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Operational Risks Identification of Fattening Company Business: Enterprise Risk Management (ERM) Approach

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ABSTRACT

The operational risk of cattle fattening company business runs from the selection of seeds to marketing the cattle ready for sale. These risks, if not properly handled, could result in the potential losses that can interfere with operational activities or even threaten the survival of the company business. This article tries to explain the highest risks are facing by the fattening company at Bengkulu city. Enterprise Risk Management (ERM) was employed to assess potential risks [8] PT. SRJ at Bengkulu City. The company chooses as ones of major fattening cattle in Bengkulu City. The results show that operational risk in PT. SRJ is carried out by assessing the 8 components of COSO Standard of Enterprise Risk Management. There are twenty three risks could occur in the cattle fattening process of PT. SRJ. Including five seed selection risks, four fattening risks, five feed management risks, three cage management risks and six marketing risks. Those were categories into four risks at the negligible level (the chance of occurring is small and the impact caused is relatively small), seven risks at the acceptable level (the impact caused is still within the tolerance limit and is still acceptable), seven risks at the undesirable level (risks to be wary of and significant impact) and five risks that are at the level of unacceptable (significant impact and can influence long term). In conclusion was the highest risk is the availability of feed, the increase in feed prices, the risk of cattle experiencing illness / death, cows experiencing stress and the risk of cattle not being sold.

Keywords: *Identification, Risks, management, fattening company business*

1. INTRODUCTION

One of the contributors to the GRDP in Bengkulu Province agriculture sector is animal farming sub-sector. Based on BPS [1] the animal farming sub-sector in 2017 contributed to the Bengkulu province GRDP of 2,502.2 million Rupiah, this value tends increase compared to the contribution of the animal farming sub-sector in 2016 which amounted to 2,328.8 billion rupiah. Bengkulu Provincial Government pays considerable attention to large animal farming, especially beef cattle in order to support the beef self-sufficiency program. The beef cattle itself has now been determined by the Bengkulu Province government as one of the leading commodities in Bengkulu Province.

One of the companies which focuses in beef cattle farming is PT. SRJ. This is one of the companies focuses in the business of fattening beef cattle as its main business. This company's business has been operating for more than five years and entering its sixth year. It has been legally registered with SIUP number 1884/3009/08-04/PM/IX/2013. The fattening business is a business that has advantages with a very high level of business capital turnover. The purpose of the fattening business is to produce daily meat of animal farming on ordinary days (supply for RPH-RPH), sacrificial holidays, Eid al-Fitr and others. However, even this fattening business has considerable weaknesses and risks.

As one of the companies that move in the agriculture sector especially the animal farming sub-sector, PT. SRJ is faced with a significant risk in operational activities, especially in the cattle fattening process run by the company from the selection of seeds to marketing the cattle ready for sale. These risk, if not handled properly will result in the potential for companies to experience losses that can interfere with operational activities or even threaten the survival of the company.

One part of risk management is implemented Enterprise Risk Management (ERM). The application of ERM is a very important thing owned by the company today because all risks will be able to be managed and minimized for the achievement of company goals [8]. Operational risk analysis is carried out by reviewing the 8 components of COSO Standard of Enterprise Risk Management, namely internal environment, objective settings, event identification, risk assessment, risk

response, control activities, information and communication, and monitoring.

1.1. Related Work

Risk analysis methods and Enterprise risk management are also used by Stella [14], Suharman [15], Mustiana and Susanty [8], Kaderi and Suharto [6], Septi [11], Kurniawan [7], Sovana [13],Prakoso [9], Septi and Risnawati [12] and Destiarini [3]. In the operational risk analysis, there are 3 objectives to be achieves, namely identifying the types of risk (through interviews and questionnaires), risk assessment and risk mapping (through indicators of probability and impact assessment according [4] and risk scoring result, risk management (based on mapping result and risk acceptance). For more details about the methods of analysis of each goal are as follows:

1.1.1. Risk Identification

Risk identification is done by understanding the beef cattle fattening business process. In this study, risk identification is focused on operational risk because operational risk is the highest risk faced by the company. Operational risk that will be identified in terms of process risk, starting from selecting seeds to marketing cattle ready to sell. As a comparison, risk identification is also carried out in smallholder businesses to see whether the risks inherent in the company are also found in small scale breeders such as the risk of stressed cows, unsold cattle, and availability of feed and so on. The initial step of the identification process is to conduct direct observations and interviews with the company Operational manager and breeders to identify the sources of risk. In addition, risk identification is also carried out with literature studies to find out what risks often occur in beef cattle fattening efforts. Once identified, the risks will be arranged in a list of risks.

