

# Assessment of The Livestock Extension Service In Ethiopia: The Case of Southern Region

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**Abstract :-** This paper Provide primary information for the current livestock extension system in respect to livestock technological packages for dairy, fattening, poultry and beekeeping. The general objective is to assess the extent of adoption and its impact on farmers' income and identified constraints for potential solution who participated on the package program and non- participants. Hence, the income of participating farmers surpassed from the non-participants which enhance more farmers to participant in the livestock extension package. However, the problems reported by farmers should receive due consideration to ease adoption of improved livestock technologies to improve the income and livelihood of the farming community.

**Index Terms—**Livestock extension system, Livestock technological packages, dairy, fattening, poultry, beekeeping, adoption and impact, income and constraints.

## 1. Introduction

Ethiopia has about 80 million inhabitants and the basis of the economy is agriculture sector accounts for 50% of GDP and generates 84% of export earnings and 80% of the labor force. Ethiopian livestock herd the largest in Africa, is a major source of cash income to the poorer sections of the Ethiopian rural population and enhance income diversification for investment. Despite the large livestock population in the country, the sector's contribution is well below its potential due to various reasons such as feed shortage, disease, less efforts in introducing the appropriate package of improved livestock technologies such as cross breeds, improved feeds management practices and inadequate healthcare services which enhance the current livestock production and productivity. To alleviate the constraints of livestock production at the farmers' level as well as to considerably increase production and productivity, different livestock packages were introduced since 1994/95 when the new extension approaches started "Participatory Demonstration and Training Extension System (PADETES). The extension package of livestock development has four components:

1. Dairy for milk production,
2. Fattening for meat production,
3. Poultry for egg production and
4. Bee-keeping for honey production.

The system also involved promotion of improved feeding and management practices into the farming system. Participants can be considered as adaptors and non-participants are non-adopters regarding the four livestock technology packages disseminated.

## 2. Objectives

- 2.1 To assess the extent of adoption of dairy, fattening, poultry and beekeeping of improved livestock technologies;
- 2.2 To comprehend farmers' perceptions of the livestock extension in promoting and disseminating livestock technologies appropriate to farmers.

## 3 Methodology

### 3.1 Study area and sampling

The study areas were selected based on production potential, accessibility and agro-ecology. Sidama zone (Hawassa Zuria), Amaro special woreda, Wolayita Zone (Humbo), Gomogofa zone (Arbamench Zuria), Hadiya zone (Lemu), Kefasheka zone (Bita). From each woreda two PAs were selected. Households were selected using two stage random sampling techniques. Households who were participated in one of the four livestock extension packages were considered as participants (adopters) and others considered as non-participated (non-adopters). The survey was conducted in 2009/10 cropping season using a total of 240 households from the mixed farming system.

### 3.2 Data collection and analysis

The data collection includes review of relevant literature, secondary data and primary data. The structured questionnaire were designed and pretested for any amendments and modifications. Descriptive statistics such as mean, frequency, t-test and chi-square test were used to analyze the household questionnaire for the assessment of the livestock extension packages and the extent. Farmers' perceptions were analyzed using Likert scale; strongly agree (5), agree (4), undecided (3), disagree (2), strongly disagree (1).

## 4. Results and Discussion

### 4.1 Livestock Production

Livestock are the main source of income and also used as draught power. As shown in Table 1, the average number of oxen owned was 1.91 for participants and 1.26 for non-participants. Bulls are reared mainly for sale. The average cattle owned by household range from 1.91 to 3.46 for participants and 1.26 to 2.09 for non-participants. The number of sheep owned by participants was (0.90) and the number of sheep by non-participants (0.93). The chicken number owned by participants exceeds the number of chicken owned by non-participants by 16 percent. Hence the TLU for participating farmers is double to non participant farmers and the benefit is highly realized and it should be recommended to scale up these technologies to enhance production and productivity.

