



Development of Stingless Bee Enterprises in Peatland Ecosystems: A Strategic Approach in Tuwung Village, Pulang Pisau Regency, Central Kalimantan, Indonesia

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ABSTRACT

Kelulut bees (*Trigona* sp.) are a type of honey-producing bee native to Kalimantan, Indonesia, known for their stingless nature. These bees have high economic value, particularly in the peat ecosystem areas. This study aims to analyze the strategy for developing the Kelulut Bee cultivation business in Tuwung Village, Pulang Pisau Regency, Central Kalimantan. Using a quantitative approach and purposive sampling, the study found that one major challenge for breeders is the lack of a definite market and reliance on manual, word-of-mouth marketing. The SWOT analysis revealed that the business is in a weak position (quadrant IV), requiring a survival strategy to avoid failure and improve profitability.

INTRODUCTION

Kelulut bees are a type of small bees that do not sting, and live around the forests of Kalimantan, and the Kelulut Bee *Trigona sp*, is able to live well near agricultural land, peat hydrological areas, and can even live in mangrove forests (Syaifudin and Normagiat, 2020; Hasan *et al.*, 2022; Satriadia *et al.*, 2023). Kelulut *Trigona sp bees* are species from the genus Melliponini (Seprido and Andriani, 2022), which have the characteristic of being able to produce propolis other than honey (Personal, 2020), is one of the types of honey-producing bees that are typical of Indonesia, which comes from the Kalimantan area, this type of bee has long been known by the community around the forest, and is even able to become a leading commodity in the village, as well as business opportunities to improve the community's economy (Istikowati *et al.*, 2019; Lukman *et al.*, 2020; Mussawir, 2020; Nurhayati *et al.*, 2022; Ilham *et al.*, 2023; Sari D., & Ardo G. 2023; Purnomo *et al.*, 2023). Indirect benefits that can be felt by the communities around the forest are symbiotic relationships that are mutually beneficial, in efforts to preserve forests, and increase plant productivity (Jacobus 2011; Kerisna *et al.*, 2019). In addition, kelulut honey has competitive and comparative advantages (Yumantoko and Ramdiawan, 2021).

In conclusion, while the cultivation of Kelulut bees holds great promise, effective marketing strategies and business development are crucial for sustaining and expanding this industry. The study in Tuwung Village aims to address these gaps and provide practical recommendations for Kelulut bee farming development.

Central Kahayan District has the potential to manage Kelulut Bees, especially those that have been managed by social forestry business groups (KUPS), and as a source of income for this community group. Since 2020, the National Economic Improvement (PEN) program has entered Tuwung village, one of the businesses through the Social Forestry Business Group (KUPS) activities of the Kelulut bee has been tried until now. The strategy for developing the kelulut bee business is through strategies to increase production, and quality through efforts to add stups, making stup boxes adjusted to local weather conditions and temperatures, adding types of flower-producing plants, post-harvest always pays attention to product quality, then the pricing strategy of honey products, as well as the promotion and distribution strategy of honey products (Chandra *et al.*, 2022). Nurhayati *et al.*, (2022) Kelulut honey business development strategy, the need to increase knowledge and skills, in maximizing production, through trainings provided by the government.

The purpose of this study is to find out how the strategy for developing the Kelulut Bee cultivation business in Tuwung Village, Central Kahayan District, Pulang Pisau Regency, Central Kalimantan Province. The urgency of research for science and technology and development, including the development of human resources, especially in local communities, is still minimally carried out, so that this study can be a model to improve the business management ability of the Kelulut Beehive, which is a native commodity in Kalimantan. The results of this research are expected to affect the government's

policy-making process, in preparing quality and character human resources for farmers to build the community's economy.

