

## Farmers' Perception to The Role of Extension Workers on Kaligesing Goat Farm Management in Kaligesing, Purworejo

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**Abstract.** The aims of this research were to describe the characteristics of Kaligesing goat farmers; to analyze the farmers' perceptions on the role of extension workers as conduit of information, as mentors, organizers and dynamic factor, technicians and liaisons; to discover the relationship between the farmers' characteristics with farmers' perceptions; and to investigate the relationship between farmers' perceptions to goat maintenance management. The respondents were goat farmers in Kaligesing, Purworejo, Central Java Province. Data were obtained from questionnaire survey method. Determining location, the research applied combination of stratified sampling method with purposive random sampling. Total respondents were 159 farmers with nine farmer groups as samples. Analysis was subject to Spearman Rank, resulting that age, education level and farming experience were not significant to the farmers' perceptions to the role of extension workers, but the ownership of livestock had a very significant relationship with a correlation coefficient of 0.240, group classes had also very significant relationship with a correlation coefficient of 0.414, and frequency of meeting with extension workers have a significant relationships with a correlation coefficient of 0.202. Farmers' perceptions to the role of extension workers had very significant relationships to the maintenance management with a correlation coefficient of 0.393.

**Key words :** farmers' characteristics, farmers' perceptions, Kaligesing goat, role of extension workers

**Abstrak.** Penelitian ini bertujuan untuk mengetahui karakteristik peternak, persepsi peternak terhadap peran penyuluh, hubungan antara karakteristik peternak dengan persepsi, dan hubungan antara persepsi peternak dengan manajemen pemeliharaan. Responden penelitian adalah peternak Kambing Kaligesing di Kecamatan Kaligesing Kabupaten Purworejo Jawa Tengah dengan metode penelitian survei kuesioner. Penentuan lokasi penelitian dengan kombinasi cara *stratified sampling* dan *purposive random sampling*. Jumlah kelompok tani sebagai sampel penelitian sebanyak sembilan kelompok dan jumlah total responden sebanyak 159 peternak. Analisis *Rank Spearman* digunakan untuk analisis data. Hasil analisis menunjukkan bahwa umur, tingkat pendidikan dan lama beternak tidak secara nyata memiliki hubungan dengan persepsi peternak terhadap peran penyuluh, sedangkan kepemilikan ternak memiliki hubungan sangat nyata ( $P < 0,01$ ) dengan nilai koefisien korelasi 0,240. Kelas kelompok memiliki hubungan sangat nyata ( $P < 0,01$ ) dengan nilai koefisien korelasi 0,414 dan frekuensi bertemu penyuluh memiliki hubungan nyata ( $P < 0,05$ ) dengan nilai koefisien korelasi 0,202. Persepsi peternak terhadap peran penyuluh memiliki hubungan sangat nyata ( $P < 0,01$ ) terhadap manajemen pemeliharaan dengan nilai koefisien korelasi 0,393

**Kata kunci:** karakteristik peternak, persepsi peternak, kambing Kaligesing, peran penyuluh

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### Introduction

The agricultural extension organization (extension workers and services) serves importantly to actualize the crucial role of agricultural extension in national development. Agricultural extension is an educational process and brings about desired behavioral change in farmers and other stakeholders. Extension also uses its own delivery mechanism to reach its

cliente. Four personal qualities essential for extension work include ability to communicate well with farmers, ability to get on with people, enthusiasm for the job, common sense and initiative. Some extension workers are more professional than others because of the developed qualities for professional success. The qualities come easily to some people, while to others show different professional qualities

like empathy, credibility (safety and competency), humility, professional commitment, listening, observation, encouragement, questioning, summarizing, timing, flexibility and receptivity. Finally, Extension service is meant for those staff that have chosen them as a choice and not by chance (Anaeto et al., 2012). The strength of participatory extension is that it empowers people to change, to recognise the value of indigenous knowledge, and to help provide easily accessible pathways for change. Agricultural innovation systems (AIS) strategies now encourage new ideas to emerge through a collaboration of stakeholders, and are adapted, adopted and integrated into rural enterprises (Garforth, 2013). Modern participatory approaches to agricultural development have farmers collaborating within research, extension and education systems to bring about changes that meet their real needs. This is situated within the sphere of AIS involving two-way relationship with all other stakeholders supported by government policy and regulatory framework (Chowdhury et al., 2013) moving from centralised information based extension on production systems, to a more pluralistic market based focus (Benson and Jafry 2013; Garforth 2013). However, agricultural extension in most countries including Indonesia was founded on the conventional top-down, transfer of technology (TOT) models, as described by Pretty and Chambers (2003). While Benson and Jafry (2013) highlight some issues of mistrust and control that can occur between non-government organizations (NGOs) and governments, as well as their potential for stifling private sector extension services. Many Indonesian farmers are unable to embrace change due to impediments such as a lack of establishment finances, increased costs of inputs, wages and land, a lack of secure water, poor market prices and infrastructure support, family needs and personal problems. Agricultural extension must seek to address

these issues with farmers and communities to help them find pathways to change, rather than merely demonstrate better production methods (Shalaby et al., 2011).