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Table 1. Livestock ownership of Sampled households

Livestock types	Size per household		Total	
	Participants (N=127)	Non-participants (N=113)	Participants	Non-participants
Cow	3.46	2.09	435.96	236.17
Oxen	1.91	1.26	242.57	142.38
Sheep	0.90	0.93	114.3	105.09
Goat	1.43	1.16	181.61	131.08
Equine	0.34	0.27	43.18	29.97
Poultry	1.75	1.18	222.25	130.98
TLU	6.02	3.88	-	-

Survey data

Table 2. The mean income from different sources (in Birr) of the sample farmers

Cash income sources	Participant		Non-participant	
	N	Mean (Birr)	N	Mean (Birr)
Farm produce	125	2006.00	109	1904.00
Livestock sale	124	2800.00	113	1059.00
Livestock byproducts	127	482.00	113	142.00
Bee-byproducts	127	51.00	113	34.00
Off-farm income	126	88.17	113	112.00
Total cash income		5427.17		3251.00

Survey data

## Income

The economic study of farm families in developing countries has undergone formidable increases in its scope and complexity in recent decades. A bewildering array of theories now exist on household decision making, the working of rural factor markets, paths of technical change, the internal relations of the farm household, and the prospects for peasants in a capitalist world economy (Ellis, 1993). Often agricultural households' income is determined by household's production activities and changes in factors influencing production activities consequently will change household income and consumption behavior. The household cash income was estimated based on the sale of farm produce, livestock and its by-products and off-farm income during the survey period (table 2). However, farmers are reluctant to reliably estimate their income and it was underestimated. The average income of participants is 5427.17 birr/year and exceeds the average income of the non-participants by 26%. The adoption of improved technologies specifically improved livestock technologies were understood to result in higher income for the adopters of the technologies such as cross breeds, improved forage and management practices.

## 5. Livestock extension packages

### 5.1 Dairy extension package

Trial in individual farm is a method of determining the suitability of a new practice in farmers' situation. This is the first stage a new and improved practices passes through, before is taken up for result or method demonstration or recommended for large scale adoption. On farm trials are not meant to try to stimulate experiment station conditions in farmers' fields. Rather, they are designed to help detect differences under typical farmer management practices and environmental conditions. This is crucial first step in making recommendations that are appropriate for the farmers. The objective of this method is to test new and promising practices under the resources, constraints and abilities of the farmer. It also takes to find out the profitability of the new practice in comparison to the existing one and to build up confidence of the extension workers, research workers and farmers. Demonstration is very effective method for the transfer of technology in a community. It stimulates amongst the people to try out innovations themselves or even may replace a test of innovations by the farmer. They can show the causes of problems and their possible solutions without complicated technical details. A great advantage of demonstration is seeing how innovation works in practice. Post harvest technology assumes particular importance in the case of perishable commodities like fruits, vegetables, milk, egg, fish and other animal products and processed food. A mismatch between production and post harvest technologies affects adversely both producers and consumers. Growing urbanization leads to a diversification off food habits. Therefore there will be increasing demand for animal products like milk, cheese, eggs as well as for