LITERATURE REVIEW

Kelulut bees, or stingless bees, are indigenous to tropical regions, particularly in Southeast Asia, including Indonesia. According to Biesmeijer et al. (2006), stingless bees are essential pollinators for many crops and contribute significantly to biodiversity and ecological balance. In Indonesia, Kelulut bees have become an important part of local livelihoods, especially in areas like Kalimantan, where they are used for honey production (Hadi et al., 2019). Research by Fadhila and Utomo (2021) highlights the economic potential of Kelulut honey, noting its health benefits and high market demand in both local and international markets. Despite this potential, Kelulut bee farming faces challenges in marketing and product distribution (Nugroho & Suryanto, 2020). The manual, word-of-mouth marketing approach limits the scalability of this business. Furthermore, the SWOT analysis technique has been widely used in similar agricultural businesses to identify strategic positions and inform better decision-making (Mulyadi & Mulyani, 2018).

METHODOLOGY

Place and Time of Research

This research was carried out in Tuwung Village, Central Kahayan District, Pulang Pisau Regency. The location determination was carried out by the Non non-probability Sampling technique with the side purposive method (Sugiyono, 2013) or determined deliberately, because Tuwung village is one of the locations for the management of the kelulut bee business which is still running well. This research took place from July-September 2024.

Population and Sample

The population in this study is a community group that is a member of the Kelulut Bee business group, which totals 30 people, consisting of the chairman and members. Sample determination uses the saturated sample method (Sugiyono, 2013) where all populations are samples.

Data Collection

Data collection using questionnaires, including primary and secondary data collection. This study uses data collection methods by means of interviews, observations, and documentation, during the interview process in the field, using a survey method, by conducting direct observations, and the interviewed respondents are the managers of social forestry business groups (KUPS), as Kelulut Bee cultivators.

Data Analysis Methods

This research is a quantitative research (Sugiyono, 2013), so that to answer the research and provide recommendations, the data that has been obtained from interviews in the field, will be classified and further analyzed using qualitative

descriptive analysis, by describing the focus of the research (research object), namely the business of cultivating kelulut bees based on data obtained based on field surveys.

RESULT AND DISCUSSION

KUPS Business Development Strategy "Madu Kelulut" in Tuwung village, Central Kahayan District, Central Kalimantan Province.

Kelulut bees are currently starting to be in demand by the public, because of their distinctive taste, but the amount of production is still not widely known. To see the development strategy of Kelulut bee business management in the Tuwung village area, based on the results of the SWOT analysis, where internal factors, including *strengths* and *weaknesses*, as well as external factors, including *opportunities* and *threats*). Based on the results of the Internal Factors analysis (IFAS), the internal factors (strengths and weaknesses) were identified, the results of the SWOT analysis for the strength factors are presented in Table 1, as follows:

Table 1. Strengths SWOT Analysis Results

Internal Weight	Weight (%)	Rating (1-5)	Shoes (Bobot x Rating)
Available bee populations	20%	5	1.00
Have the will to work	15%	4	0.60
Good honey quality	20%	5	1.00
Consumers available	15%	4	0.60
Affordable honey prices	10%	3	0.30
Feed available	10%	4	0.40
Land available in large quantities	10%	4	0.40
Total:	100%		4.30

Source: Primary Data Processed, 2024

Based on Table 1, it can be seen that the strategy factor that is the biggest strength, and the most influential in the development of the Kelulut bee business, is the availability of the bee population, and the quality of honey is good, with a score of 1, while the factor of having the will to try, and consumers are available, is a factor that is a big strength in business development, because it gets a fairly high score of 0.60. The results of the analysis show that the main strength lies in the "available bee population" and "good quality honey" which has a high weight and rating.

