

GOAT FARMING AS A BUSINESS: a farmer's manual to successful goat production and marketing



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1.0 INTRODUCTION

There are more than 3.5 million goats in Zimbabwe, of which 98 per cent are indigenous breeds and owned by the smallholder farmers. Most of them are kept in the drier agro-ecological zones in Natural Ecological Regions IV and V and in Tsetse infested areas. Natural Region IV has a low rainfall subject to periodic droughts and extended dry spells. Overall, the importance of goats increases as the rainfall decreases. Goats are hardy and easier animals to look after, which can survive under harsh environments.

Goats are reared under extensive farming conditions, mainly for meat (chevon) and to a lesser extent for milk. To some extent productivity of these goats is low due various factors such as high kid mortality and lack of good animal husbandry practices. Goats also provide skins of commercial importance and manure for gardens (and crop fields). In other parts of the world goats are kept for their wool (mohair).

Human populations are growing, and creating a significant and increasing demand for additional animal protein foods. The goat can play an important role in meeting these demands. This calls for farmers to put value in their goat enterprises by shifting from subsistence production to commercial production. It is easier to increase the population of small ruminants (goats and sheep) than large stock. In economic terms the opportunity costs are low for goat production.

“The goat was probably the first animal to be domesticated around 9000-7000 B.C. This long association between goat and human indicates the variety of functions the goat can provide.”

This manual has been written to provide information to farmers who are in need of knowledge to start a goat enterprise on a commercial basis, and goat husbandry. The information is not completely comprehensive, but combines experiences from authors and farmers.

2.0 ENTREPRENEURSHIP

Objectives

By the end of the session farmers should be able to:

- Exhibit entrepreneurial competencies needed to run a successful commercial enterprise.

Introduction.

An entrepreneur is a person who continuously identifies opportunities in the market for products or services and then develops new products and services to satisfy the identified needs. As an entrepreneur one needs to visualize a successful goat business and then commit resources to achieving the set goals.

Most producers have the “*Imbuzi ziyazibonela* (The goats should look after themselves) mentality. They do not realize the value of goats, their total worth and how much more they could contribute to their livelihoods if well managed as a business enterprise.

For the smallholder goat producers to run successful commercial goat enterprises they need:

- To understand that starting a business has some risks;
- Access adequate knowledge and information;
- To identify opportunities;
- To commit time and resources; and
- To be ambitious and set goals that are achievable.

Characteristics of entrepreneurship

The entrepreneurial abilities that one needs to develop in order to be a successful commercial goat producer are identifying business opportunities, calculated risk taking, goal setting, information seeking, commitment to a business plan, persuasion and networking, and systematic planning and monitoring.

1. Identifying a business opportunity

The key is the ability to see opportunities in business or personal life where others do not. An opportunity is therefore a chance, an opening or prospect, which avails itself.

Thus an entrepreneur is anyone who identifies problems, resources and unmet needs in society and develops these into business ideas. Thus generating business ideas is the first step in business creation. Examples of entrepreneurs are:

- A farmer who identifies the need for supplementary feeding and goes on to store the feed and sell it to other farmers during the dry season.
- A group of farmers who realize that the shortage of beef is an opportunity for them to sell more slaughter goats. They organize themselves, hire a truck and transport 50 goats per month for sale in Bulawayo.
- A trader who buys goats from the small-holder farmers and sells them to abattoirs in Bulawayo and Harare.

What goat business opportunities are available in your area? Use the tool below to identify your business opportunities in the goat sub-sector.

Problems	Business idea
e.g. Shortage of meat	Buy and sell goats to abattoirs
Resources	Business idea
e.g. Goats	Improve condition and sell to retail shops in Bulawayo
Unmet needs	Business idea

2. Calculated risk taking

Once an opportunity is identified, matched with one's capabilities, it is then necessary to take a calculated risk. When one is taking a risk, it is a matter of striking a balance between success and failure. Risk can be minimized by seeking information and making informed decisions.

Most goat producers are scared of taking risks because of the following reasons:

- They might lose their savings;
- They are not sure whether the goat enterprise will give them a return; and
- They do not have information on available opportunities.

A good illustration of risk taking is that of goat traders. They undertake tasks that most smallholder goat producers do not want to undertake on their own. The traders incur costs that

include buying, transportation, pre-financing, personnel costs (for buyers/ herders) and slaughtering fees.

Exercise: What calculated business risk have you ever taken in your life? Write down the event below. What happened and how did it happen?

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.....
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.....
.....

3. Objective setting

An objective is defined as a specific and measurable achievement to be attained within a specific period of time and cost constraint. A well-defined objective statement is the foundation for goal achievement. Objectives are set to give direction, motivate one to work hard, assist one to be well organized and as monitoring tools.

An objective states the following:

- What is to be achieved?
- By who?
- By when?
- Where?

Objectives should be specific, measurable, achievable, realistic and time-bound (SMART)

Example of an objective that is not SMART	Example of a SMART objective
“I want to have more money”.	“I will sell 5 goats directly to TITI restaurant by September, leading to an increase in my income by 100 %.

Exercise:

Write a SMART objective for your goat enterprise:

.....
.....
.....

Taking your objective as it is, if achieved what would it bring to you?

.....
.....

4. Information seeking

An entrepreneur should access new technologies and other factors that affect their goat business.

The information gathered will:

- Shape the business plan;
- Help reduce risk; and
- Enable the entrepreneur to make better/ informed decisions.

There are a number of information gathering methods that can be used. These are:

- Desk research;
- Interviews;
- Questionnaire; and
- Observation.

The sources of information include business magazines, books, government records, electronic media (radio and television), Business Development Service (BDS) providers such as One-Up and Women-In-Business, Internet services, competitions (fairs and shows), buyers, suppliers, other farmers and newspapers.

Exercise:

What are the prices of goats at the local sale points?

What are the prices of goats in the nearest urban centre?

What business decision would you make based on this information?

.....

.....
.....
The sources of information include Farmer Magazines, books, relevant government departments, electronic media (radio and television), competitions (fairs and shows), buyers, suppliers, other farmers and newspapers.

5. Commitment to the business plan

Once one has a business plan in place there is need:

- To stay focused;
- To be committed to the tasks ahead;
- To adhere to a set work plan;
- Motivate and provide leadership to the people you are working with on the goat business.

Exercise: Write your plans for your goat business for the coming 12 months.

.....
.....
.....

6. Persuasion skills and networking

Buyers or abattoirs do not just buy your goats. It is your responsibility (individually or as a producers' association) to remind them about the availability of your goats or goat products. This can be done through face-to-face meeting with your clients, advertising and constant communication with suppliers and buyers.

Through persuasion and networking you build strong business relationships. Strong business relationships are built on trust, interdependence, fair decision making process, balanced power structure, shared goals, equitable returns, problem solving process, and commitment.

Exercise: Give an example of a situation where you have managed to persuade buyers to purchase your products?

.....
.....
.....
.....

List the different stakeholders you are interacting with and are relevant to your business.

.....

.....

.....

7. Persistence

The goat business is full of challenges. You must not give up when the going gets tough. An obstacle can be turned into an opportunity. What is needed is the ability to persevere and quickly adapt to changes taking place. One also needs to be flexible.

When you lost some of your kids/ goats, what did you do?

.....

