

SHEEP AND GOATS MARKETING BUSINESS

TRAINING COURSE FOR YOUTH AGRI-ENTREPRENEURS

Ethiopian Agricultural Transformation Institute



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ANNEX



OVERVIEW OF THE MODULE

Ethiopian sheep and goats have high demand in domestic and export markets. The sheep and goat market segment extends from villages to big cities like Addis Ababa, Adama, Bahir Dar, Gondar, Mekele, and Hawasa, among others. Traders play a significant marketing function in these segments. Hence, the sheep and goat marketing business are a good opportunity for jobless youth and/or interested individual (s) or group (s) entrepreneur (s) in Ethiopia. However, the entrepreneurs are required to equip themselves with the necessary knowledge and skills of small ruminant marketing business, and the animal welfare before engaging in it. This training module addresses all about skills and knowledge required by an entrepreneur who wants to engage in small ruminants marketing business. The module is subdivided into sections; each section contained overview, learning outcomes, learning questions, times required to complete the section, detail topics about the section, post assessment questions and key messages. In addition, the potential risks and management strategies were also addressed.

The Agriculture-focused Dignified Employment for Youth (ADEY) program is implemented by the Ethiopian Agricultural Transformation Institute in partnership with the Mastercard Foundation to enable 611,343 inclusive and dignified work opportunities for young women and men and support youth entrepreneurship, employability, and sustainable livelihoods in the agribusiness sector.

INTRODUCTION

Sheep and goat trading has many advantages over large ruminants for needing lower investment; easy transport, resisting stress, quicker turnover, easy management, and appropriate size at slaughter. Ethiopian sheep and goats have high demand in domestic and export markets. The market segment extends from villages to big cities. There are no religious or cultural restrictions or taboos on the consumption of mutton and goat meat. A sheep or a goat could be slaughtered at a household level and consumed within a short period and do not require preservation facilities like refrigerator. Such characteristics of sheep and goats make them a more suitable business for the jobless. Domestic and export markets could be targeted while engaging in the sheep and goat business.

Business and anatomical skills and knowledge are needed to determine which animals fit for which markets. Jobless youth could be engaged in meat sheep and goat marketing business either in groups or individually. Hence, marketing support including the development of infrastructures, provision of market information, organizing marketing youth groups, animal handling in welfare, and selecting animals using body frames and regulations could entitle youth to their fair share of the market profit margins. For this, some basic knowledge and skills are required for any youth showing interest in engaging in any sheep, or goat marketing business. Hence, this training module principles and skills a youth or group of youth entrepreneurs are required to be equipped with.

Training methods

- Explanation of the contents of the topics
- Group discussion
- Question and answering
- Videos from different sources

Training materials

- Flip chart
- Weighing scale
- Tape meter
- Computer
- Projector
- Video on some portions
- Any marketable sheep and goats

Target participants

Jobless youth entrepreneurs, any interested entrepreneur in sheep and goat marketing business

Total time required: 3 days

SECTION 1. MARKET SEASON AND MARKET SEGMENTS

Overview of the section

The sources of animals for sheep and goat marketing agri-business could be the different agro-ecologies of the country. The population of sheep and goat is different in the different agro-ecologies. It is very important to know where the population of sheep and goat are found for the marketing business. Understanding the marketing seasonality is also a crucial issue when engaging in sheep and goat marketing business.

Additional key points for the sustainable sheep and goat marketing business are market prices and the trust the entrepreneurs develop with their customers.



Learning outcome

1. Agro-ecology based sheep and goat distribution understood
2. Marketing seasonality and related concepts understood by the entrepreneurs.



Duration: 1 hour



Learning question

1. How many sheep and goats production systems do you notice in Ethiopia?
2. In which production system do you think the population of sheep and goat is high?

1.1 SHEEP AND GOAT DISTRIBUTION BY AGRO-ECOLOGY OF ETHIOPIA

In Ethiopia different species of livestock are more concentrated in some production systems than others. As a result, the major supply sources of meat goats & sheep are found, in respective order, in the mixed pastoral, agro-pastoral and crop-livestock production systems. In these production systems meat goats & sheep are largely kept as scavengers, and commercial production is almost non-existent.

Small flock sizes predominate in the highland mixed crop–livestock systems because of land and capital limitations. Relatively larger flocks are maintained in the lowland (agro) pastoral systems.

Such distribution has implications for marketing as animals have to be moved from production areas to consumption centers. Several factors may influence the volume and direction of flow of live animals from the production areas to various destinations: relative costs of transport, geographic and regional differences in feed or forage availabilities, infrastructure, trekking routes, and animal cost prices.

Therefore, knowledge of the geographical distribution of livestock populations and their movements along market routes may be helpful to understand the supply potentials and associated market price of animals. Additional points to knowing the major sources of the animal, it is also important to have information regarding

- Sustainable supply (see figure 1) of sheep and goats from producer to the market,
- Accessibility of transport from a small market to a zonal or terminal market
- Physiological status and behaviors of the animals to a given mode of transport (trekking, trucking) and ability to withstand wet and hot temperature of the marketing places.
- Identify demands of animals to zonal/terminal/export market for sheep and /or goats you are going to trade.
- Price of the animal at where you buy and sell, etc.

