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The performance of animal husbandry extension officers in the perspective of animal breeders for the achievement of transfer of technology of beef cattle feed

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Abstract. The objective of this study was to assess the performance of extension officers in the perspective of animal breeders for the achievement of transfer of technology of beef cattle feed in Bulukumba Regency, South Sulawesi Province. Primary data were derived from animal breeders using the questionnaire as the instrument of research as the reference to do the structured interviews, and secondary data were collected from formal written reports. In addition to that, focus group discussion was conducted among animal breeders to gain more information, and in-depth interviews were performed among key informants. The collected data were analyzed and calculated using the descriptive statistics, the methods of summarizing and tabulating data. Results of the study indicated that the performance of animal husbandry extension officers for the dissemination of the extension subjects of livestock feed technology, the extension methods in the form of face to face communication and/or visits, the demonstration methods of livestock feed technology, getting access to information on the subjects of livestock feed technology and empowering the institutions of animal breeders were 39.7%, 43.8%, 13.4%, 35.7% and 50% respectively. In general, it was concluded that the performance of animal husbandry extension officers for the achievement of transfer of technology of beef cattle feed in Bulukumba Regency was at the intermediate category. Therefore, the performance of animal husbandry extension officers in Bulukumba Regency should be continuously improved to more intensively increase beef cattle productivity, income and welfare of animal breeders. The recommendations suggested in this study were the extension services concerning the transfer of technology of beef cattle feed should compliant with the need of animal breeders in the short and long term and the improvement of performance of animal husbandry extension officers could be conducted through training programs.

1. Introduction

Act No.16 of the year 2006 of the Republic of Indonesia concerning the Agricultural, Fishery and Forestry Extension System is the milestone that paves away to empower farmers and animal breeders as well as institutions of animal breeders. To realize the policies stated in Act No 16 of the year 2006, the government of Indonesia formulated Act No. 18 [1]. Article 3 of Act No. 18 [1] states that the implementation of husbandry and animal health shall be governed with the objective to: a. Manage animal resources with prestige, accountability, and continuously for the maximum welfare of the people; b. Suffice the need for animal-origin food, goods, and service independently, competitively, and continuously for improvement of the welfare of the breeders and the people toward the nation



1 achievement for food defense; c. Protect, secure, and guarantee the Unitary State of the Republic of Indonesia from any threat that may perturb the health of life of a human being, animal, plants, and the environment d. Develop animal resources for the welfare of the breeders and the community, and e. Provide legal security and certainty to enter into business in the field of husbandry and animal health.

Referring to the statements in the Article 3 of Act No. 18 [1] as stated above, the roles of animal husbandry extension officers play an essential role in developing animal husbandry sector. As a consequence, they are hoped to take meaningful and significant roles to improve their performance to empower the self-sufficiency of animal breeders[2].

The performance appraisal of animal husbandry extension officers should be done based on the measurement standards of their jobs. The data about the knowledge and skill required for the task, their performance in the actual situation need to be collected through interviews, case methods, and direct observation techniques. This is 3 compatible with the definition of performance as stated by Bernardin & Russel as cited by [3] that define performance as the record of outcomes produced on a specified job function or activity during a specified period.

In the current time, lower achievement of planned targets in developing human resources in the animal husbandry sector through extension services in Indonesia is caused by the gap between methods/media of extension services and social and economic conditions of animal breeders as well as the discrepancy between the subjects of extension services and the current need of animal breeders. The main obstacles including: (a) social interactions between husbandry extension workers and animal breeders are less intensive; (b) weaknesses of animal husbandry extension officers in the mastery of animal husbandry extension services; and (c) lack of responsiveness of animal husbandry extension officers on the current problems among animal breeders.

Lower achievement of transfer of technology of beef cattle feed is due to the discrepancy between the method of extension services and current social and economic conditions of animal breeders. This inconsistency is caused by several constraints that include: (a) social interactions between animal husbandry extension officers and animal breeders are less intensive; (b) lack of knowledge of animal husbandry extension workers in giving animal husbandry extension; and (c) lack of responsiveness of animal husbandry extension officers to tackle current problems among animal breeders.

Livestock feed technology is one of the determining factors to the achievement of success of animal breeders. Technology is a tool to realize the success of entrepreneurship of animal breeders, in which the subjects are animal breeders, the objects are livestock, whereas, land and environment are the ecological domains utilized to develop the entrepreneurship of animal breeders

Some studies revealed that most animal husbandry extension officers in Indonesia conduct animal husbandry services at an inappropriate level compared to the need of animal breeders. Based on this fact, this study aims to assess the performance of animal husbandry extension officers in the perspective of animal breeders for the transfer of technology of livestock feed at the regional level in which the study location is in Bulukumba Regency.

