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# POTENTIAL ANALYSIS AND DEVELOPMENT STRATEGY OF CATTLE-PALM INTEGRATION LIVESTOCK BUSINESS IN OGAN KOMERING ULU REGENCY

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**ABSTRACT**
*The integration system between oil palm plantations and cattle must be supported by the application of appropriate and targeted technology, so that the resulting production can be more efficient, competitive and sustainable. The formulation of the problem in this research is how is the potential for the development of integrated cattle-palm farming business in Ogan Komering Ulu Regency. The method in this study used the survey method. The data collection method is an exploratory qualitative data collection method. The data analysis technique used is Location Quotient (LQ) analysis, Shift-Share analysis and SWOT analysis. The results of the study found that the cattle-oil integration farming business in Ogan Komering Ulu Regency could be developed using strengths using existing opportunities and this is a very profitable situation where Ogan Komering Ulu Regency has a cattle-oil integration livestock farming business with take advantage of existing opportunities. The strategy that can be used is the SO Strategy, namely (Strength and Opportunities), which is a strategy that optimizes strengths to take advantage of opportunities (opportunities), namely conducting counseling and coaching to farmer group farmers, providing counseling to farmers that cattle-palm integration can be a main source of income, utilization of cow dung as palm oil fertilizer and empowerment of existing cattle farmer groups to be able to partner with government and private institutions.*



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## 1. INTRODUCTION

The concept of integrating livestock with oil palm plantations is more oriented to face the era of globalization/free trade. The concept applied using the LEISA (*low external input system agriculture*) approach is the dependence and profit obtained between plantation crops and livestock. In principle, the by-products of plantation waste can be used as animal feed ingredients, while manure and animal feed residues become nutrient providers to increase the fertility of plantation soils (Setiadi, 2017). The integration system between oil palm plantations and cattle must be supported by the application of appropriate and targeted technology, so that the production produced can be more efficient, competitive and sustainable. Basically, this integration system can make it recycled or (resource driven) with optimally available resources. In addition, the by-products of this plantation waste can be used as animal feed ingredients, while livestock manure and feed residues and crops can be further decomposed into compost which is more beneficial for farmers.

Ogan Komering Ulu Regency is one of the regencies in South Sumatra that has enough potential in developing cattle integration business with oil palm. Since 2012 the Directorate General of Animal Husbandry of the Ministry of Agriculture of the Republic of Indonesia has launched assistance sourced from state budget funds in the

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form of a program called the cattle and palm oil integration system (SISKA) in several central districts in South Sumatra Province, and including Ogan Komering Ulu Regency.

The potential for the development of the local beef cattle business, namely the type of Bali cattle in Ogan Komering Ulu Regency, is quite large, because the feed and land resources that exist at this time (*existing condition*) with oil palm plantation land, in the form of potential land use, waste from oil palm plantations, which can be used as animal feed that can increase livestock productivity and also livestock waste that can be used as compost for crops palm oil to be able to increase palm oil production. However, this has not been fully utilized properly, so there needs to be support in the field of appropriate technology and appropriate policies from the local government, in addition to the empowerment and guidance programs for cattle-oil palm farmer groups in this central area should be a priority in the development of Bali cattle breeding business. Therefore, the introduction of technology that is in accordance with the regional potential and the territory of the integrated cattle business development breeding center that must pay attention to the concept from upstream to downstream, which is currently an important step for Ogan Komering Ulu Regency to be able to go to an area that is expected to become a business center in breeding local beef cattle integrated with oil palm plantations.

The main problem in the development of cattle breeding business is the limitations animal feed resources, this can lead to low livestock productivity. Therefore, the decrease in the number of populations in cattle is thought to be caused by the narrower food land converted into plantation land, in addition to the smaller ownership of food crop land, which results in reduced availability of forage and the rest of agricultural products that cannot meet the needs of animal feed. In addition, the use of agricultural land is not optimal because it is generally only used for one type of business and there are still difficulties in providing feed in a sustainable manner properly, this can affect the quality of feed given to livestock and can reduce livestock productivity, but with the increasing use of land types for various agricultural business activities, therefore in the development of local cattle businesses in the central area, must be carried out in an integrated manner between the plantation business and the local cattle business that exists at this time, so that it can be mutually beneficial.

In this study as a research sample, it was examined in Lunggaian Village, Lubuk Batang District, where in this area included quite a lot of cattle and oil palm plantation populations. Where they have problems, namely thedevelopment of beef cattle is constrained by the provision of quality feed due to the increasingly limited land for grazing and for the cultivation of livestock food. To overcome this, the development of the cattle business in the future can rely on the use of plantation by-products which are no longer considered as waste but as resources. Cattle-palm integration farms have the potential to be developed more widely, so that they can increase income for the community by opening or developing a cattle-palm integration livestock business.

