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# Strategies in Developing Horse Breeding with Socio-cultural Concept in the Regency of Sumba Barat Daya

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***Abstract:*** The objective of this study is to formulate alternate strategies in developing horse breeding that has socio-cultural concept in the Regency of Sumba Barat Daya through evaluation on its internal and external factors. The data were collected from November 2015 to July 2016. Survey was held on 27 experts who were selected purposively. Analyzing tool being used is SWOT. The results of the research show that the position of horse breeding with socio-cultural concept in the Regency of Sumba Barat Daya is on the first quadrant, that is to say growth oriented strategy. Therefore, the application of SO strategy using the internal strength of Regency of Sumba Barat Daya is needed to gain all benefits from the external opportunity in horse breeding development.

***Key-words:*** development strategy, horse breeding, socio-cultural, SWOT

***JEL Classification Code:*** Primary Q1; secondary Q26, Z13

## INTRODUCTION

Horse breeding is one of natural resource components that can be used in developing animal husbandry in Indonesia. Horse breeding relieves transportation difficulties in remote areas, provides for recreational needs, and provides animal protein (Siregar 2011; Kadir 2011; and Uniacke-Lowe *et al* 2010). In several communities, it also supports socio-cultural events.

Nusa Tenggara Timur (NTT) is one provinces in Indonesia with such potential of horse breeding development. Indonesian Statistic Agency of NTT in 2016 reported that horse breeding activity in NTT in 2015 contributed 25.94% to national horse population, in which its highest dispersion level is in Sumba Island.

Sumba Barat Daya is a Regency in Sumba Island in the Province of NTT that develops horse breeding. The history of it was started in the sixteenth century though the trading activities of Europeans (Kapita 1976; Hoskins 1984, cited by Adams 2004). Its development is supported by the availability local breed sandalwood, vast grazing ground of 17.607 hectare, people's culture of breeding horse, sea and air infrastructure, and market.

The developed horse breeding activity has a strategic role in keeping the socio-cultural tradition. Horse is a commodity that is compulsory for dowry, as sacrificial animal in death ceremony, and as rides in Pasola ritual (Adams 2004; Nurrochsyam 2011; dan Djawa 2014). It makes Sumba Barat Daya a one of tourist destination.

Agency of Animal Husbandry of Sumba Barat Daya, in 2006, reported that the development of horse breeding has decreased 2.75% each year during 2010-2014. It does not worth the expenses, which was increased 57.81% in each year during 2011-2015. The profile shows a limited ownership of animal, low education level, and low mastery of management. The conditions have led to inharmonious relation between horse breeding activities and the environment, so it has affected the continuity of cultural tradition.

The development of horse breeding in the Regency of Sumba Barat Daya is basically caused by the internal factors (strength and weakness) and external factors (opportunity and threat). Evaluation and mapping on both components (internal and external factors) is essential in describing proper alternate strategy to develop horse breeding activity with socio-cultural concept.

## LITERATURE REVIEW

SWOT analysis is used in strategic management to identify as well as to evaluate strength and weakness in regards of their opportunity and threat. The derived decisions are the strategies coming from the combination between the internal capability of an organization and environmental uncertainty (Ommani 2011 and Salusu 2015).

Strategies derived from SWOT analysis will be successful if they are used effectively to maximize strength and opportunity and to minimize weakness and threat. The analysis is used in making complex decision because it is more flexible in defining strategies and measures (Collado *et al* 2012; Pearce and Robinson 2013; and Rangkuti 2013).

The strategy in developing horse breeding has been studied in the United States and North Ireland focusing mainly on fulfilling industrial and tourism needs. The recommendations are establishing horse breeding conservation organization, holding horse race training, making more horse race events, limiting horse slaughter, applying artificial insemination, using technology in promotion and marketing, improving coordination and participation, and upgrading the quality and the standard of horse horse farm (Savage 2007 and Phillips *et al* 2011).

