



MoARD

TECHNICAL BULLETIN No.37 **Methods in sheep and goat technology extension**



ESGPIP

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Foreword

This Technical Bulletin titled “*Methods in sheep and goat technology extension*” is the 37th produced by the Ethiopia Sheep and Goat Productivity Improvement Program (ESGPIP). The ESGPIP is a USAID funded Project with the objective of improving the productivity of Ethiopia’s sheep and goats.

If improved technology is to achieve real impact on farm productivity and livelihoods, appropriate methodologies for dissemination of information have to be used. Experience has shown that development agents need to be equipped not only with the technical knowhow on sheep and goat production but also have the skill and knowledge to deliver this to their clients.

This technical bulletin presents some methods and approaches of technology extension. It is believed that this will help bridge the gap in this regard and help the effective transfer of sheep and goat production technologies.

At this juncture, I would like to thank all those involved in the preparation and review of this technical bulletin.

Desta Hamito (Prof.),
Chief of Party,
ESGPIP
June, 2010

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Methods in Sheep & Goat Technology Extension

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1. Introduction

Rural farmers, agro-pastoralists and pastoralists have raised sheep and goats for generations and recognize them as an integral part of their agricultural production system. Sheep and goats are utilized for meat, hair, milk, skins, manure, and for income generation. Furthermore, small ruminant production plays important roles in social security, religious rituals, etc.

Despite Ethiopia's immense sheep and goat resources, their contribution to the country's economy is insignificant mainly due to their low productivity. The production of meat from Ethiopian sheep and goats averages 10 and 9 kilograms, respectively, compared to 13.5 kilograms of sheep meat and 13.1 kilograms of goat meat for East African countries. One of the reasons for low productivity of Ethiopian sheep and goats is lack of and/or weak extension services in sheep and goat production. A strong, effective, efficient and sustainable extension delivery system is essential to realize improvements in productivity.

The demand for information on sheep and goat production is growing both in the sense of demands expressed by producers themselves and in a more general sense of a growing desire for increasing production and livelihood of producers through the delivery of information.

This technical bulletin provides small ruminant extension and development approaches that will assist Development Agents (DA) and Animal Health Technicians (AHT) to transfer necessary knowledge and skills to sheep and goat producers effectively.

2. What is agricultural extension?

Agricultural extension can be defined as the application of communication and learning activities to transfer "proven" technologies, practices and skills to producers of agricultural commodities. Accordingly, the objective of sheep and goat extension is to sustainably improve production and productivity of sheep and goats through technological knowledge and skills combined with indigenous knowledge. Sheep and goat extension will result in better management of sheep and goats that produce more quality products and consequently generate higher income to the producer.

3. Methods of agricultural extension

These are ways through which new ideas, practices or innovations are transferred/ communicated to producers. The choice of method or approach depends on the nature of the message, the objectives to be achieved, the channels to be used, the availability of facility, and literacy level of the target audience. The three major methods are described here-under.

3.1. Individual extension method (IEM)

This method involves interaction of the extension worker with the producer on a one-to-one basis to address individual problems of production. IEM has the following advantages:

- It is easy to identify problems and their causes based on first hand information. This helps the extension agent to supply relevant recommendations to solve particular problems.
- Immediate feedback is obtained on whether the message has been understood in the way intended.
- People will listen to the advice and suggestions of extension staff who they feel they know personally.



DA visiting forage field of farmer

The disadvantages include:

- Relatively expensive in terms of time and logistic requirements.
- Very few farmers will be reached within a given period.
- There is a possibility that extension workers will choose to visit only a few beneficiaries raising the concern of equity.
- Requires greater effort of the extension agent.

The different means for transferring knowledge and skills to beneficiaries with IEM include written (e.g., bulletin, leaflet, pamphlets), verbal (e.g., general meeting, conference) and audiovisuals (e.g., blackboard, flip charts, pictures, photographs, slide films, etc.; home visit, telephone call, office visit by client, music, songs, and tales also are beneficial in IEM.