fruits, vegetables and processed food. It is also advisable to note, farmers should have to be provided with the necessary inputs and market to promote production and productivity (Singh, 2003). The package used evaluation criteria mainly focus on the breed, improved management practices and improved feeding. Annex 1 portrays the sample farmers' dairy husbandry practices for participants and non-participants. Exclusively there were significantly participant farmers (72.3%) who reported their participation in the livestock extension package ( $\chi^2 = 131.3$ ,  $p < 0.01$ ). Only 22.4% participate in dairy package and for the components of dairy package, AI more participant farmers (16.1%) who reported the availability of AI service than non-participant farmers (5.7%). Bull service used more by non-participants about (63%) than participants (53%). The breed types were Hollestine/ Frieseina and Jersey (Exotic once). Dairy package also include forage and pasture for the participants only (10%). Accessibility to vet service is more for participants (88%) than non-participant (81%) and found to be affordable at the present conditions. The major problems pinpointed for the dairy package were sporadic insect pests and disease, shortage of feed, inadequate vet service, occasional drought and shortage of grazing land. Farmers in the study area also suggests to improve the current participation level and constraints for improved dairy technology package, timely provision of the packages based on farmers needs, improve farmers access to vet services and alleviation of grazing land shortcoming. Agriculture in Ethiopia is becoming more and more commercially oriented. And with that trend comes a growing interest in postharvest issues, in particular processing. There are several reasons for this. Where outputs is abandoned in the field or underutilized after harvest, processing can increase the usable physical volume and economic value of existing production. When seasonal cropping patterns or fixed production cycles restrict availability of agricultural commodities to given time periods, processing can extend their employment. If particular commodities have relatively limit usage, processing can diversify their exploitation and there by create new markets. In so doing, processing activities can also increase the value-added in rural production through transformation of low-priced raw materials into higher-priced intermediate or finished products. Processing may facilitate transportation and handling of these commodities as well. Managing information input is going to be very crucial for the recent agriculture. Decentralized production systems will have to be supported by a very few key centralized services such as the supply of credit, seed, fertilizer, bio pesticides and animal diseases diagnostics. Ideally an information shop will have to be set up by trained local youth in order to give farm families timely information on meteorological, management and marketing factors. Organization and management are key elements and depending on the area and farming systems steps will have to be taken to provide to small producers and advantage of scale in processing and marketing. It can best be developed through participatory research between scientists and farm families. This will help to ensure economic viability environmental sustainability and social and gender equity in integrated resource management villages (Singh, 2003).

## 5.2 Fattening extension package

According to the sampled farmers (Annex 2) the purpose of fattening were income source and significant at ( $\chi^2 = 4.657$ ,  $P < 0.05$ ). The trend of the community in the study area is increasing by 16.4% of participants due to better vet service (6%), favorable weather condition (6%) and feed availability (3%). While the reasons for decreasing is shortage of grazing area. Major problems in fattening were shortage of feed (32%) and inadequate vet service (27%).

## 5.3 Poultry Extension Package

The poultry extension package rarely includes vet service and only 4.9% of the participants reported the package provide vet service and customarily poultry share the farmers house partitioned 26% of the participant farmers (Annex 3). Thirty percent of the participant farmers in poultry production use improved forage. The choice of poultry breeds mainly based on dual purpose for meat and egg which exemplified by the participant households 35% which is more than 27% intended for egg and 15% for meat. The difference between the participants and non-participants are significant in the three variables ( $P < 0.01$ ). The sources of poultry package were the MOARD/ BOARD according to the participants (9.8%) as well as from PAs, cooperatives and unions 2.3% of participants and 1.3% of non-participants and this difference is significant ( $\chi^2 = 8.520$ ,  $P < 0.01$ ). The purpose of poultry production to the farming community mean both income and for food 22% of participants, 17% for income and 7% for food The trend of poultry population in the study area is decreasing according to 46% of participant and 49% of non-participant an increasing 39 % of participant and this difference is significant ( $\chi^2 = 47.050$ ,  $P < 0.01$ ). Major problems in poultry production were disease (35%), shortage of feed (16%), lack of vet service (11%), predators (20%) and the problem of housing (15%) of the participants. Therefore, to alleviate these problems, enhancing poultry production through the adoption of improved breeds, improved forage and agronomic management practices.

## 5.4 Beekeeping extension package

The components of improved beekeeping as of the sampled farmers depicted in Annex 4 were improved bee hives (3.8%), honey processing machine (2.5%) and marketing (3.8%) for the participant farmers and this difference is significant ( $\chi^2 = 9.703$ ,  $P < 0.01$ ). Among the improved bee hive introduced is Kenyan type 6% and other top bars 7% of the participated farmers which means 13% of the farmers adopted improved beehive. Honey processing machine introduced and adopted by 2.4 % of the participants as well as improved housing and handling. The purpose is mainly for both income and food (11%), for income (2.5%) and food (1.2%) for participants only.