## 2. RESEARCH METHOD

The method in this study used the survey method. According to Sugiyono (2017) the survey method is the method used to find the influence of certain treatments. Thesample drawing method used in this study is the saturated sample method. In this study, the selected respondents were 71 respondents with details of responden from the State Civil Apparatus (ASN) of the Ogan Komering Ulu Regency Government consisting of one Head of the Fisheries and Animal Husbandry Service, two people from the Livestock Sector within the Ogan Komering Ulu Regency Fisheries and Animal Husbandry Service, five Extension Workers Field Farm. Respondents from breeders were as many as 25 breeders as a sample. The data used in this study is secondary data in the form of a *time series*, namely the GRDP (Gross Regional Domestrik Product) of Ogan Komering Ulu Regency in 2017-2021. This GRDP data will be processed to determine the potential of freshwater fish farming businesses by calculating using LQ (*Location Quotient (LQ)* and *Shift Share* analysis tools. *Shift-share* analysis compares the differences in the growth rate of various sectors (industries) in regions with national regions with sharper methods and details the causes of changes in several variables (Tarigan, 2015).

Furthermore, researchers made observations using secondary data regarding obstacles and opportunities for freshwater fish farming in Ogan Komering Ulu Regency, and then determined what strategies were appropriate to use in overcoming obstacles in order to develop these opportunities.

## 3. RESULTS AND ANALYSIS

### *Location Quotient (LQ)* Analysis

Base and non-base sector analysis uses *Location Qoutient* (LQ) analysis techniques to determine whether the cattle-palm integration livestock business in the base or non-base sector in Ogan Komering Ulu Regency. This technique compares the large role of a sector in an area (district) to the large role of the sector in the Provincial sector. If the LQ>1 index then the sector is a base sector, while LQ=1 then the sector is only able to meet the demand of the region, while LQ<1 then the sector is a non-base sector.

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After processing the GRDP data per sector, the *Location Quotient* index value is obtained as shown in table 1 as follows.

Table 1. *Location Quotient* Index Calculation Results

| Business Field | Year | | | | | Average | Information |
|---|---|---|---|---|---|---|---|
| | 2017 | 2018 | 2019 | 2020 | 2021 | | |
| Fisheries agriculture and forestry | 1.011531 | 0.996186 | 0.972858 | 1.232388 | 1.24072 | 1.09 | Base |

Source: Secondary data, 2022 (Processed)

The results of the *calculation of the Location Quetiont* (LQ) of Ogan Komering Ulu Regency from the period 2017-2021 show that the cattle-palm integration livestock business in Ogan Komering Ulu Regency shows the results that fishery and forestry agriculture businesses are included in this case the cattle-palm integration livestock business with an LQ value of 1.09 where the LQ value > 1 means that this business sector is able to meet the needs within the Ogan Komering Ulu Regency area and even meet the needs in other regions so that the sector is a base sector and has the potential to be developed as a driver of economic growth in Ogan Komering Ulu district.

***Shift-Share* Analytics**

The calculation results of the *Shift Share* analysis are described in table 5 which is mentioned below.

Table 2 *Shift Share* Analysis Results

| Business Field | Nij | Mij | Cij | Dij | Information |
|---|---|---|---|---|---|
| Agriculture, Forestry and Fisheries | 36598685.41 | -11931355.36 | 35242327.09 | 59909657.14 | Auspicious |

Source: Secondary Data, 2022 (Processed)

Based on table 2, you can know that the *differential shift* (Dij) component is 59909657.14 or Dij>0, so thelocalization of the livestock business sector of cattle-palm integration is profitable.

**SWOT Analysis**

The results of the SWOT analysis in this study can be seen in the following table.