Annex 1 summarizes the planning, implementation and follow-up requirements of the individual extension method and most common tools.

3.2. Group extension method (GEM)

This method is when one or more extension workers meet/ communicate with a group of farmers. It aims to develop local skills and empower local people to solve their own problems. This method is particularly suitable when dealing with matters related to the whole community or village. Advantages of GEM include:

- Cheaper than IEM in terms of staff time and transportation costs since more people can be addressed using the same material resources and time.
- Extension personnel can serve a wider spectrum of clients more equitably.
- The group approach speeds up learning, attitude change and acceptance of new ideas.
- Exchange of several points of view in a group makes problem identification, diagnosis and screening of possible solutions easier and more relevant.
- Reduces transaction costs for input supplies and improves bargaining power during sale of produce. Beneficiaries can also share resources.
- Groups provide an opportunity for strengthening friendship and teamwork, allowing members to share ideas, experiences and problems.
- Increases personal motivation by creating competitive spirit because of group influence.

- The group method is effective when action needs to be taken collectively.
- Groups have better chances of getting funding and advice from NGOs or other donors to support their development work.

Disadvantages

- Dependent on sufficient mobilization at the grassroots level
- It may take a long time to arrive at a decision.
- It can sometimes be difficult to get people to agree on issues and to work together.
- Influential people in a community may divert the group from the desired course of action.
- Individual problems are not addressed in a group.
- People who are not members of the group will not be reached.
- Conflict may arise among the group members. The members must have similar interests and understandings about the group and what it will achieve. The benefits should be distributed fairly according to the amount of effort each member contributes.

There are different tools or means of delivering services through GEM, which include method demonstrations and result demonstrations.

- **Method demonstrations:** used to introduce new skills/practices and show how something is done through a series of steps e.g. urea-molasses block making, urea treatment of crop residues. Method demonstrations provide opportunity to beneficiaries



Demonstration of urea treatment

to trust a technology and adopt it in a shorter period. It is an effective way of teaching because beneficiaries practice, see, listen and discuss during the demonstration. Several people can be taught at the same time using method demonstrations. Method demonstrations are effective if a limited number of people are involved. If there are too many people, some of them may not be able to hear, see or practice the technique under demonstration.

- **Result demonstrations:** intended to demonstrate/show what has happened or been gained because of using a given technology or practice. The comparison of old practices or techniques to new ones is a main feature. Result demonstrations can be influential in persuading beneficiaries to adopt introduced concepts and practices since they provide evidence of the benefits of carrying out recommended practices. Demonstration of the effects of supplementation on growth and body condition of lambs could be



Field day on effect of feed supplementation

an example. Result demonstrations can be made during exchange visits, visits to institutions, field days or workshops. Annex 2 summarizes the planning, implementation and follow-up requirements of the group extension method and most common tools.

3.3. Mass extension method (MEM)

The method is designed to expose a large number of people to the same information. MEM involves the use of the mass media. Radio, television, newspapers, newsletters, motion pictures, photographs, poster exhibitions, etc., are some of the tools to disseminate information. The delivery system used depends on the nature of the information to be disseminated. A single delivery system or a combination of delivery systems can be used to deliver the same information.

This method is advantageous in that many people even in remote areas can be reached within a short period. One-way flow of information, limited access to the media and difficulty in evaluating the impact, because there is no feedback, are among the drawbacks.

4. Calendar of major sheep and goat extension activities

There are a number of sheep and goat extension activities that can be undertaken during a given period. These activities can be conducted in short, medium and long-term phases. The calendar in Annex 3 gives details of sheep and goat extension activities to be conducted throughout the year by KDAs and AHTs. It should be noted that there could be variations and similarities in the use of extension methods and timing of these activities depending on the agro-ecological zones.