## 5.5 Feed availability

Use of improved forage was reported more by about 63% of participants than 18% of non-participants. This difference is significant ( $\chi^2 = 16.875$ ,  $P < 0.01$ ). The types of forages were identified such as grasses like Rhodes, panicum, etc. accounted 60% of participants and 18% of non-participants. Herbaceous legumes 35% and 8% for participants and non-participants respectively and tree browsers etc. 20 percent of the participants (Annex 5). Hence, the main reasons

farmers are not using improved forage were unavailability 14% of participants, and 9% of non-participants, land shortage 3% of participants and 7% of non-participants, and lack of awareness 7% of participants and 6% of non-participants.

## 6. Farmers perceptions of sample households

Annex 6 shows the farmers perception of improved livestock technologies in Likert scale of strongly agree (5), Agree (4), Undecided (3), Disagree (2), strongly disagree (1). The actual mean was three due to the rating scale. Mean of greater than 3 denotes a positive attitude while a mean less than 3 denotes negative attitude of farmers towards the adoption of improved livestock technologies.

## 7. Access to extension service

Access to extension information could influence a farmer's decision to adopt a new technology. The farmers' access to extension visits through the extension contact is 98% for participant and 97% for non-participant. The frequency of extension visit to farmers was mainly once per week as reported by 63% of participant and 53% of non-participant. Meanwhile, the extension messages on livestock management which is one of the evaluation criteria for livestock extension packages has been given due emphasis. Hence, the farmers' perception regarding the adoption of recommended practices is explicit as far as the recommended practices have been tested on-farm adaptive trial with their involvement, they can have the opportunity and be able to adopt 98% of participants and 78% of non-participants. Moreover, the subject of the extension message which includes, veterinary 54% of participant and 46% of non-participant and artificial insemination 53% and 47% , bull service 52% and 48%, improved forage 53% and 47%, and marketing 54% and 46% for the participants and non-participants respectively have been attended in due course. Some of the reasons given by the sampled household, not adopting the improved practices were too expensive, too technical and too risky. Therefore, the practices should be cost effective, simplify at the farmers management level and to minimize the risk if more farmers to adopt the technology. Sex of agent making usual visit is male 62%, female 7% and both 29% of participants and male 67%, female 7% and both 10% for non-participants. Communication problem also reported by farmers 22% of participants and 14% of non-participants. The source of agricultural information to the farming community regarding improved technology dissemination is the extension agents 84% of participants and 85% non-participants followed by contact farmers and researchers (Table 3). Use of leaflets, posters and newsletter is very minimal 6% of participants and 14% of non-participants. The use of mass media as source of information, to the farming community really sounding according to 59% of participants and 21% of non-participants.

Table 3. Sampled farmers' access to extension information and communication

Description	Participants		Non participants	
	N	%	N	%
Extension contact				
Yes	85	97.7	69	94.5
No	2	2.3	4	5.5
Frequency of extension visit				
Once in Week	55	63.2	39	53.4
Once in two weeks	17	19.5	16	21.9
Once in month	11	12.6	9	12.3
Once in three months	4	34.4	9	12.3
Extension message on livestock mgmt				
Yes	122	96.1	98	86.7
No	5	3.9	15	13.3
Recommended practices adopted				
Yes, very often	82	64.6	47	41.6
Yes, sometimes	42	33.1	41	36.3
Yes, seldom	1	0.8	14	12.4
No at all	2	1.6	11	9.7
Sex of agent making usual visit				
Male	55	62.2	49	67.1
Female	7	8	7	9.6
Both	25	28.7	17	23.3
Communication problem				
Yes	19	21.8	10	13.7
No	68	78.2	63	86.3
Source of information				
Extension agent				
Yes	72	83.7	62	84.9
No	14	16.3	11	15.1
Contact farmer				
Yes	64	76.2	62	84.9
No	20	23.8	11	15.1
Researcher				
Yes	18	21.2	2	2.9
No	67	78.8	71	97.3
Survey data				

## 8. Availability of Credit for livestock production

Table 4 shows sources and farmers access to credit. About 28% of participants and 18% of non-participants used credit for livestock extension packages. However various credit problems encountered the sampled farmers, 35% of participants and non-participants. The main problems mentioned were unavailability of bank loans (21% of participants and 18% of non-participants), BoA/MoA loans not available (24% participants and 25% of non-participants), collateral, unavailability of informal loan, and unfavorable repayment terms.