.....

.....

8. Independence and self confidence

When one takes up goat production as a business he/ she needs to:

- Be their own boss;
- Have a desire to transform their dreams into reality;
- Have self belief;
- Be free to make decisions; and
- Strive to achieve financial independence.

9. Systematic planning and monitoring

For the effective planning and monitoring of the goat business write up a business plan that answers the following questions:

- Step I: Where am I now? (current situation)
- Step II: Where am I going? (future/ desired situation/ Mission/ objectives)
- Step III: What is between here and where I want to go? (The business environment)
- Step IV: What is the best way for me to get there? (strategic options)
- When the planned actions will be done and how do I know that I am making progress? (Monitoring Plan and milestones)

3.0 Goat Breeds

Objectives

At the end of this session farmers should be able to:

- Identify the breeds found in Zimbabwe and their attributes
- Choose the appropriate breeds for their goat farming businesses

TYPES OF BREEDS

- The vast majority of goats in Zimbabwe are indigenous and these are mainly the large Matebele and the Small East African (SEA) goat
- Average birth weights of kids range from 1.5kg to 2.5kg. (up to 3kg)
- The indigenous breeds are well adapted to their respective environments.





In the southern parts of Zimbabwe, there are larger goats, which are termed the Matebele goat with a mature weight of 45kg.

Other breeds found in Zimbabwe include exotic types, the Boer goat (mainly for meat) with a mature weight of 65kg. The Saanen goat is for milk production and produces an average of 3.5litres of milk per day. There is also the Angora goat for mohair production.

Boer goat



Saanen



4.0 Management of does and bucks

Objectives

At the end of this session farmers should be able to:

- Properly care for female and male goats
- Know the age at first mating

Proper care of both female and male goats is an essential aspect of goat production. This includes strategic vaccinations and dosing, supplementary feeding, selection of breeding stock, kid rearing and weaning.

4.1 Management of females (does)

Young females should be mated as from the age of 12 months. Good nutrition ensures that the animal grows faster and ready for mating. It also increases fertility and litter size. If young animals are mated when they are very young (less than 8 months) they will remain stunted the rest of their life and will have poor reproductive performance. A well-managed female can produce kids for about eight years.

Pregnancy in goats lasts between 145 –150 days (five months). A mature female can only mate when she is ready (on "heat"). The heat period lasts between 24 –26 hours. During this time she should receive the male. The presence of the male in the flock triggers heat. Coming on heat also depends on the nutrition of the animal. Signs, which may indicate that the animal is on heat:

- *Shaking of the tail*
- *Mounting other animals*

- *Seeking males*
- *Continuous bleating*
- *Mucous discharge*

Pregnant females should be separated from the main flock for close monitoring, at least two months before kidding. This also reduces the loss of kids. At this stage they will need quality feed supplements to enhance feed reserves in the body. This will ensure a healthy kid and enough milk.



Female goats (does) separated from the main flock

4.2 Management of male; (buck;)

- Male goats are known to be fertile at an earlier stage than females. In such circumstances males have to be raised separately from females to avoid unplanned mating.
- Bucks have to be kept in good condition and fed at all times.
- For breeding purposes bucks with horns have to be used, so as to avoid haemophrodism (*incukubili/bisexual*), which comes with the use of hornless/polled bucks.
- Bucks can be selected at an early age. A male kid born weighing about 2.5kg or more kg could be selected for future breeding. Heavier and fast growing bucks should be selected. Select bucks from twin births so as to increase the chances of twinning.
- Males not suitable for breeding should be castrated or culled.



5.0 Breeding

Objectives

At the end of the session farmers should be able to:

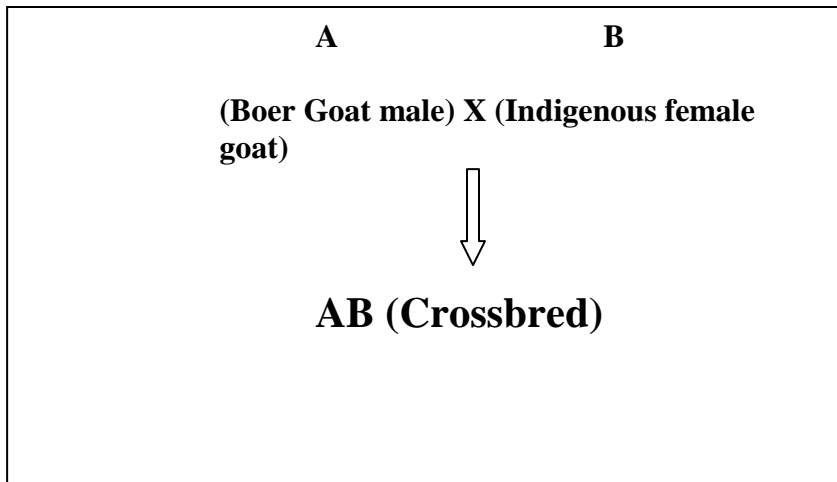
- Understand different breeding systems
- Understand different mating systems
- Formulate their own breeding calendars.

5.1 Breeding systems

The breeding system is an important aspect of goat production in terms of meat and milk production. It has a significant influence on immediate and long-term flock productivity.

Crossbreeding:

This involves the mating of different breeds to combine characteristics found in the different breeds and to make use of the “hybrid vigour”. In simple terms this means that the offspring performs better than the parents. Crossbreeding is one of the methods used in meat and milk production. It can be disastrous, if not done properly, leading to the disappearance of the existing genetic pool.



Pure breeding:

- In this system purebred females are run with purebred males (bucks) to maintain the desired traits (colour, size, meat and milk qualities) of that particular breed.

5.2 Mating systems

It is important for the farmers to know different mating systems that can be applied to their breeding flock.

Random mating is letting any number of bucks to run with a flock of females uncontrolled

Advantages of random mating

- 1) Simple
- 2) Cheap
- 3) Goats can kid any time, therefore a farmer can sell any time.

Disadvantages

- 1) High risk of inbreeding
- 2) High risk of spread of diseases.

Assortive mating is putting the best females to the best buck. This is better than the random mating

Advantages of Assortive mating

- 1) High quality breeds
- 2) Maintain genetic base

Disadvantages

- 1) Unavailability of appropriate breeding stock

- 2) Difficult to implement in communal set ups
- 3) Lack of technical skills, including records

5.3 Selection and Culling

Selection: is a process of choosing the animals with desirable characteristics to be parents of the next generation.

Culling: It is the process of removing unproductive animals (old goats, animals with poor mothering abilities, poor reproductive performance, and animals with chronic sicknesses) from the flock

5.5 Mating Ratio

In a controlled mating system:

- A male goat should run with females for 36-42 days. The reason being that a female which misses mating or coming into heat has a second chance within the mentioned period.
- A mature buck can be given 40-50 females to service. A young buck can be given 25-30 females. The effectiveness of both male and females depends on their body condition at mating.

5.4 Breeding calendar

Below is a calendar that can assist the farmers to plan their flock breeding cycles. This helps the farmer to plan when to purchase inputs, market and to carry strategic operations.