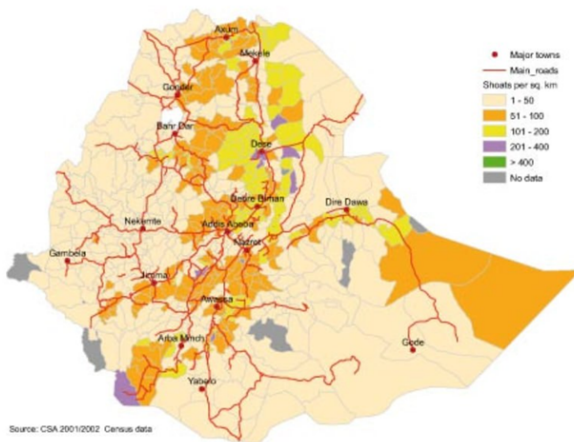


Figure 1 Sheep and goat population density in Ethiopia (number per square kilometer). (Source : Mohammad J. et al., 2007).

1.2 UNDERSTAND MARKET SEASONALITY

In most part of Ethiopia, the demand for meat sheep & goat heavily influenced by the seasons when the occurrence of religious and cultural festivals practiced. On the contrary, the weather shocks also affect negatively the supply of animals as well as heavily influenced sales price to spike high. Knowledge of the consumers' trend along the major seasonal events is important.

- During Eid-El-Adha, New Year, Christmas, Epiphany and Easter, price of sheep and goats is high. As a result, high sales volume was experienced.
- During the Orthodox Christian fasting periods, the price of small ruminant decreases.
- During the season from January to May (excluding 52 days of Christmas orthodox fasting times), high social celebrations occur increasing sheep and goat demand.
- Price fluctuation of animals is expected in both buying and selling sites.
- Accordingly, the businessman needs to assess the major seasonality of festivities on the one hand, and occurrence of drought in the year under consideration.

1.3 MARKET PRICE AND TRUST WITH CUSTOMER

- Track the annual target sales plan as what type and quality of animal is being most demanded in a given season by the buyers and which buyers will be interested in that type of animals,
- By estimating both purchase price costs of the

animals, overhead costs and reasonable marginal profit, you can decide what type of animal will be demanded by the customers and satisfy by the services rendered.

- Sorting animals into lots of similar size and weight will make them more attractive to buyers. Selling clean and healthy animals assures buyers that they are paying for a quality product.
- The advantage of setting alternative payment rather than just pay at one price is that it gives you flexibility to respond to changing market trends. Staying in touch with the market is crucial when trying to achieve a target price.
- Set target prices of candidate salable animals' considering procurement costs, transaction costs, and expected profit levels.
- Sgetting alternative payment including in advance payment collections, credit services, etc.
- Propose all possible alternatives for choice of the customers. Each alternative method has specific features that may make it more suitable than other to the customer satisfaction.
- Implement all means of accessing and delivery alternatives: mass media advertizing, video marketing, direct sales, electronic payments, provide slaughter services, etc., that satisfy both supplier and consumers in mind.
- Buy knowing what you have for sale, build reputable relation with your buyers and, assure your customers are satisfied with your service (quality of animals, price as well as mode of delivery),
- A livestock marketing plan involves all the steps listed above. By executing these steps, you will have a thorough understanding of how your business is functioning. Have confidence to properly implement & evaluate planned sales.
- All plans must be evaluated to determine what worked and what can be improve.
- By looking back on livestock sales plan and how the returns matched the needs of the business, continue to learn about what factors influence the operation.
- **Target market segmentation:** It is known that all customers are not the same. Some customers might be more likely to buy your products than others. Some customers may be unprofitable. Others may be willing to pay more. Some customers might not understand your product and need more education. Some customers might

want to use your product in a different way, or for a different purpose.

- Undertake your market segment to understand these logical groups, so you can target and serve them better for sustainability and mutual benefit of both parties (buyers & suppliers).



Post assessment question

- What is scavenging?
- Discuss how the trust building with the consumers contribute to the sheep and goats marketing business!
- List the target markets of sheep and goat in Ethiopia



Key message

Mixed production system could be the highest source of sheep and goats for domestic market. In order to run the sheep and goat marketing business sustainably, it is important to understand the market seasonality.

SECTION 2 SELECTING MEAT SHEEP AND GOATS

Overview of the section

In the process of marketing sheep and goat judging and selecting the right animal leads not only to the profitability of the business, but also it makes the business more sustainable. Any entrepreneur is expected to judge the degree of muscling, structural correctness and finish of a sheep or goat. The capacity and freshness of the animal has to be judged as well. Some guides are provided on judging sheep and goat to be marketed under this subsection.



Learning outcome

The concept of judging criteria of sheep and goats for marketing understood by any interested entrepreneur.



Duration: 4 hour



Learning Question

- How do you judge the sheep and goat for marketing?
- What is the importance of judging sheep and goat suitable for marketing?

2.1 JUDGING MEAT SHEEP AND GOATS

To undertake proper judging of the meat goat and sheep in the market, you can use a number of key anatomical areas of the animal. From these, the loin muscle is a good indicator of muscular fill/ anatomy throughout the body of the animal. Forearm circumference will correlate to the loin eye area and is another area of evaluation.

The goat & sheep should have a wide, thick back and loin that are naturally firm and hard handling. A wide, symmetrically oval shape on each side of the backbone that carries forward over the rack or chine is desirable. The goat & sheep should show a wedge shape from front to rear when viewed down the top from behind. Usually, a goat & sheep that walks and stands wide will be heavy muscled.

The hindquarters should show a deep, heavily muscled leg and rump. A long, deeply attached muscle that shows expression in the stifle is desirable. The goat & sheep should be thickest from stifle to stifle when viewed from the rear.