Table 4. Access to credit for livestock extension

Description	Participants		Non participants	
	N	%	N	%
Credit availability				
Yes	24	27.6	13	17.8
No	63	72.4	60	82.2
Credit problem				
Yes	30	34.5	26	35
No	57	65.5	47	65
Bank loans not available				
Yes	18	20.7	13	17.8
No	69	79.3	60	82.2
BOAMOA loans not available				
Yes	21	24.1	18	24.7
No	66	75.9	55	75.3
Collateral problem				
Yes	13	14.9	8	11
No	74	85.1	65	89
Repayment terms unfavorable				
Yes	15	17.2	9	12.3
No	72	82.8	64	87.7

Survey result

## 9. Membership in organizations

Thirty percent of participants and 10 percent of non-participants were members of service cooperatives while 20% of participants and 3% of non-participants also member to union. The main services provided by these organizations were loan service (20% participant and 24% of non-participants), seed (52% participant and 51% non-participant), fertilizer (45% participant and 33% non-participant) and training (16% Participant and 29 % non-participant) as depicted in Table 5.

Table 5: Membership of peasant organizations and their services to members

	Participants		Non participants	
	N	%	N	%
Service cooperative member				
Yes	26	29.9	7	9.6
No	61	70.1	66	90.4
Union member				
Yes	17	19.5	2	2.7
No	70	80.5	71	97.3
Loan service				
Yes	17	19.5	21	23.8
No	70	80.5	52	76.3
Seed				
Yes	45	51.7	37	50.7
No	42	48.3	36	49.3
Fertilizer				
Yes	39	44.8	24	32.9
No	48	55.2	49	67.1
Training				
Yes	14	16.1	21	28.8
No	73	83.9	52	71.2

Source: Survey data

## 10. Conclusions and Recommendations

This paper assessed the livestock extension system in respect to livestock technological packages for dairy, fattening, poultry and beekeeping. It has been verified that the income of the participants surpassed from the non-participants which enhance more farmers to participant in the livestock extension package. However, the problems reported by farmers should receive due consideration and ease adoption of improved livestock technologies to improve the income and livelihood of the farming community. The main problems mentioned regarding credit availability were unavailability of bank loans 21% of participants and 18% of non-participants, Ministry of Agriculture loans not available 24% of participants and 25% of non-participants, Collateral, unavailability of informal loan, and unfavorable repayment terms. Therefore credit availability is pertinent to promote and ease of dissemination of the livestock extension packages to small holder farmers and bases for commercialization. The source of agricultural information to the farming community regarding improved technology dissemination is the extension agents 84% of participants and 85% non-participants followed by contact farmers and researchers. Use of leaflets, posters and newsletter is very minimal 6% of participants and 14% of non-participants. The use of mass media as source of information was 59% of participants and 21% of non-participants. Therefore the different sources of agricultural information should be capacitated to reach the majority of the farming community to promote agricultural technologies to improve production and productivity. The major problems pinpointed for the dairy package were sporadic insect pests and disease, shortage of feed, inadequate vet service, occasional drought and shortage of grazing land. To put in effect the farmer's perception in the study area to improve the current participation level and constraints for improved dairy technology package, timely provision of the packages based on farmers needs, improve farmers' access to vet services and alleviation of grazing land shortcoming. The main limiting factors in fattening were shortage of feed (32%) and inadequate vet service (27%). Priority should be given to resolve these problems if fattening technology to be effective and improve the farmers cash needs and livelihood. While in poultry production the problem is severe and persistent to improve the local breeds to improve production and productivity. The problems reported by farmers were disease (35%), shortage of feed (16%), lack of vet service (11%) predators (20%) and the problem of housing (15%) of the participants. Therefore these problems should be alleviated in order to boost poultry production through the adoption of improved breeds, forage and management practices. Hence, the main reasons farmers are not using improved forage were unavailability 14% of participants, and 9% of non-participants, land shortage 3% of participants and 7% of non-participants, and lack of awareness 7% of participants and 6% of non-participants. The farmers' attitude towards the current extension system regarding the assessment of livestock extension packages was positive. Efforts should be on place to resolve the present agricultural constraints. Therefore, government and non-government organizations should support the current livestock extension system to

