

Strategy of the Sustainable Development of Beef Cattle in Tanah Laut District, South Kalimantan, Indonesia

Eni Siti Rohaeni¹, Budi Hartono²

¹Researcher at Assessment Institute for Agricultural Technology South Kalimantan, Jl. Panglima Batur Barat No. 4 Banjarbaru, Kalimantan Selatan, Indonesia

²Faculty of Animal Husbandry, University of Brawijaya, Jl. Veteran, Malang, Indonesia

Abstract: *The research aims at analyzing the strategic of beef cattle's sustainable development in Tanah Laut as the centre of beef cattle in South Kalimantan. The research was conducted in Tanah Laut, South Kalimantan, Indonesia. The research method was survey. The data analysis applied the opportunity analysis. The strategies conducted were: the development of integrated beef cattle to meet the market demand with business oriented for public livestock business; the increase of fund support from the government/ personal for the cattleman; the increase of intensive training and counseling about the efficient technology of livestock; improving the cooperation between the related instances in term of the use of land; improving the utilization of the processing the agricultural/ husbandry wastes technology which give more values; improving the cattle productivity by applying the efficient technology (feed, breed, management); providing the superior bull for improving the quality of the breeding.*

Key words: *beef cattle, farming system, sustainability*

I. Introduction

The population of beef cattle in Indonesia in 2013 is about 16.6 million spread in several provinces [1], and most of the beef cattle are bred as the public livestock business with the scale about 1-5 cattle/family. Thus, the cattle play a role in supporting the farm, savings, the social status even the hobby.

Beef as the main product produced by the beef cattle is the nutritive foodstuff and the economical commodity which has the strategic value. The need of beef especially beef cattle can not be fulfilled from the domestic production. Within a period of five years, from 2004-2008, Indonesia still imports about 3,280 and 348,400 of the cows and calves seeds in a year. Furthermore, the importing of beef is increased 8.67% in a year even the import of beef in 2008 reaches the amount of 45,708 ton [2].

Thus, the need of beef in Indonesia is still fulfilled by other country and it can be a chance and a threat. Therefore, it needs an effort to reach the target of beef self-supporting by relying on 5-10% import of beef or no beef import at all. The project result of the beef need in 2013 from the agricultural ministry is 549,700 ton. 474,400 ton of beef is fulfilled by domestic beef cattle, while for the rest, 80,000 ton (14.6%) should be imported. The beef import contains 32,000 ton frozen beef and 267 cattle as the same as 48,000 ton beef [3].

The beef self-supporting program is proclaimed in 2014 after getting failed in 2005 and 2010. This is one of the ministry self-supporting programs beside rice, corn, soybean, and cane. Beef self-supporting program aims at decreasing the dependency of beef import by developing the domestic potential [2].

The beef cattle has a big role since it is as the source of animal protein, producing fertilizer and energy, employee, revenue resources, a business opportunity and as the savings for the owners (which can be sold quickly when the owners need money). Therefore, the beef cattle are important for the cattleman and they support the household need, they also give the relief to the owners.

South Kalimantan is one of the provinces in Indonesia which belongs to the east side of Indonesia where the agricultural sector becomes the most important resource for its populations. It is proved by the 22.34% populations who become a cattleman. One of the efforts done by the cattleman in South Kalimantan is by breeding the beef cattle although it is still a subsystem.

SWOT analysis is one of the systematic tools to analyse the situation. In conducting SWOT analysis, it needs to consider the internal factors (IFAS: internal factors strategic) and external factors (EFAS: external factors strategic). Internal factors need to be elicited are strength and weakness of a business while the external factor needs to be elicited are opportunity and threats which may occur [4].

The result of the research aims at analysing the strategy of sustainable development of beef cattle in Tanah Laut as the centre of beef cattle in South Kalimantan, Indonesia.

II. Methodology

Time and location of the research

The research was conducted on July-August 2012. The set of location was chosen by Multistage Sampling Method. The research was conducted in South Kalimantan considered it has the largest beef cattle in Kalimantan in 2011 as 138,691 cattle or about 30.09% of total population of the beef cattle in Kalimantan. Besides, the area is a central of the beef cattle i.e. Bali cattle [2]. Tanah Laut was picked up by some other consideration i.e. the beef cattle are the best commodity, the beef cattle are one of the farmers' livelihood, it is an central area of beef cattle with 57.291 cattle or about 41.31% of total of beef cattle in South Kalimantan, its is as the superior cattle in South Kalimantan.