Strategies for developing horse breeding in Indonesia is limited because most strategies are for cow and buffalo breeding. Suresti and Wati (2012) in their research on beef cattle development in Kalimantan Selatan recommend aggressive strategy (SO=3.725), while Lamba (2009) recommend turnaround strategy (WO=5.9276) for the same case in NTT. The opposing recommendation comes from differences of abilities between both territories in managing strategic environmental element, where NTT is capable in

responding external environment elements, while Kalimantan Selatan is quite good in using various internal environment elements.

Achmad, Hartoyo, Arifin, and Didu (2013) reported that the development of beef cattle farming in Sulawesi Selatan is in grow-and-build position. The same finding is also reported by Sarpintono (2013) in his research in Bengkulu, in which the development of dairy cattle is in growth-stability condition that supports aggressive policy. The condition indicates that the development of beef cattle and dairy cattle farming requires the implementation of SO strategy since both regions have internal strengths and external opportunities.

Rohaeni, Sabran, and Hamdan (2007) reported that tradisional cultivation system, limited supply of water and animal feed, shrinkage of pastures, and disease are the cause of the low population of buffalo in Kalimantan Selatan. Similar condition in the Regency of Grobogan makes the slow reproduction of swamp buffalo (Herianti and Prawirodigdo, 2010). The recommended strategies are application of reproduction and animal feed technology, changing the cultivation and production orientation, and increasing the ownership of buffalo.

Suyitman, Sutjahjo, Herison, and Muladno (2009) in their research ini the Regency of Situbondo reported that economic and socio-cultural dimensions have some quite sustainable indices in affecting agropolitan development. Rohaeni, Hartono, Fanani, and Nugroho (2014) reported that mastery in technology affects the sustainability of beef cattle farming, while environmental quality affects the welfare of breeders. It shows that economy, social and culture, and technology affect the development of subsectors of animal husbandry.

Based on previous studies, it is believed that the discourse of developmental strategies generally integrates various components of strategic environmental factors. The current researches tri to include socio-cultural components as important elements in formulating alternate strategies for developing horse breeding in the Regency of Sumba Barat Daya.

## RESEARCH METHOD

### Research Location, Time, and Samples

This study was held in the Regency of Sumba Barat Daya from November 2015 to July 2016. The location is determined by considering the contribution of bred horse population in 2014 (amounting 9.87%) to the total population of horses in Sumba Island, the role of horse breeding in supporting the sustainability of socio-cultural tradition, and the strategic position of horse breeding for trade and tourism.

Experts involved in this study are 27 people, who were selected purposively by considering their involvement in horse breeding and trade activities, improving the capacity of breeders, formulating regulation in animal husbandry, and making the policies in district and village level. The classification of experts is shown in (Table 1).

### Data Collection

The research data were collected through survey, which was carried out to obtain information dealing with strategic environmental factors for horse breeding development. Nazir (2005) stated that survey was used

**Table 1**
**Classification of experts in this study**

| *No* | *Expert Respondents* | *Region* | *Number* |
|---|---|---|---|
| 1 | Non-Governmental Organization | Regency of Sumba Barat Daya | 1 |
| 2 | House of Representatives | Regency of Sumba Barat Daya | 2 |
| 3 | Agency of Regional Planning | Regency of Sumba Barat Daya | 3 |
| 4 | Animal Husbandry Service | Regency of Sumba Barat Daya | 3 |
| 5 | Tourism Service | Regency of Sumba Barat Daya | 1 |
| 6 | Inter-island trader | Regency of Sumba Barat Daya | 2 |
| 7 | Leader of Cultural | District of Kodi, Bangedo, Balaghar | 3 |
| 8 | Head of District | District of Kodi, Bangedo, Balaghar | 3 |
| 9 | Animal husbandry instructor | District of Kodi, Bangedo, Balaghar | 3 |
| 10 | Head of Village | Pero Batang, Ate Dalo, Waikaninyo, Umbu Ngedo, Waiha, and Wainyapu | 6 |
| | | Total | 27 |

to gain research information and facts on current phenomena, so it could be used to systematically generalize the meanings behind the phenomena.