A goat and sheep should be wide through the chest

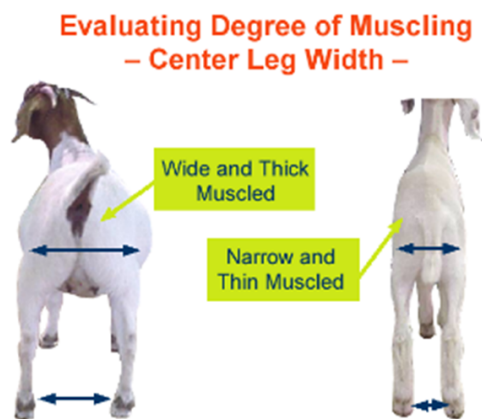
floor and have a forearm muscle that exhibits a prominent bulge. The following are key areas used to undertake ranking of traits for judging the meat goats & sheep:

2.2 JUDGING MEAT SHEEP AND GOATS & EVALUATING DEGREE OF MUSCLING, STRUCTURAL CORRECTNESS AND DEGREE OF FINISH

- Degree of muscling.
- Soundness and structural correctness.
- Degree of finish (fat cover).
- Capacity (volume).
- Style.
- Alertness.

The degree of muscling in meat goats is best evaluated by considering:

- Thickness through the center of the leg.
- Width between rear feet when the goat stands and walks.
- Width, depth, and length of the loin.
- Wide-topped goats with a long hind saddle concerning the front saddle are desired.



Evaluating Degree of Muscling – Length of Loin –



★ Hind saddle should be at least as long as front saddle.

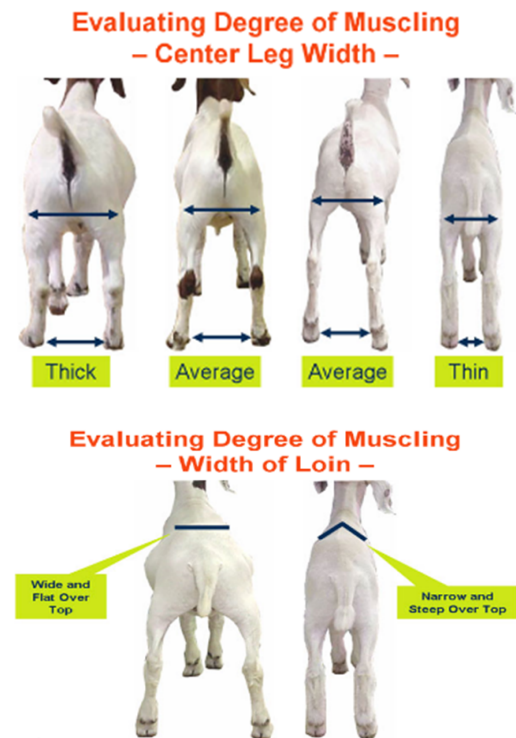


Figure 2. Points for Judging meat sheep and goats

Soundness and structural correctness in meat goats & sheep are best evaluated by considering:

- Feet and toes, Knees
- Hocks
- Pasterns
- Levelness of top

The degree of finish in meat goats & sheep is best evaluated by considering:

Unique characteristics of meat goats

- Goats deposit fat from the inside to the outside.
- Goats do not marble (do not deposit intramuscular fat).

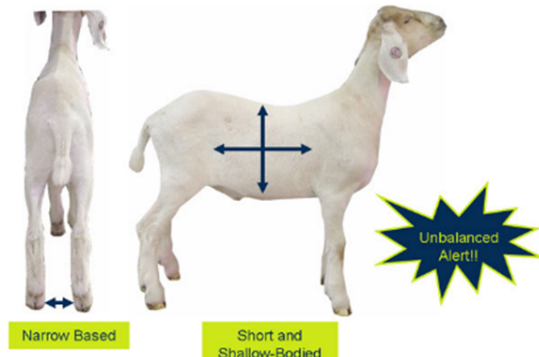
Meat goats should be lean and trim.

- They should also have bloomed.
- Lean meat goats that are unthrifty are discounted.

2.3 EVALUATING CAPACITY OR VOLUME AND FRESHNESS

- Body width.
- Open rib shape and good base width desired.
- Body depth.
- Good depth desired.
- Body length.
- Good length desired.

Evaluating Capacity or Volume



Evaluating Capacity or Volume

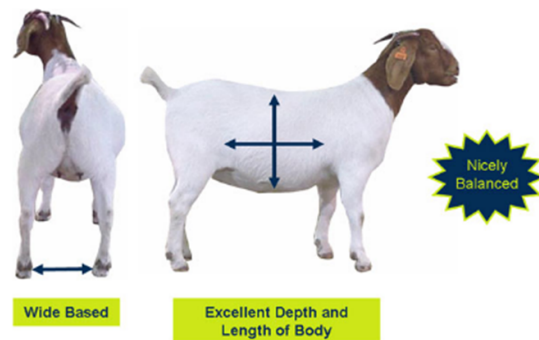


Figure 3. Evaluating the capacity or volume

Meat goats with style will exhibit the following:

- A long, level top line.
- A long neck that sits high on the shoulder.
- A clean breast.
- A smooth, neat shoulder that blends smoothly from neck to forerib.

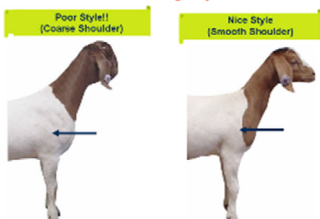
Evaluating Style



Evaluating Style



Evaluating Style



Evaluating Style



Figure 4. Evaluating the style of goats up on buying

Freshness in meat goats refers to having:

- An appearance of being healthy (not unthrifty)
- A smooth, slick hair coat.

Evaluating Freshness



Evaluating Freshness



Figure 5. Evaluating the freshness of animals up on purchase



Post assessment question

1. List points for judging meat sheep and goats from soundness and structural correctness aspects?
2. How do you evaluate the volume and freshness of the animal for marketing?
3. Differentiate the following terminologies: structural correctness, degree of finish, volume of finish and freshness of an animal.