Research method

The method of the research is a survey by collecting the primary and secondary data. The primary data were collected by interviewing the respondent, cattleman and expert and also observing the field in order to get the information needed. The secondary data were used to complete the discussion. They were collected from the institution, related offices and literature study. There were 100 sample of the respondent from the cattleman picked up by proportionate random sampling. Furthermore, there were 24 experts chosen purposively i.e. Livestock Office in province and District level, academics/ lecturers, Animal Health Centre (puskesmas), Agricultural counseling Center staff (BPP), Agricultural extension Center (PPL), Veterinary Disease Investigator Center (BPPV), Superior Breedings Center (BPTU) and Animal Husbandry Junior High School (Snakma).

Data analysis

The data were analyzed by using the descriptive and qualitative approach. The strategic arrangement and the beef cattle development direction were analyzed by using SWOT analysis. The SWOT analysis is one of the systematic tools to analyse the situation. The use of the SWOT analysis need to consider the internal factors (IFAS : internal factor strategic) and the external factors (EFAS : external factor strategic). The internal factors which have to be elicited are the strength and the weakness of a business while the external factors are opportunities and threats which may occur [4]. The formulation method of the beef cattle development strategy in Tanah Laut refers to the strategic formulation technique (SWOT analysis) developed by [4], by three analysis stages i.e. input, process, and decision stages. The determination of the priority scale strategy is done by arranging the opinion matrix to decide the level of importance every decision element presented in every hierarchy level of the decision.

III. Results And Discussions

The general condition of Tanah Laut

South Kalimantan is one of the provinces in Borneo with an area about 37,530.52 km² or approximately 6.98% of total area of Borneo and 1.96% of total Indonesia area. The location is between 114°19'13"-116°33'28" East longitudinal and 1°21'49"- 4°10'14" North latitudinal. Geographically, it is in the north side of Borneo with 114°30'20" - 115°23'31" west longitudinal-115°23'31" east longitudinal and 3°30'33" north latitudinal. The area is 3.631,35 km² (Governor decision) or approximately 9.71% of Kalimantan area. Tanah Laut with Pelaihari as the capital city is bordered by Java seas for the west and north sides, Tanah Bumbu district on the east side and Banjar as the border for south side. Tanah Laut consists of 11 subdistricts. The largest subdistrict is Jorong with the total area 628.00 km² [5].

Based on the type of the land use, it is known that there are 75.884 ha (24.49%) of rice field and 233.279 ha (75.51%) dry land which mostly use as the agricultural field (44.0%) i.e rubber commodity, palm oil, clove, etc [5]. The agricultural area affects the development of beef cattle where it is used as the area of food source in order to get the grass and other agricultural wastes.

Beef cattle profile

Tanah Laut population are working in agricultural; crops commodity, horticulture, farming, forestry and animal husbandry (47.41%). Populations who work in subsector of livestock are about 3.960 populations or about 2.8% of the working population but there is no further information about what animal they breed. According to the Table 1, it informs us that the agricultural sector is the important one in Tanah Laut. The economical structure in agricultural sector is the highest level with the percentage of 28.44%, the next is trade (22.77%) and mining (10.79%).

The high level of agricultural in economical structure in Tanah Laut informs that the agricultural sector is quite large and dominant in supporting the populations economic condition. The economic condition in Tanah Laut in 2010 increase 5.98% (estimation number). This increment is higher than the development in 2009 which reaches 5.77% [5]. The value of economical structure in Tanah Laut for agricultural sector is lower than

province level which can reach 32.8% and Borneo level which reaches 46.6%. Tanah Laut is one of the districts in South Kalimantan which is known as the centra of superior beef cattle and they are distrubuted to other districts in the South Kalimantan. The cattle population in Tanah Laut is shown in Table 1. The largest population of the beef cattle is in the Pelaihari and Panyipatan subdistricts.

Table 2 it is known that the highest beef cattle which are bred in household is 56.732 cattle or 99,02%, or about 41,31% of total beef cattle bred in North Kalimantan. The beef cattle mostly breed semi-intesively (69,44%) where the cattle are in the cage at the afternoon untill morning and they are grazed in the daylight in a field.