Month 1	2	3	4	5	6	7	8	9	10	11	12
Selection of breeding stock	Mating starts (Putting the buck to the females for 42 days)	End of mating			Separate the pregnant and the non-pregnant	Supplement and vaccinate against pulpy kidney all pregnant females	Kidding starts	End of kidding	Care of kids	Vaccination against Pulpy kidney Weaning	Flushing of females
Flushing											
Routine management of the flock-Dipping, dosing, vaccinations											

6.0 Kid management

At the end of this session farmers should be able to:

- Know the advantages and disadvantages of different kidding seasons.
- Know the recommended kid rearing strategies.
- Understand the importance of weaning
- Acquire skills on different methods of castration

It is important to take good care of kids so as to reduce mortalities and improve kid growth rate. A reduction in kid mortality translates into an increase in flock size and consequently the increase in offtake.

6.1 Kidding seasons

- Kidding should coincide with times of abundant feed availability so that the does will be producing enough milk for the survival of the kid.
- This is usually in the December –to February period.
- Sometimes goats may kid when the condition of the range is not good that is in winter. In such cases it is always important to make sure that the doe is adequately fed and is producing enough milk.

6.2 Kid-rearing

1. Preparation

- Kidding area should be clean with dry bedding (Stover or hay).
- The doe may be kept in the kidding area for a few days before kidding
- The signs of a goat that is about to kid are:
Restlessness, separating itself from the flock, discharges mucus,
- The advantage of separating pregnant does from the rest of the flock is to ensure undisturbed birth process and creates good bonding between the doe and kid.

2. At birth

To allow bonding the doe must clean and groom her kids and remain undisturbed for two to four hours

When to intervene in the birth process:

- When there is mal-presentation or difficulties in kidding.
- When the kid does not bleat or breathe because the doe failed to clean it, remove the membrane over the nostrils

- Cutting the navel and application of iodine. Iodine application is not necessary if bedding is clean.
- When there is no bonding between the doe and the kid

4. Kid Housing

Keep the kids at home for the first few weeks to about one month (especially if the does have to travel long distances to browse and water). The kids require warm and dry conditions during their first four weeks of life. Housing should protect kids from heat, cold or even spread of diseases among kids

An example of kid housing is the Kid boxes. The kid box has the following: made of wood or bamboo measuring, 500-600mm long, 400-500mm wide and 300-400mm deep. Bedding in the box should be kept clean and fresh. This makes it easy to detect diarrhoea. The kid can be kept in the box for three days and moved thereafter.

5. Feeding kids

- Kids should suckle the first milk (colostrum-*umthubi*) within the first six hours of birth which is rich in antibodies that increase the immunity of the kid. If the doe is not producing enough milk for her kid, fostering (*ukumunyisela*) or bottle feeding is recommended.
- From about 3 weeks of age kids start nibbling grass and leaves. This is important for rumen development.
- They should be allowed to browse/graze from no later than one month. Effective grazing and browsing starts at 6-7 weeks.

6. Identification

It is important to have identifications for individual animals as this makes record keeping easier. There are a number of methods that can be used. These include ear tagging, ear notching and attaching names to animals. It is also a government requirement that all the animals have standard identification for traceability when exporting livestock and livestock products.

(a). Ear tagging

- If numbers are used with tags the system of numbering should be logical for example one can have the year of birth, sex, and order of birth. For example: If an animal is born in 2007, male and its kid number 23 in the flock it can have the number 07123, meaning that 07 is the year of birth, 1-for male and 23 being the order of birth. Females can be having a 0 on their tags to show the sex.
- Ear tagging is quick and easy. Tags can be made of plastic or metal. The disadvantage of this method is that the tag can get torn out of the ear and in a large flock the animal cannot be readily re-identified. To avoid this problem put tags on both ears.

Plastic tags (can come in various shapes, size and colors)



Metal tags



(b) Ear notching

- This involves cutting V-shaped notches on the ear. The position of a V notch stands for a certain number.
- The disadvantage is that it cannot be unique to one farmer especially where there is communal grazing and the farmer may have to hold animal before reading the notch.

- The right ear represents tens and the left ear represents units.

7. Health care in kids

- A clean environment will reduce the incidence of diseases. A farmer should always be on the look out for diarrhoea & for respiratory problems- coughing or nasal discharge

Prevention is better than cure!!!!!!!!!!!!!!!!!!!!

- Make sure kids get colostrum within six hours of birth
- Make sure bedding is clean and dry
- Do not confine many kids in a small area
- Avoid damp conditions and excessive heat or cold
- Avoid overfeeding kids with milk as this result in scours.

To improve the general health of the kids ensure the following; to the whole flock:

- Dry sleeping places
- Clean drinking water (about 5litres per animal per day)
- Adequate feeding (3-5% of their body weight per day)
- Control of internal and external parasites

8. Predation

- Ensure that the kids are housed to protect them from being eaten by jackals, eagles and other dangerous animals.
- Do not allow kids to browse in dangerous places unattended

Healthy kids



Alternative kid houses



Weaning

- This should be done when the kids are hundred days old on average and weighing between 8-12 kilograms
- The most common weaning method in goats is complete separation of the kids and the does.

- It is however critical to vaccinate the kids and the does against pulpy kidney (PK) just before weaning as this stresses them, making them vulnerable to PK.
- Weaning enables the does to be in good body condition in preparation for the next mating season

9. Castration

This is the severing or cutting of the spermatic cords so that the animal cannot mate with the females. Castration improves the quality of meat by reducing the characteristic smell of the entire male. There are three main methods of castration used in goats i.e. the rubber ring, knife/razor and burdizzo.

(i). The Rubber ring method

The rubber rings are used within the first two weeks of life. An elastrator is used to stretch and apply the ring over the spermatic cords.

- One person should hold the kid with both its right legs in his right hand and its left legs in his left hand and its rump on his knee. The scrotum then becomes easy to reach.
- One should make sure that both testicles are drawn to the lower part of the scrotum
- Using an elastrator put the rubber ring over the scrotum.

The scrotum will shrivel and drop off a few weeks later. This method is quick and easy to use. Its advantage is that no disinfection is required and the disadvantage is that there might be screw worm infection after rubber ring and testicles have dropped.

Opening the rubber ring using an elastrator Rubber ring applied on spermatic cords



(ii). Knife/Razor

This can be done between three weeks and three months. A sharp knife/razor should be used and it has to be sterilized in boiling water or antiseptic solution.

- Hold the animal in sitting position
- Clean the scrotum with a disinfectant
- Using a sharp knife or new razor blade cut open the lower end of the scrotum
- Gently pull the testicles from the scrotum and rub the top part of the scrotum to prevent over bleeding, and then cut the spermatic cords.
- Dip the whole scrotum in iodine solution or antiseptic solution and apply wound powder.

(iii). Burdizzo

The burdizzo is used to squeeze the spermatic cords so that after some days the testicles wither, but the outer surface of the scrotum is not damaged. This is most effective when the kid is more than three months old.

- Draw one testicle down the scrotum and clamp that side of the scrotum above the testicle to crush the spermatic cord. (see picture below)
- Squeeze the spermatic cords one at a time

A burdizzo



Castrating using a burdizzo



Other methods

- Use of a hammer
- Biting with teeth

These methods are not recommended as they inflict a lot of pain to the animals. They also increase the risk of spreading diseases from animals to humans.