1.1.2. Risk Assessment

Risk is analyzed by calculating the likelihood (Probability) and its impact as a basis in determining how the risk will be managed. Risk assessment is done through interviews with the help of questionnaires to operational managers and farmers to get risk scoring, where risk scoring is a multiplication of probability with the impact of each risk. Indicators of the likelihood of risk can be seen in Table 1 Furthermore, an assessment of the impact caused by these risks is also carried out. Risk impact assessment indicators can be seen in Table 2 below

Table.1 Indicators for assessing the probability of the risk

Probability			
value weight	Scale Probability	Information	Event interval
1	Very low (Improbable)	Almost never happens	Not happened in 5 years
2	Low (Remote)	Chances are small but (rare)	Occurs 1 time in 5 years
3	Medium (Occasional)	It might happen (sometimes)	Occurs 1 time in 2 years
4	High (Probable)	Most likely to occur (often)	Occurred 1-4 times in 1 year
5	Very High (Frequent)	Almost always happens	Occurs> 5 times in 1 year

Source: Godfrey, 1996

Table.2 Risk impact assessment indicators

Value Weight	Scale of Impact	Information
1	Very low (Improbable)	Does not cause problems
2	Low (Remote)	Causing small problems that can be overcome by routine management
3	Medium (Occasional)	The company not being able to achieve its objectives only a short period.
4	High (Probable)	The companies not being able to achieve long-term goals, disrupting company liquidity.
5	Very High (Frequent)	The company not being able to achieve all of its long-term goals, causing bankruptcy, death and criminal law.

Source: Godfrey, 1996

1.1.3. Risk Response

Risk response is a way for management to choose and respond to every existing risks based on the risk map of handling of operational risks (Table 3). There are four risk management strategies that can be done, namely avoiding, accepting, mitigating/ reducing and sharing.

Table.3 Risk matrix

			Impact				
			Catastrophic	Critical	Serious	Marginal	Negligible
			5	4	3	2	1
PROBABILITY	Frequent	5	25	20	15	10	5
			Unacceptable	Unacceptable	Unacceptable	Undesirable	Undesirable
	Probable	4	20	16	12	8	4
			Unacceptable	Unacceptable	Undesirable	Undesirable	Acceptable
	Occasional	3	15	12	9	6	3
			Unacceptable	Undesirable	Undesirable	Undesirable	Acceptable
	Remote	2	10	8	6	4	2
			Undesirable	Undesirable	Undesirable	Acceptable	Negligible
	Improbable	1	5	4	3	2	1
			Undesirable	Acceptable	Acceptable	Negligible	Negligible

Source: Godfrey, 1996

1.2. Our Contribution

This article presents some enrichments and findings the application of Enterprise Risk Management (ERM) Approach in Cattle and Agriculture commodity Companies in Tropical. By deploying this approach in broad areas, it is well known the advantages and disadvantages this method.

1.3. Paper Structure

This paper is organized as follows. Section 1 introduction, argumentation behind this paper, which include determination of fattening company and the kinds of risks. Section 2, addressing the preliminaries used in this article including some application of this approach. Also, explained the component and the way of the ERM Approach being implemented. Section 3, results and discussion. Section 4, conclusion the paper and direction for company policy.

2. MATERIALS AND METHODS

The location of the study was conducted in PT.SRJ at Bengkulu City. Purposive location determination is one of the companies in the field of animal husbandry that has a major business of fattening beef cattle on fairly large scale with the number of animal farming kept as many as ± 250 head and has been operating for 6 years.