Tabel 1: Beef cattle populations in 2012 in Tanah Laut district

No.	Subdistricts	Beef cattle	Percentage (%)
1	Pelaihari	15,233	24.5
2	Bajuin	5,350	8.60
3	Takisung	11,565	18.6
4	Panyipatan	11,409	18.3
5	Jorong	3,867	6.21
6	Batu Ampar	8,114	13.0
7	Kintap	1,890	3.04
8	Tambang Ulang	1,921	3.09
9	Bati-Bati	2,027	3.26
10	K u r a u	815	1.31
11	Bumi Makmur	44	0.07
	Total	62,235	100.00

Source: [6]

Based on the interview conducted and the data analysis, it in known that the respondents breed the beef cattle intensively 63.0% and the rest 37.0% semi-intensively, and there is no cattleman who breeds extensively. However, f we pay attention to Tanah Laut, there are cattleman who breed their cattle traditionally, extensively by letting the cattle paly in the montain about 7.27% [7]. Most of the cages are group cages (45.6%), and the rest is the cages with divider and individual cage. The cattleman has been aware about the importance of the cage, although they have a small number of beef cattle, between 2-7 cattle, the breeding has been done intensifely.

Table 2: Total beef cattle bred by householf, companies and traider in Tanah Laut on 1st June 2011

No	Type of breeding cattle	Total	Percentage (%)
1	Household cattleman	56.732	99,02
2	Company incoorporated	59	0,10
3	Trader	500	0,87
4	Etc	-	-
	Total	57.291	100,00

Source : [7]

Table 3: The various beef cattle reproduction and mating processin the research location

No	Description	Average score
1	First mated Age (years)	2,49
2	Age at first birth (years)	3,47
3	An-estrus post partum (APP, days)	63
4	Days open (days)	83
5	Calving interval (months)	12,98
6	S/C IB	1,47

Based on the analysis result from the respondents interviewed, it tells that the various beef cattle reproduction is presented in Table 3. Most of the most cattle bred by the cattlemand are local cattle i.e. Bali cattle, Onggole Hybrid (PO), and crossbreed between them. The result shows that beef cattle in research location are in the good condition showed by the average age in the first mating is 2.49 years old, first age when birth a calf are 2.47 years old, anestrus post partum (APP) 63 days, days open 83 days and calving interval 12.98 years and servise per conseption (S/C) IB (1.47 and S/C natural (1.40). This condition is the expected condition where the breeding process can run well. The lusting period is one of the indicators to get a short range of birth.

Internal and external factors identification

Based on the survey and deep interview, there are some results of internal and external factor identification of beef cattle business in Tanah Laut district as follows:

1. Internal Factors

1.1. Strengths

- The availability of spacious field of the beef cattle business as the field in one of the important assets which has to be owned as the cowshed location or the place to get the livestock feed.
- The availability of human resources/employees as the business executants, the availability of human resources have to be offset by its quality to develop the business well.
- High motivation of the cattlemen in running their business, which can be seen from their consistencies in running their business through years though the selling price was falling down once in 2010. Another motivation is seen from their effort in their improvement in maintaining, from the traditional or extensive into semi-intensive or even the intensive one.
- Tanah Laut district is a cow central base / area. In South Kalimantan, it is known as a central base of beef cattle. It is a beef cattle source which supplies beef cattle to other regencies which is supported by weekly animal market.
- It is supported by other businesses such as food crops, *palawija* crops, vegetables, fruits, and farm crops. The other agriculture business is by providing the cattle feed in the form of agricultural waste at the harvest time. The fertilizer or manure has an economic value as it can be sold or used by themselves for their agricultural business run so that they can reduce the purchase of organic fertilizer.
- The strategic geographical location/ of Tanah Laut as it is located near to the capital city of the province and it is being a crossings track to the other regencies, which are Tanah Bumbu and Kotabaru. It is adjacent to the sea, so that it has an access to the harbor which is used for the economy development.
- It is supported by the available institutions, such as farmers groups (*kelompok tani*), farmers groups affiliation (*gapoktan*), and the cooperative. The availability of the mentioned institutions gives a positive effect to the beef cattle business development. Some benefits can be obtained by the farmers through the availability of the institutions are the institutions are the information sources both technically and non-technically, farmers can coordinate / collaborate with the government or private institutions to support the beef cattle business which is run collaboratively, the institutions ease the farmers to get an activity through either aid or loan or institutional guidance.
- The availability of adequate technical / medical personnel in the area. Technical or medical personnel is adequate enough in this area as there is an animal health centre (*Puskesmas*), the availability of veterinarians who are on duty and live in the central area to serve the farmers' needs of their cattle health. The availability of inseminator either from the government or themselves. The District Institution of Agricultural Counseling Executor (BP3K) which is available in every sub-district, in which there are agricultural counselors who has their own are to give field guidance.
- The availability of agricultural waste can be used as the cattle feed. The Tanah Laut farmers often face the difficulties to get cattle feed, especially in the climax of the dry season. By the availability of the different agricultural business, they utilize the agricultural waste as the cattle feed although most of them are not implementing the processing or preservation yet.
- 5 year experience in the livestock. Experience is one of the best teachers, and the farmers can learn and get any knowledge or local wisdom from their experiences. The longer experience in the livestock, the better effect in the business either technically or non-technically.
- The availability of good enough infrastructures. The available infrastructures are good enough, especially for the telecommunication, transportation, water resources, and the drainage. Road is the most important infrastructure. By having a good quality road, the transportation can be used for all of the activities, including agricultural business.