7.0 HUSBANDRY PRACTICES

Objectives

At the end of this session farmers should be able to:

- Know the different housing systems for goats and their attributes
- Construct appropriate goat housing structures
- Use dentition to determine the age of the goats so as to influence management decisions

7.1 Housing

The main reasons why goats are housed:

1. To make management easier
2. To reduce kid/adult mortalities
3. To reduce predation/theft

Goats should be housed to protect them from bad weather for example rain, sun and. Wind. Each adult goat should be allowed a floor space of 1.5 square metres. For example if one has 10 goats then the house/pen should be 1.5*10 which is 15 square metres.

Types of housing

(a). Walled and Roofed

Attributes

- The wall is usually up to one metre high.
- Well ventilated
- Protects animals from wetness during the rainy season
- Easy to clean
- It is warm

*In some cases the wall could be made from pole and dagga and the roof from thatch grass or stover. This can be designed to accommodate different flock sizes.

(b) Raised floor with wooden walls, flat roof and a feeding area

Attributes

- Warm and easy to clean
- Animals can be fed at the pens
- Floor is well drained resulting in reduced foot rot incidences

This is usually ideal for small to medium size flocks

(c) Poles only with no roof

Attributes

- Well ventilated
- Floors get wet and increase foot rot cases
- Cheap to construct
- Expose animals to rain, heat, cold and draughts.

These structures can be upgraded.

7.2 Dentition

Dentition is often used to determine the ages of goats. Goats have no teeth in the upper jaw but have eight front teeth (incisors) in the lower jaw. Towards the back of the mouth goats have large teeth called molars used for chewing.

- In animals **less than one year** the front teeth are small and sharp. This is the **milk tooth** stage
- At **one year** the centre pair of teeth drops out and two large ones replace them. This is the **two tooth** stage.



Two tooth stage

- At about **two years** to the next two small teeth (one on each side of the first centre pair) drop out and two large ones emerge. This is the **four tooth** stage



Four tooth stage

- At **3-4 years** the next set drops out and two large ones emerge; this is the **six tooth** stage



Six tooth stage

- At **4-5 years** the last two milk teeth drop and two large ones emerge, the goat will now be having eight permanent teeth. This is called the **full mouth** stage.



Full mouth

- As the animal grows older (from six years onwards) the teeth start to wear off, spread apart become loose and finally drop out.

Front teeth worn out at adult stage



All teeth have dropped at old age.



Broken mouth

Management Tips

At two tooth to six tooth the castrates can be marketed.
Start culling at broken mouth stage for does and bucks.

8.0 GOAT NUTRITION

Objectives

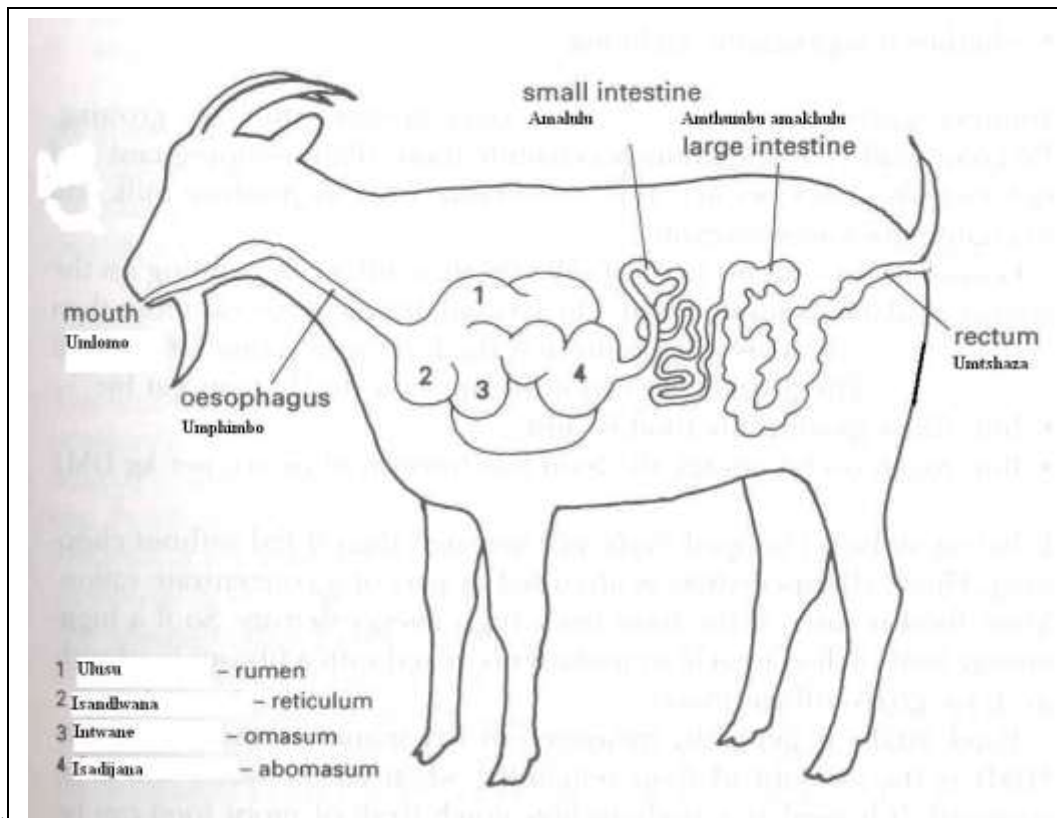
At the end of this session farmers should be able to:

- Understand the digestive system of goats
- Understand the nutrient and feed requirements of goats
- Know the sources of the required nutrients for goats
- Identify suitable fodder crops for semi-arid areas
- Produce and conserve fodder crops for dry season feeding.

Goats are natural browsers but they do also graze. They are however selective in their feeding behaviour and they do well where they feed on a variety of feeds. Their main feed is shrubs, bushes (and wild fruit/pods) and grass.

8.1 Digestive system

To understand the feeding of goats one has to know their digestive system. The goat like any other ruminant (cattle, sheep) has four stomachs which are; *rumen*, *reticulum*, *omasum* and *abomasums* as illustrated in the diagram below.



Feed requirements

The quantity of feed consumed by a goat depends on: age; breed; sex, size and physiological status (pregnant /lactating.)

- Goats will consume about 3-5% of their own body weight in dry matter daily
- Young goats will consume relatively more than mature goats
- Pregnant and lactating animals will need more feed to produce milk and to enable the foetus to grow.

Goats need a balanced diet comprising of water, carbohydrates, protein, vitamins, minerals and fibre. The table below shows the nutrients and some of the feeds from which the nutrients can be obtained.

NUTRIENT	SOURCE
Protein	Leguminous plants, Poultry litter, Cotton seed cakes,
Carbohydrates	Cereals(maize, sorghum, millet, corn),molasses
Vitamins	Vegetables, green forage
Minerals	Agro-industrial residue, limestone flour
Water	Water bodies, succulents(water melons, cacti, etc)
Fibre	Crop residues, hay

Types of feeds:

Compound feeds

Straight feeds

Supplements

Problems encountered in feeding

Bloat

Feeding leguminous feeds which are high in nitrogen content causes bloat, which is the accumulation of gases in the stomach. If animals are not attended to in time they may die.