enhance the production and productivity of small scale farmers to improve their livelihood in the region.

### Appendices

Annex 1. Dairy Package for sampled households

Description	Participants		Non participants		X <sup>2</sup>
	N	%	N	%	
Participated in livestock extension					131.3***
Yes	93	72.3	0	0	
No	34	26.8	112	100	
Participated in dairy package					3.4***
Yes	19	22.4	0	0	
No	66	77.6	72	100	
Components of dairy package					NS
AI service	14	16.1	4	5.7	
Bull service	46	52.9	44	62.9	
Open mating (farmers Practice)	27	31	22	31.4	
Crossbreed's type					43.36***
Friesian and/or holstein	6	4.9	0	0	
Jersey	19	15.4	0	0	
No response	98	79.7	113	100	
Dairy package include forage and pasture					
Yes	13	10.2	0	0	
No	114	89.8	113	100	
Access to veterinary services					NS
Yes	112	88.2	90	81.1	
No	15	11.8	21	18.9	
Affordable vet service					NS
Yes	103	81.1	90	79.6	

No	24	18.9	23	20.4
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Source: Survey data

Annex 2. Fattening packages for sampled households

Components of fattening packages	Participants		Non participants		X <sup>2</sup>
	N	%	N	%	
Purpose of fattening					4.65***
Income source					
No response	4	7.1	0	0	
Yes	52	92.9	63	100	
Trend of fattening					12.461***
Increase	11	16.4	0	0	
Decrease					
No response	1	1.5	0	0	
Yes	55	82.1	63	100	
Reason for increasing					11.299***
Better vet service	4	6	0	0	
Feed availability	2	3	0	0	
Good weather condition	4	6	0	0	
Good housing condition	1	1.5	0	0	
No response	56	83.6	63	100	
Reason for decreasing					
Shortage of grazing area	20	100	20	100	

Major problems in fattening	N	%	N	%	X <sup>2</sup>
Shortage of feed	13	31.7	0	0	36.640***
Inadequate vet service	11	26.8	0	0	
Occurrence of draught	1	2.4	0	0	
Shortage of grazing area	1	2.4	0	0	
No response	15	36.6	39	100	

Source: Survey data

Annex 3. Poultry packages for sample households

Description	Participants		Non participants		X <sup>2</sup>
	N	%	N	%	
Vet service					4.001**
Yes	4	4.9	0	0	
No	77	95.1	79	100	
Housing					23.576***
Yes	21	25.9	0	0	
No	60	74.1	79	100	
Feed					23.576***
Yes	21	25.9	0	0	
No	60	74.1	79	100	
Poultry for meat production					12.653***
Yes	12	14.8	0	0	
No	69	85.2	79	100	
Poultry for egg production					24.677***
Yes	22	27.2	0	0	
No	59	72.8	79	100	
Poultry for meat and egg production					30.077***
Yes	29	35.4	0	0	
No	53	64.6	79	100	
Source of poultry package					8.520**
MOARD/BOA	8	9.8	0	0	
RD					

Description	Participants		Non participants		X <sup>2</sup>
	N	%	N	%	
PAAs Cooperatives Unions	2	2.4	1	1.3	
No response	72	87.8	78	98.7	