In-depth interview and focus group discussion are the techniques used in collecting the research data, since they are useful in identifying strength, weakness, opportunity, and threat, as well as formulating the alternate strategies for horse breeding development. This study uses primary data, obtained from experts through questionnaires, and secondary data, obtained from related governmental agencies and written document collections relevant to the research objectives. To simplify its explanation, the research analysis is presented in charts, matrices, and diagrams.

## Data Analysis

SWOT analysis is designed to identify internal factors (strength and weakness) and external factors (opportunity and threat) systematically, so it can be used in formulating strategies to develop horse breeding with socio-cultural concept in the Regency of Sumba Barat Daya.

According to David (2011); Achmad *et al* (2013); Rangkuti (2013); and Massinai *et al* (2013), stages in SWOT analysis are as follows.

1. Internal Factor Evaluation (IFE) uses matrices to analyze strength and weakness in relation with aspects of natural resource, human resource, capital, management, infrastructure, marketing, and institution. External Factor Evaluation (EFE) uses matrices to analyze opportunity and threats regarding aspects of politic/policy, economy, social and culture, technology, and competition. IFE and EFE matrices are assessed through weight that shows the magnitude of influence of each element on the success of horse breeding development. The weighting scale includes 1 (very poor), 2 (poor), 3 (fair), 4 (good), and 5 (very good). The scale of rank includes 1 (insignificant for handling), 2 (less significant for handling), 3 (significant for handling), and 4 (very significant for handling).

2. SWOT matrix is used to formulate alternate strategies. They are obtained from interactions among elements of strength, weakness, opportunity, and threat. The matrix produces four kinds of strategies; they are SO (strengths-opportunities), which uses strength to capture any opportunity, WO (weaknesses-opportunities), which minimizes weakness to use opportunity, ST (strengths-threats), which uses strength to overcome threats, and WT (weaknesses-threats) which minimizes weakness and overcomes threats at once.
3. Determination of focused strategy based on the quadrant position uses SWOT diagram. The quadrant position is determined by the gap between strength score and weakness score in IFE matrix (x axis), and by the gap between opportunity score and threat score in EFE matrix (y axis). The quadrant position shows the type of relevant strategy and is focused on the development of horse breeding in the future.

## RESULT AND DISCUSSION

### Internal Factor Evaluation (IFE)

Internal Factor evaluation is carried out on elements of strength and weakness of the development of horse breeding with socio-cultural concept in the Regency of Sumba Barat Daya. It is implemented through assessment of weight, ranking/rating, and score (Table 2).

**Table 2**
**IFE Matrix on the Development of Horse Breeding in the Regency of Sumba Barat Daya (SBD).**

| *No* | *Internal Factors* | *Weight* | *Rating* | *Score* |
|---|---|---|---|---|
| | *Strength* | | | |
| 1 | Geographical position of SBD | 0,053 | 2,93 | 0,156 |
| 2 | Topographical condition of SBD | 0,045 | 2,78 | 0,125 |
| 3 | Climate of SBD | 0,053 | 2,81 | 0,148 |
| 4 | Availability of pastures | 0,051 | 3,04 | 0,154 |
| 5 | Availability of water | 0,045 | 3,00 | 0,136 |
| 6 | Motivation of breeding horse | 0,052 | 2,93 | 0,153 |
| 7 | Culture of raising horse | 0,053 | 2,96 | 0,158 |
| 8 | Availability of high quality horse seedlings | 0,047 | 3,19 | 0,151 |
| 9 | Horse cultivation system | 0,042 | 2,70 | 0,114 |
| 10 | Availability of horse breeding workforce | 0,051 | 2,78 | 0,142 |
| 11 | Availability of animal health center | 0,046 | 2,44 | 0,112 |
| 12 | Availability of cattle market | 0,050 | 3,04 | 0,151 |
| 13 | Availability of road infrastructure | 0,045 | 2,48 | 0,113 |
| | Sub Total | | | 1,813 |
| | *Weakness* | | | |
| 1 | Availability of cattle feed | 0,039 | 3,56 | 0,137 |
| 2 | Availability of horse population | 0,040 | 3,41 | 0,137 |
| 3 | Knowledge of horse breeding management | 0,037 | 3,52 | 0,130 |