Acidosis

Bladder stones

Plant poisoning (Umphaphapha)

8.2 Fodder Production and conservation

- The major constraint to livestock production is the unavailability of sufficient feed, especially in the dry season.
- The rangelands do not provide adequate (quantity and quality) feed throughout the year to support goat production.
- Therefore it is necessary to produce fodder crops for supplementary feeding during the dry season.

Fodder crops

These are crops that are grown for livestock feeding. They can be fed while still fresh or preserved. Some examples are given in the table below.

Fodder crops classification

Class	Crop name	Varieties	Planting	Preservation	Usage
Grasses	Sorghum	-Sugar drip -Sugar graze	Sow seeds with the first effective rains Spacing-90x20cm	-Harvested at milk dough stage -Make silage. Add legumes to the silage	Refer to the local AREX extension officers.
	Millet	-Nutrifeed	-Sow seeds with the first effective rains Spacing-90x20cm	-Harvested at milk dough stage -Make silage. Add legumes to the silage	Refer to the local AREX extension officers
	Bana grass	-	-Planted in furrows/rows with the first effective rains -Rows should be 1m x 1m in irrigated lands and 1.5mx1m in dry lands -Use plant cuttings (vegetative propagation)	-Allow the plant to grow for one year before it can be harvested -Thereafter harvest when the plants reach 1m and maintain a height of 10-15cm above the ground. -Continue to harvest for the next 3 years - Make hay or silage	Refer to the local AREX extension officers
Legumes	Cowpeas, Dolichos bean, Velvet bean		-Sow seeds with the first effective rains -Spacing-10cmx10cm -For Dolichos the spacing is 75cmx15cm	-harvest after flowering but before hard dough stage before they lose lots of leaves -Mix with cereals for silage making -May harvest them when the seeds have matured. -Crush seeds and mix with cereals.	- Refer to the local AREX extension officers

Class	Crop name	Varieties	Planting	Preservation	Usage
Forage tree	Leucaena	- <i>Leucecephala</i> - <i>Pallicida</i>	-Scarify the seeds or soften the coat of the seed before planting. -Raise plants in a nursery -Transplant them when they are 20-30cm -Spacing-5mx5m	-Cut, wilt and feed -Cut, dry and feed -Cut, wilt and include in silage mixtures	- Refer to the local AREX extension officers
	Acacia	- <i>Angustissima</i> -	-Scarify the seeds or soften the coat of the seed before planting. -Raise plants in a nursery -Transplant them when they are 20-30cm -Spacing-5mx5m	-Cut, wilt and feed -Cut, dry and feed -Cut, wilt and include in silage mixtures	- Refer to the local AREX extension officers

Fodder conservation

Reasons for conserving fodder are:

- To ensure all year round supply of good quality feed for livestock.
- To maintain milk production and fertility in livestock.
- Maintain good body condition and prevent deaths.
- To minimize stress to animals through food search.

Conservation methods

The two major fodder conservation methods used in Zimbabwe are silage and hay making. Preservation of crop residues is also a common practice in the smallholder sector.

Silage making

Silage is material produced by the controlled fermentation of green succulent crop material with a high water and sugar content in a sealed container called silo.

A silo can be:

- a pit covered with plastic
- a drum
- a plastic bag.

The silo has to be sealed completely and the contents should be chopped and well packed together so that all air is driven out and therefore fodder inside will ferment.

- Bacteria convert some of the sugars in the plant into pleasant tasting lactic acid which prevents spoilage bacteria or moulds from making the fodder to rot.
- Wrongly fermented fodder rots, is unpalatable and toxic.
- Properly ensiled fodder has energy and protein in it.

The Plastic Bag Method

- Every year before ensiling begins, the room should be checked.
- 15kg plastic bags are usually used and these should be clean.
- Chop clean material (with no soil) to 15-20mm
- Seal the material completely in the bags so that all the acid is retained.
- Store in a dry, place at room temperature, safe from rodents.
- The silage should be ready after 3 weeks.

The whole bag can be fed completely once opened which reduces chances of spoilage to the remaining fodder. Bags are easily stored and portable. It also reduces the workload in comparison with the pit method.

Storage after preparation

- It is important to store bags of silage in a room safe from rodents and ants.
- Empty bags must be carefully washed, dried and stored in a safe place for use the following year.

The Pit Method

- Dig a pit 2m in depth and 1,5m wide x 3m long with one end sloping to allow easy entry and exit of the water drums
- The pit is dug where the water table is not near the surface e.g. on an upward slope.
- The side walls of the pit should slope slightly inwards at the bottom so that settling of the silage will not produce pockets of air at the sides, which causes spoilage.
- Sides must be completely smooth with no rock outcrops or bumps.
- Trenches should be dug either sides of the pit to facilitate surface drainage / run-off.
- Chopped length of fodder material should be not more than 20cm and compacted as thorough as possible with the use of heavy water drums pulled / rolled over each layer.
- Pit must be filled as quickly as possible and sealed with plastic sheeting well tucked in at the sides
- The silage pit should maintain a dome shape to avoid seepage of water into the pit and allow runoff.
- Leave to ferment for three weeks

It is good for mass production.

Hay making

- Excess grasses and legumes which are in abundance in summer can be conserved and made use of in winter and during dry periods.
- They should be cut during the growing season when they are young and tender, and have sufficient minerals and vitamins.
- The grass should be cut out in dry weather, left to wilt and then heaped in small bunches in order to dry thoroughly.
- The dried hay should then be stored on a properly constructed hay rack to avoid losses.

9.0 Crop- Small Livestock production systems.

Objectives

At the end of this session farmers should be able to:

- Understand the co-existence between crops and livestock
- Improve outputs from their crops and livestock enterprises by making use of the relationship between crops and livestock

- Integrated crop-livestock production systems explain the inter-dependence between crops and livestock that is each benefiting from the other.
- For most small scale and marginalized farmers, crops and livestock are often the major sources of income.
- These products are often disposed of during times of need where cash is needed urgently to provide for other services.
- Integrated systems can increase farm productivity for most resource poor farmers.

Crop –livestock Interaction

Benefits of Livestock to Crops	Benefits of Crops to Livestock
<ul style="list-style-type: none"> • Sold to procure crop production inputs 	<ul style="list-style-type: none"> • Crops sold to procure inputs for livestock
<ul style="list-style-type: none"> • Supply of manure for crop production 	<ul style="list-style-type: none"> • Provide feed.
<ul style="list-style-type: none"> • Nitrogen supply through urine. 	<ul style="list-style-type: none"> • Produce Oxygen used by livestock
<ul style="list-style-type: none"> • Livestock helps balance ecosystems through foraging 	<ul style="list-style-type: none"> • Use of crop residues as bedding and roofing material.
<ul style="list-style-type: none"> • Help in seed dispersal of certain crop and grasses 	<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • Insurance against of crop failure 	<ul style="list-style-type: none"> •

10.0 HEALTH

Objectives

At the end of this session farmers should be able to:

- Differentiate between a sick and a healthy animal.
- Identify common goat diseases, how they are prevented and treated.
- Understand the importance of dipping and the different methods of dipping
- Understand the importance of hoof trimming
- Understand the importance of dosing and vaccination.
- Acquire skills in administering drugs using needles and syringes

- Diseases contribute to high mortalities in goats, and they reduce animal performance.
- It is therefore important for a farmer to closely monitor the flock. This enables the farmer to detect any sick animals and render assistance as early as possible.
- Early treatment reduces the chances of spread of the disease.
- It is important to note that different diseases may present similar symptoms therefore one disease must not be confused for another.
- Proper and accurate diagnosis is required before attempting to treat the animal.
- It is recommended that you consult your local veterinary officer if in doubt or if your goats are exhibiting some strange conditions.