Descriptive analysis in this study was used to describe types of operational risks in the beef cattle fattening business. Operational risk analysis was carried out by reviewing risk identification, risk assessment, and risk response. In this study, **Risk identification** is focused on operational risk, because operational risk is the highest risk faced by the company (see table 1). Operational risk that will be identified in terms of process risk, starting from selecting seeds to marketing cattle ready to sell. **Risk assessment** (see table 2) is done through interviews to operational managers and farmers. Risk scoring is a multiplication of probability with the impact of each risk. **Risk response** (see table 3) is any ways for management to choose and to respond every existing risks based on result of risks mapping. There are four alternative actions or risk management strategies that can be done, namely avoiding, accepting, mitigating/ reducing and sharing.

3. RESULTS AND DISCUSSION

3.1. Risk Identification

Risk identification is an analysis process to find systematically and continuously risks (potential losses) that challenge the company [2]. The process of identifying operational risks for the cattle fattening business is carried out by conducting interviews and direct observation with internal parties of the company and breeders as well as tracing through sources of risk that are likely to occur.

The process of fattening beef cattle consists of five stages, namely selection of seedlings, fattening, feed management, pen management and marketing. These five processes have the potential to cause unwanted events and can cause harm to the company. Based on the results of risk identification indicates that there are 23 types of risks faced by PT.SRJ and breeders in operational activities in terms of the cattle fattening process with the following division: 1) five risks are in the process of selecting seedlings, 2) four risks are in the fattening process, 3) five risks are in the process of feed management, 4) three risks in the cage management process and 5) six risks in the marketing process.

3.2. Risk Assessment

The purpose of measuring risk is to determine the relative importance of the risks faced [10]. Risk measurement always refers to at least two measures. The first measure is the probability or likelihood, the second measure is the impact (D) or the effect if the risk actually occurs [16].

Table.4 Measurement and Risk Assessment of Cattle Fattening

Process	No	Risk Events	Risk Scoring	Risk Scoring PK	Average Risk Scoring
Selection of beef cattle	A1	Errors in selecting beef cattle	2	4	3
	A2	Death of a cow while traveling	12	6	9
	A3	Increase in the price of beef cattle	2	2	2
	A4	Supplier fraud on the weight of a cow	4	4	4
	A5	Late arrival of beef cattle from schedule	6	2	4
Fattening	B1	Growth of body weight is not optimal	9	9	9
	B2	Errors in data collection and reporting on the condition of cattle	4	1	3
	B3	Errors in data collection and reporting on the condition of cattle	6	1	4
	B4	Cow theft is happening	4	12	8
Feed Management	C1	Availability of feed ingredients	16	4	10
	C2	Increase in the price of feed ingredients	16	4	10
	C3	Damage to animal feed ingredients	4	2	3
	C4	Mismatch in the amount of feed ingredients that come with the number of orders	4	2	3
	C5	Delay in arrival of feed ingredients from the schedule	4	2	3
Enclosure Management	D1	sick / dead cow	16	16	16
	D2	stressed cows	16	16	16
	D3	Air pollution(odor from livestock manure)	10	10	10
Marketing	E1	Fluctuations in selling prices of cattle	2	2	2
	E2	Error in selling price	2	6	4
	E3	Cow not sold	16	16	16
	E4	Death during distribution	6	6	6
	E5	Complaints / returns of cows from consumers to companies	6	6	6
	E6	Unable to fulfill request	4	4	4

3.3. Risk Response

The principle of mapping is the arrangement of risks based on certain groups so that management can identify the character of each risk [5]. The purpose of this risk mapping is to identify the character of each risk and determine the appropriate action for each risk. Risk mapping is categorized into four levels of risk, namely negligible, acceptable, undesirable and unacceptable. The higher the probability and impact of risk, the higher the interest of management to pay special attention and allocate resources to deal with risk. For more details, the results of risk mapping of the business processes of the fattening cows of the two respondents can be seen in the table and figure below. Responses to risk events were analyzed using descriptive analysis. In dealing with or handling risks there are four treatments that can be done by an organization, namely: 1) Avoiding Risk, 2) Mitigation of Risk (Risk Reduction), can be done by reducing the likelihood and impact, 3) Transfer risk to third parties (Risk Sharing), and 4) Accepting Risk (Risk Acceptance).

