EXTENSION PERFORMANCE AND SATISFACTION LEVEL OF BALI CATTLE FARMERS IN SOUTH KONAWE REGENCY, INDONESIA

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ABSTRACT

Objective: Extension officers play an important role in increasing community participation and are tasked with preparing, implementing, and evaluating the performance that has been carried out by the performance evaluation of extension workers in the Republic of Indonesia Minister of Agriculture Regulation No. 91/Permentan/OT.140/9/2013.

Theoretical framework: The increase in livestock population is inseparable from the role of agricultural extension workers who always guide breeders to produce Bali cattle. Livestock rearing in Konawe Selatan Regency is dominated by small-scale community farms with natural and human resources that have the potential to support the development of Bali cattle. However, the development of Bali cattle in this area has not been carried out effectively. Field extension officers have held various counseling regarding cattle development, but many breeders still have not changed their farming methods.

Method: The location for the study was determined by purposive sampling, considering that South Konawe Regency is an area designated by the government of the Republic of Indonesia as a source area for Bali cattle breeds. Using statistical data, the sub-district area used as the study location was determined by stratified random

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sampling based on the criteria for low, medium, and high population numbers of Bali cattle. Furthermore, respondents were determined by snowball sampling up to 300 farmers for each sub-district and descriptively analyzed using independent evaluation scores.

**Results and conclusion:** The findings regarding the performance of livestock extension agents in South Konawe Regency have not given satisfaction to Bali cattle breeders, as evidenced by the analysis of the competence and role of extension agents. This study concludes that to increase the population of Bali cattle, the role of extension agents is very important, and of course, the government must further increase the competence and role of extension agents in the South Konawe Regency.

**Implications of the research:** The findings in this study can be concluded that the competence of extension workers and the role of extension agents both in East Kolono District, Buke District, and Tinanggea District fall into the bad and not good categories according to PERMENTAN RI No. 91/Permentan/OT.140/9/2013 regarding the performance of livestock extension agents.

**Originality:** The novelty of this research lies in evaluating the performance of extension workers by the Regulation of the Minister of Agriculture of the Republic of Indonesia No. 91/Permentan/OT.140/9/2013.

**Keywords:** Performance, Extension, Breeders, South Konawe.

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**EXTENSÃO DO NÍVEL DE DESEMPENHO E SATISFAÇÃO DOS CRIADORES DE GADO DE BALI NA REGÊNCIA DE KONAWE DO SUL, INDONÉSIA**

**RESUMO**

**Objetivo:** Os agentes de extensão desempenham um papel importante no aumento da participação comunitária e são encarregados de preparar, implementar e avaliar o desempenho que foi realizado pela avaliação de desempenho dos trabalhadores de extensão na República da Indonésia Regulamento n.º 91/Permentan/OT.140/9/2013 do Ministro da Agricultura da República da Indonésia.

**Quadro teórico:** O aumento da população pecuária é inseparável do papel dos trabalhadores de extensão agrícola que sempre orientam os criadores para produzir gado bali. A criação de gado na Regência Selatan de Konawe é dominada por pequenas fazendas comunitárias com recursos naturais e humanos que têm o potencial de apoiar o desenvolvimento do gado de Bali. No entanto, o desenvolvimento do gado de Bali nesta área não foi realizado de forma eficaz. Agentes de extensão de campo têm realizado vários conselhos sobre o desenvolvimento do gado, mas muitos criadores ainda não mudaram seus métodos de cultivo.

**Método:** A localização para o estudo foi determinada por amostragem intencional, considerando que a Regência de Konawe do Sul é uma área designada pelo governo da República da Indonésia como uma área de origem para raças de gado Bali. Usando dados estatísticos, a área sub-distrital utilizada como local do estudo foi determinada por amostragem aleatória estratificada com base nos critérios para número baixo, médio e alto de população de bovinos de Bali. Além disso, os respondentes foram determinados por amostragem de bola de neve até 300 agricultores para cada sub-distrito e analisados descritivamente usando escores de avaliação independentes.

**Resultados e conclusão:** Os achados relativos ao desempenho dos agentes de extensão pecuária na Regência do Sul de Konawe não deram satisfação aos criadores de gado de Bali, como evidenciado pela análise da competência e do papel dos agentes de extensão. Este estudo conclui que para aumentar a população de gado de Bali, o papel dos agentes de extensão é muito importante, e, claro, o governo deve aumentar ainda mais a competência e o papel dos agentes de extensão na Regência do Sul de Konawe.