2. Materials and Methods

This survey study was conducted in Bulukumba Regency, South Sulawesi province. The respondents in this study were animal breeders in the groups of animal breeders. Primary data were collected using the questionnaire as the instrument of the research as the direction to do the structured interviews, and secondary data were gathered from formal written reports.

The types of questions in questionnaires were closed-ended and open-ended questions. Closed-ended questions are the 4 structured questions and they are answered in an only a specific piece of information, whereas, open-ended questions seeks to explore the qualitative, in-depth aspects of a particular topic or issue. Open-ended questions could explore information about the activities of focus group discussion between animal husbandry extension officers with animal breeders through in-depth interviews with key informants.

The variable assessed in this study was the responses of animal breeders for the performance of animal husbandry extension officers on the achievement of transfer of technology that consists of five indicators: 1. Animal husbandry extension officers disseminate the subjects of livestock feed technology; 2. Animal husbandry extension officers carry out the methods of extension services in the form of face to face communication and visits; 3. Animal husbandry extension officers perform the methods of extension services through face to face communication and visits; 4. Animal husbandry extension officers get access concerning the livestock feed technology and; 5. Animal husbandry extension officers empower the institutions of animal breeders. The scale of measurement of responses of animal breeder was classified into three categories: disagree (score 1), fairly disagree (score 2) and agree (score 3). Analysis and calculation of the data used descriptive statistics, the methods of summarizing and tabulating data, in the form of frequency and percentage.

3. Results and discussion

Populations of beef cattle in Bulukumba Regency account for up 3.43%. Bulukumba Regency is classified within the high number of livestock density amounted to 66.33 livestock /km² and the average of ownership of livestock is 0.82 livestock per household. Areas within the high category of livestock indicate higher competition for the supply of livestock feed. This situation prompt animal breeders to find alternative ways to seek for innovative technology utilized for their livestock feed, and consequently, animal husbandry extension officers should find and disseminate innovative technology of beef cattle feed to animal breeders.

The demographic characteristics of animal breeders as the respondents consist of the level of education, number of livestock ownership and breeding experience. 7% of the total respondents are within < 30 years old and 27% are within > 50 years old and 66% are within a 30-to-50 year old scale. This indicates that most respondents were classified at the productive age. Individuals at the productive age are more innovative to easily accept innovations [3] and tend to achieve higher productivity in conducting their jobs.

The respondents have various levels of education. Of the total animal breeders as the respondents, 48.0% were categorized as the primary school dropout, 50% were at the tertiary school level and only 2 % were at the category of graduation of the university. This indicates that the level of education gives a significant effect on the diffusion of innovative ideas.

On average, the livestock density was three cattle per household in which the livestock ownership is ranging from 1 cattle to 17 cattle or 85.1% of the total respondents have less than five cattle and only 14.9% of the total respondents have more than five cattle. Regarding the breeding experience, most animal breeders (61.4%) have breeding experience of more than ten years and the remaining (38.6%) have breeding experience of fewer than ten years. Most animal breeders gain knowledge of animal husbandry from their breeding experience in routine activities. Breeding experience is one of the factors to seek solutions concerning problems of animal husbandry.

3.1. The performance of extension officers in the perspective of animal breeders for the transfer of technology of beef cattle feed

Based on the results of interviews and focus group discussion with key informants, the performance of animal husbandry extension officers affected the transfer of technology of beef cattle feed. One of the statistical tools used to measure the performance of animal husbandry extension officers is the frequency of their activities in conducting extension services. Higher frequency of visits of animal husbandry extension officers to animal breeders provides higher positive impact for the transfer of technology of beef cattle feed. This is compatible with the study conducted by [3] that intensity of activities of animal husbandry extension officers in promoting innovations of technology through appropriate methods and interesting presentation as well as suitable with the need of animal breeders will accelerate the process of transfer of innovations of livestock feed technology.

Table 1. The responses of animal breeders on the performance of animal husbandry extension officers for the transfer of technology of beef cattle feed in Bulukumba Regency.