1.2. Weaknesses

- The productivity of the cattle is relatively low. Generally, the productivity of the cattle is low, especially for the weight of the cattle growth.
- The knowledge or skills of the cattlemen are relatively low. Although they have a long enough experiences in this field, they do not develop their knowledge or the implementation of the knowledge further.
- The use of un-innovative technology. It is related to the previous factor that is the low knowledge/skills of the cattlemen. Technology used by them is generally the old technology such as feeding by using grass or agricultural waste.
- Most of the feed is still dependent to the nature and season. Most of the green cattle feed is still dependent to the natural grass, although the cattlemen have a field to plant the excellent HMT. The availability of natural grass is highly affected by the season. In the climax of the dry season, it is very

hard to get the natural grass, so that makes the cattlemen try to find the grass outside the village or sub-district or even to outside the district for some particular area by renting a truck collectively.

- The use of production factors is relatively low or not optimal yet. It is related to the availability of the fund that makes the use of production factors is relatively low. For example, the cattlemen give bran as the supplementary feed in a limited amount, the use of agricultural waste without processing or improving its quality. The cattle feces used as the fertilizer is not cultivated. It is only left for a long time.
- The limited amount of the supplementary feed that is available in the area. The supplementary feed given by the cattlemen is in the form of bran. The availability of the bran is also rare enough because of the competitive needs of the bran for chickens or ducks. The cattlemen often use their own bran to be rice for themselves when they grind their rice plants.
- The limited funding. In running the agricultural business, the main problem is the limitedness of the capital.

2. External Factors

2.1. Opportunities:

- The demand from the market to the beef cattle product. The relatively high market demand to the beef cattle product is a realized business chance that makes the cattlemen keep running their business.
- The development of science and technology. The Research Institutions or Universities always produce any innovative technology that can be used for the beef cattle business development.
- Private institutions supports. Private institutions that can be involved can be in the form of financial institutions or corporations who cooperate or partner with the cattlemen. The financial institutions give installment facility, if the corporation can play a role as the core while the cattlemen as the plasma through profit sharing system.
- Government supports. Either central or local government has given supports to the beef cattle business development, especially for supports in PSDSK program through various cattle procurement, productive female-cows rescue, incentive feed for productive female-cows or institutional guidance, trainings, and installment loan with low interest.
- Stable beef cattle price. Now, the beef cattle price is relatively stable even high. It makes the cattlemen is very motivated to run the business. The fluctuating price makes the cattlemen were not motivated to run the business as once happened when the cattlemen have to sell their cattle cheaper than the price when they buy the cattle itself.
- The availability of animal market. In Tanah Laut district, the animal market is available in Monday. In 2012, the transactions inside is about 15.000 animals. The sellers or buyers are not only the inhabitants of the district but also the other regencies, while in the other regencies in South Kalimantan, the animal market is not developed or we can say that there is no animal market there.
- Local Autonomy (OTDA) supports. The local autonomy affect the beef cattle business development as in Tanah Laut District the business is not only dependent to the programs of the central government but also from the province and district.