5. References

- 1. Alemu Yami and R.C. Merkel. 2008.** Sheep and Goat production handbook for Ethiopia.
- 2. Central Statistics Agency, 2009.** Agricultural Sample Survey, Volume II, Report on Livestock Characteristics.
- 3. Chimdo Anchala, Mandefro Negussie, Anteneh Girma and Abebe Kirub (eds). 2010.** Soft and business skill management for Ethiopian Agriculture. MoARD, Addis Ababa, Ethiopia.
- 4. Ethiopia Sheep Goat Productivity Improvement Program Technical bulletins.**
- 5. Ministry of Agriculture and Rural Development 2006.** Agricultural Extension Department, Business Process Re-engineering Study Report.

ANNEX 1. Planning, implementation and follow-up requirements of the individual extension method and most common tools

Method	Tool	Planning of activities	Implementation	Follow-up
Individual extension Method	Farm visit	<ul style="list-style-type: none"> • Inform in advance about the visit • Review records/notes from earlier visit and get prepared accordingly; • Maintain an activity calendar; • Prepare training/teaching aids or distribution materials, if needed. 	<ul style="list-style-type: none"> • Respect local culture and norms • Greet all members of the farm family according to their culture; • Use the local language if you can. If not seek assistance of a translator • Be informal and friendly; • Observe the conditions and activities of the farm; • Discuss the observations with the farmer; • Be more of an active listener. Let the farmer do most of the talking; • Keep a record of activities for follow-up; • At the end of the visit, thank the farmer for sharing his time, energy and information 	<ul style="list-style-type: none"> • Prepare any additional information promised and fulfill all other commitments; • Ensure follow-up contacts
	Office visits by farmers	<ul style="list-style-type: none"> • Respect farmers' appointments; • Keep regular office hours; • Have information and materials readily available. 	<ul style="list-style-type: none"> • Try to put the visitor at ease and comfortable; • Interact with the visitor warmly, generously and attentively; • Keep notes/records of the visit for future reference. 	<ul style="list-style-type: none"> • Ensure follow-up contacts

ANNEX 2. Planning, implementation and follow-up requirements of the group extension method and most common tools

Tool	Planning of activities	Implementation	Follow-up
Method Demonstration	<ul style="list-style-type: none"> • Decide on the purpose of the demonstration; • Prepare the operational schedule, step by step; • Identify key points; • Select and procure material and equipment needed; • Prepare supporting visual aids; • Prepare kits for practice by the learners; • Publicize to collect the audience. • Make a “dry-run” or rehearse to make sure that the demonstration can successfully be carried out within the allotted time 	<ul style="list-style-type: none"> • Make sure that the audience can see and hear you; • Find out what they already know about the practice; • Get them interested in learning the practice; • Explain the purpose of the demonstration; • Demonstrate each operation step by step, while narrating it; • Check that the audience is following you and repeat steps as needed; • Stress key points and tell the audience the importance of each; • At the end, summarize all steps covered; • Give chance to the audience to try the method by themselves; • Distribute supplementary reference materials. 	<ul style="list-style-type: none"> • Keep a list of participants; • Help participants seeking additional information; • Make a sample check of their satisfaction and adoption of the practice.
Result demonstration	<ul style="list-style-type: none"> • Decide the objectives; • Gather complete information; • Seek assistance of the host producers in planning and carrying out the demonstration; • Develop a complete plan of work; • Select accessible demonstration sites; • Make a “dry-run” to make sure that the demonstration can successfully be carried out within the allotted time and to give a chance for the host farmers to rehearse 	<ul style="list-style-type: none"> • Make sure that the audience can see and hear you; • Find out what they already know about the practice; • Explain the purpose of the demonstration; • Conduct a comparative presentation of the new and old practices and show the benefits of the new one; • Check that the audience is following you and repeat as needed; • Stress key points and tell the audience the importance of each; • Distribute supplementary reference materials. 	<ul style="list-style-type: none"> • Provide follow up information and training • Make a sample check of their satisfaction and adoption of the practice.
Field Days	<ul style="list-style-type: none"> • Identify the objectives to be achieved; • Evaluate and identify successful producers based on their success/benefits gained • Work with area leaders and the host farmers; • Arrange appropriate time for the field day and make invitation to participants; • Display signboards at the field day site; • Arrange for an exhibition of related materials; • Make a “dry-run” to make sure that the field day can successfully be carried out. This gives a chance for the host farmers to rehearse 	<ul style="list-style-type: none"> • Distribute literature about the practices being demonstrated; • Explain the objectives of the field day and the schedule the day’s activities; • Let the host farmers explain the practices being demonstrated and new things he/she has learned; • Create a forum for discussion among the host farmers and participants 	<ul style="list-style-type: none"> • Evaluate the field day; • Contact farmers who indicated interest