Table 3 SWOT Analysis Matrix

| Internal Factors / External Factors | *STRENGHT* (S) | *WEAKNESS* (W) |
|---|---|---|
| | 1. Reliable livestock exension workers<br>2. Cattle-palm farming business can be the main income<br>3. Natural resources, especially oil palm land, are quite large<br>4. The cattle breeder group already exists | 1. Smallholder oil palm land ownership remains low<br>2. How to raise livestock is still part-time<br>3. Low attitude and skills and insight of breeders<br>4. Limited ability of local governments to allocate funds for integrated livestock |
| *OPPORTUNITIES*(O)<br>1. The availability of privately owned oil palm land is quite wide<br>2. The price of meat in the potential market<br>3. Cow dung can be used as a | SO (*Growth* Strategy)<br>1. Conducting counseling and coaching to farmer group breeders<br>2. Providing counseling to farmers that cattle-palm integration can be the main income<br>3. Utilization of cow dung as oil | WO (*Stability* Strategy)<br>1. Apply for cooperation with private companies that own oil palm land to optimize cattle-palm integration<br>2. Making cattle-palm integration the main commodity<br>3. Technical guidance to farmers |

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| | | |
|---|---|---|
| natural fertilizer<br>4. Consumer demand for beef continues to increase | palm fertilizer<br>4. Empower existing groups of cattle breeders to be able to partner with financial institutions | in processing cow dung into fertilizer<br>4. Submission of cooperation to BUMD or companies in terms of financial assistance |
| *THREATS* (T)<br>1. Cheaper imported beef prices<br>2. Risk of death of cattle due to disease<br>3. Low quality of livestock<br>4. Frequent theft of cattle | ST (*Diversification* Strategy)<br>1. Optimization of marketing within the OKU Regency itself<br>2. Conducting mass vaccinations in cattle<br>3. Improving the quality of livestock by conducting artificial insemination of cattle<br>4. Holding rotating siskamling in the cattle-palm integration area | WT (*Defend* Strategy)<br>1. Perform active and passive services to breeders<br>2. Improve the knowledge and skills of farmers to integrate cattle with oil palm<br>3. Utilization of palm oil mill waste as feed for cattle<br>4. Submit an *e-proposal* to the Ministry of Agriculture and BPTU Sembawa in allocating cattle-palm integration funds |

Source : Data Processing in 2022

In addition to opportunities and threats, the development of the potential of cattle-palm integration livestock business in Ogan Komering Ulu Regency also has its strengths and weaknesses. In determining the potential for the development of cattle-palm integration livestock business in Ogan Komering Ulu Regency, we will look at it from a different side. Namely from how when we know the strengths, weaknesses, opportunities and threats packaged in the SWOT analysis. Table 4 shows the *Internal Factory Analysis Summary* matrix and *the External Factory Analysis Summary* matrix used to find out what strategies will be used for the potential development of cattle-palm integration livestock business in Ogan Komering Ulu Regency:

Table 4. *Internal Factor Analysis Summary Matrix*

| Internal Factors : | Weight | Rating | Score |
|---|---|---|---|
| *Strength:* | | | |
| 1. Reliable livestock extension workers | 0,12 | 3 | 0,36 |
| 2. Cattle-palm farming business can be the main income | 0,11 | 3 | 0,33 |
| 3. Natural resources, especially oil palm land, are quite large | 0,14 | 4 | 0,56 |
| 4. The cattle breeder group already exists | 0,13 | 4 | 0,52 |
| Sub Totals | | | 1,77 |
| *Weakness:* | | | |
| 1. Smallholder oil palm land ownership remains low | 0,13 | 3 | 0,39 |
| 2. How to raise livestock is still part-time | 0,12 | 3 | 0,36 |
| 3. Low attitude and skills and insight of breeders | 0,13 | 3 | 0,39 |
| 4. Limited ability of local governments to allocate funds for integrated livestock | 0,12 | 1 | 0,12 |
| Sub Totals | | | 1,26 |
| Total | 1,00 | | 3,03 |

Based on table 4, it was found that the sub-total for the weight of the internal factor value of strength with a score of 1.77. As for the sub total internal factors of weakness with a score of 1.26. From the results of the

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combination of internal factors of strength and weakness, a total score of 1.00 and a total score of 3.03 were obtained. So the score difference between internal factors of strength and weakness was obtained by 0.51.

Table 5. *External Matrix Factor Analysis Summary*

| External factors : | Weight | Rating | Score |
|---|---|---|---|
| *Chance:* | | | |
| 1. The availability of privately owned oil palm land is quite wide | 0,13 | 4 | 0,52 |
| 2. The price of meat in the potential market | 0,14 | 3 | 0,42 |
| 3. Cow dung can be used as a natural fertilizer | 0,13 | 3 | 0,39 |
| 4. Consumer demand for beef continues to increase | 0,10 | 3 | 0,30 |
| Sub Totals | | | 1,63 |
| *Threat:* | | | |
| 1. Cheaper imported beef prices | 0,13 | 2 | 0,26 |
| 2. Risk of death of cattle due to disease | 0,14 | 3 | 0,42 |
| 3. Low quality of livestock | 0,13 | 3 | 0,39 |
| 4. Frequent theft of cattle | 0,10 | 1 | 0,10 |
| Sub Totals | | | 1,17 |
| Total | 1,00 | | 2,80 |