**Implicações da pesquisa:** Os achados neste estudo podem concluir que a competência dos trabalhadores de extensão e o papel dos agentes de extensão, tanto no Distrito de East Kolono, Distrito de Buke, e Distrito de Tinanggea, se enquadram nas categorias ruim e não boa de acordo com a RI PERMENTAN n.o 91/Permentan/OT.140/9/2013 sobre o desempenho dos agentes de extensão de gado.

**Originalidade:** A novidade desta pesquisa está na avaliação do desempenho dos trabalhadores de extensão pelo Regulamento do Ministro da Agricultura da República da Indonésia nº 91/Permentan/OT.140/9/2013.

**Palavras-chave:** Performance, Extensão, Criadores, Konawe do Sul.
1 INTRODUCTION

Livestock is the most important part of human needs, which continues to be developed to meet domestic consumption needs in line with the demand for livestock, which is the most important part of human needs, which continues to be developed to meet domestic consumption needs in line with the demand for meat, which continues to increase every year. The increased demand for meat is not proportional to the declining livestock population, one of which is due to the cutting of productive broodstock and traditional scale rearing systems that continue to increase yearly. The increased demand for meat is not proportional to the declining livestock population, one of which is due to the cutting of productive broodstock and traditional scale rearing systems.

The traditional extensive rearing system has caused Bali cattle to experience a population decline caused by various problems, including disease (Aku et al., 2022; Sutisna et al., 2019; Ditcham et al., 2009), feed (Lisson et al., 2010; Valerio et al., 2022), breeding management (Sanjaya & Suparta, 2019; Garantjang et al., 2020; Hikmawaty et al., 2020; Rastosari et al., 2022), environment (Putra et al., 2019; Sari et al., 2021), genetics (Widyas et al., 2017; Setiaji et al., 2019) and reproductive appearance (Baco et al., 2020; Saili, 2020; Garantjang et al., 2020; Hasbi et al., 2020).

The problems that occur in livestock and breeders are inseparable from the competence and role of extension workers, who are always looking for a way out of the problems a breeder faces. Sasidhar, (2019) revealed that an extension agent must be able to overcome problems that arise among breeders, transfer knowledge and skills (Brenya & Zhu, 2023), be responsive to climate change, and continuously promote sustainable agriculture (Fan et al., 2022), and market-oriented, improve welfare, and food security (Girma & Kuma, 2022).

Activities in the livestock business of an extension agent should be able to organize non-formal education for breeders by accompanying breeders, teaching them knowledge and skills, and educating and disseminating innovations to breeders. Alotaibi et al., (2021) reporting the sustainability of a farming business depends on the experience of farmers, information received, and risk management as well Ejem et al., (2023) supported by the quality of extension workers in terms of communication and skills at work, Nazarzadehzare & Dorrani, (2012) to minimize obstacles and problems that occur to farmers.

The role of extension agents in Indonesia in the last few decades has not been studied in detail, especially the competence and role of extension agents in increasing the productivity of Bali cattle. South Konawe Regency, as one of the regencies in Southeast Sulawesi which has been designated as a center for Bali cattle breeding, has problems that continue to hamper the livestock population rate, namely disease, the slaughter of productive females, genetics, feed, and maintenance systems.

Livestock rearing in South Konawe Regency is dominated by small-scale community farms with natural resources and human resources that have the potential to support the development of Bali cattle. However, the development of Bali cattle in this region has not been carried out effectively. Field extension officers have held various counseling regarding cattle development, but many breeders still have not changed their farming methods. Gebresilasse, (2023) the increase in the agricultural sector is an obstacle for developing countries, Kassem et al., (2021) certainly will affect farmers' satisfaction with agricultural extension services.

The statistics agency recorded the population of Bali cattle in South Konawe Regency in 2021, totaling 60,597 heads, and in 2022 totaling 65,864 heads. The increase in population...
is not proportional to the consumption of meat from beef cattle, which reaches 650.661/kg/year (BPS, Southeast Sulawesi, 2022). Another problem that arises from breeders should be the role of extension workers to link livestock knowledge through extension activities to change the behavior of breeders so that they are more capable of carrying out their business activities.

The livestock business run by breeders is inseparable from the competence and role of extension workers (PERMENTAN RI No. 91/Permentan/OT.140/9/2013). Through this regulation, researchers must review the competence and role of agricultural extension workers in increasing the productivity of Bali cattle because of the various problems faced by breeders, it always does not show the desired results, and as a result, it always raises various responses, and perceptions of farmers regarding the performance of livestock extension agents in South Konawe Regency.