2.2. Threats

- The entry of cattle from outside the region and inter-regional competition. South Kalimantan, still bring in cattle from outside the province of NTB and including East Java. If a lot of cattle coming from these areas with a cheaper price then it would disrupt the stability of the cattle price. Besides, the expenditure is greater than income of the livestock. Tanah Laut is a seeds central in South Kalimantan, it is not only a chance but also a threat if it is not accompanied by a better cultivation.
- Field diversion. In several years, there were some field diversion for residences, mining, and agriculture business such as oil palm and rubber. The fields were originally used for food crops, diverted to farm crops, especially for rubber and oil palm plantations. The diversions were also conducted into mining that makes the cattlemen could not run their business in the location or it would give some negative effects such as flood, if there were no reclamations.
- Reproduction disorders. Threats faced by the cattlemen are a disturbance to the cattle reproduction are hypofunction and silent heat. Hypofunction is caused by the quality of the feed that is still less of quantity and quality. Silent heat is also a problem to the development of cattle business.
- Deadly diseases. Diseases that may attack and cause death are bloating and dysentery in calves. While in the adult cows is Jembrana. This condition is one of the threats.
- Productive female cutting. Productive female cutting is still going on in this district, as the cattlemen who have livestock cannot be prevented from selling their livestock if they require the funding. Based

on the information in RPH, there are about 50-70% cattle that are cut are female and in the productive ages or even pregnant.

- Quality of the seeds. The improvement in the cattle quality is only limited to mating either with IB or natural mating. Other efforts to improve the quality of the calves is not been done for instance selection, as well as the local government that did not have UPT of cattle breeding. This condition is a threat to the survival of the cattle business.
- Cattle theft. One of the threats faced by the cattlemen is cattle theft, so they should be vigilant and protect the cattle regularly and in rotation if it is in the shed area / group. However, for them whose shed is near to their own home or garden, the responsibility to protect the cattle is taken by themselves personally.
- Climate changes. There were significant climate changes in the last few years. The climate changes affected the beef cattle business as one of the feed resources is the agricultural waste. Climate changes caused a time shift in planting season, or even the cattlemen cannot plant of harvest.
- Fluctuations in feed availability due to the season. The fluctuations in the availability of feed is one of the threats are quite influential. Because if both quantity and quality of feed is low, it will affect the productivity of the cattle.

Evaluation of internal and external factors

Based on the identification of internal and external factors, then there is an evaluation metrics conducted. The result of the evaluation obtained is that the strengths value is greater than the weaknesses; it shows that farmers have greater strengths than the weaknesses in the development of cattle sustainably. On external factors generated that the chances value is greater than the threats faced, this also shows a positive factor towards the development of the beef cattle business. Based on the calculation of the data shown in Tables 4 and 5, it is known that the position of beef cattle business in Tanah Laut district is in the position of the first quadrant where the value of the difference of internal factors and external factors are positive , i.e. positive (0.72 and 0.11). The position of the beef cattle business is located in the first quadrant indicates that the beef cattle business in Tanah Laut district is a strong and full of chances business. The strategy recommendation that was given is Progressive strategy, means that the beef cattle business is in a fit and steady condition, so it is possible to continue to expand (expansion), to increase the growth and achieve maximum progress.

Table 4: Evaluation metrics of internal factors of beef cattle development in Tanah Laut

No	Internal Factors	Value	Rank	Score
Strengths				
1	The availability of spacious field	0.06	3	0.18
2	The availability of human resources/employees	0.06	3	0.18
3	High motivation of the cattlemen to run their business	0.07	4	0.28
4	Cow central base/area	0.06	3	0.18
5	Other agricultural businesses support or availability	0.05	3	0.15
6	Strategic geographical location	0.05	3	0.15
7	Supported by the available institutions, such as farmers groups, farmers groups affiliation, and the cooperative	0.06	3	0.18
8	The availability of medical and technical personnel in the area	0.06	3	0.18
9	The use of agricultural waste as the cattle feed	0.05	3	0.15
10	5 years experience in the livestock	0.06	3	0.18
11	Good infrastructures	0.06	3	0.18
		0.64		1.99
Weaknesses				
12	The cattle productivity is relatively low	0.05	2	0.10
13	The knowledge / skill of the cattlemen is relatively low	0.06	2	0.12
14	The use of un-innovative technology	0.05	2	0.10
15	Most of the feed is dependent to nature and season	0.05	2	0.10
16	The use of production factors is relatively low or not optimal yet	0.05	2	0.10
17	The limited amount of the supplementary feed that is available in the area	0.05	2	0.10
18	The limited funding	0.05	2	0.10
	Total	0.36		0.72