Table 2. Results of SWOT Analysis of Weaknesses

Internal Weight	Weight (%)	Rating (1-5)	Shoes (Bobot x Rating)
Limited stup desirability	20%	4	0.80
Feed available seasonally	15%	4	0.60

Haven't fulfilled the request yet	15%	3	0.45
Limited honey production	15%	4	0.60
A type of bee is only one	10%	3	0.30
Limited honey stock	15%	4	0.60
Limited managed land	10%	3	0.30
Total:	100%		3.65

Source: Primary Data Processed, 2024

Based on Table 2, it can be seen that the strategic factor that is the biggest and most influential weakness in the Kelulut bee business in the KUPS "Madu Kelulut", is the limited availability of stup being the main weakness factor with a score of 0.80, then the feed factor is seasonally available, limited honey production, and limited honey stock are factors that weaken the management of the Kelulut bee business in the KUPS "Madu Kelulut", with the same score of 0.60. This needs to be watched out for by the manager of the KUPS "Madu Kelulut".

Meanwhile, based on the results of the External Factors analysis (EFAS), it was identified external factors (opportunities and threats), development of the Kelulut bee business in Tuwung village, based on the results of SWOT analysis, for the strength factors presented in the following Table 3:

Table 3. Opportunity SWOT Analysis Results

External Weights	Weight (%)	Rating (1-5)	Shoes (Bobot x Rating)
Development of promotional media	15%	4	0.60
Increasing demand	20%	5	1.00
Less competitors	10%	4	0.40
Known in the market	15%	4	0.60
Availability of natural feed	10%	3	0.30
Market demand increases	20%	5	1.00
Various product sizes available	10%	3	0.30
Total:	100%		4.20

Source: Primary Data Processed, 2024

Based on Table 3, which is the biggest opportunity, and the most affected in the development of the Kelulut bee business by KUPS "Madu Kelulut" is that demand is increasing, and market demand is increasing with a high score, namely a score value of 1, opportunities that can be developed by KUPS "Madu Kelulut" in the development of promotional media, and products are known in the market with a score value of 0.60. Meanwhile, to find out how big the threat is from the management of the Kelulut bee business in the KUPS "Madu Kelulut", it is presented as follows:

Table 4. Threat SWOT Analysis Results

External Weights	Weight (%)	Rating (1-5)	Shoes (Bobot x Rating)
Volatile climate	30%	5	1.50
Pest disorders	20%	4	0.80
Security	20%	3	0.60
Forest and land fires	30%	5	1.50
Total:	100%		4.40

Source: Primary Data Processed, 2024

Based on Table 4, it illustrates that the results of the SWOT analysis show that the strategic factor that is the biggest threat, and the most influential in the development of the Kelulut bee business, is the uncertain climate and forest and land fires, which are the biggest threats to Kelulut bee management at the KUPS "Madu Kelulut" in Tuwung village, with a high score value of 1.50. Meanwhile, the pest disturbance factor with a score of 0.80 is close to 1, and safety is a threat factor with a score of 0.60. Based on the results of the analysis of the calculation of the score on the threat factors, it shows that all threat factors turn out to be strong threats that need to be watched out for by KUPS "Madu Kelulut" in the management of the Kelulut bee business.

The results of the SWOT analysis in determining strategies that are in accordance with the conditions of the Kelulut bee business group at the KUPS "Madu Kelulut". Based on the results of the analysis, it can be seen in the following table;

Table 5. Internal and External Factor Scoring Results

Criteria	Score	Koordinat
Internal Factors		
Strength	4.30	0.65
Disadvantages	3.65	
External Factors		
Opportunities	4.20	-0.20
Threats	4.40	

Source: Primary Data Processed, 2024.

The strategy should focus on fixing internal weaknesses and dealing with external threats, while leveraging the strengths it has to maintain its position in the market. Analysis of internal and external factors, based on the X and Y values, the position is in Quadrant IV (Turnaround / Survival Strategy). The results of the Kelulut Bee business by KUPS "Madu Kelulu" in Tuwung village, Kahayan Tengah District, Pulang Pisau Regency, are depicted in the following quadrants:

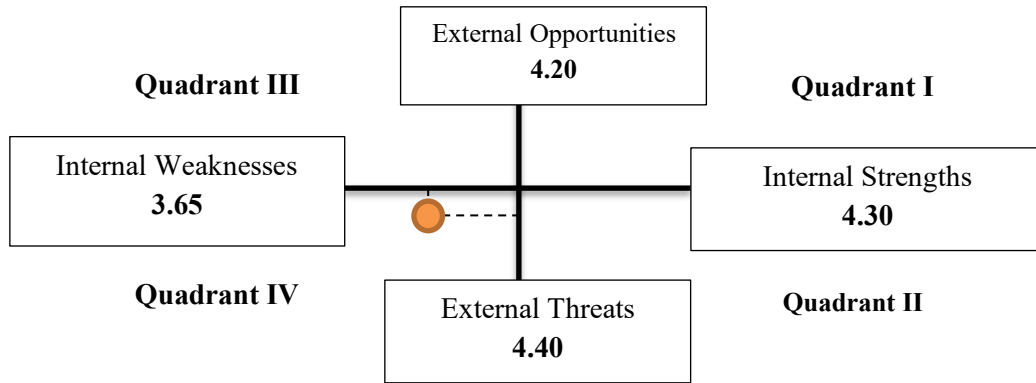


Figure 1. Quadrant Positions in SWOT Analysis Diagrams
 Source: Primary data processed, Year 2024.

SWOT analysis on external factors is carried out by processing external factors in the form of opportunities, which can be used by farmers to increase the business carried out, and anticipate future threats, because threats are one of the company's external factors that can hinder the smooth development of business. Based on the weighted value where the coordinates obtained are the coordinates of the internal factor the value of strength minus the value of weakness (4.30-3.65) gets a result of 0.65, and the external factor of the opportunity factor minus the threat (4.20-4.40) gets a result of -0.20. This strategy shows an unfavorable situation, and the manager of the Kelulut bee business must undergo a survival strategy so that his business does not go bankrupt. Based on the results of the SWOT analysis, the strategy survives at the condition of quadrant point IV.

Table 6. SWOT Matrix Formulation of a Strategy to Improve Kelulut Bee Farming KUPS "Kelulut Honey" in Tuwung Village, Central Kahayan District, Pulang Pisau Regency, in 2024.

<p>IFAS</p> <p>EFAS</p>	<p>Strength (S)</p> <ol style="list-style-type: none"> 1. Available bee populations 2. Have the will to work 3. Good honey quality 4. Consumers available 5. Affordable honey prices 6. Feed available 7. Land available in large quantities 	<p>Disadvantages (W)</p> <ol style="list-style-type: none"> 1. Limited stup desirability 2. Feed available seasonally 3. Haven't fulfilled the request yet 4. Limited honey production 5. A type of bee is only one 6. Limited honey stock 7. Limited managed land
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<p>Odds (O)</p> <ol style="list-style-type: none"> 1. Development of promotional media 2. Increasing demand 3. Less competitors 4. Known in the market 5. Availability of natural feed 6. Market demand increases 7. Various product sizes available 	<p>SO Strategy</p> <ol style="list-style-type: none"> 1. Developing promotional media to improve the branding of quality honey products, by utilizing the availability of bee populations and good honey quality as the main selling point to attract more consumers. 2. Expanding market reach through diversification of honey products (e.g., providing different product sizes) to meet growing consumer demand. 3. Capitalizing on the increasing market demand by increasing honey production and reaching consumers in new regions that do not yet have strong competitors. 	<p>WO Strategy</p> <ol style="list-style-type: none"> 1. Overcoming the limitations of honey production through increased production capacity and resource management. For example, increasing stups or increasing production efficiency to take advantage of increased demand. 2. Develop technology to ensure the sustainable availability of natural feed so that it can overcome seasonal feed problems, as well as ensure more stable production. 3. Increasing the availability of stups through cooperation with suppliers or beekeepers, so that it can meet the increasing market demand without being disturbed by infrastructure limitations.
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Threat (T)	ST Strategy	WT Strategy
<ol style="list-style-type: none"> 1. Volatile climate 2. Pest disorders 3. Security 4. Forest and land fires 	<ol style="list-style-type: none"> 1. Utilize available bee populations by building better protection systems against pest infestations and mitigating the impacts of uncertain climates. The use of modern technology in bee management can help protect bee populations. 2. Good quality honey can be used as a tool to maintain the market even though the threat of uncertain climate and forest fires affect production in certain regions. Diversification of production areas can also be considered to reduce dependence on just one region. 3. Create a system to protect land from forest fires by conducting early monitoring and working with local authorities to prevent and tackle fires. 	<ol style="list-style-type: none"> 1. Diversify bee species to reduce dependence on a single bee species that are vulnerable to climate change or pest attacks. This can strengthen the resilience of beekeeping to environmental threats. 2. Improve land management to reduce the risk of forest and land fires, as well as ensure stable availability of feed throughout the year. The creation of better irrigation systems and land management can reduce dependence on unpredictable climatic conditions. 3. Develop a more efficient production system to overcome limited honey stocks, while anticipating the threat of environmental disturbances such as pest disturbances and an uncertain climate.