Handling response to supplier fraud on cow's weight, delay in arrival of beef cattle from schedule, data collection and reporting condition of cattle, damage to production machinery, occurrence of cattle theft, increase in feed prices, damage to animal feed ingredients, mismatch of the amount of feed material that comes with the number of orders, delay in arrival of feed ingredients out of schedule, inability to meet demand is reducing. Handling steps to reduce the risk of supplier fraud is by sending or assigning company employees directly or a trusted person to supervise cows starting from the purchase of cattle to cattle to the company location. Meanwhile, the handling step to anticipate the delay in the arrival of beef cattle from the schedule is by making a purchase at least one month before the fattening schedule. Errors in data collection and reporting on the condition of cattle can be reduced by giving ear tags to cattle and evaluating the condition of cattle once a month by the operational manager.

Table 5 Levels of risk in cattle fattening business processes

Process	No	Risk Events	Risk Scoring	Average Risk Scoring
Selection of beef cattle	A1	Errors in selecting beef cattle	2	Negligible
	A2	Death of a cow while traveling	12	Undesirable
	A3	Increase in the price of beef cattle	2	Negligible
	A4	Supplier fraud on the weight of a cow	4	Acceptable
	A5	Late arrival of beef cattle from schedule	6	Undesirable
Fattening	B1	Growth of body weight is not optimal	9	Undesirable
	B2	Errors in data collection and reporting on the condition of cattle	4	Acceptable
	B3	Errors in data collection and reporting on the condition of cattle	6	Undesirable
	B4	Cow theft is happening	4	Acceptable
Feed Management	C1	Availability of feed ingredients	16	Unacceptable
	C2	Increase in the price of feed ingredients	16	Unacceptable
	C3	Damage to animal feed ingredients	4	Acceptable
	C4	Mismatch in the amount of feed ingredients that come with the number of orders	4	Acceptable
	C5	Delay in arrival of feed ingredients from the schedule	4	Acceptable
Enclosure Management	D1	sick / dead cow	16	Unacceptable
	D2	stressed cows	16	Unacceptable
	D3	Air pollution(odor from livestock manure)	10	Undesirable
Marketing	E1	Fluctuations in selling prices of cattle	2	Negligible
	E2	Error in selling price	2	Negligible
	E3	Cow not sold	16	Unacceptable
	E4	Death during distribution	6	Undesirable
	E5	Complaints / returns of cows from consumers to companies	6	Undesirable
	E6	Unable to fulfill request	4	Acceptable

Damage to feed ingredients, can lead to non-fulfillment of nutritional requirements needed by cattle. Therefore, to reduce this risk it is necessary to apply strict Standard Operation Procedure (SOP) related to the arrangement of feed ingredients in transport vehicles and warehouses, packaging of feed ingredients and to monitor the condition of the warehouse periodically. Damage to production machinery at PT. SRJ is usually caused due to the end of the usage period. Damage to production machines such as chopper machines and concentrated feed processing machines can hamper operational activities carried out by the company. Therefore, to reduce the impact caused, the handling that can be done by the company is to maintain the engine periodically to ensure the condition of the machine is always in good condition and to buy new machines when it is nearing the end of usage.

Increase in feed prices is included in the risk that cannot be avoided, especially for companies, given the company's dependence on suppliers and market mechanisms. The high price of feed can cause company expenses to swell, given the cost of feed is the second largest cost after labor costs. to reduce the impact of rising feed prices can be done by making agreements with suppliers related to below market prices such as feed prices of Rp2,500, - suppliers can provide a price of Rp2,200 to the company, so that the company's cash flow can be controlled.

Forms of handling the risk of mismatching the amount of feed ingredients that come with the amount ordered and the delay in arrival of feed ingredients from the schedule by making a routine purchase schedule of feed ingredients and determine the estimated feed requirements each month. Schedule and amount of feed needed are then given to suppliers of feed ingredients so that the amount of feed that arrives and the arrival time can be appropriate and on time. Meanwhile, handling the risk of cattle theft can be carried out by implementing SOPs related to the supervision and control of the security of cows and cows for 24 hours and checking cows in the morning, and response to handling to reduce the risk of

inability of companies to meet the demand for cows to establish cooperation with farmers- breeders or herds to meet cattle stock. Handling response to the risk of death of cattle while traveling, Growth of body weights not optimal, availability of feed, stressed cows, air pollution (odor from livestock manure), and cattle not sold, and death during distribution, complaints / return of cows from consumers to companies is to avoid. The risk of death of cattle while traveling can be avoided by controlling and supervising during the trip related to feed and drinking during the trip and the physical condition of the cow.