(*contd...Table 2*)

| *No* | *Internal Factors* | *Weight* | *Rating* | *Score* |
|---|---|---|---|---|
| 4 | Knowledge of the benefit of horse meat and horse milk | 0,032 | 3,48 | 0,113 |
| 5 | Frequency of horse meat and milk consumption | 0,028 | 3,52 | 0,099 |
| 6 | Easiness of capital access | 0,032 | 3,52 | 0,114 |
| 7 | System and channel of horse marketing | 0,028 | 3,22 | 0,091 |
| 8 | Support of agricultural institutions | 0,040 | 3,52 | 0,140 |
| 9 | People's participation in tutorials | 0,031 | 2,89 | 0,090 |
| 10 | Availability of instructor | 0,033 | 3,41 | 0,112 |
| 11 | Frequency of tutorial / demonstration plot | 0,025 | 3,48 | 0,087 |
| | Sub Total | | | 1,250 |
| | Total | 1,000 | | 3,063 |

*Source*: Processed primary data (2016)

Based on Table 2, the total score of IFE matrix is 3.063, which comes from the subtotal score of strength element (1.813) and subtotal score of weakness element (1.250). It describes that, internally, the Regency of Sumba Barat Daya has the strength to develop horse breeding with socio-cultural concept. David (2011) stated that the IFE total score between 3.00 and 4.00 indicates strong internal condition, IFE total score between 2.00 and 2.99 indicates average internal condition, and IFE total score between 1.00 and 1.99 indicates weak internal condition.

The strength element with the highest score is the culture of raising horses (0.158), while the weakness element with the highest score is the support of agricultural institutions (0.140). The culture of raising horses has been done from generation to generation involving all family members, where father and children provide the food and the mother provides water for the animals. The low support of agricultural institution is caused by the unavailability of KUD (rural level cooperatives) that functions as distributor of production factors, capital, and marketing, and caused by the weak function of farmer groups due to the lack of control and empowerment from animal husbandry instructor.

## External Factor Evaluation (EFE)

EFE matrix is a tool of strategic management to evaluate elements of opportunity and threat that affect the development of horse breeding. The evaluation is derived from assessment of weight, ranking/rating, and score obtained from the multiplication of weight and rating (Table 3).

Based on Table 3, the EFE result is positive with the total score of 3.232, which is obtained from the subtotal score of opportunity (1.806) and the subtotal score of threat (1.426). It indicates that, externally, the Regency of Sumba Barat Daya has a strong position in responding opportunity and minimizing threat. David (2011) stated that EFE total score between 3.00 and 4.00 indicates a strong response to opportunity and threat, EFE total score between 2.00 and 2.99 indicates average/medium response, and EFE total score between 1.00 and 1.99 indicates weak response.

