

Livestock Farmers' Characteristics of Bali Cattle Fattening in West Timor (Case Study on Farmers Group Nekmese, Usapinonot, North Central Timor, East Nusa Tenggara)

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ABSTRACT: The research aims was to study the farmers' characteristics of Bali cattle fattening at the farm people to obtain a variety of information that can become a reference in order to increase the capacity of farmers to manage beef cattle fattening. Research was carried out from December 2014 to March 2015 which is a wet month and July until August 2015 representing a dry month, in Farmers Group Nekmese in Usapinonot Village, West Insana District, North Central Timor Regency, East Nusa Tenggara Province. The method used was survey and direct observations in the field. Animal groups target were selected using purposive sampling method with the criteria having and raising livestock fattening males at least one bull. To obtain more in-depth information and interviews, discussions was conducted with the chairman and members of farmer groups using questionnaires. Measurement variables included age, gender, level of education and experience of farming. Data were analyzed descriptively. Results of research showed the age of the farmers at the level of productive age with an average 30-64 years, with a male farmers' distribution by 47.17%, while 52.83% of women farmers. The average of level education of farmers was not school 9.431%, primary school 84.91%, junior high school 1.89% and senior high school 3.77%. Judging from the experience of farming, most farmers (30.19%) had experience in raising cattle more than 14 years, the remaining 10 -13 years experience farmers of 26.42%; 6 - 9 years 18.88%; 2 - 5 years 13.21% and less than 2 years at 9.43%. Livestock rearing was still done traditionally with low quality and quantity feed control, minimum health controls, while fattening cattle age varies and the fattening period average 7 - 9 months. It was concluded that characteristics of farmer needs to be improved, especially in the aspect of formal and non-formal education so the farmers' capacity/ability in technology adoption and management of cattle fattening was more optimal.

Keywords: Farmers, Characteristics, Fattening, Bali Cattle, West Timor

INTRODUCTION

Farmers are key and the main component in the management of the beef cattle fattening because it has a central role in determining the success or failure of the farm. A good management ability of farmers can increase the productivity of livestock; on the contrary it will give minimum results when management carried out by the farmers is not standardized. Theoretically, to obtain optimal results in fattening beef cattle, the influence of internal and external factors must be considered. Judging from the internal factors, some factors are believed to fairly determine the effectiveness of the role of farmers in managing beef cattle fattening are their characteristics including age, education level, raising experience and gender. In addition, some of the main things that need to get the farmers' attention in managing beef cattle fattening is the ability of farmers to select calves, fattening system used, feed materials selection and manner of administration, the provision of the enclosure, as well as disease control and prevention. While external factors are influential in determining the farmers' management was the availability of labor, availability of calves, feed and animal health.

Beef cattle fattening, especially Bali cows has become an integral part of the lives of the

farmers/ breeders and had been conducted for generations in West Timor. Nevertheless, the study of the farmers' characteristics in West Timor in Bali cattle fattening has not been done. Therefore, this study is expected to provide important information relating to the characteristics of the farmers/ breeders in the farms. Thus it can be used as valuable information in order to increase the farmers' capacity to manage beef cattle fattening, which in turn can have a positive impact in increasing livestock productivity.

MATERIALS AND METHODS

The research was conducted from December 2014 until March 2015 in which it was the wet month (rainy season) and July and August 2015 that represent the dry season (dry season) at Nekmese Farmers Group in Usapinonot Village, West Insana District, North Central Timor Regency, East Nusa Tenggara Province.

The materials used in this study included the target farmer groups as respondents as many as 53 people and questionnaires (questionnaires). The method used was in the form of surveys and direct observations in the field. Selection of farmer group used purposive sampling method with consideration that the selected group was the group that met the criteria in conducting cattle fattening. The group that was selected in the farmers' data was the respondent. Farmer respondents' criteria was at least had one male tail of Bali cattle that was being fattened. Data collection was conducted through interviews with the chairman and members of farmer groups using questionnaires. Farmers' characteristics that become variables measured and observed in this study were age, gender, level of education, rearing experience and livestock rearing pattern. The data collected were tabulated and analyzed descriptively.