This research focused on the roles of extension worker in rural goat management especially in the perspective of farmers. Livestock maintenance management of Kaligesing District as goat farm centers of Kaligesing Goat is still mainly traditional, therefore needs various ways to improve maintenance management including through counseling. A large number of extensions do not guarantee the success of counseling purposes, but it is determined by the role of extension workers classified into five, namely as a conduit of information, supervisor, organizer and a dynamic, technicians, and liaison. The diversity of farmers' characteristics include level of education, length of breeding, the number of cattle ownership, group classes and intensity allegedly met extension will lead to differences in the farmers' perception toward the role of the extension workers. This is because the perception is the process by which individuals organize and interpret their sensory impressions in order to give meaning. Differences in farmers' perception are suspected to correlate with the farmers' maintenance management level.

This study was aimed to 1) describe the farmers' characteristics, 2) analyze the farmers' perception toward the role of extension workers as a conduit of information, supervisor, organizer and motivator, technicians and liaison, 3) determine the relationship between farmers' characteristics and perception, and 4) investigate the relationship between farmers' perception and maintenance management.

## Materials and Methods

This research was conducted in Kaligesing District, Purworejo, Central Java, to 159 Kaligesing goat farmers as respondents. An open questionnaire with 30 statements to

measure perceptions and 30 statements to measure the level of maintenance management was used for data collection. Research location was determined by purposive sampling to obtain a village included in three group classes namely beginner, advanced or intermediate, continued by random sampling in case of more than one village in a category. Convenience sampling was conducted to obtain respondent sample, in which the selected group members could be found and were willing to be respondent. Farmers' perception towards the role of the extension workers was measured using Likert scale, namely strongly agree (5), agree (4), hesitate (3), disagree (2), and strongly disagree (1). Statements to determine the maintenance management were dichotomy, providing "Yes" (1) or "No" (0) answer choices. The data were subject to SPSS program analysis.

## Results and Discussion

**Respondents' characteristics.** Age of Kaligesing Goat breeders is listed in Table 1. Judging from the farmers' condition, the largest percentage was productive age. It was very supportive in the implementation of counseling because the younger productive farmers demonstrated bigger curiosity and higher interest to technology adoption. The older farmers were inclined to poor efficiency also in implementing extension.

Table 1. Age of Kaligesing goat farmers

Respondents' age (year)	Respondents (person)	Percentage (%)
26 – 44	39	24.53
45 – 63	100	62.89
64 – 82	20	12.58
Total	159	100.00
Average: 51.96±10.73		

The education level of Kaligesing goat farmers is presented in Table 2, in which farmers' education level was 42.77% ranged from elementary to junior high school level. It created barrier and another problem in the

extension implementation because low education level had implications for the lack of farmers' perceptions as respondents in understanding an extension activity.

Tabel 2. Education level of famers

Education level	Respondents (person)	Percentage (%)
Uneducated (no school)	2	1.26
Elementary school	66	41.51
Junior high school	44	27.67
Senior high school	36	22.64
University	11	6.92
Total	158	100.00

Table 3 presents farming experience of Kaligesing goat farmers, averagely 10.23 years because the effort to raise goats in Kaligesing was passed on from the first entry of India during the Dutch colonial and was intended as savings. When the data were limited to 5 years, farmers with more than 5 year experience were 88.05%. This was a good condition because according to Boogaard et al. (2011) the farmers with experience or knowledge of agriculture

Table 3. Farming experience of farmers

Farming experience (year)	Respondents (person)	Percentage (%)
02.00 – 10.00	95	59.75
10.01 – 18.00	46	28.93
18.01 – 26.00	18	11.32
Total	159	100.00
Average 10.23±5.34		

were more confident with their farming manner and more receptive to contemporary and modern farming.

Livestock ownership was still small because raising cattle only served as side job for saving. Ownership needed to be improved to meet business feasibility (Table 4). As Das and Shivakoti (2006) mentioned that small farms could optimize their business by raising 4 goats, or equivalent to 20 adult goats, while the

category of medium-sized farms could be optimized by keeping 14 goats or 70 unit.