2 LITERATURE REVIEW

Agricultural and livestock extension is part of the agricultural and livestock development system which is an education system outside of school (non-formal education) for breeders and their families and other community members involved in agricultural and livestock development (Guithhe, 1973), thus agricultural and livestock extension is an effort to create a conducive climate to help breeders and their families to grow to be dynamic (Farr, 1982) as well as being able to improve his life and livelihood with his strength and in the end be able to help himself (Schulz, 1985).

Agricultural and animal husbandry counseling is an effort to empower breeders and their families and the agribusiness community through non-formal education activities in the field of animal husbandry so that they can help themselves both in the economic, social and political fields (Steyn, 1993), thereby increasing their income and welfare can be achieved (Wadsworth, 1995). Counseling is a social science that studies systems and processes of change in individuals and society to realize better changes as expected (Morton, 2000).

Counseling can be seen as a form of adult education that involves a person consciously communicating information to help others give opinions to make the right decisions (Grage, 2004). Counseling is a process of social, economic, and political change to empower and strengthen the capabilities of all agribusiness "stakeholders" through a participatory joint learning process so that changes in behavior occur in each individual (Oladele, 2004) and the community to manage their agribusiness activities more productively and efficiently (Budak, 2010), for the realization of a good life, and increasingly prosperous in a sustainable manner (Minh, 2010; Oliveira et al., 2022).

Thus it can be concluded that livestock extension is a non-formal educational activity for the main actors and business actors as a guarantee for the right to education, which is expected to be able to utilize existing resources to improve and increase income and their families and more broadly to improve their welfare (Ravikumar, 2011; Chander, 2013; Chander, 2015; Gustafson, 2015).

This understanding implies that in the inherent learning process, other processes occur simultaneously, namely: (a) persuasive communication processes, carried out by extension workers in facilitating targets (main actors and business actors) and their families (b) empowerment processes, the meaning is to give "power and authority" to the main actors and business actors and position them as "subjects" in the livestock development process, not as "objects".

Animal Husbandry Extension has two goals to be achieved: long-term and short-term goals. The short-term goal is to foster changes that are more focused on farming which include: changes in the knowledge, skills, attitudes, and actions of family breeders through increasing knowledge, skills, and attitudes. The long-term goal is to increase the standard of living and the
extension performance and satisfaction level of Bali cattle farmers in South Konawe Regency, Indonesia

welfare of breeders, which is directed at realizing technical improvements in farming, improving livestock business, and improving the lives of breeders and their communities.

To increase the contribution of the livestock sector to national development, it is necessary to have key actors and business actors who are qualified, reliable, and have managerial, entrepreneurial, and business organizational skills. Improving this capacity requires agricultural and livestock extension activities to build highly competitive businesses from upstream to downstream that are highly competitive and preserve environmental functions in line with the principles of sustainable development (Grejo & Lunkes, 2022).

Animal Husbandry extension is a learning process for key actors and business actors so that they are willing and able to help and organize themselves in accessing technology, market information, capital, and other resources, to increase productivity, business efficiency, income, and welfare, as well as increase awareness in preserving environmental functions. The success of this extension is largely determined by the existence and competence of livestock extension workers in carrying out their extension activities.


3 RESEARCH METHOD

The research was conducted in South Konawe Regency from August to December 2022. The determination of South Konawe Regency as the research location was carried out by purposive sampling based on subjective considerations that this district is one of the centers for the development of Bali cattle which has the largest population out of the 17 regencies/cities in Southeast Sulawesi Province. The total population of Bali cattle in South Konawe Regency in 2022 will reach 65,864 heads or around 18.26% of Bali cattle in Southeast Sulawesi Province, with 390,903 heads spread across 17 districts/cities.

Figure 1. Bali Cattle Population in South Konawe Regency
Source: Statistics South Konawe, 2022

The area of South Konawe Regency consists of 25 sub-districts, and the determination of the sub-district area as the research location was carried out by Stratified Random Sampling based on the criteria for low, medium, and high strata Bali cattle population. The range of strata levels of the Bali cattle population in each district is presented in Table 1.