ANNEX 3. Action plan for delivering sheep and goat extension services

No	Activities	Extension methods	Reference	Working calendar											
				Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
1	Feed production and utilization														
1.1.	Preparation of urea molasses block(Ref. TB No.1)	IEM, GEM	HB, TB No.1												
1.2.	Making bag silage	IEM	HB, TB No.12												
1.3.	Making and conserving hay	IEM,GEM,MEM	HB, TB No.6												
1.4.	Treating low quality roughages with urea	IEM, GEM	HB, TB No.2												
1.5.	Developing improved forage	IEM, GEM,	HB, TB No.17												
	1.5.1.Annual forage development	IEM, GEM	HB, TB No.17												
	1.5.2. Perennial forage development		HB, TB No.17												
	• Establish nursery sites and produce seedlings preferably where water for irrigation is available		HB, TB No.17												
	• Planting and management		HB, TB No.17												
1.6.	Improving communal grazing land	GEM	HB, TB No.25												
	• Create awareness and in cooperation with community elders organize farmers that use a common grazing land for proper use and management.		HB, TB No.25												
	• Improve grazing land by enclosure, manuring, oversowing		HB, TB No.25												
1.7.	Collection and preservation of forage seeds	IEM, GEM	HB, TB No.17 & 35		√	√	√								
1.8.	Concentrate feed formulation and use	IEM	TB No.16				√	√	√	√					
1.9.	Applying appropriate feeding techniques for sheep and goat	IEM,GEM,MEM	HB, TB No.5, 11, 13,												
1.10.	Promote fattening of sheep and goats for better income generation	IEM, GEM	HB, TB No.11												

*HB=Sheep and goat production handbook for Ethiopia; TB=ESGPIP Technical Bulletin

ANNEX 3. CONT'D...

No	Activities	Extension methods	References	Working calendar											
				Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
2	Sheep and goat health care														
2.1.	Control of external parasites	IEM, GEM, MEM	HB												
	<ul style="list-style-type: none"> • Create awareness among beneficiaries about external parasites and their control measures 														
	<ul style="list-style-type: none"> • Organize the community to participate in the collective control measures 														
2.2.	Control of internal parasites	IEM, GEM	HB, TB No.3												
	<ul style="list-style-type: none"> • Create awareness among beneficiaries about internal parasites and their control measures 		HB, TB No.3												
	<ul style="list-style-type: none"> • Organize the community to participate in collective control measures 		HB, TB No.3												
2.3.	Vaccination /infectious disease prevention and control	IEM, GEM, MEM	HB												
	<ul style="list-style-type: none"> • identify the type of disease/s affecting sheep and goat/s in your area 														
	<ul style="list-style-type: none"> • Plan a vaccination schedule in coordination with veterinary personnel responsible 														
	<ul style="list-style-type: none"> • Organize the community for the vaccination and vaccinate 														
	<ul style="list-style-type: none"> • Follow up and/or get feed backs about disease outbreaks and report immediately 														

***HB**=Sheep and goat production handbook for Ethiopia; **TB**=ESGPIP Technical Bulletin

ANNEX 3. CONT'D...