Table 4: Evaluation metrics of internal factors of beef cattle development in Tanah Laut

No	Internal Factors	Value	Rank	Score
	Internal Factors Total	1.00		1.27
	Strengths and weaknesses differences			0.72

Table 5: Evaluation metrics of external factors of beef cattle development in Tanah Laut

No	External Factors	Value	Rank	Score
Opportunities				
1	Market demand of beef cattle product	0.08	4	0.32
2	Science and Technology development	0.07	3	0.21
3	Government institutions supports	0.07	3	0.21
4	Private institutions supports	0.06	3	0.18
5	The stable cattle price	0.07	3	0.21
6	The availability of animal market	0.07	4	0.28
7	OTDA support	0.06	3	0.18
		0.48		1.59
Threats				
8	The entry of cattle from outside the region and inter-regional competition.	0.06	3	0.18
9	Field diversion	0.05	3	0.15
10	Cattle reproduction disorders	0.06	3	0.18
11	Deadly disease	0.07	3	0.21
12	Productive female-cows cutting	0.06	3	0.18
13	Seeds quality	0.07	4	0.28
14	Cattle theft	0.05	2	0.10
15	Climate changes	0.05	2	0.10
16	Fluctuations in feed availability due to the season	0.05	2	0.10
	Total	0.52		1.48
	External Factors Total	1.00		3.07
	Chances and Threats differences			0.11

Strategy formulation

Based on the evaluation results of internal and external factors in Tables 6 and 7, which have been analyzed then subsequently used to construct business development strategies formulations in beef cattle business in Tanah Laut district. Furthermore, the results of the SWOT metrics analysis are presented in Table 6. Results of development strategies formulations of sustainable beef cattle business in Tanah Laut district can be formulated several strategies, they are:

a. SO strategy (Strengths – Opportunities), is:

The development of integrated beef cattle business to meet the business oriented market demand to public livestock business, can be achieved through several programs, they are:

- Areal development and location centralization which are differed based on its business purposes, i.e. seeds area (qualified seeds sources), production area (calves sources to be fattened), and or other purposes with some considerations according to the cattle density in one area. An area which has a high cattle density will be suggested to conduct the business intensification program while the low or medium density one the development program will be suited to the human resources skills or the available natural resources.
- The development of integrated area between crops and cattle which is business oriented and public livestock based. For example, an area which get a priority of crops commodities development will be integrated to the cattle like what is integrated in the farmers groups of oil palm and cows integration.

b. WO strategy (Weakness-Opportunities):

1. Increase funding support either from government or private institutions for the cattlemen through several programs, they are:
 - Cooperation or business partnerships with government / private / BUMN either for profit sharing or installment loan.

- Reinforcement of institutional funding either through a financial institution or a group of low interest loan from the government institutions or banks
2. Intensive Training and Counseling improvement about suitable livestock technology to the specific locations through as follows:
 - Training and Counseling to the cattlemen or businessmen in village, sub-district or higher, accompanied by the Demonstration Plots (*demplot*)
 - Guidance and Training for the technical and medical personnel for seeds, feed, and cattle health management aspects to increase their skills.
 - Institutional guidance in the village to be more independent, creative, and cooperative with any parties.
- c. ST strategy (Strengths – Threats):**
1. Improve the cattle health management both through services and counseling through as follows:
 - Increase the monitoring and prevention to the cattle disease and also the vaccination
 - Improve the monitoring and quarantine to in and out cattle.
 2. Improve the cooperation inter-institutions involved in field use through as follows:
 - Socialization, coordination, and cooperation of inter-institutions in field use matters and the absence of contradictory policy.
 - Make a policy of permit to the cattlemen if in an area there is a state forest as a cattle feed resources.
 3. Improve the use of agricultural / cattle waste processing technology which gives additional value through as follows:
 - Developing specific integration pattern of the location based on the developed commodities of the area.
 - The availability of adequate tools and infrastructures to support the agricultural and cattle waste processing business.
 - Group guiding to cooperate in production and marketing of the products of agricultural and cattle waste processing.
- d. WT strategy (Weakness and Threats):**
1. Improve the cattle productivity by implementing the suitable technology (feed, calves, and management) through as follows
 - Information, demonstration plots, and counseling deployment about suitable technology of feed, calves, and management aspects which is technically can be done by the cattlemen, which is prosperous economically and can be accepted in the society socially.
 - Improvement in calves quality can be done through IB to produce the better descendants genetically.
 2. The availability of superior male-cows to improve the available calves as it is deployed to the cattle pots. The procurement of superior male-cows can be conducted by the government or group so that the cattlemen can conduct natural mating to their female-cows with qualified male-cows.