Kaligesing goat farmer group classes are presented in Table 5. Kaligesing Goat farmers' membership in farmer groups was distributed evenly in three group classes. Ashwar *et al.* (2011) said that the participation of farmers in the extension and organizations such as farmers' groups contribute in developing a positive attitude towards the management of the farm. When joining a group, the members must be convinced that the benefits of the group would be greater than the individual.

Meeting frequency of farmers and the extension worker both in formal meetings and in friendly visit (*anjangsana*) was mostly 2 to 4 times a month (Table 6) because the extension workers' schedule to visit was four days a week (Monday-Thursday). A day visit to one or two groups would make up 18-36 visits a month. Extension workers would have more frequent visit if there were fewer groups.

**Farmers' perception towards the role of extension workers.** Farmers with high perception reached 62.26% indicating that the extension was excellent in providing information to farmers who, in this case, needed more specific information about the maintenance management of goats (Table 7).

Table 8 presents farmers' perceptions to the role of extension workers as mentors namely 55.97%, or high level. This suggests that the extension worker was excellent in providing guidance to make fermented feed and recycle manure to farmers.

Farmers' perceptions to the role of extension workers as an organizer and dynamic factor are listed in Table 9. Most farmers had medium perception towards the role of extension worker as an organizer and a dynamic extension. This was because involvement of extension workers in the establishment, re-organization and sustainability of the group was very small and not in depth to interfere with some personal affairs and group focus was on farms technical issues.

Table 10 shows the farmers' perceptions to the role of extension workers as technicians. Many farmers with medium and low perception indicated that the role of the extension worker as a technician needed improvement in examples and practices on various education topics, especially on new technological innovations in livestock management.

The largest percentages of farmers had medium perception towards the role of the extension workers as a liaison. It indicated that the extension needed to increase its role in bridging the farmers with various parties such as the company inputs, agricultural training institutions, research institutions and government (Table 11).

Farmers' perceptions to the role of extension workers as listed in Table 12 were at medium and high levels, showing that the workers performance was good enough with still needed improvement to make the perception high.

Table 4. Livestock owned of Kaligesing Goat farmers

Livestock (units)	Owned	Respondents Person	Percentage (%)	Average
Adult:	0-5	138	87.34	2.92±2.25
	6-10	18	11.39	
	11-15	2	1.27	
Kid:	0-4	140	88.61	2.32±2.24
	5-9	16	10.13	
	10-14	2	1.27	

Table 5. Group classes of Kaligesing goat farmers

Group classes	Respondents (person)	Percentage (%)
Beginner	49	30.82
Intermediate	52	32.70
Advanced	58	36.48
Total	159	100.00

Table 6. Meeting frequency Kaligesing goat farmers with extension workers

Frequency on a month (time)	Respondents (person)	Percentage (%)	Category
0-1	27	16.98	Seldom
2-4	128	80.50	Medium
5-8	4	2.52	Often
Total	159	100.00	

Table 7. Farmers' perceptions to the role of extension workers as a conduit of information

Perception score	Perception	Respondents (person)	Percentage (%)
06.00 – 14.00	Low	3	1.89
14.01 – 22.00	Medium	57	35.85
22.01 – 30.00	High	99	62.26
Total		159	100.00

Table 8. Farmers' perception to the role of extension workers as mentors

Perception score	Perception	Respondents (person)	Percentage (%)
06.00 – 14.00	Low	0	0.00
14.10 – 22.00	Medium	70	44.03
22.01 – 30.00	High	89	55.97
Total		159	100.00

Table 9. Farmers' perceptions to the role of extension workers as a organizer and dynamic factor

Perception score	Perception	Respondents (person)	Percentage (%)
06.00 – 14.00	Low	2	1.26
14.01 – 22.00	Medium	88	55.34
22.01 – 30.00	High	69	43.40
Total		159	100.00

Table 10. Farmers' perception to the role of extension workers as technicians

Perception score	Perception	Respondents (person)	Percentage (%)
06.00 – 14.00	Low	4	2.52
14.01 – 22.00	Medium	65	40.88
22.01 – 30.00	High	90	56.60
Total		159	100.00

Table 11. Farmers' perceptions to the role of extension workers as a liaisons

Perception score	Perception	Respondents (person)	Percentage (%)
06.00 – 14.00	Low	24	15.09
14.01 – 22.00	Medium	85	53.46
22.01 – 30.00	High	50	31.45
Total		159	100.00