RESULTS AND DISCUSSION

Age. The average age of 53 Bali cattle farmers in Farmers Group Nekmese were 30-34 years old (13.21%), 35-39 years old (9.43%), 40-44 years old (9.43%), 45-49 years old (18.87%), 50-54 years old (15.09%), 55-59 years old (16.09%), 60-64 years old (15.09%) and 65-69 years old (1.89%). The results showed that beef cattle farmers in Farmers Group Nekmese, Usapinonot village was dominated by the productive age group (30-64) years old, while the non-productive age group (above 64 years) was only one farmer (2%). It shows the readiness of physical and psychological maturity in maintaining cattle ranchers. Physical maturity was important because by having a strong physical farmers can prepare needs of livestock every day, especially in the form of forage legumes and grasses that were taken from the garden or pasture which were relatively far away.

In addition, the condition of that age such farmers are able to think and do a good job as well as be able to accept new innovations to make it useful for the progress of his efforts. According to Tarmidi (1992) on the condition of 15-65 years of age, a person was included in the productive age category with the ability to work that still relatively good and thinking ability that was good enough. In the demographic analysis, age structure population can be divided into three groups, namely (a) the younger age group, under 15 years old; (b) the productive age group, aged 15-64 years old; and (c) older age groups, aged 65 years old and over (Tjiptoherijanto, 2000).

Gender (Sex). The results showed that the ownership and maintenance of cattle fattening was not only conducted by male gender, but also by women. Men who own and raise livestock fattening was 47.17%, while the women was 52.83% (Table 1). This illustrates that the participation of women in beef cattle fattening was quite high. The higher participation of women farmers than the men was caused by some of the women had to have lived alone (widowed) with the children and because the husband as the head of the family generally looked for another job outside the main job as a farmers/breeder so they did not have enough time to raise cattle.

According to Suradisastra and Lopez (2000), in most societies, roles of men as workers was

generally dominance in the family farming activities including farm businesses, demonstrated by the high level of physical participation conducted. While the female gender participation was relatively low despite a huge influence. Female farmers typically had a responsibility and a double role in the household, in addition to participating in the livestock business where women had a responsibility to take care of the household and children. It can be positive or negative impact on livestock productivity was maintained. Time raising livestock is mainly concerned with feeding time and the amount of feed given relatively less when compared to male farmers.

Therefore, although the gender participation of women was quite high in beef cattle fattening farmer group in West Timor, according to Suradisastra and Lopez (2000), gender status of women in the cattle business was limited by social status, especially with regard to the level of education, health, and positions in decision making, barriers to work due to low mobility aspect and was expected to be with their children at home, employment status where women often earned a lower position than men. Likewise, there were often different remuneration for the same job and position. In terms of technology, certain gender often had more negative effects than positive one.

Table 1. Usapinonot Village, West Insana District, North Central Timor Regency, East Nusa Tenggara Province

Description	Number of Respondents	Percentage (%)
Gender (Sex)		
<input type="checkbox"/> Male	25	47.17
<input type="checkbox"/> Female	28	52.83
Total	53	100
Education		
a. Formal Education		
<input type="checkbox"/> Uneducated	5	9.43
<input type="checkbox"/> Elementary	45	84.91
<input type="checkbox"/> Junior high	1	1.89
<input type="checkbox"/> Senior high	2	3.77
<input type="checkbox"/> College	-	0.00
Total	53	100
Raising Experience		
<input type="checkbox"/> < 2 Years	5	9.43
<input type="checkbox"/> 2 - 5 Years	7	13.21
<input type="checkbox"/> 6 – 9 Years	10	18.88
<input type="checkbox"/> 10 – 13 years	14	26.42
<input type="checkbox"/> > 14 years	16	30.19
Total	53	100

Level of education. The average education levels of farmers who fattened the meat cattle were dominated by elementary and no school education respectively 74.36% and 13.51%. Farmers who had senior high school and junior high education were 5.41% amounting to 2.70% (Table. 1). The impact of educational level was still quite low causing the management aspect in fattening business owned by farmers was low and suboptimal. Farmers with low levels of education will lead to the ability to adopt a technology will be hampered. The result of observation of fattening business showed that low level of education caused low ability of feedlot farmers' governance in managing feed, housing, health and understanding of the calves used in fattening. Feed given did

not guarantee the needs of livestock because it was quite volatile in terms of quality and quantity. Housing system used did not ensure the comfort and health of livestock. Similarly, the fattened calves had not been standardized, so that the impact on growth and the duration in fattening cattle were getting longer.

According to Hernanto (1995), limited farmers' level of education was relatively resulted in a slow response to adapt to new technologies, weak supervision and weak production in processing their field practiced. Meanwhile, according to Widyaningrum *et al.* (2013), general education level of farmers in East Nusa Tenggara was low, so it affected the farming pattern. Moreover, the productivity of livestock kept on dry land farmers was relatively low. Therefore, it needs a continuous assistance to provide education or training so that their knowledge can be improved in developing fattening business.