Some of the husbandry research is reported using the SWOT analysis approach such as research reported by [8], [9], [10], [11], [12]. Other researches about the strategy of the beef cattle development reported by [9], based on the SWOT analysis, it is known that the strength (1,92) and opportunity (1,91) is higher than the score of the weaknesses (0,64) and threat (0,70) is resulted as the strategy which support the development of the beef cattle in Wonogiri. [10] reports that the strategies of the development of livestock subsector in Boyolali district are: the increasing the production of livestock commodity and its processed products, the reinforcement of agroindustrial with the commodity/ livestock product base, the reinforcement of fund for the catteman and livestock agroindustrial, the development of marketing for the livestock commodity and its processed products, improving the role of KUD and GKSI to support the livestock subsector performance and the development of feed innovation. The research reported by [12] is based on the external evaluation matrix result, the opportunity and threat factors 1,85 is 0,70. It shows that the utilization of brand as the feed has the big opportunity to help the breeding of beef cattle in Bantaeng district. [13] in his research reports that the strategies used in developing the beef cattle in Madura is the collaboration support from government and investors. He suggests that the supporting fund, counseling, training and introduction green crops as the high quality feed that can be planted among the main crops.

Table 6: SWOT analysis result of the beef cattle development strategy in Tanah laut

Internal Factors	<p>Strenghts</p> <ul style="list-style-type: none"> • The availability of field • The availability of human resources • The high motivation of cattleman • The cattle area base • Support from other agricultural business • Geographical area • The availability of technical and medical personel • The availability of agricultural wastes • The experience in breeding • The availability of good infrastucture 	<p>Weaknesses :</p> <ul style="list-style-type: none"> • The low productivity of cattle • The limited fund • The lack of cattleman knowledge and skill • The limited technology • The dependency of feed to the nature and weather. • The use of production factor is still low • The limited extra feed
External Factor		
<p>Opportunities :</p> <ul style="list-style-type: none"> • Market demand • Development of technology • Government support • Personal support • The stability of cattle price • The availability of animal market • The support from OTDA 	<p>SO :</p> <ul style="list-style-type: none"> • The integrated development of beef cattle to fulfill the market demand with business oriented for public livestock business 	<p>WO :</p> <ul style="list-style-type: none"> • The increasement of fund support from government/ personal for the catteman • The improvement of intensive training and counceling about the efficient livestcok technology
<p>Threaths :</p> <ul style="list-style-type: none"> • The entry of cattle from te outside of district • The field diversion • Inter-regional competition • Cattle reproduction disorders • Deadly deceases • Productive female-cows cutting • Seeds quality • Cattle theft • The climate changes • Fluctuations in feed availability due to the season 	<p>ST :</p> <ul style="list-style-type: none"> • Improving the cattle health management by the service or counceling • Improving the cooperation between connected institution in case of providing the field • Improving the utilization of agricultural/ livestock wastes process which give valuable input 	<p>WT :</p> <ul style="list-style-type: none"> • Improving the cattle productivity by applying the efficient technology (feed, seeds, management) • Providing the superior cattle to improve the quality of calf

IV. Conclusion

The sustainable development of beef cattle in Tanah Laut belongs to progresive category. It means that the beef cattle is in the good condition and it is possible to have an expansion, increase the growth and get the success maximally. The strategies done are: the development of beef cattle centra integratedly to fulfill the market demand with business orientation for the public livestock business; increasing the fund support from the government/personal for the cattleman; The improvement of intensive training and counceling about the efficient livestcok technology; Improving the cattle health management by the service or counceling; improving the cooperation between connected institution in case of providing the field; improving the utilization of agricultural/ livestock wastes process which give valuable input; improving the cattle productivity by applying the efficient technology (feed, breed, management); providing the superior cattle to improve the quality of calf.