Key message

Remembering the important traits for judging sheep and goats during marketing, knowing what the "correctness" of an animal look like, judging the animal by looking at lots of meat sheep and goats and having practical skills of judging the animals is very important in the due courses of sheep and goats marketing.

SECTION 3 HOLDING PENS AND MANURE STORAGE

Overview of the section

Unlike that of sheep and goats under production and fattening, marketing sheep and goats stay for short periods of time with the entrepreneurs. The holding pens for these animals has to be built having this in mind. Since the issue of manure management is a global concern this days, the manure from the temporarily kept sheep and goat has to be managed properly.



Learning outcome

Selecting appropriate sites selection for sheep and goats under marketing understood by sheep and goat market entrepreneur.



Duration: 2 hour



Learning Question

What are the criteria to be considered for selecting suitable sites for sheep and goats under marketing?

3.1 PREPARING HOLDING PENS FOR MEAT SHEEP AND GOATS

Selecting appropriate sites for meat sheep & goats pens/holding areas where marketable animals are handled until they are sold out is a prerequisite for a youth to be engaged in a marketing of sheep and goats' business. It is important to consider the following points:

- The holding pen space & sites should be judged from the viewpoint of distance to the neighboring residence, direction of prevailing winds, topography, and soil types.
- Start keeping marketable meat sheep and goat farms at relatively distant places from residential areas.
- It is advisable to have a reasonable distance of about 300 m away from residential as well as river water source areas. However, if the water sources are pipe-based and groundwater, these could be made available at the farm gate.
- Sheep and goats need to be handled, either in groups or individually
- Handling pens are useful in reducing injury and stress on animals from one market to another
- The pen should match the number of animals expected to be handled at one time
- The space for the rams/buck group is 1.8 m² for ewes/doe 1 m², for, individual for rams/bucks 3.2 m², and for ewes/does 1.5 m².
- The feeds and watering for sheep and goats have 40-50 cm², 50 cm², 30 cm², and 35 cm² for space per animal, width, depth, and height, respectively.
- Avoid placing small ruminant production facilities near existing (or future) "non-owned residences" (residences not owned by the owners of the small ruminant production operation), especially clusters of homes, built-up areas, and parks.
- Make the sheep and goats for marketing out of someone's sight.
- Consider suitable slop of land for establishing a pen/holding ground for their dung and urine
- Consider manure storage structure & properly store in the solid form to use for fertilizer.

3.2 ACCESS TO LAND FOR MANURE STORAGE

Adult sheep or goats could produce about 2.5 to 3 kg of fresh manure per day. Therefore, this manure shall be properly managed within the farm of small ruminants. The ideal storage site for solid manure is a roofed shade with an impermeable floor (e.g. concrete). Manure storage structures or sites should be located to minimize odor nuisance to neighbors. To prevent nuisance, the dung is stored in pits that are about a meter deep. When the pits are filled to the top, the surface is sealed with mud slurry. The manure is used after 4-5 months. The buildings/dung collection center should be suitable for tractors and scrapers as easy access to manure removal.



Post assessment question

1. List important criteria for selecting the proper house site for sheep and goats under marketing.
2. Calculate the amount of manure produced on daily and annual basis from 100 heads of sheep/goats?
3. How manure is used for fertilizing crop fields?



Key message

During the process of marketing, the animals has to be housed properly. The concept and knowledge of manure management is very important in the due course of sheep and goat marketing practices!



Learning outcome

Proper managements of sheep and goats in the due course of marketing well understood.



Duration: 8 hours



Learning Question

1. Discuss the available means of transporting sheep and goats from place to place during marketing!
2. What are the requirements of vehicle to be used for the transportation of sheep and goats?

SECTION 4 MANAGEMENT OF MARKET SHEEP AND GOAT DURING TRANSPORTATION

Overview of the section

Marketing of sheep and goats could involve transportation of these animals from one site to the other. The means of transportation could be through trekking or trucking. If the animals are not properly transported, the consequences are not only the loss of weights and conditions by the animals, but also the loss of quality of the meat at the end of the day. Therefore, the right transportation means are very important in the process of sheep and goats marketing.

4.1 PRE-LOADING PRECAUTIONS

- Check transport vehicles for safety and adequacy
- Animals sold to small traders (collectors) in the primary markets (producers) are should be transport to secondary markets using trucking.
- Appropriate laws and legislation should govern the transportation of animals.
- The journey should be planned, paying attention to the distance to be traveled, and opportunities for grazing, watering, and overnight rest.
- The sheep/goats should be trekked during the cooler times of the day and arrive with sufficient time to be rested and watered before loading onto vehicles.
- The recommended maximum trekking distances for sheep and goats should not exceed 24 km/day on the first day. The distance they travel should not exceed 16 km/day for subsequent days.
- Improvements in holding facilities for watering, feeding and rest along the trek routes will reduce weight and mortality losses
- Transporting animals for well-being is not only for the welfare of animals it is a matter of product quality and safety. Long-distance traveling increases

the levels of intramuscular creatine kinase and lactate dehydrogenase enzymes.

- Used a dedicated truck for sheep and transportation. The absence of dedicated animal transport contributes to quality deterioration as a result of injury and stress. Ordinary trucks should be modified to serve the sheep and goat transport purpose.
- Avoid mixing different animal species to minimize fighting and mounting one to another. Individual animals can be transported in a loose sack tied to the animal's neck. In this case, feet should not be tied and they should be turned every 30 minutes or so.
- Driving a medium speed. high speed subsequent high mortality rate and rapid loss of live weight during long-distance.
- Avoid transporting animals during extreme climates (too warm and cold/rainy)
- Feeding and watering animals before transport has a settling effect.
- Do not mix horned and hornless animals in the vehicles.- Diseased, injured, and emaciated animals are unfit to be transported as they cannot withstand the stress of transport.
- Heavily pregnant animals within four and preferably six weeks before lambing should not be transported long distances.