Source: Primary Data Processed, 2024.

The description of the main strategies in the strategy to increase honey productivity from Kelulut bees in the Tuwung village area, Kahayan Tengah District, Pulang Pisau Regency, based on the results of the SWOT analysis and the scores that have been calculated, the formulation of strategies that can be taken for each category is as follows:

Strategy S-O (Strengths-Opportunities)

The S-O strategy leverages internal strengths to seize the opportunities that exist in the market. The results of the analysis were obtained that **the S-O strategy** refers to focusing on harnessing strengths (bee population, honey quality) to capture market opportunities (increased demand, lack of competitors). Based on the results of the analysis, the strengths possessed by

KUPS "Madu Kelulut" in Tuwung Village, include; The availability of bee populations, good honey quality, and increasing demand are the main basis for designing the following strategies: Develop promotional media to improve the branding of quality honey products, by taking advantage of the availability of bee populations and good honey quality as the main selling point to attract more consumers. Expanding market reach through diversification of honey products (e.g., providing different product sizes) to meet growing consumer demand. Capitalizing on the increasing market demand by increasing honey production and reaching consumers in new regions that do not yet have strong competitors. Productivity and quality of honey will affect market demand, generally the productivity and quality of Kelulut honey products are still low (Malik. M. *et al.*, 2023).

Efforts to develop the Kelulut bee business by KUPS "Madu Kelulu", can be carried out by developing the ability of breeders, and the experience of farmers by utilizing natural resources, or land that is already available, intensively, or increasing the area of land that has not been managed at all or business extensification efforts, so that the land area increases which means the number of stups also increases, can provide opportunities to produce a greater amount of honey production, so that business groups or KUPS are able to increase the Kelulut bee business to a larger scale.

Strategy W-O (Weaknesses-Opportunities)

The W-O strategy seeks to minimize internal weaknesses by taking advantage of external opportunities. The findings are based on the results of the SWOT analysis, that the W-O strategy that can be taken by the KUPS management group "Madu Kelulut", shows that to overcome weaknesses (limited production, availability of stup) with opportunities (increased market demand, development of promotional media). From the results of the analysis, weaknesses such as limited honey production and limited availability of stup, must be overcome with opportunities such as increased demand and lack of competitors. Efforts that can be made are: Overcoming the limitations of honey production through increasing production capacity and resource management. For example, increasing stups or increasing production efficiency to take advantage of increased demand. Develop technology to ensure the sustainable availability of natural feed so that it can overcome seasonal feed problems, as well as ensure more stable production. Increasing the availability of stups through cooperation with suppliers or beekeepers, so that it can meet the increasing market demand without being disturbed by infrastructure limitations. The type of feed that suits the needs of Kelulut Bees is important (Winarno *et al.*, 2024).