The availability of feed becomes important in running a fattening business, this is because the adequacy of feed is the main source in optimizing the weight of cattle. To avoid this risk, the handling steps that companies can take are to increase the number of suppliers or partners to anticipate if the feed ingredients from the first supplier are missing or insufficient.

In livestock business, the smell of cow dung is one of the problems for business actors because it is related to the existence of the company including the operating license of the company. The smell of cow dung can pollute the air around the cage location which can disturb the comfort of the community around the company location and can be a source of disease. Therefore, to avoid complaints from surrounding communities, one of the handling solutions that can be done is to pay attention to proper waste management by processing cow dung into manure or biogas, cleaning the cage every day, location of the cage as much as possible close to water sources to make it easier to clean the cage and plant trees around the cage that aims to reduce air pollution. To establish a good relationship with the community, the company should issue corporate CSR annually as compensation and for the welfare of the community around the company.

In the fattening process, the growth of cow's body weight is not optimal and the risk of unsold cattle can occur at any time. Weights that are not optimal, can reduce selling prices and affect consumer buying interest. If the weights are not as expected while the price is high, this can result in the cattle not being sold. To avoid the risk of the growth of cow's body weight is not optimal, the handling steps that the company can do is to pay attention to the cattle's feed patterns and pay attention to the cow's environment so that the cow does not experience stress so that the cow's appetite can be maintained. In addition, the handling step to avoid unsold cattle is to sell cattle in the form of ready-to-slaughtered cows or in the form of fresh cows by cooperating with meat traders or processed beef traders. So companies and breeders do not have to bear losses. In addition, for other efforts that can be done is to establish cooperation or partnerships with small farmers, where the company provides capital in the form of cattle with a payment system in installments.

Stressed cows can trigger cows with disease that can lead to death if not treated immediately. Management efforts that can be done by the company to handle this risk are by maintaining a comfortable cow environment such as paying attention to the maintenance patterns, type of cage, including paying attention to the behavior patterns of the cows that are in one cage. In addition, another effort that can be done is to carry out checks conducted by veterinarians regularly (once a month) to ensure the condition of the cow is always in good health.

The physical condition of the cow and the weight of the cow are one of the references for consumers to buy cattle. To avoid complaints or returning cows from consumers, the thing that can be done is to ensure the specifications of the cows are in accordance with consumer demand, maintain the quality of the cows in good condition until the cows reach the consumers, delivery of cows is carried out on time.

As for the risk of sick or dead cows the risk response that can be done is to share the risk with other parties by insuring it. That is because the impact caused by this risk is quite fatal and causes substantial losses. Based on the decision of the minister of agriculture, cattle breeding or fattening that die from disease, accidents, theft and death due to child birth can be insured into the AUTS / K program (Cow/Buffalo Cattle Business Insurance) by paying a premium of Rp200,000 per year.

4. CONCLUSION

The study founds some conclusion that:

1. There are twenty three risks occurred in the cattle fattening process of PT. SRJ consisting of five seed selection risks, four fattening risks, five feed management risks, three cage management risks and six marketing risks.
2. There are four risks are at the negligible level (the chance of occurring is small and the impact caused is relatively small), seven risks at the acceptable level (the impact caused is still within the tolerance limit and is still acceptable), seven risks at the undesirable level (risks to be wary of and significant impact) and five risks that are at the level of unacceptable (significant impact and can influence long term). The highest risk is the availability of feed, the increase in feed prices, the risk of cattle experiencing illness / death, cows

experiencing stress and the risk of cattle not being sold.

3. The alternative risk management actions could be implemented by the company are 1) insuring livestock, 2) Keeping the cattle environment comfortable (maintenance patterns, cages), 3) establishing cooperation with processed traders as suppliers of fresh meat, 4) adding partners, finding or making alternative feeds.

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