4.2 LOADING ANIMALS AND FEEDING SHEEP AND GOAT DURING TRANSPORTATION

The following should be noted regarding the loading of sheep and goats.

- Align the vehicle floor with the loading race while loading.
- Limbs and heads must not protrude outside the sides and tops of the vehicle.
- Separate animals by size and age.
- Always treat animals humanely.

4.3 FEEDING AND WATERING SHEEP AND GOATS DURING TRANSPORTING

Feeding during transport: Mature animals must not be without food for more than 24 hours and young animals for not more than 12 hours. A simple guide to an adequate amount of feed is 2.5% of the animal's live weight as hay in kilograms per day, e.g., a 20 Kg sheep would require 0.5 Kg (500 g) of hay /day.

Watering during transport: Provide water at least every 8 hours for lactating or young animals and every 12 hours for mature non-lactating animals. Allow at least 4 liters/head/day for sheep and goats. If animals are lactating, stressed or in hot conditions, water requirements will be higher. Water supply should at least be doubled where temperatures are greater than 40 C.

After the Journey: transported sheep/goats should have access to clean water immediately after unloading. The feed should be readily available immediately after unloading. Provide ample good quality hay. Sheep/goats should reach their destination during daylight so that they can start grazing in the new and unfamiliar ecology. Care should be taken introducing hungry sheep to grazing areas with toxic plants.

4.4 PROBLEMS OF SHEEP AND GOAT TRANSPORT IN ETHIOPIA

- No laws or guidelines governing animal transport
- Absence of rules and regulations that prohibit transporting animals by ordinary trucks
- Lack of awareness on the extent of losses incurred during transport by producers, transporters, etc. has delayed action to curb the problem.
- Traders transport animals through non-dedicated vehicles and long trekking.
- Almost all livestock trekking routes in the country are traditional and do not have facilities where animals are provided rest, feed, and water. Vehicles are increasingly used for long-distance transportation of sheep and goats to abattoirs, large terminal markets, and central loading sites for the export market.

Problem-related trekking: absences of holding points: The animals are forced to travel long distances without rest, feed, and water

- Absences of train drivers; skills required to handle a problem situation that arise during travel.

Problem-related trucking: Types of vehicles used

- Unavailability of holding grounds
- Untrained truck drivers and animal handlers
- Improper loading/unloading
- Congestion-Transport vehicles are often overloaded with animals

4.5 REQUIREMENTS FOR A VEHICLE FOR SHEEP AND GOAT TRANSPORT

Transporting animals for well-being is not only for the welfare of animals it is a matter of product quality and safety. Long-distance traveling increases the levels of intramuscular creatine kinase and lactate dehydrogenase enzymes which causes dark firm dry. Sheep and goats should not travel for more than 36 hours and be offloaded after 24 hours for feed and water.

The following conditions should be fulfilled by both dedicated and modified vehicles used for the transport of sheep and goats.

Ventilation: Animal transport vehicles should never be totally enclosed. The free flow of air at floor level is important to facilitate the removal of ammonia from urine and exhaust fumes in road vehicles that may cause poisoning.

With a minimum airflow of nominal capacity of 60 m³/h/Kilo Newton (KN) payload. It must be capable of operating for at least 4 h, independently of the vehicle engine. Poor ventilation can cause undue stress, poisoning and suffocation, especially under warm weather conditions. Sheep are particularly susceptible to problems from poor ventilation and often die en route.

Floor: Non-slip floors to reduce the risk of animals falling

A grid of cross slating made from wood or metal is suitable

The grid can be removable, so the vehicle can be used for other purposes

Additional balance for animals is provided by partitioning the interior of the vehicle

Broken floors: cause leg & other injuries

Covering the surface with grass, sawdust or similar materials is not suitable to reduce slipping.

No gaps through which a leg might protrude and be broken

Floor space: Sheep/goats require adequate floor space during transport to allow them to stand freely and in a normal posture. Overcrowding results in injuries or even death. Allow an average floor area of 0.4 m² / sheep or goat.

Allowances should be made for body size and physiological states like pregnancy.

CATEGORY	APPROXIMATE WEIGHT (KG)	AREA (M2/ ANIMAL)	
Weight category	<20	0.14	
	<35	0.2-0.3	
	35-55	0.3-0.4	
	>55	0.4-0.75	
Heavily pregnant sheep/goats	<55	0.4-0.5	
	>55	>0.5	

Table 1. Recommended floor space allowance guide for sheep/goats of different body weights and physiological states

Sides: The sides of vehicles should be high enough to prevent animals from jumping out. The inside could also be padded at hip level to reduce bruising

Roof: A roof is necessary on a sheep and goat transport vehicle provided the animals are not exposed to the hot sun for long hours.

Loading/Unloading ramps: Vehicle floors should be level with loading/unloading

ramps/platforms. Vehicles should be fitted with a portable ramp to facilitate emergency offloading in case of prolonged breakdowns along the route.

4.6 CONSEQUENCES OF POOR SHEEP AND GOAT TRANSPORT

- Body weight loss (Shrinkage)
- Physical Injury-Bruising, Trampling, broken legs and horns
- Loss of product quality- DFD and PSE
- Mortality loss
- The possibility of spreading animal diseases



Learning question

1. List the pre-cautions for preloading of marketing sheep and goats.
2. At what interval, for how long and how much feed and water is required by an animal under transportation for marketing?
3. What are the problems associated with trekking and trucking?