Based on table 5, it was found that the sub-total for the weight of the value of the external factor of the opportunity obtained a score of 1.63. The sub-total of external factors of the threat obtained a score of 1.17. From the combined results of external factors of opportunity and threat, a total value of 1.00 was obtained with a total score of 2.80. So the score difference between external factors of opportunity and threat is obtained by 0.46. From table 5, the result is obtained that the score value for the strength factor is 1.77 and the score value for the weakness factor is 1.26. Meanwhile, from Table 4.5, the result is obtained that the score value for the opportunity factor is 1.63 and the score value for the threat factor is 1.17. The strength score value turned out to be above the weakness score value with a difference in value (+) of 0.51, while the opportunity score value turned out to be below the threat score value with a difference in value (+) of 0.46.

Based on the results of the identification of these factors and the determination of the score difference, it is then depicted in a SWOT diagram, where the strength and opportunity factors are given a positive value (+), while the weakness and threat factors are given a value (-).

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The following if depicted in the form of a SWOT diagram.

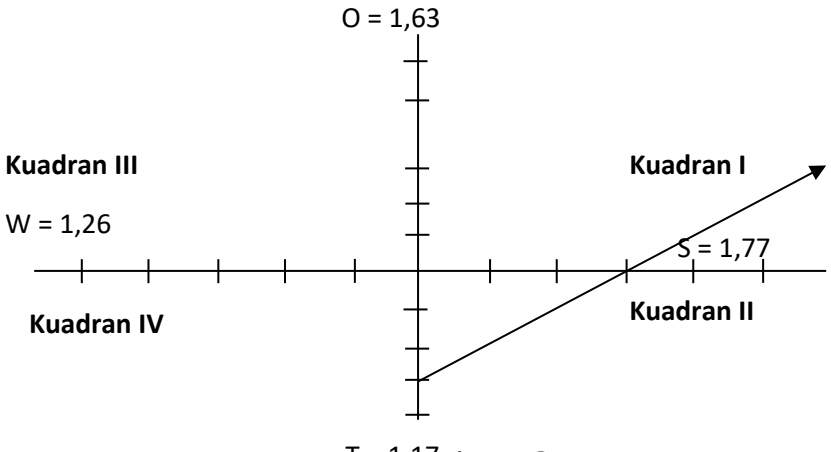


**Figure 2**
**SWOT diagram**

Information:
Quadrant I : *Opportunities* / opportunities = 1.63
Quadrant II : *Strength* = 1.77
Quadrant III : *Weakness* = 1.26
Quadrant IV : *Threat* = 1.17

In the picture above, it can be seen that the S and O values in quadrant I are very large compared to the W and T values so it can be said that the cattle-palm integration livestock business in Ogan Komering Ulu Regencycan be developed using *strength* using existing opportunities. Thus, this is a very favorable situation where Ogan Komering Ulu Regency has a cattle-palm integration livestock business in Ogan Komering Ulu Regencycan be implemented by taking advantage of existing opportunities.

In line with the development of Ogan Komering Ulu Regency, it is necessary to make a strategy that is interrelated between internal and external factors to support the livestock business process of cattle-oil palm integration in Ogan Komering Ulu Regency. Strategies that can be used are the SO Strategy, namely *(Strength and Opportunities)*, which is a strategy that *optimizes strength (strength)* to take advantage *of opportunities (opportunities)*, namely:
1. Conducting counseling and coaching to farmer group breeders
2. Providing counseling to farmers that cattle-palm integration can be the main income
3. Utilization of cow dung as oil palm fertilizer
4. Empower existing groups of cattle breeders to be able to partner with financial institutions

## 4. CONCLUSION

Based on the analysis of the results of the research that has been carried out, the following conclusions :
1. Cattle-palm integration farming business in Ogan Komering Ulu Regencycan be developed using *strengths* using existing *opportunities* and this is a very favorable situation where Ogan Komering Ulu Regency has a cattle-palm integration livestock business by taking advantage of existing opportunities.
2. The strategy that can be used is the SO Strategy, namely *(Strength and Opportunities)*, which is a strategy that optimizes *strengths* to take advantage of opportunities *(opportunities)* conducting counseling and coaching to farmer group farmers, providing counseling to farmers that cattle-palm integration can be a main income, utilization of cow dung as fertilizer for palm oil and empowerment of existing cattle farmer groups to be able to partner with financial.

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