Table 1. Strata of Research Locations Based on Total Livestock Population Bali Cattle in South Konawe Regency

<table>
<thead>
<tr>
<th>Strata</th>
<th>Cattle Population (head)</th>
<th>District Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>&lt; 1.171</td>
<td>*East Kolono *, Laonti, North Moramo, Benua</td>
</tr>
<tr>
<td>Medium</td>
<td>1.172 – 4.168</td>
<td>Lalembu, Andoolo, <strong>Buke</strong>, West Andoolo, South Palanga, Baito,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lainea, Laeya, Kolono, Wolasi, Ranomeeto, West Ranomeeto,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lando, Mowila, Sabulakoa, Angata, Basala, Moramo</td>
</tr>
<tr>
<td>High</td>
<td>&gt; 4.169</td>
<td>Tinanggea, Palangga, Konda</td>
</tr>
</tbody>
</table>

Information: *The sub-district area of the selected research location

Source: Data Comparison, 2022

The equation model to determine the level of Bali cattle population strata from each sub-district for research locations is:

1. **Low level** = [(Min) s/d ($\bar{X}$ - STDEV -1)],
2. **Medium level** = [(\$\bar{X}$ - STDEV) s/d ($\bar{X}$ + STDEV)],
3. **High level** = [(\$\bar{X}$ + STDEV +1) s/d (Max)].

Information:

$\bar{X}$ = The average population of cattle in all districts;
STDEV = Standard deviation
Max = The highest population of cattle
Min = The lowest cattle population

Based on the consideration of the population strata of Bali cattle in each sub-district, as shown in Table 1, then 3 (three) sub-districts were determined as research locations. The research sample is a Bali cattle breeder household unit with a target number of 300 household respondents for each district using the Snowball Sampling technique. Research respondents must meet the following criteria: (1) own and raise at least 2 adults Bali cattle aged >1 year, (2) have at least 2 years of experience raising Bali cattle, and (3) have participated in counseling activities.

This research is in the form of a survey using a questionnaire to collect primary data from respondents. In contrast, secondary data is taken from agencies related to the research. The research variables include the competence and role of extension workers according to PERMENTAN RI No. 91/Permentan/OT.140/9/2013. The total measurement values obtained from the survey results are then calculated using the formula:

$$NPK = \frac{\text{Total NEM}}{80} \times 100$$

Standard NPK Extension:

- $\geq 91$ = Very well
- 76-90 = Good
- 61-75 = Enough
Farmers' perceptions of extension workers' performance (competence and role of extension agents) were measured using a Likert scale forming 5 (five) answer categories (1,2,3,4,5). The percentage using the formula:

\[
\text{Score proportion} = \frac{\text{Score Acquisition}}{\text{Maximum Score}} \times 100\%
\]

4 RESULTS AND DISCUSSION

4.1 Study Area

South Konawe Regency is between 3.58° and 4.31° south latitudes 121.58° and 123.16° east longitudes. It is divided into 25 sub-districts, with the widest sub-district, namely Tinanggea District, which is 317.59 km² or around 7.56% of the total area of South Konawe Regency. In 2022 South Konawe Regency had 5.684 State Civil Apparatuses with a composition of 2.875 men and 2.809 women.

The population composition for men and women in 2022 is recorded at 103.560 people for men and 99.212 women divided into 351 villages, most of whom work as horticultural farmers, plantations, fisheries, and animal husbandry. Plantation production such as cashew nuts in 2022 will reach 6.093,4 tons, cattle population 65.864 heads, native chickens 1.442,987 heads, and fish production will reach 8.467,72 tons.

4.2 Breeder Characteristics

The characteristics of the respondents (breeders) in this study totaled 300 household units spread over three sub-districts: East Kolono District, Buke District, and Tinanggea District. The respondents' ages (Table 2) ranged from 18 to 60 years old, with respondents between the ages of 41 and 51 accounting for 150 and men accounting for 291. The main occupation of the respondents is dominated by farmers (66.33%), while the respondents with the main job as breeders have a percentage value of 16.33%. Education will form skilled human resources, which influences the level of understanding and application of technology and breeders. The level of education influences business continuity, production, and marketing.

The education level of the respondents was dominated by upper-middle-class graduates, with a percentage value of 39.00%. Gyawali et al., (2023) revealed that technology has benefits for the development of agricultural agribusiness, Xie & Huang, (2021) the application of technology is a reflection of the level of education and understanding of farmers in applying sustainable agricultural business. The increasingly rapid world of technology, now that most of the developed countries have applied smart robots in the livestock industry. Stoimenov et al., (2022) smart robots can streamline the work of farmers, such as cleaning livestock pens and identifying livestock with health problems.