Key message

Proper management of sheep and goats under transportation ensures the weight and body conditions of the animals but also contributes to the meat quality of the animals after fattening.

SECTION 5 HEALTH OF SHEEP AND GOATS UNDER MARKETING

Overview of the section: The sheep and goats to be marketed has to be free from any diseases including the zoonotic ones. There are two approaches by which sheep and goats under marketing could be free from any diseases. These are vaccination and treatments. These measures are discussed under this subsection.



Learning outcome

General overview of sheep and goats under marketing understood



Duration: 4 hours



Learning Question

1. What are the disease preventive measures?
2. What do you do if your sheep and goats under marketing get sick? Vaccination or treatment? When to do what?

5.1 VACCINATING MARKETING SHEEP AND GOATS

Effective vaccines are crucial for controlling and preventing the spread of many animal diseases, including marketing sheep and goats, some of which can also infect humans. Vaccines in animals work similarly to those in humans by triggering an immune response that prepares the body to combat future infections.

However, some vaccines use live microorganisms, such as viruses, which can potentially cause the disease they aim to prevent. There are some means to minimize this effect; radiation can mitigate this risk by inactivating the microorganism, rendering it unable to cause infection while preserving its structure. This allows the immune system to recognize it and develop immunity. Some tips regarding vaccines are given as follows:

- A vaccine is a suspension prepared in a laboratory from the cause of the disease.
- When injected into an animal, the animal produces immunity to that disease, which protects the animal from that specific disease.
- Vaccines are of two types, dead and living vaccines.
- Vaccines need to be kept in a cold chain, meaning kept cold at all times from production through transport and storage, and before injecting into an animal.
- Hence, vaccines must be kept: in an ice box with sufficient amount of ice during transport, at 4°C or -200°C while in the clinic, and out of direct sunlight. Vaccines are easily damaged if handled improperly.
- Always exactly follow the instructions given for the storage and use of vaccines. Most vaccines are injected under the skin.
- Always use sterile syringes and needles for

vaccination. Always give the correct dose by the correct route.

- These include pasteurellosis, sheep and goat pox, anthrax, pest des petits ruminants (PPR).

There are four economically important disease against which vaccines has to be provided for small ruminants. Is an impairment of the normal state of an animal that interrupts or modifies its vital functions. Newly purchased animals should be watched closely. If there are signs of disease, such animals should be separated from the rest of the flock. If the disease persists, the animals should be disposed off.

AGRO ECOLOGY	PREVALENT DISEASES	VACCINATION/ TREATMENTS
Highland	Anthrax	OTTC 20%, Penstrip
	Pasteurellosis	Tylosin, Penstrip
	Sheep and goat pox	No treatment/Vaccination
Midland	Peste des Petits Ruminants (PPR)	No treatment/Vaccination
	Sheep and goat pox	No treatment/Vaccination
	Anthrax	OTTC 20%, Penstrip
	Pasteurellosis	Tylosin, Penstrip
Lowland	Peste des Petits Ruminants (PPR)	No treatment/Vaccination
	Anthrax	OTTC 20%, Penstrip
	Pasteurellosis	Tylosin, Penstrip
	Contagious Caprine Pleuro-Pneumonia (CCPP)	Tylosin

Table 2. Treatment and vaccinations for sheep and goats under marketing

5.2 SHEEP AND GOAT DISEASE CONTROLS

The first step to keep the animals healthy is to vaccinate them. But sometimes, diseases could occur regardless of vaccination. In that case, it is very important to note some common clinical examinations and take the right corrective measures.

Clinical examination of sick sheep and goats

Make an inspection of the environment; particularly those places known to favor disease, such as marshy, damp areas, should be closely observed. Identify the animal by some means, brand, nick name, ear tags, etc. Carry out the examination while the animal is still quiet. Further examination can be carried out later while the animal is restrained.

You should ask several questions during the clinical examination. The answers may allow you to form an opinion of the disease responsible before conducting the physical examination. The following are some of the procedures:

Closer inspection of all body regions:

- First, look at the animal from a short distance before you disturb it.
- Observe the animal's behavior. Is the animal calm? Is it excited or aggressive? Is its breathing normal or distressed? How fast is the animal breathing? Is it shaking and grinding its teeth? Does it move normally? Is it with its group or does it stand alone?

Closer examination of the nose, mouth, eyes, head and neck:

- Is there a discharge coming from the nose?
- What type of discharge?
- runny, thick, clear, cloudy or colored? Are there any sores on the nose?
- Does the breath smell bad?
- Is there abnormal salivation?
- Are there ulcers around the lips, gums, tongue, etc.?
- Is there any discharge from the eyes?
- What color is the mucous membrane inside the eyelid?

Closer examination of the skin:

- Are there any places where the wool or hair is missing?
- Are there any sores or blisters on the skin?
- Wet, sore patches of skin may allow disease-agents to enter, causing infection.
- Are there any swellings under the skin? These may be lymph nodes or abscesses.
- Is the coat normal and healthy?

Closer examination of udder and genitals:

- Is the udder swollen or warmer than usual?
- Is the udder painful to the touch and does the animal refuse the udder being touched?
- Are there injuries on the teats, udder?
- Is the milk normal in color, quantity, and consistency?
- Is there any vaginal/vulva discharge?
- Are there any ulcers/scabs around the vulva?
- Is there any injury on the scrotum?
- Is there any discharge from the penis?

Closer examination of legs and feet:

- Is the animal lame?
- Examine the foot and legs for wounds, swelling or pain.
- Are one or more legs involved?



Learning question

1. Define the word vaccine.
2. List types of vaccines.
3. What are the economically important sheep and goat diseases
4. List some clinical examination means of sheep and goats.