Based on the results of the SWOT analysis carried out, efforts to increase honey production are still limited, so there is a need to improve skills in good management and cultivation, through mentoring and counseling activities, accompanied by plot demonstrations (pilot demonstration plots), so as to improve the ability in Kelulut bee management, the government and extension workers work together to provide routine trainings to beekeepers, The government also

helps the community's capital, by providing STUP assistance, and subsidized fertilizers where the fertilizer price is cheaper than the market price, with the intervention of the government, it is hoped that in the future it can help farmers increase production technology. Cultivation management is important for Kelulut Bee breeders (Payung *et al.*, 2024).

Problems that are also faced by beekeepers, especially in the Pulang Pisau Regency area, are experiencing difficulties when marketing or selling their honey production. Farmers only sell in the area around Tuwung village, with a door-to-door marketing model, this is because the production of honey produced by KUPS "Madu Kelulut" in Tuwung village is still small-scale, the maximum production in one month is only 8 liters, so the sales volume is still very small. The development of the Kelulut bee business needs to be supported by adequate facilities and infrastructure. Efforts to improve facilities and infrastructure that need to be carried out in supporting the development of the Kelulut bee business, including by building village-owned enterprises (BumDes), so that sales can be more effective, providing village unit cooperatives, to accommodate or buy production.

Strategy S-T (Strengths-Threats)

The S-T strategy uses internal forces to reduce the impact of external threats. Based on the results of the analysis, the strategy that can be carried out by the KUPS "Madu Kelulut" in Tuwung village in the S-T strategy, is the need to use internal forces (bee population, honey quality) to face threats (uncertain climate, pest disturbances, fires). Threats such as climate uncertainty, pest disturbances, and forest and land fires can be dealt with with the strengths of capabilities including: Leveraging available bee populations by building better protection systems against pest disturbances and mitigating the impacts of erratic climates. The use of modern technology in bee management can help protect bee populations. Good quality honey can be used as a tool to maintain the market even though the threat of uncertain climate and forest fires affect production in certain regions. Diversification of production areas can also be considered to reduce dependence on just one region. Create a system to protect land from forest fires by conducting early monitoring and working with local authorities to prevent and tackle fires.

This aims to improve the quality and quantity of honey, which is the main production of the Kelulut KUPS bee business "Kelulut Honey" To get good honey production results, the availability of feed or food produced from plants that produce fruit, and is around the cultivation site, according to Sanjaya *et al.*, (2019) that the dominant feed source in the Bengkayang area is *the Myrtaceae* type and *Dipterocarpaceae*. Furthermore, Alpian, *et al.*, (2022) include the type of carpenter (*Rhodomyrtus tomentosa*), star fruit (*Averrhoa carambola*), type of mango (*Mangifera indica*), agarwood (*Aquilaria malaccensis*), type of acacia (*Acacia mangium*), and type of putri malu (*Mimosa pudica*). Efforts to overcome pest disturbances that are likely to attack Kelulut bees, uncertain climatic conditions are also biased to result in pest explosions that can attack stups or beehives, which can make the mother bee will die attacked, or go out of the hive to find a safe place from pest

attacks. High rainfall and pests are problems for Kelulut bee farmers (Noor, 2019).

Pests that disturb stup/ beehives, including ants, lizards, cats, rats, geckos, including several types of birds (Anarki H. *et al.*, 2024) in this case, it is necessary to have the hands of extension workers to provide material and practice on how to deal with pests that disturb Kelulut bees. The management of the Kelulut bee business is also vulnerable to forest and land fires, because forests can be the main source of food for Kelulut bees, so efforts to avoid the occurrence of fires that can eliminate the source of bees also need to be considered, because fires generally also produce smoke that can affect the sustainability of the Kelulut bee business in the Tuwung village area.

Strategy W-T (Weaknesses-Threats)

The W-T strategy aims to minimize internal weaknesses and avoid external threats. The findings of the analysis on the W-T strategy, which must be carried out by the manager of the KUPS "Madu Kelulut" in Tuwung village is to reduce or minimize the existing weaknesses, where weaknesses (limited production, limited bee species) and threats (climate, fire, pests) through diversification and improvement of land management and technology.