Acknowledgements

In this occasion, the writer would like to thank the Research and Development Institute of Agriculture which had funded this research. The writer would also thank are related agencies who had provided information and cooperation.

References

- [1]. Direktorat Jenderal Peternakan. Statistik Peternakan dan Kesehatan Hewan 2013; Kementrian Pertanian. Jakarta, 2013. (In Indonesian)
- [2]. Direktorat Jenderal Peternakan. Pedoman Umum Program Swasembada Daging Sapi 2014; Kementrian Pertanian. Jakarta, 2010. (In Indonesian)
- [3]. Harianto. Pembenhahan Pasokan Daging Sapi Melalui Sistem Logistik Nasional. <http://www.setkab.go.id/artikel-8975-pembenhahan-pasokan-daging-sapi-melalui-sistem-logistik-nasional.html>, 2013. (In Indonesian).
- [4]. Hunger, J. D.; Wheelen, T.L. Strategic Management. London : Andi Publisher, Ed- 2. 2003.
- [5]. Badan Pusat Statistik Tanah Laut. Tanah Laut dalam Angka. Kabupaten Tanah Laut, 2012. (In Indonesian).
- [6]. Dinas Peternakan Tanah Laut. Laporan Tahunan. Tanah Laut (In Indonesian), 2012.
- [7]. Badan Pusat Statistik bekerjasama dengan Direktorat Jenderal Peternakan dan Kesehatan Hewan. Pendataan Sapi Potong, Sapi Perah, dan Kerbau 2011 (PSPK 2011) Provinsi Kalimantan Selatan. Badan Pusat Statistik bekerjasama dengan Direktorat Jenderal Peternakan dan Kesehatan Hewan, Jakarta, 2011. (In Indonesian),
- [8]. Suh, J. Theory and reality of integrated rice–duck farming in Asian developing countries: A systematic review and SWOT analysis. *Agricultural Systems* 2014, 125:74–81. <http://www.sciencedirect.com/science/article/pii/S0308521X13001479>.
- [9]. Hernowo, N.; Ekowati, T.; Mardiningsih. Analisis SWOT usaha penggemukan sapi potong di Kabupaten Wonogiri (SWOT Analysis of Beef Cattle Farming in Wonogiri Regency). *Animal Agriculture Journal*. 2012, Vol. 1(2), 302 – 310. (In Indonesian)
- [10]. Setyowati, N. Strategi pengembangan subsector peternakan dalam rangka memperkuat sector pertanian di Kabupaten Boyolali. *Sains Peternakan*. 2011, Vol. 9 (1), Maret 2011, 32-40. (In Indonesian). <http://peternakan.fp.uns.ac.id/media/Sains%20Peternakan/2011-1-Maret/2011%20Mar.%206%20Setyowati.pdf>.
- [11]. Kusuma, T.; Raharja, S.; dan Saleh, A. Strategi pemasaran sapi potong di CV Septia Anugerah Jakarta. *Manajemen IKM*. 2013, Februari : 71-78. <http://journal.ipb.id/index.php/jurnalmpi/>. (In Indonesian)
- [13]. Syamsu, J.A.; Karim, H. Strategic utilization of rice straw as feed for ruminants in The Bantaeng District : SWOT analysis approach. The 2nd International Seminar, The 8th Biannual Meeting, The 3rd Congress and Workshop of AINI on 2011 entitled "Feed Safety for Healthy Food". Indonesian Association of Nutrition and Feed Science (AINI) with Faculty of Animal Husbandry, Padjadjaran University. 2011, Juli 6-7 2011. http://repository.umhas.ac.id/bitstream/handle/123456789/631/makalah%20sem%20inetrnasional%202011_Jasml_Peternakan.pdf?sequence=1.
- [14]. Hariyono, M.B.; Hartatik; Dzazuli, A; Andayani, S. Economic potential of livestock farming in the post Suramadu Madura . *Tropical Livestock J*. 2010, Vol 11(2), 11-22. <http://temaktropika.ub.ac.id/index.php/tropika/article/view/98>.