Table 12. Farmers' perceptions to the role of extension workers

Perception score	Perception	Respondents (person)	Percentage (%)
30.00 – 70.00	Low	0	0
70.01 – 110.00	Medium	83	52.20
110.01 – 150.00	High	76	47.80
Total		159	100.00

**The relationship between the farmers' characteristics and perception towards the role of extension worker.** Farmers' age, level of education and farming experience had no relationship ( $P > 0.05$ ) with their perception towards the role of extension workers (Table 13). It was in accordance with Munyuli (2011) that age did not affect farmers' perception, and Gang and Ping (2011) that age had no relationship with the willingness of farmers to seek information. Lawal-Adebowale and Akeredolu-Ale (2010) reported that the level of formal education and farming experience had no relationship with the perception of farmers on the use of information and communication technologies for agricultural development in Nigeria. Furthermore, Hosseini et al. (2012) stated that farmers' age and farming experience did not related to their perceptions on the increased production of canola in Iran.

Cattle ownership of Kaligesing goat farmer groups had a significant relationship with the farmer's perception towards the role of the extension workers. Cattle ownership had a correlation coefficient of 0.240 ( $P < 0.01$ ), indicating that the more cattle ownership, the higher farmers' perception towards the role of extension worker. Group class related to the farmer's perception toward the role of extension worker, observed from the positive correlation coefficient of 0.414 ( $P < 0.01$ ). It indicated that the higher the class, the higher the farmers' perception towards the role of extension worker. These results were consistent with Munyuli (2011) that the contact

of farmers with agricultural extension workers had a relationship with farmers' perceptions. Hosseini et al. (2012) also stated that the extension factor had a relationship with the farmers' perception. Meeting frequency of farmers and extension workers showed a significant effect on farmers' perception towards the role of extension workers as seen from the positive correlation coefficient of 0.202 ( $P < 0.05$ ), therefore the higher the meeting frequency, the higher the level of the farmer's perception towards the role of the extension workers.

**The relationship between the farmers' perception towards the role of extension workers and maintenance management.** Kaligesing goat farming management was 1.26% in low category, 52.50% medium and 46.54% good as shown in Table 14, while Table 15 presents the relationship between farmers' perceptions to the role extension workers with maintenance management. The percentage of farmers with good maintenance management category increased from medium to high perception, indicating that the higher farmers' perception towards the role of extension the better the maintenance management. Spearman rank analysis results were indicated by the correlation coefficient of 0.393 with a significance value of 0.000, showing a highly significant relationship ( $P < 0.01$ ). It was in line with Baba et al. (2011) that the farmers' perception towards the implementation of extension had a positive effect on the level of farmer participation in the extension activities.

Table 13. Relationship between characteristics of Kaligesing Goat farmers with farmers' perceptions to the role of extension workers

Farmers characteristic	Correlation coefficient)	Significant
Age	-0.030	0.703
Education level	0.022	0.787
Farming experience	-0.105	0.186
Livestock owned	0.240**	0,002
Group classes	0.414**	0.000
Frequency of meeting with extension workers	0.202*	0.011

Remarks:\*\* very significantly difference (P<0.01); \* significantly difference (P<0.05)

Table 14. Maintenance management of Kaligesing goat farmers

Maintenance management score	Respondent (person)	Percentage (%)	Criteria
00.00 – 10.00	2	1.26	Less
10.01 – 20.00	83	52.20	Medium
20.01 – 30.00	74	46.54	Good
Total	159	100.00	

Table 15. The relationship between farmers' perceptions to the role extension workers with maintenance management

Level of Perception	Degree of maintenance management		
	Less(0 – 10) Person (%)	Medium (10.01 – 20) Person (%)	Good (20.01 – 30) Person (%)
Low (30 – 70)	0 (0.00)	0 (0.00)	0 (0.00)
Medium (70,01 – 110)	1 (1.20)	61 (73.50)	21 (25.30)
High (110,01 – 150)	1 (1.32)	22 (28.95)	53 (69.74)

## Conclusion

Kaligesing goat farmers' perception towards the role of extension workers were mostly at medium and high level. Farmers' age, education level, and farming experience were not connected to perceptions, while cattle ownership, group classes and meeting frequency with the extension workers correlated with level of farmers' perceptions towards the role of extension workers. Farmers' perception towards the role of extension had a positive correlation with the farmers' maintenance management. It was suggested that extension workers needed to consider the farmers' characteristics in the form of cattle ownership, group classes and meeting frequency.

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