The flock can be kept healthy by applying these simple techniques:

- provision of clean fresh water
- adequate feeding
- provision of dry, warm and well ventilated housing

The general symptoms of an unhealthy animal are:

- Dullness of the coat;
- Ruffled hair;
- Loss of appetite;
- Drooping ears;
- Dull and pale eyes;
- Difficult in movement;
- Drooping tail; and
- Going off feed.

A farmer should have a simple veterinary kit containing the following items:

- One bottle (100ml) of antibiotic
- Wound powder (100g)
- Healing oil
- Needles
- Surgical blade
- Iodine (100ml)
- Syringe (20ml)
- Broad spectrum dosing remedy (100 ml)
- Cotton wool
- Clinical thermometer
- Plastic gloves

Guide to diagnosis, prevention and treatment of some common diseases

Disease /Parasites	Causes	Signs and Symptoms	Treatment	Prevention
Pulpy kidney (Isimeme, umkhuhlane wegazi)	Caused by a bacterium which is aggravated when there is a sudden change of diet or when the goats are stressed	Unsteady gait and convulsions Animals found dead without showing any signs At post mortem Soft pale kidneys Kidneys may look bloody You may see gas filled red intestines (this may also be seen in animals which have been dead for a while) Increased amount of fluid around the heart, which gets thicker and like jelly when sac is opened	When Pulpy Kidney is suspected use antibiotics	Do not change feed suddenly Strategic vaccination is the best way of prevention
Heart water	Caused by blood parasite. The bont tick transmits the parasite. This tick is found mainly in frost-free drier parts of the country, so heart water is mainly found in these areas.	Sick animals may have temperature of 40°C or higher Strange behaviour, for example the goat may turn its head towards its body in a strange manner. Nervous signs such as a high stepping walk, convulsions or kicking very hard. Goats that are very sick with heart water may die. Post mortem Froth and fluid from the nose. Fluid in the belly, chest and sac surrounding the heart, Swelling of the lungs with froth, and fluid in the windpipe.	When you notice signs of the disease, treat immediately with a broad spectrum acting antibiotic	Dipping to control ticks is recommended. Keep domestic animals away from wild animals

Disease /Parasites	Causes	Signs and Symptoms	Treatment	Prevention
Coccidiosis (Isihudo)	<p>Caused by a type of a single celled organism.</p> <p>This disease happens when there are dirty conditions in the animal pens, sleeping areas and kraals.</p> <p>Young animals get this disease very easily.</p>	<p>Watery diarrhoea</p> <p>Dehydration</p> <p>Loss of appetite</p> <p>Loss of condition</p> <p>Post mortem</p> <p>There may be spots on the surface of the intestines.</p> <p>When the intestines are cut open, they have a bumpy appearance.</p>	<p>Separate all sick animals</p> <p>Treat all sick animals with a remedy for Coccidiosis</p> <p>Mix ½ teaspoon of salt and 6 teaspoon of sugar in 1 litre of clean warm water.</p> <p>Give the dehydrated kid ¼ to ½ litre of the solution 4 times a day for 3days.</p>	<p>Make sure that you keep the animal pens, sleeping areas and kraals dry, clean and well ventilated.</p> <p>Do not crowd animals into an area that is too small.</p>
Liver fluke	<p>How do animals get liver fluke?</p> <p>The adult fluke lays eggs which hatch in water or wet pasture, giving rise to immature flukes, which cling to the plants growing around marshes and vleis and are swallowed when the goats graze there.</p>	<p>Pale mucous membranes</p> <p>Weight loss.</p> <p>Bottle jaw, which is a soft swelling under the chin of the animal.</p> <p>Post mortem</p> <p>Bleeding in the liver.</p> <p>Thickened bile ducts in the liver.</p> <p>Firm, lighter areas in the liver (fibrosis)</p> <p>Liver flukes in the bile ducts.</p>	<p>Use a registered dewormer in your animals in early spring, in mid-summer, and in late autumn or early winter</p> <p>If fluke infection is serious; animals may need additional treatments during summer.</p> <p>If you have been treating for liver fluke and there is no improvement, then you need to ask your veterinarian or animal health technician for help.</p>	<p>Where possible, fence off vleis streams and dams to stop the goats going there.</p> <p>Fence off the pastures that are known to give liver fluke problems. They should be grazed only in the winter months, when the fluke numbers are much lower.</p> <p>Strategic dosing</p>

Disease /Parasites	Causes	Signs and Symptoms	Treatment	Prevention
Roundworms (izilo zesisu)	Goats get roundworms when they take in the immature worms while eating grass. These immature worms grow into adult worms in the animal. Young animals are most badly affected	You may see bottle jaw The inside of the eyelids could be pale Diarrhoea may occur but remember diarrhoea may also have other causes (such as Coccidiosis or toxic plants) During winter or the dry season, animals may be in poor body condition. Post mortem There may be bleeding or having worms on the stomach or intestinal lining.	If you see the signs treat with a worm remedy.	Have a flexible dosing programme
Pneumonia (Isihlabo)	Caused by a bacteria Usually occurs if goats are under stress due to exposure e.g. to wind, cold and heavy rain Animals usually develop the disease after travelling for long distances	Animals may seem tired and walk behind the rest of the flock May stop eating properly High temperature Animals show fast breathing and breathe with difficulty Mucus discharge from the nose Post mortem The lungs look patchy with red patches and normal pink areas Large part of the lung will be firm and red in colour Lungs may be covered with white layer which sticks to the inside of the ribs Froth in the windpipe If put in water the lungs will sink instead of floating	Treat with a long acting antibiotic product	Provide shelter all the time During long journeys allow goats stops to rest, eat and drink

Disease /Parasites	Causes	Signs and Symptoms	Treatment	Prevention
Orf (izilonda emlonyeni)	<p>Caused by a virus found in the soil.</p> <p>This virus gets into the animal through a cut in the skin</p> <p>An infected kid can spread the disease to its mother during suckling</p>	<p>Small round scabs seen usually at the corner of the mouth</p> <p>These scabs spread to the muzzle, nose and eyes</p> <p>Encrusted sores may develop on the teats of suckling females</p>	<p>The disease usually clears on its own</p> <p>Apply petroleum jelly to keep the scabs soft</p> <p>Cannot be treated but you can spray with an aerosol antibiotic to avoid secondary infection</p> <p>NB always wear gloves as this can be transmitted to humans</p>	<p>When a few animals are affected, vaccinate the healthy animals</p> <p>Do not vaccinate healthy animals when there is no orf in the flock</p> <p>Kids should be bottle fed when affected to avoid spreading the disease to its mother</p>
Abscesses (Amathumba)	<p>Caused by bacteria found in the dust or manure</p> <p>Usually develops from injury caused by ticks, thorns or wire</p>	<p>Round swelling which maybe red and painful on touching</p> <p>Usually develops in front of the shoulder on the head or neck or on the flank on the hind quarter, but can also develop on other areas on the body.</p>	<p>Should be done after hair has fallen off and there is a soft spot in the middle. For hairy goats, shave and cut a cross over the soft spot</p> <p>Use your finger to squeeze out puss.</p> <p>Clean the wound with boiled salty water</p> <p>Use a suitable wound spray to keep away flies (If this is not possible use some herbs that repel flies)</p> <p>If possible give an antibiotic injection</p>	<p>If the animal has several bad abscesses or often gets abscesses it should be culled</p> <p>Control ticks</p>

For other diseases consult your local veterinary office

ROUTINE HEALTH MANAGEMENT PRACTICES

The routine health management practices include dipping, dosing, vaccination and hoof trimming.