Raising experience. The results showed that the majority of farmers (30.19%) had experience in raising cattle more than 14 years, the rests who had 10-13 years experienced was 26.42%; 6-9 years was 18.88%; 2-5 years was 13.21% and less than 2 years was 9.43% (Table 1). Although most farmers had experienced in raising cattle more than 14 years, field observations showed that the management of the improvement is not significant, especially in terms of feed management, especially housing hygiene that directly related to animal health as well as the calves treatment. It has correlation with the orientation of cattle fattening which was still a sideline business. In addition, in the aspects of housing, lack of capital becomes an obstacle to build a standardized enclosure equipped with food and drink container as well as adequate drains and water supply for cleaning the enclosure and cattle. Judging from the calves fattening, although some farmers raised cattle for long enough, they still needs assistance and understanding to choose the right calves to be used in an the fattening business.

Results of this research illustrated that the experience had not been entirely influencing or positively correlated with improvement of beef cattle fattening management. Improvements management was related more to capital and fattening business orientation, in addition to the farmers' level of education. According to Murwanto (2008), raising experience is a good teacher. With enough experience to raise cattle, the farmers will be more careful in their business and correct deficiencies in the past. Nevertheless, the availability of supporting resources was needed in improving the maintenance management of the cattle in the fattening process.

Cattle Raising Patterns. Generally, raising beef cattle carried by livestock farmers in Indonesia is still largely traditional with the quality and quantity of feed that is not scalable and secure, less efficient reproductive, minimum health control, and the cow is always in a cage (not grazing) (Karnadi, 2006). Field observations indicated that beef cattle raising was conducted by means of an enclosure placed in an individual swath in a communal housing belonged to farmer groups that were built together with minimum drainage.

Feeding pattern with a "cut and carry" system with an average feeding 3 times per day, morning, afternoon and evening or night, with the type of feed and the amount of the provision which varied for both forage legumes and non-legumes. The type of feed given to cattle generally include leucaena (*Leucaena leucocephala*), natural grass, King Grass, White Teak (*Gmelina arborea*), kabesak (*Acacia leucophloea*), *Gliricidia* (*Gliricidia sepium*), stems and leaves of banana (*Musa x paradisiaca*), Turi (*Sesbania grandiflora*), Angsana (*Pterocarpus indicus*), Imperata (*Imperata cylindrica*), kapok leaves (*Ceiba pentandra*), cassava leaves (*Manihot utilissima*), jackfruit leaves (*Artocarpus heterophyllus*) as well as flowers fence. Feeding amount was not fixed, subject to availability and the ability of farmers to obtain it. The dominant factors that affected the availability of feed given to the cattle were climatic factors, particularly rainfall. Distribution of drinking water on average was one to three times a day, morning, afternoon and evening. Nonetheless, there were farmers who did not provide drinking water, but replace it by giving banana stem. Distribution of banana stem was also conducted when cattle did not want to drink water.

Table 2. Patterns maintenance Bali cattle by cattle ranchers in Bali in Nekmese Farmers Group, Usapinot, Timor Tengah Utara

Description	Explanation
Housing pattern	
Feed distribution	Communal
<input type="checkbox"/> Feed distribution system	Cut and carry
<input type="checkbox"/> Feed distribution schedule	3 times (morning, afternoon, evening)
<input type="checkbox"/> Kind of feed	Varied
Water distribution	
<input type="checkbox"/> Distribution Schedule	1 – 3 times
Fattened calves age	Varied (< 1 – 4 years)
Raising period	7 - 9 months

CONCLUSION

From the description above, it can be concluded that the characteristics of the farmers needs to be improved, especially in the aspects of education both formal and non-formal so that their capacity/ability in adopting technology and management of beef cattle fattening could be more optimal. Characteristics of farmers in this research are:

1. Farmers' age was dominated by productive age with an average of 30-64 years old with male distribution of 47.17% and 52.83% of women.
2. The average education level was uneducated as much as 9.43%, elementary education as much as 84.91%, junior high school education as much as 1.89% and junior high school education as much as 3.77%.
3. The majority of farmers (30.19%) had experience in raising beef cattle more than 14 years, the remaining was 10-13 years as much as 26.42%; 6-9 years as much as 18.88%; 2-5 years as much as 13.21% and less than 2 years as much as 9.43%.
4. The pattern of cattle raising was still conducted traditionally with a low feed management, minimum health controls with a vary of calves ages and the raising period was of 7-9 months.

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