Table 2. Characteristics of Bali Cattle Breeders

<table>
<thead>
<tr>
<th>Age</th>
<th>Amount</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-30</td>
<td>10</td>
<td>3.33</td>
</tr>
<tr>
<td>31-40</td>
<td>54</td>
<td>18.00</td>
</tr>
<tr>
<td>41-50</td>
<td>150</td>
<td>50.00</td>
</tr>
<tr>
<td>51-60</td>
<td>68</td>
<td>22.67</td>
</tr>
<tr>
<td>60+</td>
<td>18</td>
<td>6.00</td>
</tr>
<tr>
<td>Total</td>
<td>300</td>
<td>100</td>
</tr>
</tbody>
</table>
Gender | Amount | Percentage (%)  
--- | --- | ---  
Female | 9 | 3.00  
Male | 291 | 97.00  
Total | 300 | 100  

The Main Job | Amount | Percentage (%)  
--- | --- | ---  
Government Employees | 9 | 3.00  
Housewife | 9 | 3.00  
Farmer | 199 | 66.33  
Entrepreneur | 34 | 11.33  
Breeder | 49 | 16.33  
Total | 300 | 100  

Education | Amount | Percentage (%)  
--- | --- | ---  
Elementary School | 90 | 30.00  
First Level School | 77 | 25.67  
Upper-Level School | 117 | 39.00  
Bachelor's Degree (S1) | 16 | 5.33  
Total | 300 | 100  

Breeding Experience | Amount | Percentage (%)  
--- | --- | ---  
1-3 | 73 | 24.33  
3-5 | 68 | 22.67  
5-10 | 151 | 50.33  
10+ | 8 | 2.67  
Total | 300 | 100  

Most of the respondents' farming experience has reached 5-10 years, with a total percentage of 50.33%, and for respondents who have 3-5 years of farming experience, it is 22.67%. The experience of raising livestock owned by farmers in the study area illustrates that they must have had quite a long experience. Of course, this has implications for the level of income the farmers derive from the livestock they keep. However, the survey results show breeders with 1-3 years of experience in the livestock business and 8 (eight) breeders with more than 10 years of farming experience. Of course, this experience is the initial capital for breeders to improve family welfare.

4.3 Production Aspect

The development of Bali cattle in the research area is inseparable from several aspects of production, such as rearing patterns, rearing systems, mating systems, participation in counseling, extension support, and business constraints. The analysis results found (Table 3) that most farmers in the study locations applied the breeding pattern with a percentage value of 42.67%, fattening of 32.67%, and those who applied both breeding and fattening patterns of 24.67%.

Table 3. Aspects of Bali Cattle Production

| Maintenance Pattern | Amount | Percentage (%)  
--- | --- | ---  
Breeding | 128 | 42.67  
Fattening | 98 | 32.67  
Breeding and Fattening | 74 | 24.67  
Total | 300 | 100  

| Maintenance System | Amount | Percentage (%)  
--- | --- | ---  
Intensive | 5 | 1.67  
Semi-Intensive | 257 | 85.67  
extensive | 38 | 12.67  
Total | 300 | 100  

| Marriage System | Amount | Percentage (%)  
--- | --- | ---  
Natural Marriage | 175 | 58.33  
Artificial Insemination | 125 | 41.67  

Source: Analysis Results, 2022
Breeders who apply intensive maintenance systems have a percentage value of 1.67%, semi-intensive 85.67%, and extensive 12.67%. In addition to the livestock maintenance systems and patterns applied by respondents in the study area, there are two livestock mating systems commonly used by Bali cattle breeders, namely the natural mating system at 58.33% and mating using artificial insemination technology at 41.67%.

Farmers’ knowledge of artificial insemination technology is usually when participating in extension activities; this can be seen from the percentage results regarding extension participation, which reached 60.67%, and the percentage value of 39.33% is the value where farmers do not participate in extension activities. In the end, it has implications for support for counseling at 59.33%, which does not support 40.67%.

### 4.5 Feed Aspect

Forage for Bali cattle in general in the study area (Table 4) mostly comes from natural grass (44.33%) and cultivated grass (33.67%). However, some breeders provide by-products of food crops as an animal feed with a percentage of 12.67%. De Araújo et al., (2019) reported that the integration of Bali cattle and food crops contributed to the income of the people of Timor Leste, as well as breeders in the study area providing plantation by-products as a source of animal feed with a percentage value of 6.33%.