Dipping

There are quite a number of diseases that are caused by external parasites such as ticks and mange mites. The most effective way to prevent these diseases is to control these parasites using acaricides. There are different methods of dipping that can be applied to goats.

Pour On

- The acaricides comes in small containers and is poured on the back of the animal using the weight of the animal to determine the quantity to be poured.
- The acaricide then spreads throughout the animal as it sweats and in the process killing all the external parasites on the body of the animal.
- This method requires individual handling of the animal and in large flocks it becomes very laborious. It is recommended when a few animals are affected by ticks and during the dry season.

Greasing

- This involves the use of acaricides in the form of grease with tick grease being the most common.
- The tick grease is applied directly on the ticks usually under the tail, on the udder and the ears. This is also commonly used when a few animals have ticks.
- Some tick greases are used as tick repellants.

Spraying

- At times the animals pass through a spray race and the animal is sprayed throughout its body. The acaricide will be in the spray coming out through the nozzles.
- The only problem with this method of dipping is that sometimes the nozzles get blocked and the animals do not get sufficiently sprayed.
- In some cases the knapsack is used to spray the animals.

(iv). Plunge dip

- In this type of dipping the animals swim through a plunge dip with an acaricide.
- The whole animal's body gets in contact with the acaricide thereby killing all the parasites on the body.
- This is recommended in large flocks as it is not laborious and does not require handling of the animals.

- When the dip tank has not been constructed one can make use of half drums to dip the goats in a plunge way. It is however critical to dispose the dip solution safely and not cause harm to the environment.
- The typical dip tank for small ruminants has a capacity of 4266 litres.
- The dip tank should drain well.

Frequency of dipping

- In summer dip once every week because tick burden will be high and dip once in two weeks in winter because tick burden will be low, but aim to dip on warmer parts of the day to avoid pneumonia.

A typical plunge dip tank for small ruminants.



Dosing/Drenching

- This is making the goat take liquid medicine orally.
- This is usually done to control internal parasites.
- A dosing gun fitted to a two litre container and a graduated syringe is usually used in large flocks. For small flocks the medicine can be drawn from the container using a small syringe.
- Sometimes a bottle with a long neck is used for drenching. It is important to exercise caution when drenching your animal.

- The syringe, gun or bottle should be placed in the animal's mouth in such a way that the liquid runs slowly into the mouth and swallowed.

Hoof trimming

- When animals walk on hard rough ground hooves become overgrown and need regular trimming to prevent injury.
- A sharp curved knife is used or a pair of foot shears.
- Cut away the overgrown part of the hoof. If the heels are overgrown cut them as well.
- Be careful not to cut too much hoof and expose the live tissue.
- Dip the hooves in copper sulphate solution to make them hard and prevent cracking and foot rot. This can be done once a year before the onset of the rains.

Injections

Injections are use when vaccinating and when treating some diseases. There are three routes for injections:

(i). Intravenous

This is the kind of injection given to the animal directly into the blood stream through a vein. This is usually for treatment of some diseases and to get a quick response. A veterinary specialist usually does this. A long needle is used for this type of injection.

(ii). Intramuscular

These injections are given deep into the muscle of the back leg or the shoulder. This is usually for treatment of diseases and a long needle is used.

(iii). Subcutaneous

This kind is given under the skin usually in the neck or behind the shoulder. A fold of the skin is lifted up and the injection is given beneath it. This is used normally used for vaccination and uses a short needle.

NB: Syringes and needles should be sterilized by boiling them in water for twenty minutes

Subcutaneous method of injecting goats



11.0 GOAT BUSINESS MANAGEMENT

Objectives:

By the end of the session farmers should be able to:

- Understand the practice of goat marketing
- Understand the different market structures and marketing options available.
- Understand the key areas they have to manage for effective goat marketing.
- Understand the requirements for effecting negotiation and bargaining power.
- Understand how to plan for their business.
- Understand how to keep records.
- Understand how to budget and finance the business.

GOAT MARKETING

Introduction

When one takes goat farming as a business, the major objective is to make a profit. One can make a profit by providing a quality product that meets the market requirements. Therefore in simple terms, marketing is identifying the needs of the customers/ buyers and then supply a product (goats) that meets the required needs in the right quantities at the right time and place.

11.1 Understanding goat marketing

- **Identifying needs:** Buyers require goats of different ages, size, breeds, etc. Some buyers such as the local traders are much concerned about the size while some buyers from the urban, high value markets emphasize on quality.
- **Specific group of customers:** Some of the specific goat markets are individual traders, abattoirs, NGOs, ethnic groups and export market.
- **Product:** In the goat business the products that we can sell to the market are live goats, goat meat, skins, milk, mohair and manure.
- **Right quantities:** It is also important for farmers to be able to plan their production so that they consistently supply the required quantities at specified time intervals (e.g. 250 slaughter goats every month). This is key in business as this helps towards building longstanding and mutually beneficial (win-win) relationships with your buyers.
- **Right time and place:** When we start our goats to organized high value markets, we need to plan our production and logistics to meet the market requirements.

11.2 Goat market:

- Currently, the market for goats is highly informal and middlemen dominate transactions.
- Sales are predominantly at farm gate level.
- There is lack of market information.

The following are some of the market options available to goat farmers.

Individual traders

- This market comprises individual buyers who buy goats for resale in high value urban markets.

Private sector companies (Abattoirs, butcheries and others)

- These normally require huge volumes of goats to serve both the local market and the export market. .
- This market emphasizes on quality, consistency and timely supply.
- There is high transport costs involved when accessing this market.

Ethnic groups:

- The Moslem community provides a market during their religious events.
- The goats are slaughtered according to Halaal tradition.
- There are specific butcheries and abattoirs that service the Moslem community.

Non-Governmental Organizations:

- NGOs involved in restocking programmes provide a market for breeding stock.
- They pay competitive prices.

Export market:

- The export demand is found in Asian countries and other African countries.
- The market is more demanding in terms of requirements.

Why are the buyers offering low prices for your goats?

.....

.....

What do you think should be done to address the problems?

.....

Marketing Tips

- Goat farmers should be able to negotiate for prices that are commensurate with the quality of the animal.
- Farmers can come together as a group to strengthen their bargaining power.
- Farmers should gather up to date information about market trends.
- Produce good quality goats in the right quantities (optimum production).
- Farmers should avoid desperate/ distress selling.
- The farmer can sell directly or sell at an auction.

Financing the Goat Business

Most farmers lack knowledge of how much they need for their goat businesses. Farmers should have an estimate of how much they require for start up costs and operating expenses.

