencana Tata Ruang Wilayah Kabupaten Pesisir Barat Tahun 2017-2037), [Online]. https://jdih.pesisirbaratkab.go.id/files/2017100 08.pdf (Accessed Date: June 26, 2024).
- [4] Van Lakerveld, A. 2007. *Price Determination and Upgrading Within the Damar Trade Chain.* Postgraduate Thesis. Amsterdam: International Development Studies.
- [5] Cusson, A. 2013. Cat's Eye Forests: The Krui Damar Gardens. F.A.O. Rome, [Online].

<u>ftp://ftp.fao.org</u> (Accessed Date: June 29, 2024).

[6] Helms, M.M., dan Nixon, J. 2010. Exploring SWOT Analysis-Where Are We Now? A Review of Academic Research from the Last Decade, J. Strategy and Management, 3(3): 215-251.

https://doi.org/10.1108/17554251011064837.

- [7] Pathak, P. 2016. SWOT Analysis of Punjab Agriculture. *International Journal of Advanced Researh*, 4(4): 871-875. http://dx.doi.org/10.21474/IJAR01/326.
- [8] Batool, S., dan Nazir, M. 2023. SWOT Analysis and Strategy Option in Development: A Case of Pakistan's Agriculture Sector. *Pakistan Journal of Agriculture*, 39(2): 149-156. <u>https://doi.org/10.47432/2023.39.2.10</u>.
- [9] Benzaghta, M.A., Elwalda, A., Mousa, M. M., Erkan, I., and Rahman, M. 2021. SWOT Analysis Applications: An integrative literature review. *Journal of Global Business Insight*, 6(1), 55-73. <u>https://www.doi.org/10.5038/2640-6489.6.1.1148.</u>
- [10] Namugenyi, C., Nimmagadda, S.L., dan Reiners, T. 2019. Design of a SWOT Analysis Model and its Evaluation in Diverse Digital Business Ecosystem Contexts. *Procedia Computer Science*, 159(2019): 1145-1154. http://dx.doi.org/10.1016/j.procs.2019.09.283
- [11] Karami, S., dan Agahi, H. 2018. SWOT Analysis of Strategies for Agricultural Entrepreneurs Empowerment. *IJAMAD*, 8(2): 307-320, [Online]. <u>https://ageconsearch.umn.edu/record/292540/fi</u> <u>les/IJAMAD\_Volume%208\_Issue%202\_Pages</u> <u>%20307-320.pdf</u> (Accessed Date: June 29, 2024).
- [12] Djuwendah, E., Karyani, T., Wulandari, E., dan Prakarsa, B. 2020. The Development Strategy of Puncak Damar Ecotourism. *IOP Conf. Series: Earth and Environmental Science*, 466(2020):012014. <u>https://doi.org/10.1088/1755-1315/466/1/012014</u>.
- [13] Tafti, S. F., Jalili, E., and Yahyaeian, L. 2013. Assessment and Analysis Strategies According to Space Matrix-case Study: Petrochemical and Banking Industries in Tehran Stock Exchange (TSE). *Procedia - Social and Behavioral Sciences*, 99, 893-901. https://doi.org/10.1016/j.sbspro.2013.10.562.
- [14] Mallick, S. K., Rudra, S., and Samanta, R.2020. Sustainable Ecotourism Development Using SWOT and QSPM Approach: A sSudy

on Rameswaram, Tamil Nadu. International Journal of Geoheritage and Parks. https://doi.org/10.1016/j.ijgeop.2020.06.001.

- [15] Herliana, S., Lawiyah, N., and Aina, Q. 2018. SWOT Analysis Approach on **SMEs** Entrepreneurial Competence. Academv of Entrepreneurship Journal, 24(2): 1-8. [Online]. https://www.abacademies.org/articles/swotanalysis-approach-on-smes-entrepreneurialcompetence-7198.html (Accessed Date: June 29, 2024).
- [16] Safitri, Y., Hardjanto, and Sundawati, L. 2023. Development Strategy of Non-Timber Forest Product Multi-Business Forestry In Social Forestry Partnership. *Journal of Natural Resources and Environmental Management*, 14(2): 220-2030. http://dx.doi.org/10.29244/jpsl.14.2.220.
- [17] Saha, D., and Sundriyal, R.C. 2012. Utilization of non-timber forest products in humid tropics: Implications for management and livelihood. *Forest Policy and Economics*, 14 (Issue 1): 28–40.

https://doi.org/10.1016/j.forpol.2011.07.008.