#### Table 4. Feed Aspects for Bali Cattle

<table>
<thead>
<tr>
<th>Feed Type</th>
<th>Amount</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultivating Grass</td>
<td>101</td>
<td>33.67</td>
</tr>
<tr>
<td>Food Plants By-products</td>
<td>38</td>
<td>12.67</td>
</tr>
<tr>
<td>Plantation By-products</td>
<td>19</td>
<td>6.33</td>
</tr>
<tr>
<td>Natural Grass</td>
<td>133</td>
<td>44.33</td>
</tr>
<tr>
<td>Bran</td>
<td>9</td>
<td>3.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>300</td>
<td>100</td>
</tr>
</tbody>
</table>

**Source:** Analysis Results, 2022

Plantation by-products, a feed source for Bali cattle, usually come from oil palm plantations and forage found in plantation areas. Fal-Amri et al., (2022) reported that in the oil palm plantation area, there is forage that can be used as a source of animal feed, as well as Ramon et al., (2022), reported that in the area of oil palm plantations, there is a source of fodder for Bali cattle such as palm fronds, Silalahi et al., (2018). Still, there are problems because there are no standards for feed processing based on palm oil industrial waste and technical constraints (Wulandari, 2021).
4.6 Health Aspect

Livestock health plays an important role because healthy livestock can also provide good quality in terms of productivity. Livestock diseases that commonly attack Bali cattle are divided into 6 (six) types of diseases, including skin diseases (44.00%), intestinal worms (10.33%), repeated mating (8.67%), miscarriage (2.33%), physical injuries (32.00%), and inflammation of the udder (2.67%). Most of the diseases that attack livestock are not treated by breeders, and it is evident from the results that the percentage is 74.67%, the remaining 25.33% are treated.

Table 5. Aspects of Bali Cattle Health

<table>
<thead>
<tr>
<th>Livestock Disease</th>
<th>Amount</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Disease</td>
<td>132</td>
<td>44.00</td>
</tr>
<tr>
<td>Worms</td>
<td>31</td>
<td>10.33</td>
</tr>
<tr>
<td>Repeated Mating</td>
<td>26</td>
<td>8.67</td>
</tr>
<tr>
<td>Miscarriage</td>
<td>7</td>
<td>2.33</td>
</tr>
<tr>
<td>Physical Wounds</td>
<td>96</td>
<td>32.00</td>
</tr>
<tr>
<td>Udder Inflammation</td>
<td>8</td>
<td>2.67</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>300</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Disease Management</th>
<th>Amount</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treated</td>
<td>76</td>
<td>25.33</td>
</tr>
<tr>
<td>Not Treated</td>
<td>224</td>
<td>74.67</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>300</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Types of Antibiotics</th>
<th>Amount</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limoxin</td>
<td>105</td>
<td>35.00</td>
</tr>
<tr>
<td>Medoxi</td>
<td>107</td>
<td>35.67</td>
</tr>
<tr>
<td>Procain P.</td>
<td>64</td>
<td>21.33</td>
</tr>
<tr>
<td>Verm-O</td>
<td>24</td>
<td>8.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>300</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vaccine Type</th>
<th>Amount</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-Kompleks</td>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>Sambe</td>
<td>100</td>
<td>33.33</td>
</tr>
<tr>
<td>Starain 19-24</td>
<td>197</td>
<td>65.67</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>300</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Analysis Results, 2022

The types of antibiotics that farmers usually use to increase the immune system of livestock are Limoxin (35.00%), Medoxi (35.67%), Procaine P. (21.33%), and Verm-O (8.00%). Meanwhile, the types of vaccines used were B-complex (1.00%), Sambe (33.33%), and Starain 19-24 (65.67%).

4.7 Perception of Breeders

Competence is the ability possessed by a person to be able to provide solutions to any problems faced by both individuals and groups. The analysis results for extension personality competencies (Table 6) found that most breeders thought extension workers had an unpleasant personality, as evidenced by 46.49% (bad) analysis results.

Table 6. Perceptions of Farmers in East Kolono District

<table>
<thead>
<tr>
<th>Extension Competency</th>
<th>N</th>
<th>Score</th>
<th>Mean</th>
<th>%</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personality</td>
<td>300</td>
<td>2.092</td>
<td>20.87</td>
<td>46.49</td>
<td>Bad</td>
</tr>
<tr>
<td>Andragogy</td>
<td>300</td>
<td>2.197</td>
<td>21.97</td>
<td>48.82</td>
<td>Bad</td>
</tr>
<tr>
<td>Professional</td>
<td>300</td>
<td>2.211</td>
<td>22.11</td>
<td>49.13</td>
<td>Bad</td>
</tr>
<tr>
<td>Social</td>
<td>300</td>
<td>1.991</td>
<td>19.91</td>
<td>44.24</td>
<td>Bad</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Extension Role</th>
<th>N</th>
<th>Score</th>
<th>Mean</th>
<th>%</th>
<th>Category</th>
</tr>
</thead>
</table>

The competencies an instructor possesses apart from personality are other competencies that must be possessed, namely being able to direct solutions to any problems breeders face. However, most breeders’ findings (Table 6) gave unsatisfactory answers. This can be seen in the analysis results of 48.82% (bad). Likewise, professional competence and social competence with unsatisfactory answers are included in the bad category.