Source: Survey data

Annex 4. Beekeeping package for sampled farmers

Description	Participants		Non participants		X <sup>2</sup>
	N	%	N	%	
Components of improved beekeeping					9.703**
Improved bee hives	3	3.8	0	0	
Honey processing machine	2	2.5	0	0	
Housing and handling	1	1.3	0	0	
Marketing	3	3.8	0	100	
No response	71	88.8	76		
Improved Kenyan type introduced					4.786**
Yes	5	6.1	0	0	
No	5	93.9	72	100	
Other beehives like top-bar					5.780***
Yes	6	7.3	0	0	
No	76	92.7	76	100	
Honey processing machine introduced					NS
Yes	2	2.4	0	0	

No	80	97.6	76	100
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Source: Survey data

Annex 5: Improved feed availability

Description	Participants		Non participants		χ <sup>2</sup>
	N	%	N	%	
Use of improved forage	25	62.5	7	17.5	16.875**
Yes	15	37.5	33	82.5	
No					
Grasses like Rhodes, panicum, etc.	24	60	7	17.5	15.682**
Yes	16	40	33	82.5	
No					
Herbaceous legumes, etc used	14	35	3	7.5	9.479***
Yes	26	65	37	92.5	
No					
Tree browsers, etc.	8	20.0	0	0	9.329***
Yes	32	80.0	40	100	
No					

Source: Survey data

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### Reference

1. Ahmed M.M., Bezabih Emana, Jabbar M.A., Tangka F. and Ehut S. 2003. Economic and nutritional impacts of market oriented dairy production in the Ethiopian highlands. Socio-economic and policy Research Working Papers 51. ILRI (International Livestock Research Institute), Nairobi, Kenya.27 pp.
2. Berhanu Gebremedhin, Adane Hirpa and Kabsay Berhe.2009. Feed marketing in Ethiopia: Results of rapid market appraisal. Improving Productivity and Market Success (IPMS) of Ethiopian farmers project Working Paper 15. ILRI (International Livestock Research Institute), Nairobi, Kenya.64 pp.
3. Bernor, Daniel and James Q. Harrison.1977. Agricultural Extension: The training and Visit System. Washington D.C. The World Bank, May 1977.pp.99
4. CSA (Central Statistical Authority). 2007. Livestock population census, SNNPR.
5. Mc.Norman.1970. Proceedings of the annual Conference of the World Bank at Nirobi.
6. Participatory Demonstration and Training Extension System (PADETES).1994. Agricultural extension system committee Report. Addis Ababa, Ethiopi.

Annex 6. Farmers Perception of the Livestock Extension service

Perceptions	Mean	SD
The service focuses its attention on contact farmers only	4.54	0.50
The livestock extension package is supported by credit	4.15	0.35
The service system did give attention to all classes of farmers	4.26	0.44
The service program has given emphasis for infrastructure.	4.20	0.40
Teaching aids related to livestock extension package are easily distributed to the farmers.	4.30	0.46
There is always regular visit by extension agents, since they are with the farmers.	4.15	0.43
Livestock production has not increases after the introduction of livestock extension program.	4.37	0.92
The service has package did not include all the components.	4.93	0.28
The livestock extension program has not given emphasis to woman farmers	4.03	1.14
The livestock extension program appreciated the ITK of farmers.	4.05	1.08
The livestock extension system has not included credit for livestock improvement.	3.98	1.01
The program has not given emphasis for infrastructure.	2.34	1.35
The extension system has helped all classes, farmers to adopt different livestock packages	4.02	1.05
The system has not much helped the resource poor farmers.	4.19	0.95
The livestock extension package	4.29	0.82

included all the components.		
The program gives emphasis to women farmers.	2.15	1.28
Farmers have developed faith and trust in the livestock extension workers.	4.30	1.11
The livestock extension program neglected the ITK of the farmers.	3.15	1.29

Source: Survey data