**Tabel 3**
**EFE Matrix on the Development of Horse Breeding in the Regency of Sumba Barat Daya (SBD).**

| *No* | *External Factors* | *Weight* | *Rating* | *Score* |
|---|---|---|---|---|
| | Opportunity | | | |
| 1 | Output policy for cattle in SBD | 0,055 | 3,33 | 0,184 |
| 2 | Budget policy on horse development | 0,056 | 2,96 | 0,166 |
| 3 | Horse Seedling Aid | 0,060 | 3,74 | 0,224 |
| 4 | Market demand for horses | 0,066 | 3,59 | 0,237 |
| 5 | Price stability of horse as commodity | 0,058 | 3,15 | 0,182 |
| 6 | Contribution of horses to cultural tradition | 0,065 | 3,67 | 0,239 |
| 7 | Sustainability of local socio-cultural tradition | 0,063 | 3,11 | 0,197 |
| 8 | Appeal in tourism sector | 0,064 | 3,15 | 0,201 |
| 9 | Application of disease prevention technology | 0,059 | 2,96 | 0,176 |
| | Sub Total | | | 1,806 |
| | *Threat* | | | |
| 1 | Policy on horse development in SBD | 0,037 | 3,15 | 0,116 |
| 2 | Horse theft in SBD | 0,046 | 3,07 | 0,142 |
| 3 | Access to price information of horse | 0,037 | 2,89 | 0,107 |
| 4 | Partnership activity in horse breeding development | 0,038 | 3,22 | 0,121 |
| 5 | Availability of horse product processing industry | 0,033 | 3,37 | 0,111 |
| 6 | The use of reproduction technology in SBD | 0,035 | 3,15 | 0,110 |
| 7 | The use of cattle feed technology in SBD | 0,036 | 3,22 | 0,115 |
| 8 | The use of horse product processing technology | 0,030 | 3,07 | 0,091 |
| 9 | The use of waste processing technology | 0,037 | 2,81 | 0,104 |
| 10 | Technology mastery in breeder level | 0,047 | 3,44 | 0,161 |
| 11 | Frequency of horse disease in SBD | 0,043 | 3,48 | 0,151 |
| 12 | Contribution of other cattle commodities | 0,036 | 2,67 | 0,097 |
| | Sub Total | | | 1,426 |
| | Total | 1,000 | | 3,232 |

*Source*: Processed primary data (2016)

The biggest opportunity of the Regency of Sumba Barat Daya is the contribution of horse breeding to local cultural tradition (0.239). The opportunity must be maintained to support the development and the sustainability of horse breeding, the sustainability of local cultural tradition, and at the same time to make room for improvement for tourism. The threat that should come to attention is the mastery of technology in breeder level (0.161). The low mastery of technology gives and adverse effect on the effort of breeders to increase the population and productivity, to consume the available resource, and to improve the added value of horse breeding products and commodity.

## SWOT Matrix

SWOT matrix is used to formulate alternate strategies in developing horse breeding with socio-cultural concept in the Regency of Sumba Barat Daya. It is derived from interactions among strength, weakness, opportunity, and threat elements. The opinions of experts in the FGD are used as the foundation in formulating various alternate strategies. The SWOT matrix of horse breeding development in the Regency of Sumba Barat Daya is presented in (Table 4).

Based on Table 4, there are four alternatives of strategy that can be implemented based on their weighting; they are SO strategy through the use of strength of the Regency of Sumba Barat Daya to gain