The bad competence of extension workers in South Konawe Regency is probably caused by productivity, competence, and work motivation. That’s according to the opinion of Kamsiah, (2015) that there is a positive relationship between competency and work productivity of extension workers. Figna et al., (2019), the work of extension workers is closely related to the competence of extension workers in terms of age and education. Santi & Hery, (2021) not much different from what happened in Pasaman District, the competence of extension agents was in the medium category.

Suvedi et al., (2018) reported that an extension agent should have a good attitude, competence, a responsible personality, and better knowledge to convince farmers of the application of technology. Tarekegne et al., (2021) believe that an extension agent must be able to facilitate the needs of farmers in the form of alignment of education, Herawati & Susilo, (2019) raise farmers, Idowu (2021) also supported the level of education of extension workers. Umar et al., (2017), such as extension workers in Malaysia.

The role of extension workers as educators, analysts, consultants, and organizers (Table 6) should be owned and become a prerequisite when someone wants to become an extension worker because if an extension agent does not have that, it will result in the level of community understanding regarding the extension process. This is evident from the results of the analysis it was found that the role of extension workers as educators has a percentage of 45.52% (bad), analyzer 44.16% (bad), consultant 33.20% (bad), and organizer 38.76% (bad). Afrad et al., (2019) revealed that an extension worker should be an agent of change so that it has an impact on the public as well as the private sector.

Extension officers, in terms of educating breeders, must be able to make and initiate various pieces of training, such as non-formal education. Baughman et al., (2012) Extension officers in implementing non-formal education must be able to evaluate each extension activity in terms of field education, Paschen et al., (2021) become an advisor to farmers, and Biswas et al., (2021) servant for farmers. However, the reality on the ground shows that most extension workers get less impressive percentage scores.

The results of a subsequent study regarding the performance of extension workers in Buke District (Table 7) found that the competence of extension officers had different scores. This can be seen from the percentages of Personality 47.87% (bad), andragogy 53.33% (bad), professionalism 49.76% (bad), and social 51.62% (bad). The study on the competency of extension agents illustrates that to increase the participation of farmers, an extension agent must have competencies that align with the needs of the breeder.

<table>
<thead>
<tr>
<th>Extension Competency</th>
<th>N</th>
<th>Score</th>
<th>Mean</th>
<th>%</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personality</td>
<td>300</td>
<td>2.154</td>
<td>22.99</td>
<td>47.87</td>
<td>Bad</td>
</tr>
<tr>
<td>Andragogy</td>
<td>300</td>
<td>2.400</td>
<td>24.00</td>
<td>53.33</td>
<td>Not Good</td>
</tr>
<tr>
<td>Professional</td>
<td>300</td>
<td>2.239</td>
<td>22.39</td>
<td>49.76</td>
<td>Bad</td>
</tr>
<tr>
<td>Social</td>
<td>300</td>
<td>2.323</td>
<td>23.23</td>
<td>51.62</td>
<td>Not Good</td>
</tr>
</tbody>
</table>

Table 7. Perceptions of Breeders in Buke District

<table>
<thead>
<tr>
<th>Extension Role</th>
<th>N</th>
<th>Score</th>
<th>Mean</th>
<th>%</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educator</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analyzer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consultant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Analysis Results, 2022
In general, the role of extension workers in this study indicated that most respondents stated that the role of extension workers was not good. The findings of the analysis show that the role of extension workers as educators has a percentage value of 54.96%, followed by that of analyzers (54.40%), consultants (54.32%), and organizers (54.04%). The subordinate role of extension workers is probably due to their level of education because, in general, extension workers in South Konawe are of less productive age.

The needs of breeders in handling livestock diseases, maintenance management, and feed management will not be properly realized if an instructor does not have qualified competence. This is different from studies by Islamiyah & Azizah, (2020), which found that the role of extension workers as motivators and communicators has a positive relationship with serving small farmers in rural areas (Cesarini, 1982), and Gao et al., (2020), especially adopt the application of the latest technology.

Anaktototy et al., (2021) The level of education is directly related to knowledge and mindset in carrying out their duties as extension workers, even in Subang Regency extension workers only work because of affiliation, power, and achievement (Siregar et al., 2010), but for the Timor region the presence of livestock extension agents in developing Bali cattle (Marnisah et al., 2022). Bali cattle have good productivity on the island of Timor because they receive support from livestock extension workers (Habaora et al., 2020). Likewise, with the perceptions of Bali cattle breeders towards extension agents in North Central Timor District (Riwukore & Habaora, 2019), but in contrast to the perception of farmers in low-income countries, most farmers are disadvantaged by extension services such as Burkina Faso, Mali, and Benin (Pousga et al., 2022).