Key message

The most important measure to keep the animals healthy and safe is to provide the right vaccine. However, it is also important to treat

sick animals when some indicative clinical signs are observed.

SECTION 6 RECORD KEEPING

Record keeping is an essential aspect of any agricultural enterprise, including sheep and goat farming. It involves the systematic documentation of various farm activities, animal health records, breeding data, financial transactions, and other relevant information.

Record keeping offers numerous benefits that can significantly impact the success of sheep and goat marketing. Some of the key advantages include:

- **Improved Health Management:** Keeping accurate health records helps in monitoring the health status of the herd, scheduling vaccinations, and identifying and treating illnesses promptly. This leads to better herd health and reduced mortality rates.
- **Financial Management:** Financial records, such as income from sales, expenses on feed, veterinary services, and labor, are vital for tracking the profitability of the farm. They also assist in budgeting, planning for future investments, and securing loans or grants.
- **Regulatory Compliance:** In many regions, farmers are required to maintain certain records for regulatory compliance, including animal movement, medication administration, and biosecurity measures. Proper record keeping ensures compliance with these regulations and avoids potential legal issues.
- To reap the benefits of record keeping, farmers should focus on maintaining a comprehensive set of records. Some of the key records to keep include:
- **Identification Records:** Each animal should have a unique identifier, such as an ear tag number, along with records of its breed, sex, birth date, and parentage.

- **Health and Veterinary Records:** Documentation of vaccinations, deworming, illnesses, treatments, and health check-ups is essential for effective health management.
- **Breeding Records (if any):** Information on mating dates, pregnancy checks, lambing/kidding dates, and offspring details are crucial for managing the breeding program.
- **Production Records (if any):** Records of milk production, wool/fiber yield, and growth rates of offspring help in evaluating the productivity of the herd.
- **Financial Records:** Detailed records of income and expenses, including sales of animals, milk, wool/fiber, and costs of feed, veterinary services, and labor, are necessary for financial management.

SECTION 7 FINANCIAL FEASIBILITY

Overview of financial feasibility

Financial feasibility describes whether agri-business is financially viable. It involves determining initial investment (resource) requirement to start the business, estimating production cost, operation expenses, and sales revenue.

These are used to determine the initial investment requirement, profitability of the business, break-even point (minimum level of production) to attain the profit zone, and pay-back period (number of years required to recover initial investment). These series procedures are used to make wise decisions to accept or reject the agribusiness investment alternative.



Learning outcome

Trainees equipped on:

- How to determine initial investment requirement to start the business
- How to estimate periodical production costs, operating expenses, and sales revenue of

the business

- How to determine profitability and cash flow of the business
- How to calculate break-even point (minimum level of production) to recover total cost and generate profit.
- To calculate payback period (time requirement to recover initial investment and
- How to make decision to accept or reject the investment alternative
- **Training Method:** Brainstorming, presentation, group discussion, exercise



Duration: 4 hours



Learning question

1. Do you know how to determine financial feasibility of the given specific agri-business to make wise investment decision?

7.1 INITIAL INVESTMENT

- Initial investment is the minimum capital requirement to start the business.
- Example of initial investment requirement to start seed production business includes tools and equipment, seed storage, land, tractor, working capital, etc

DESCRIPTION	TOTAL COST	REMARK
Housing related costs		
Equipment required for fattening		
Animal purchase costs		
Working capital		
Total		

Table 3: Template to estimate initial investment requirement for sheep and goats fattening agri-business

7.2 LONG-TERM INVESTMENT

- Long-term investment in agri-business involves all asset requirement for the business which can serve for more than one year.
- Example tools and equipment, storage for feeds, land for housing construction, etc

TYPES OF INVESTMENT	UNIT OF MEASUREMENT	QUANTITY	UNIT COST	TOTAL COST

Table 4: Template to calculate total cost for acquisition of long-term investment



7.2.1 WORKING CAPITAL

- Working capital for the planned sheep and goats agri-business includes all payments requirement for day-to-day operating activities such as production costs and operating expenses.

Example

- Production costs include cost of fattening animal purchase, roughage and concentrate purchase for these animals, vaccination and medication costs, labor cost etc
- Operating expenses includes administrative salary, sales commission, promotion, etc
- Working capital excludes long term investments such as housing for sheep and goats under fattening, tools and equipment, land, and etc.

A. Production cost

- Production costs are a key component in any agri-

business including in sheep and goats.

- It includes all costs associated with production including value addition to make the product ready for sale.

TYPES OF COST	UNIT OF MEASUREMENT	QUANTITY	UNIT COST	TOTAL COST
Roughage feeds	Bales			
Concentrate feeds for supplementation	Qtl			
Vaccines	Vials			
Different medicaments	Litter			
Medicines for ecto and endo parasites				
Different medicine types to treat sick animals				
Caring sheep and goat under marketing	Hectare			
Total				

Table 5: Template for estimating production cost per hectare for onion seed production

B. Operating expenses

- Operating expenses are all costs not directly associated with production.
- They are common costs incurred for administrative and selling activities.
- Example administrative salary, promotion cost, sales commission, transport cost to sale, etc

TYPES OF COSTS	TOTAL COSTS
Administrative salary	
Utility (electric, water, tele.)	
Interest	
Promotion	
Sales commotion	
Tax	
Etc...	

Table 6: Template to estimate operating expenses for agri-business



7.3 ESTIMATED PRODUCTION AND SALE REVENUE

- Production volume is the main source of revenue for the agri-business to generate profit.
- Producers should determine the estimated average production volume from the planned production season.