**Tabel 4**
**SWOT matrix on the Development of Horse Breeding with Socio-Cultural Concept.**

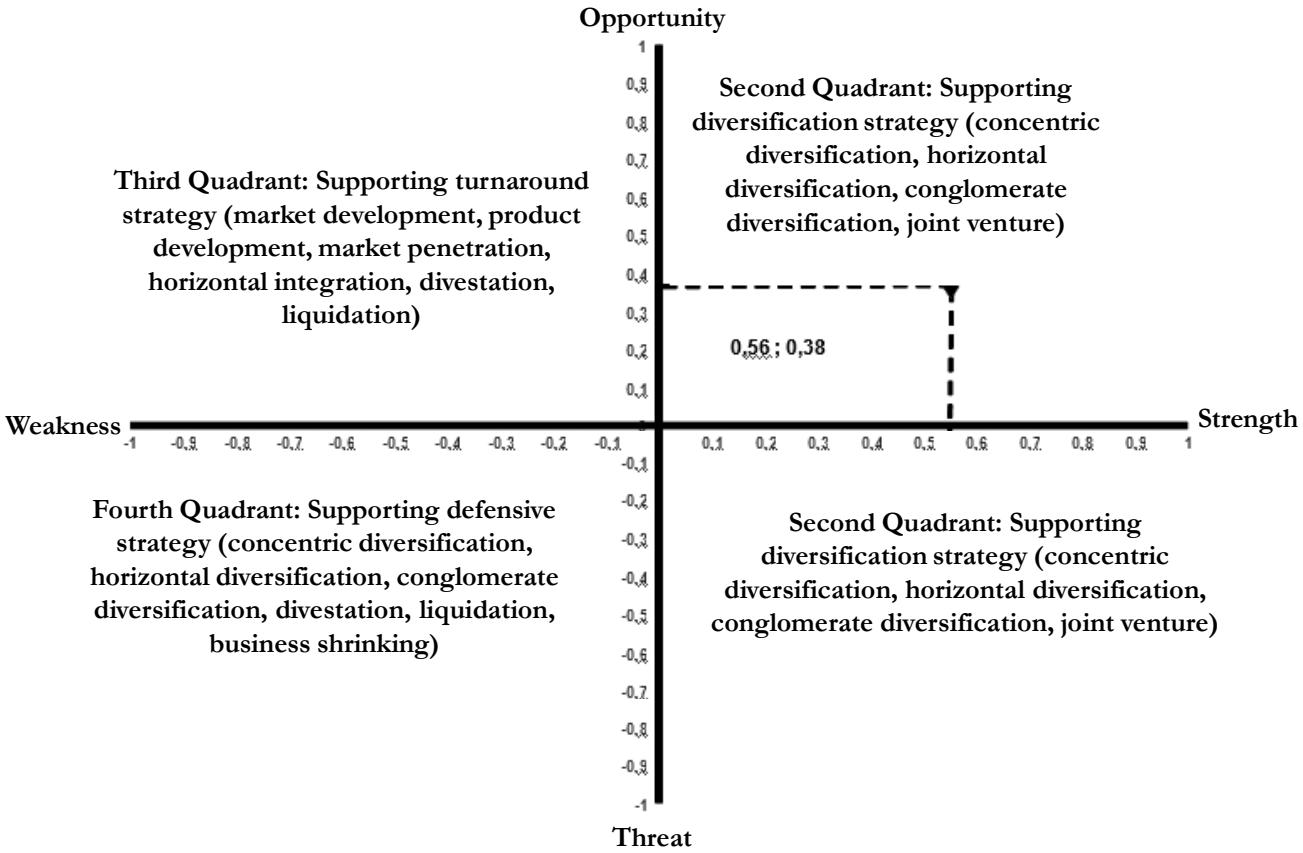
| | *Internal Factors* | |
|---|---|---|
| | *Strength (S)* | *Weakness (W)* |
| | *Strength – Opportunity (SO)* | *Weakness – Opportunity (WO)* |
| External Factors Opportunity (O) | 1. Increasing the population and scale of horse horse farm ownership (S1, S8, S13, O1, O3)<br>2. Optimizing functions of land, water, and horse cultivation system (S3, S7, S9, S10, S11, O8)<br>3. Promoting aptitude competition (horse race) and horse contest (S5, O5, O9)<br>4. Developing horse market (S2, S6, S12, O6, O7)<br>5. Improving promotional effort and making Pasola as the brand of distinguished cultural attraction and cultural tourism destination (S4, O2, O4)<br>Weight 3,619 | 1. Improving the fair distribution of seedling aid, surveillance, and regional planning on horse breeding development areas (W3, W7, O3, O5, O8, O9)<br>2. Introducing kinds of cattle feed / superior cattle main diet according to the characteristic of the region (W2, W4, O2)<br>3. Campaigning the benefit of horse meat and milk and the role of horses in socio cultural activities (W6, W8, W11, O4)<br>4. Developing breeder groups, Rural cooperatives, and partnership with banks in providing production material, capital, and marketing (W1, W5, W9, W10, O1, O7)<br>5. Limiting the output of horses (W3, O6)<br>Weight 3,056 |
| | *Strength – Threat (ST)* | *Weakness – Threat (WT)* |
| External Factors Threat (T) | 1. Improving the knowledge and technical skill of horse breeders and technological mastery (S1, S4, T1)<br>2. Optimizing proper technology and research partnership in animal husbandry (S7, S9, S11, S13, T2, T6, T8, T10, T12)<br>3. Promoting business partnership in horse breeding (S8, T4, T9, T11)<br>4. Developing horse-commodity-based livestock agroindustry (S5, T7)<br>5. Optimizing the role of government in horse breeding development and local cultural tradition preservation (S2, S3, S6, S12, T3, T5)<br>Weight 3,239 | 1. Increasing the number and the quality of animal husbandry instructor and intensifying business mentoring of horse commodity (W7, W9, W10, T4, T9)<br>2. Improving animal husbandry tutorial and technology transfer (W1, W6, W8, W11, T1, T8, T1O)<br>3. Preserving the use of horses for dowry, sacrificial animal, and Pasola (W2, W4, W5, T5, T11)<br>4. Introducing animal husbandry technology adoptable by breeders (W2, W6, T6, T7, T12)<br>5. Optimizing disease prevention and treatment and improving security for breeders (W3, T2, T3)<br>Weight 2,676 |