[18] Harisudin, M., Adi, K., and Qonita, A.RR. 2022. Synergy Grand Strategy Matrix, SWOT and QSPM as Determinants of Tempeh Product Development Strategy. *Journal of Sustainability Science and Management*, 17(8): 62-82.

https://doi.org/10.46754/jssm.2022.08.004.

- [19] Garnevska, E., Edwards, J.R., and Vaughan, D.R. 2007. SWOT Analysis of the Horticultural Farms in The Plovdiv Region of Bulgaria. Bulgarian Journal of Agricultural Science, 12: 353-361, [Online]. <u>https://www.agrojournal.org/12/03-01-06.pdf</u> (Accessed Date: June 26, 2024).
- [20] Indrasari, L. D., and Widodo, S. R. 2020. Development of Business Strategies Using QSPM and SWOT on Snail Chips. Journal of Engineering and Management in Industrial System, 8(2): 79-87. <u>https://doi.org/10.21776/ub.jemis.2020.008.02.</u> 7.
- [21] Vlados, C. 2019. On a Correlative and Evolutionary SWOT Analysis. *Journal of Strategy and Management*, 12(3), 347-36. <u>https://doi.org/10.1108/JSMA-02-2019-0026</u>.
- [22] Satrianto, A., Sentosa, S.U., Ariusni, Ikhsan, A., and Samad, K.A. 2023. SWOT Analysis of Strategy Development in Prominent Industries of Underdeveloped Regions: A Case Study of the Kepulauan Mentawai Regency, West

Sumatra, Indonesia. *International Journal of Sustainable Development and Planning*, 18 (11): 3591-3601. https://doi.org/10.18280/ijsdp.18114.

[23] Abyaa, H., Khalilib, M.M.N.K., Ebrahimic, M. and Movaheda, A. 2015. Strategic planning for tourism industry using SWOT and QSPM. *Management Science Letters*. 5 (2015):295– 300. <u>https://doi: 10.5267/j.msl.2015.1.009</u>.

### Contribution of Individual Authors to the Creation of a Scientific Article (Ghostwriting Policy)

The authors equally contributed to the creation of this article at all stages from problem formulation to final findings and solution.

# Sources of Funding for Research Presented in a Scientific Article or Scientific Article Itself

No funding was received for conducting this study.

### **Conflict of Interest**

The authors have no conflicts of interest to declare.

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## APPENDIX



Fig. 1: Production of non-timber forest products in Pesisir Barat Regency in 2020-2021