Responses of Animal Breeders	Scale of Measurement	Frequency	Percentage
Animal husbandry extension officers disseminate the subjects of livestock feed technology	Disagree	105	46.9
	Fairly disagree	30	13.4
	Agree	89	39.7
Animal husbandry extension officers carry out the methods of extension services in the form of face to face communication and visits	Disagree	24	10.7
	Fairly disagree	102	45.5
	Agree	98	43.8
Animal husbandry extension officers perform the demonstration methods regarding the livestock feed technology	Disagree	96	42.9
	Fairly disagree	98	43.8
	Agree	30	13.4
Animal husbandry extension officers get access concerning the livestock feed technology	Disagree	65	29.0
	Fairly disagree	79	35.3
	Agree	80	35.7
Animal husbandry extension officers empower the institutions of animal breeders	Disagree	37	16.5
	Fairly disagree	75	33.5
	Agree	112	50.0

As reported by key informants, dissemination of the subjects of livestock feed technology and their utilization were still limited in which animal husbandry extension officers possessed inadequate qualifications to teach properly the knowledge and application of livestock feed technology. Also, operational costs of animal husbandry extension officers were at a minimum level and the necessity for animal husbandry extension officers to accomplish the planned targets of extension programs.

Based on the results of the observation, animal husbandry the extension officers applied various methods and extension media. They selected the methods and media of extension that depend upon the schedule and the specific locations, but most presented methods were not appropriate with the current problems of local animal breeders. A certain method of the extension will give effective results if it appropriates with a certain problem. Also, a certain sophisticated method will give lower impacts without consideration to a relevant context.

Results of the survey revealed that animal husbandry extension officers conducted extension services once a month. Referring to this fact, there was limited time to conduct direct interactions between animal husbandry extension officers with animal breeders. Sometimes animal husbandry extension officers did not attend the session of extension while animal breeders needed facilitation. As indicated in table 1, face to face communication between animal husbandry extension officers and animal breeders was categorized at a lower level (43.8%) since animal breeders reasoned that animal husbandry extension officers were more paying attention to communicate with the coordinators about the groups of animal breeders. Animal breeders assumed that animal husbandry extension officers only built direct communication with the organizers of the groups of animal breeders without giving appropriate solutions to their current problems that boosted them hesitated to attend the regular sessions of extension. For that reason, there was a communication gap between animal husbandry extension officers and local animal breeders.

Based on the results of the survey, animal husbandry extension officers utilized mass media to learn new information about livestock feed technology. They then attended to homes of animal breeders to explain new technological innovations. This approach is an effective way since animal breeders could admit new technological innovations derived from mass media. This is in line with the study of [3] that individuals tend to easily admit knowledge of innovations through mass media. However, the local animal breeders usually apply interpersonal communication at decision-making

process to admit new technological innovations. There are also animal breeders who more easily admit new technological innovations through mass media without depending upon interpersonal communication media. According to Shore, mass media offer various information at a wider scale. As stated by [4] mass media is an effective way to channel information, especially information concerning public headline news. Rogers [5] states that mass media could change habitual perceptions and increase knowledge. However, [4] state that the necessity of communication in developing countries cannot rely on mass media alone, but it could assist interpersonal communication without replacing certain functions of interpersonal communication.

The performance of animal husbandry extension officers in empowering the institutions of the local animal breeders achieved an appropriate level, although this aspect needs to be improved because farmers owned enterprises (FOE) was proven played its functions as the new domain to empower animal breeders. Through farmers owned enterprises, the empowerment of animal breeders not only limited to the improvement of human resources, the enhancement of the capacity of entrepreneurship and managing environment, but it also provides bargaining position for animal breeders to do partnership using the establishment of corporate body as their legal institution.

4. Conclusion

- Results of the study indicated that the animal husbandry extension officers who conducted the dissemination of the extension subjects of livestock feed technology, the extension methods in the form of face to face communication and/or visits, the demonstration methods of livestock feed technology, getting access to information on the subject of livestock feed technology and empowering the institutions of animal breeders were 39.7%, 43.8%, 13.4%, 35.7% and 50% consecutively.
- Concerning to results of the analysis, this study formulated several recommendations that include: 1. extension services concerning the transfer of technology of beef cattle feed should be compliant with the need of animal breeders in the short and long term; 2. the improvement of performance of animal husbandry extension officer through training programs.
- In general, the performance of animal husbandry extension officers for the achievement of transfer of technology of beef cattle feed in Bulukumba Regency was at the intermediate category. Therefore, the performance of animal husbandry extension officers in Bulukumba Regency should be continuously improved to more intensively increase beef cattle productivity, income, and welfare of animal breeders.

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