opportunity of developing horse breeding with socio-cultural concept (weighing 3.619), ST strategy through the use of strength of the Regency of Sumba Barat Daya to avoid the impact of threat on the development of horse breeding with socio-cultural concept (weighing 3.239), WO strategy through the effort of minimizing the weakness of the Regency of Sumba Barat Daya by using the opportunity of developing horse breeding with socio-cultural concept (weighing 3.056), and WT strategy through the effort of minimizing the weakness of the Regency of Sumba Barat Daya while reducing threats on the development of horse breeding with socio-cultural concept (weighing 2.676).

## SWOT Diagram

The quadrant position in the SWOT diagram is an indicator to determine the focus of the developmental strategy. The difference between strength factor and internal weakness (IFE matrix), as well as opportunity factor and external threats (EFE matrix), will place x and y axis in the SWOT diagram. The combination of x and y axis is the focus of developmental strategy for horse breeding with socio-cultural concept in the Regency of Sumba Barat Daya. The result of SWOT diagram analysis is described in (Figure 1).

Based on Figure 1, the total score of internal and external factors on x and y axis is located in the first quadrant (0.56, 0.38). It gives a picture that the development of horse breeding with socio-cultural concept in the Regency of Sumba Barat Daya is in favorable position because it has strength and opportunity.




**Fgure 1: SWOT Diagram of Horse Breeding Development with Socio-cultural Concept in the Regency of Sumba Barat Daya.**

Marimin (2004) and Rangkuti (2013) stated that the first quadrant needs the support of aggressive strategy (growth oriented strategy), which includes market development, product development, market penetration, vertical integration, and concentric diversification.

The first quadrant of the development of horse breeding with socio-cultural concept in the Regency of Sumba Barat Daya must focus on SO strategy, which uses strength to gain optimum opportunity. This result is similar to Suresti and Wati (2012), Achmad *et al* (2013), and Sarpintono (2013) on the research of dairy cattle and beef cattle. However, it differs from Lamba (2009). The gap is caused by difference of capability of each region in responding strategic environmental factor, not to mention the different elements involved in the assessment of strategic environmental factors.

The SO strategy in the context of development of horse breeding with socio-cultural concept in the Regency of Sumba Barat Daya must be objected to improvement of added value of product and service that can be implemented through the control and management of production factors, entrepreneurial management system, human resource, and market components.

## CONCLUSION

Based on the result of this study, it can be concluded that the development of horse breeding with socio-cultural concept in the Regency of Sumba Barat Daya supports aggressive strategy through the implementation of SO strategies; they are increasing population and ownership of horse horse farm, optimizing the function of land, water, and cultivation system, promoting more aptitude contest (horse race), horse contest, establishing horse market, encouraging promotional events, and making Pasola as the brand of distinguished attraction and cultural tourism destination.

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