Fig. 2: Map of Research Location, Pesisir Barat Regency







SWOT	Strengths (S)         1. Almost 80% of Indonesian cat's eye resin products come from Pesisir Barat Regency         2. The cat's eye resin garden is managed traditionally based on local wisdom acquired from generation to generation         3. Soil and climate conditions throughout the West Pesisir Regency area are very supportive of developing cat's eye resin cultivation         4. Production of cat's eye resin is relatively stable from year to year	<ul> <li>Weakness ( W</li> <li>1. There is no technology yet for processing cat's eye resin</li> <li>2. Limited number of human resources for processing cat's eye resin</li> <li>3. Dependence of cat's eye resin farmers on collectors</li> <li>4. The production age of cat's eye resin is &gt; 20 years</li> </ul>
Onnortunities ( $O$ )	Strategy (SO)	Strategy (WO)
<ul> <li>Opportunities (O)</li> <li>1. Access to infrastructure in Pesisir Barat Regency is good</li> <li>2. The demand for cat's eye resin is quite high</li> <li>3. There is a very wide market for the sale of cat's eye resin, both nationally and internationally</li> <li>4. There is support from the government in creating programs or policies that support the development of the cat's eye resin business</li> </ul>	<ol> <li>Strategy (SO)</li> <li>Increasing the production of high-quality resin resin &amp; in accordance with market standards.</li> <li>Identifying market demand &amp; potential, paying attention to market trends &amp; consumer preferences.</li> <li>Improving infrastructure access to increase production and marketing of cat's eye resin in Pesisir Barat Regency.</li> </ol>	<ol> <li>Strategy (WO)</li> <li>The government took part in procuring technology for processing cat's eye resin.</li> <li>Form an education or training program for local communities about sustainable forest management practices and the benefits of resin.</li> <li>Conduct training for farmers to improve skills in processing cat's eye resin. Strategy (WT)</li> </ol>
1 The selling price of cat's evenue	1 Establishment of an information network	1 The use of identification tags
<ol> <li>The sening price of cat's eye gum fluctuates from year to year</li> <li>Farmers' limitations in terms of information and access in the distribution of cat's eye resin</li> <li>There are pest and disease attacks on cat's eye resin plants</li> <li>There was theft of cat's eye resin</li> </ol>	<ol> <li>Establishment of an information network &amp; partnership by stakeholders regarding technology and marketing of cat's eye resin in Pesisir Barat Regency.</li> <li>Implement optimal agricultural practices, including selecting the right seeds, good soil management, and controlling pests and diseases.</li> <li>Building an efficient distribution network to spread products to various markets, both local and international.</li> </ol>	<ol> <li>The use of identification tags on agricultural products makes it easier to track and identify if theft occurs.</li> <li>Innovating agricultural techniques to extend the production life of cat's eye resin.</li> <li>Conduct training for farmers on efficient sap tapping so that cat's eye resin production increases</li> </ol>

Fig. 4: SWOT Matrix of the cat's eye resin business in Pesisir Barat Regency

Table 1.	Total Attractive S	Score (TAS	) on alternative cat's e	eve gum business	s strategies in Pesisir	Barat Regency
			<b>,</b>	J - O		

Table	1. Total Attractive Score (TAS) on alternative cat's eye guill business strategies	s m res	ISII Dalat
No.	Strategy Alternatives	TAS	Priority
1	Increasing the production of high-quality cat's eye resin in accordance with market standards.	6.83	1
2	Identifying market demand & potential, paying attention to market trends & consumer preferences.	5.33	9
3	Improving infrastructure access to increase production and marketing of cat's eye resin in Pesisir Barat Regency.	5.60	5
4	The government took part in procuring technology for processing cat's eye resin.	5.75	4
5	Form an education or training program for local communities about sustainable forest management practices and the benefits of resin.	3.88	12
6	Conduct training for farmers to improve skills in processing cat's eye resin.	5.27	10
7	Establishment of an information network & partnership by stakeholders regarding technology and marketing of cat's eye resin in Pesisir Barat Regency.	6.51	2
8	Implement optimal agricultural practices, including selecting the right seeds, good soil management, and controlling pests and diseases.	5.83	3
9	Building an efficient distribution network to spread products to various markets, both local and international.	5.53	6
10	The use of identification tags on agricultural products makes it easier to track and identify if theft occurs.	4.93	11
11	Innovating agricultural techniques to extend the production life of cat's eye resin.	5.34	8
12	Conduct training for farmers on efficient sap tapping so that cat's eye resin production increases.	5.35	7

Table 2.	Four	priority	strategies	for the ca	t's eve i	resin l	business	in	Pesisir	Barat	Regency
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	Table 2. Four priority strategies for the ears eye resin business in resisin	Darat	Regency
No.	Strategy Alternatives	TAS	Priority
1	Increasing the production of high-quality cat's eye resin in accordance with market standards.	6.83	1
2	Establishment of an information network & partnership by stakeholders regarding technology and marketing of cat's eye resin in Pesisir Barat Regency	6.51	2
3	Implement optimal agricultural practices, including selecting the right seeds, good soil management, and controlling pests and diseases	5.83	3
4	The government took part in procuring technology for processing cat's eye resin.	5.75	4