Weaknesses such as limited production and a single type of bee become more vulnerable to threats such as unpredictable climate and wildfires, so it is necessary to do: Diversify bee species to reduce dependence on one bee species that are vulnerable to climate change or pest attacks. This can strengthen the resilience of beekeeping to environmental threats. Improve land management to reduce the risk of forest and land fires, as well as ensure stable availability of feed throughout the year. The creation of better irrigation systems and land management can reduce dependence on unpredictable climatic conditions. Develop a more efficient production system to overcome limited honey stocks, while anticipating the threat of environmental disturbances such as pest disturbances and an uncertain climate.

These strategies will help optimize existing opportunities and mitigate the risks faced, so that the business can grow better. The development of the Kelulut bee farming business requires improvements in its management by these business actors, namely increasing innovation and promotion in agriculture, by processing Kelulut bees. Currently, the lack of communication between members of the KUPS group "Madu Kelulut", can result in the ignorance of farmers, in carrying out the Kelulut bee farming business activities, the role of extension workers is needed in improving the knowledge and ability of the farmers, with the existence of extension workers can also direct farmers to make proposals to the agency, such as capital proposals, because farmers' capital is currently still insufficient for additional stup, expansion of the business area, buyers of fertilizer for plants around the stup location, so that efforts to increase production can occur.

The physical condition of the environment where Kelulut bees are cultivated is comfortable, is an absolute requirement, including ideal temperature conditions which are between 20-30oC, the ideal is around 26oC,

then moderate humidity, not too dry, and not too humid, wind conditions, the location should be protected from strong winds, so that the condition of the stup is not disturbed, shakes and collapses, this will be detrimental to the breeder (Harjanto *et.al.*, 2020). Environmentally, Tuwung village is actually qualified for Kelulut bees to breed, and produce honey, but the surrounding natural environment conditions are very influential, especially if the rainfall is high enough, causing the stup to become wet, and humidity to be high, this will affect the development of Kelulut bees. Lestariningsih *et al.*, (2022) for the development and marketing to each market segment, the making of Kelulut honey into candy is an innovation that can encourage an increase in added value from the abundance of Kelulut honey production, and its benefits for health.

CONCLUSION

Internal and external factors that affect the development of the Kelulut bee business, the strength factor gets a score of 4.30, and the weakness gets a score of 3.65, the reduction between the strength and weakness criteria gets a coordinate result of 0.65, on the horizontal and positive lines, because the strength is greater than the weakness. Meanwhile, the results of scoring external factors have a chance score of 4.20, and the threat score is 4.40, a reduction between the opportunity criteria, and the threat of getting a coordinate result of -0.20, with a negative value. This strategy shows an unfavorable situation, and the manager of the Kelulut bee business must undergo a survival strategy, based on the results of the SWOT analysis, then the survival strategy is at the condition of quadrant point IV, this strategy is taken so that the business does not stop (fail). Efforts to be made are the need to diversify bee species, the need to improve land management to reduce the risk of forest and land fires, as well as ensure the availability of stable feed throughout the year, the creation of better irrigation systems and land management, and the development of more efficient production systems, to overcome the limitations of honey stocks, as well as anticipating the threat of pest disturbances and climate change.

RECOMMENDATION

The role of extension workers is very important in accompanying, and providing counseling, on how to manage or cultivate Kelulut bees well, and be able to produce quality honey products, not only from the quantity of production, but also the quality of the product is important, it is hoped that extension workers will be able to assist and train breeders in the management of this Kelulut bee business, as well as prepare business development programs made from Kelulut honey.

ADVANCED RESEARCH

The role of extension workers is very important in accompanying, and providing counseling, on how to manage or cultivate Kelulut bees well, and be able to produce quality honey products, not only from the quantity of production, but also the quality of the product is important, it is hoped that extension workers will be able to assist and train breeders in the management of

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