They must produce a financial plan/budget. This will help the farmer to source for funding. The plan should state how much money is needed for the following items:

- Infrastructure
- Breeding stock
- Feeds
- labour
- Veterinary supplies
- Transport

It should also estimate income from the business.

Sources of finance are:

- Own savings: which is normally cheap but not easy to raise.
- Loans from commercial banks: These are very expensive and not readily available to most rural goat farmers. The requirements for these loans are normally stringent and rigorous. The requirements include among other things:
 - Track record
 - Formal registration of entity or enterprise.
 - Financial information
 - Collateral.
 -

Institutions that provide short term facilities include commercial banks like Agribank, ZABG, Premier Banking Corporation, Commercial Bank of Zimbabwe, development

institutions like the SEDCO and the Infrastructural Development Bank and a range of lower level financial institutions such as microfinance institutions and village banks or savings and credit cooperatives. Issues financed through short term facilities are of a working capital nature such as feeds, veterinary medicine, breeding stock etc.

- **Group lending:** A scheme whereby groups comprising approximately five to fifteen smallholder farmers or rural entrepreneurs come together to borrow money from the bank. These should be staying within the same locality. They are bound by a group constitution and operate a group savings account. They should have similar project interests for them to qualify for the loan. The group will have joint liability on the group loan granted
- **Credit schemes:** There are traditional schemes where communities loan each other animals. These are rare. There are schemes that are government driven on agricultural inputs. However most of them concentrate on crop farming.
- **Donors:** available only for poor farmers for restocking exercises. These are cheap funds. They are available for group projects. However, these funds are not usually enough to run viable enterprises.
- **Contract farming or out grower schemes:** are relationships in which buyers of agricultural products lend funds (either in-kind or in cash) to producers. The loan is generally tied to a purchasing agreement. This scheme is not yet available in the goat sub sector. The out grower scheme is operational in the cattle, pigs, poultry and ostrich sub sectors. The processors provide farmers with inputs and deduct the equivalent amount plus interest from the farmer on delivering the products. Contract farming and out grower schemes allow producers to gain access to high-value markets, as well as to increase their productivity by offering them credit with embedded services such as technical and marketing assistance.

COSTING AND PRICING

- When you are running any business venture it is very important for any businessperson to understand how much it costs to source or produce their products. The cost of the product (goat) will assist you calculate a good selling price for it.
- Many people do not know the cost of their products and sometimes the selling price of their products is too low, so that they do not make money from their businesses. This is bad news!
- If it costs you \$400 000 to raise your livestock, it is no good selling that animal for \$300 000. You should try to sell it for more than the cost of raising it.

To make money in a business you must make sure that the selling price of your product is more than the cost of producing it!

Assumptions:

50 breeding does

2 bucks required

Kidding once a year

Kidding: 150%

Kid mortality: 10%

Replacement of breeding stock: 20 %

Young male goats to be sold at an average age of 2 years

Budget of Raising Goats:

Herd Composition		Biological Parameters			
Number of Does	50	Kids born	75 (40 males and 35 females)		
Number of Bucks	2	Kid mortality	8 (4males and 4 females)		
Adult Death Rate	5%	Kids raised	67(36males and 31 females)		
Kids to be sold	34 males	Young bucks	2		
Income	Number	KG	Price	Unit	Total
Market Kids	34	35	60000	Kg live	71400000
Market Does	10	40	40000	kg	16000000
Cull Bucks	1	50	40000	kg	20000000
Milk sales	10	450 litres	10000	litre	4500000

Total Income					93900000
Operating	Number	Amount	Cost/animal/yr	Total	
Feed Costs:	119 animals		100000	11900000	
Salt	50kg				
Health program	119		200000	23800000	
Deworming Adults					
Deworming kids					
Vaccinations					
Other Vet Costs					
Transport	45		300000	13500000	
Labour	1	1000000		12000000	
Total Costs				61200000	
Return/Surplus					

Capital Costs	Number	Costs	Unit	Total	Per
Does	50	2m		50m	
Bucks	2	3		6m	
Fencing		3m		3m	
Housing		5m		5m	
Watering System		5m		5m	
Supplies and Equipment					
Working pens					
Start Costs					

Cash Flow Statement

- This statement lists the inflows (revenue generated by the business) and the outflows (expenses incurred by the business). The difference between the inflows and outflows give the net cash flow. This net cash flow can be positive or negative. If it is positive that means the project is making money but if it is negative it means the business is not generating enough income. It should be noted that this net cash flow could initially be negative but increase gradually to become a positive cash flow.

MONTH	1	2	3	4	5	6	7	8	8	9	10	11	12	Total
Sales: Does														
Buck														
Kids														
TOTAL INFLOWS														
Capital Expenditure														
Feed Costs:														
Salt														
Health program														
Deworming Adults														
Deworming kids														
Transport														
Supplies														
Labour														
Opening Balance														
Closing Balance														

12.0 Record keeping

Record keeping is of utmost importance in livestock production.

12.1 Physical records

Record keeping is of utmost importance in livestock production. Records, which should be kept, include:

(i) Mating records-

These records include taking note of the female number, male number, when mated, when kidded and whether aborted or not,

(ii) Births

Record the date of birth, sex and weight of kid and doe at kidding,

(iii) Deaths

Record the date and cause of death if known,

(iv) Sales

Record the number of sales, costs, name of buyer

(v) Health

Keep record of when the animals were vaccinated, dosed or given any other treatment

Name of farmer.....		
Type of animals being raised.....goats/sheep		
Number of Animals:		
	Adults	Kids
Males		
Females		

Sex:	Male/Female	Doe.....	Sire.....
Type of birth(Single/Twin/ triplet).....			
Date of Birth.....			
Weight at Birth (kg).....			
Weight at weaning(kg).....			
Weight at time of disposal (sales).....kg COST Z\$.....Date.....			
Comments:			
Health.....			
Death.....			
Sales.....			

Whenever, expenditure results in a benefit beyond the year, – such as for a plough, sprayer, fencing – the item must be categorized as a business asset. For your record-keeping purposes, the costs of these items are likely to be treated as capital expenditures.

Assets must be tracked separately from other business expenses by your record system. Show the date of purchase and the type of asset: truck, machinery, and so on. And unless it is obvious, write a short explanation of how the asset is used in the business

12.2 Financial records

The Importance of Good Record Keeping

Some fledgling entrepreneurs believe that if there is money in their business checking account at the end of the month, they must be making a profit. But only if you keep accurate records will you really know if your business is making or losing money. A record-keeping system helps business to check whether it is making or losing money.

Records can also serve as an early warning system to let you know whether changes need to be made in your operation. Indeed, operating without good records is like flying a small plane in dense fog with no instruments.

Keeping Income Records

Your operation may take in money from one or many sources, depending on what line of work you are in. Most of what you receive is called gross income or gross receipts, for goods sold. Your records should account for all gross income and also show the source of each item – for instance, “buck sales, doe sales and kid sales.

Keep track of where your money come from. Make notes explaining the origin of all money put into your business and personal bank accounts. Write down the source of the deposit on the slip or in your checkbook.

Keeping Expense Records

To make money in your business, undoubtedly you will have to spend money. It is important that you record all the expenses you incur, such as labour, vaccines, transport, etc. These are then deductible from your income to determine whether you are making profits or not.

13.0 REFERENCES

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