No	Activities	Extension methods	References	Working calendar											
				Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
3	Husbandry and management		HB												
3.1.	Castration of sheep and goats	IEM,GEM,	HB, TB No.18												
	<ul style="list-style-type: none"> • Create awareness among beneficiaries on the need for castration 														
	<ul style="list-style-type: none"> • Demonstrate Burdizzo castration 														
3.2.	Trimming the hooves of sheep and goats	IEM,GEM,	HB, TB No.21												
	<ul style="list-style-type: none"> • Create awareness among beneficiaries on the need for hoof trimming 														
	<ul style="list-style-type: none"> • Demonstrate trimming of hooves 														
3.3.	Housing/ shelter for sheep and goats	IEM,GEM, MEM	HB, TB No.32												
	<ul style="list-style-type: none"> • Create awareness on the need for housing/shelter and types of housing 														
	<ul style="list-style-type: none"> • Provide practical oriented training on appropriate house/shelter construction based on agro-ecology 														
3.4.	Management of sheep and goats	IEM,GEM, MEM	HB												
	<ul style="list-style-type: none"> • Create awareness and provide training on the proper management of different classes of sheep and goats 														
	<ul style="list-style-type: none"> • Follow up trained participants to evaluate application of lessons and best practices learnt 														

***HB**=Sheep and goat production handbook for Ethiopia; **TB**=ESGPIP Technical Bulletin

ANNEX 3. CONT'D...

No	Activities	Extension methods	References	Working calendar											
				Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
4.	Breed improvement		HB, TB No.4,14												
4.1.	Evaluate and monitor the status of distributed pure and crosses of Boer goat and Dorper sheep	IEM	HB,												
	<ul style="list-style-type: none"> Prepare checklist and/or questionnaire to evaluate and monitor performance of the improved breeds 														
	<ul style="list-style-type: none"> Identify problems and provide solutions 														
	<ul style="list-style-type: none"> Scale up best practices from forefront beneficiaries to others 														
4.2.	Improving indigenous breeds of sheep and goats	IEM,GEM	HB, TB No.4,14												
	<ul style="list-style-type: none"> Encourage and assist beneficiaries to identify and select sheep and goats with better performance 														
	<ul style="list-style-type: none"> Promote and organize mating of indigenous breeds of sheep and goats with rams and bucks of Dorper sheep and Boer goats 														
	<ul style="list-style-type: none"> Evaluate and monitor the mated ewes and does 														
	<ul style="list-style-type: none"> Follow-up progress of genetic improvement 														
4.3.	Forming breeders association	IEM, GEM	HB, TB No.14												
	<ul style="list-style-type: none"> Help to organize beneficiaries involved in keeping improved sheep and goats to form primary sheep and goat breeders association 														

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ANNEX 3. CONT'D...

No	Activities	Extension methods	References	Working calendar											
				Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
5.	Cross-cutting activities														
5.1.	Organize field days	GEM													
5.2.	Strengthen Farmers and pastoralists training centers for training on sheep and goats	GEM													
	5.2.1 Equipping training centers														
	<ul style="list-style-type: none"> In cooperation with the local administration equip the center with training facilities(audiovisuals, farm tools, etc., for training on sheep and goats 														
	<ul style="list-style-type: none"> Establish forage demonstration site 														
	<ul style="list-style-type: none"> Prepare pit for silage making and urea treatment 														
	<ul style="list-style-type: none"> Construct shed/house and introduce sheep and goats for farmer training 														
	5.2.2 Preparation of training reference materials	GEM, MEM													
5.3	Experience sharing	IEM													
5.4.	Support the private sectors to establish sheep and goats farms, breeding and multiplication ranches														
5.5.	Create linkage and network with research and other partner institutions	IEM													
5.6.	Record keeping	IEM, GEM	HB, TB No.30												
	<ul style="list-style-type: none"> Give advice and demonstrate the value and how to keep simple records of sheep and goats farm 														
	<ul style="list-style-type: none"> Collect, review, compile data and information on sheep and goat from the clients and use it for planning 														
5.7.	Link producers to markets		HB												
	<ul style="list-style-type: none"> Assist producers to develop contacts with traders and processors 														
	<ul style="list-style-type: none"> Train producers on market requirements 														
	<ul style="list-style-type: none"> Organize producer/marketing groups 														

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