Another perception regarding the performance of livestock extension officers is also found in Tinanggea District (Table 8), where the competence of extension agents in the personality field has a different score, as can be seen from the percentage value, which reaches 53.03%, andragogy 53.49%, professionalism 55.38%, and social competence 54.31%. Meanwhile, the roles of extension workers as educators were 52.88%, analyzers 43.20%, consultants 33.20%, and organizers 35.56%.

Table 8. Perceptions of Farmers in Tinanggea District

<table>
<thead>
<tr>
<th>Extension Competency</th>
<th>N</th>
<th>Score</th>
<th>Mean</th>
<th>%</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personality</td>
<td>300</td>
<td>2.389</td>
<td>23.89</td>
<td>53.09</td>
<td>Not Good</td>
</tr>
<tr>
<td>Andragogy</td>
<td>300</td>
<td>2.407</td>
<td>24.07</td>
<td>53.49</td>
<td>Not Good</td>
</tr>
<tr>
<td>Professional</td>
<td>300</td>
<td>2.492</td>
<td>24.92</td>
<td>55.38</td>
<td>Not Good</td>
</tr>
<tr>
<td>Social</td>
<td>300</td>
<td>2.444</td>
<td>24.44</td>
<td>54.31</td>
<td>Not Good</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Extension Role</th>
<th>N</th>
<th>Score</th>
<th>Mean</th>
<th>%</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educator</td>
<td>300</td>
<td>1.322</td>
<td>13.22</td>
<td>52.88</td>
<td>Not Good</td>
</tr>
<tr>
<td>Analyzer</td>
<td>300</td>
<td>1.080</td>
<td>10.80</td>
<td>43.20</td>
<td>Bad</td>
</tr>
<tr>
<td>Consultant</td>
<td>300</td>
<td>830</td>
<td>8.30</td>
<td>33.20</td>
<td>Bad</td>
</tr>
<tr>
<td>Organizer</td>
<td>300</td>
<td>914</td>
<td>9.14</td>
<td>36.56</td>
<td>Bad</td>
</tr>
</tbody>
</table>

Source: Analysis Results, 2022

The findings in Tinanggea District (Table 8) are not much different from what happened in East Kolono District (Table 6) and Buke District (Table 7). If this is not addressed, it will directly affect the quality of the counseling program by the local government, considering that South Konawe Regency is an area that has been designated as a national-scale livestock breeding center. Thus, efforts are needed to improve the quality of livestock extension agents.
on a large scale because it is feared that there will be a fatal decline due to the incompetent quality of extension resources.

The quality of extension human resources who do not have competence will slowly harm small breeders, the local government, and the central government because, in the end, it will harm all stakeholders engaged in animal husbandry, especially South Konawe Regency. Tatik et al., (2014) Livestock extension officers should be able to identify and understand the behavior of Bali cattle breeders to determine programs and work practices for management in the future.

Anaktototy et al., (2021), Increasing livestock productivity requires access to effective extension services as the basis for the sustainability of livestock business, Dillon et al., (2015) practice of farmers regarding disease management, Iyiola-Tunji et al., (2015) evaluate the knowledge level of breeders, Ayalew & Abebe, (2018) transfer of knowledge and technology into livestock systems, Gustafson et al., (2015) as well as educating breeders against various livestock diseases, Mairiga et al., (2016) by carrying out activities in the form of face-to-face visits, demonstrations, training in the form of field schools and the introduction of information technology.

5 CONCLUSION AND RECOMMENDATION

The findings in this study can be concluded that the competence of extension workers and the role of extension agents both in East Kolono District, Buke District, and Tinanggea District fall into the bad and not good categories according to PERMENTAN RI No. 91/Permentan/OT.140/9/2013 regarding the performance of livestock extension agents. Through this study, researchers recommend a policy to provide special training for livestock extension workers in South Konawe Regency.

ACKNOWLEDGMENTS

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AUTHOR CONTRIBUTIONS

AT, ASA (Survey, Data Analysis, and Licensing), LAS (Translate, Data Analysis), MAP (Licensing, Data Analysis), DZ, LJ (Kolono Timur District Survey), AT, ASA(Buke District Survey), MAP, LAS (Data analysis), LMM(Tinanggea District Survey).

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