Formula -1

1. Total production volume = Total number of sheep or goat bought at initial under marketing
2. After determining the estimated volume of production, it is possible to determine the expected sales revenue for the planned production

Formula -2

1. Total sales revenue = Total production volume X unit selling price

A	B	D	E	F	G
Types of animals	Type of seed	Estimated production	Total production (d)	Estimated selling price/unit	Total sales revenue
Sheep	Male				
	Female				
Goat	Male				
	Female				

Table 7: Template for estimating volume of production and sale revenue

7.4 PROFIT AND LOSS STATEMENT

- The primary objective of any business is to generate profit.
- Profit and loss statement is the main tool to calculate profitability of the business.
- It is used to accept or reject the investment based on estimated profit.

Formula -3

1. Gross profit = Total sales revenue – Cost of goods sold
2. Net profit = Gross profit – Total operating expenses

Description		
Sales Revenue		
Sale of male sheep and goats		
Sale of female sheep and goats		
Total Sales revenue		
Cost of goods sold		
Animal fattening cost		
Animal fattening animal purchase cost		
Ending inventory		
Cost of goods sold		
Gross profit		
Operating Expenses		
Salary if any		
Utility (electric, water, tele.)		
Interest		
Promotion		
Depreciation		
Tax if any		
Total operating expense		
Net profit		

Table 8: Template for profit and loss statement preparation



7.5 BALANCE SHEET

Balance sheet used to know the total resource owned, amount of claim by creditors and amount of owners' equity

- **Balance sheet contains asset, liability, and own capital**
- Assets are all resources available for use or for sale
- Example cash, inventory, warehouse, land, equipment etc
- Liabilities are all debts obtained from bank, microfinances, individuals or others
- Own equity/capital involves own/member contribution, grant/donation, etc

Formula -4

Total Asset = Total liability + Total own capital

Description		
Asset		
Current asset		
Cash		
Inventory		
Total current asset		
Fixed asset		
Tools and equipment		
Warehouse		
Land		
Total fixed asset		
Total asset		
Liability and Capital		
Liability		
Bank loan		
Debt from relative		
Total liability		
Owners capital		

Own capital contribution		
Grant/donation		
Total owners' capital		
Total liability and capital		

Table 9: Template for balance sheet preparation

7.6 CASH FLOW STATEMENT.

Cash flow is all cash inflow and outflow for any purpose in the business operation

Example:

- Cash inflows include sale of seed/seedling, debt obtained from banks, members capital contribution, etc
- Cash out flow includes purchase of input, payment for construction, repayment of debt, payment for salary, etc

Formula -5

Beginning cash balance + total cash inflow = ending cash balance + total cash out flow

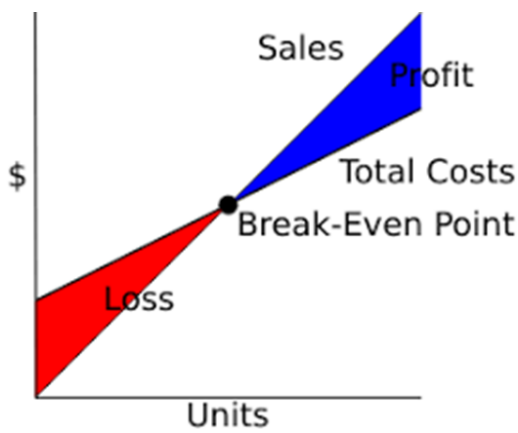
Description	AMOUNT OF OUTFLOW	AMOUNT OF INFLOW
Owners' investment		
Debt		
Grant		
Sale of animals		
Wate house construction cost		
Purchase of equipment		
Purchase of input		
Cash Operating costs		
Ending cash balance		
Total		

Table 10: Template for cash flow statement preparation

7.7 BREAK EVEN ANALYSIS

- Break even analysis is used to determine the minimum level of production to cover total cost
- At break-even point no profit no loss

- To make profit, level of production and sale should exceed/greater than breakeven point.
- Fixed costs are fixed in total amount regardless of increase/decrease in volume of production.
- Example depreciation, warehouse rent, administrative salary, promotion cost, etc
- Variable costs varied in total in response to increase/decrease in level of production
- Example production costs, packaging cost, loading and unloading, etc



Formula -6

Break-even point = Fixed cost/ (Unit selling price – unit Variable cost)

7.8 PAYBACK PERIOD

Payback period is used to determine number of years/ periods it takes to recover initial investment.

Formula -6

1. When the annual profit of the business is uniform/equal
Payback period = Initial investment/annual profit
2. When the annual profit fluctuate/vary from year to year
Payback period = # of year before coverage + uncovered amount/profit of the next year



Post assessment questions

1. Which of the following is part of working capital
a. Purchase of feeds, b. Purchase of initial animals for fattening, c. Transportation cost, d. Purchase of chemical
2. Which of the following should include in profit/loss statement
a. Purchase of tools and equipment, b. Sales revenue, c. Debt, d. Owner investment
3. Which of the following is variable cost
a. Purchase of animals, c. administrative salary, c. Depreciation, d. Rent of storage



Key message

Analyzing financial feasibility of agribusiness enables to pre-determine the applicability of the business in terms of initial investment requirement, profitability, and sustainability.

Risks and Management strategies

No	RISKS	MITIGATION STRATEGIES
1.	Loss of animals during transport	Deal the driver; use standardized tracks
2.	Failure to sell as per the plan	Deal with alternative buyers
3.	Weight loss of animal	Supplement animals with recommended feeds

Table 11. The potential risks and mitigation strategies associated with sheep and goats marketing business is given here under

ANNEX

No	DATE	INITIAL WEIGHT	INITIAL PRICE	MARKET PLACE	NUMBER OF ANIMALS	TRANSPORT MEANS	TARGET MARKET	HOLDING DURATION	SELING PRICE	SELING WEIGH

Table 12. Template for recording marketing related information

