

AGRICULTURE IN VANUATU

GOATS



**Ministry of Education
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1. Introduction

History of goats in Vanuatu

Goats first set foot in Vanuatu in 1806, when de Quiros took them ashore at Big Bay, Santo. The goats, however, were taken away again by de Quiros. Then Paddon landed some goats on Aneityum in 1840 for breeding. Those goats are the ancestors of the local breed.

By 1984, an Agricultural Census indicated that there were about 15,000 goats in Vanuatu. This number has probably doubled in the years since then.

Importance of goats

Goats are important for the following reasons:

- Goat's meat is good to eat and it provides proteins.
- Goat's milk is very good food.
- Goats from Angora breed have long hair. The hair may be cut and sold.
- Goats need a smaller area of land than cattle.
- Goats are of a convenient size to provide meat for the family.

Factors to Consider

Land

Farmers who want to start a goat project must consider the following factors:

- A piece of land must be available for the project.
- The land should be goat-proof fenced.
- A flat area is the most preferable with good pasture.
- There must be also some shrubs in the goat paddock.

Breeds

Local breeds should be chosen because they are tolerant to the tropical climate of Vanuatu. The farmer has to decide whether he will keep goats for meat or milk. The decision taken will determine which breed to select.

Housing

A shelter should be built in the goat pen to protect the goats from rain, wind, heat and cold. They can also use the shelter at night.

Other uses of the goat house would be:

- for feeding - cut grass, rations
- for milking
- for kidding
- for keeping sick animals.

Feeding

The farmer should consider feeding in terms of:

Grazing: This needs a big area of pen to be made available. The area should be divided into paddocks for rotation of stock. This method allows the goats to have fresh green grass every time they are moved.

Feeding in a manger: This is mostly used in an intensive system. The grass and legumes are harvested and supplied to the animals in the mangers. Rations could also be provided in the manger with protein supplement food.

The types of feeding above will determine how much land is needed to set up the project.

Finance

The farmer should consider if:

- He has enough money to start his project.
- He has to borrow money to start his project.
- He has enough money to keep his project running.
- The project is going to be profitable (will make a profit).

Labour and time

The farmer should consider whether:

- He has enough time to do all the work.
- He should hire some labour at critical period.
- His family can help him doing the job.
- He has money to pay wages for workers.
- He should employ a worker permanently, etc.

Management

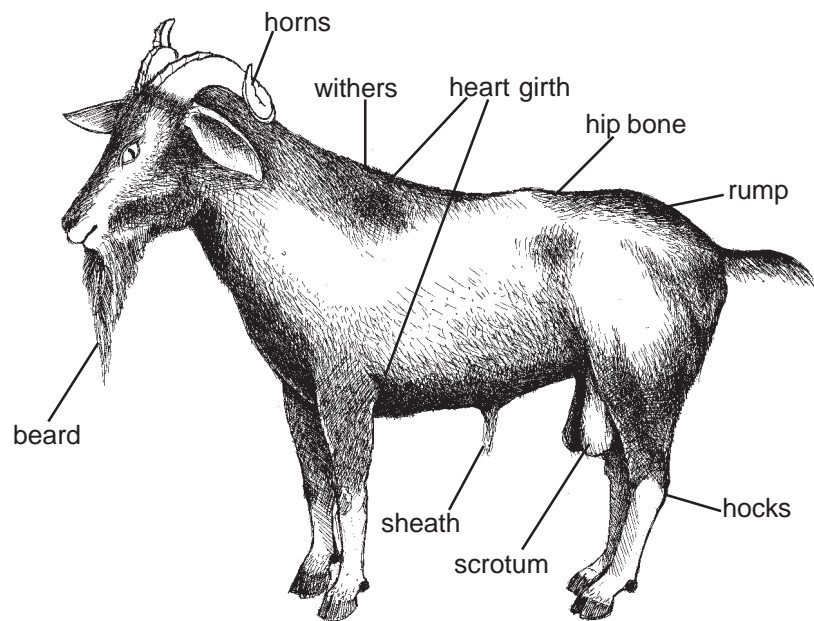
In terms of management, the farmer should consider the following:

- Who is going to manage the project.
- What should be managed carefully, eg:
 - feeding/grazing
 - breeding
 - financial record
 - production record
 - marketing
 - control of pests and diseases.

2. External Parts

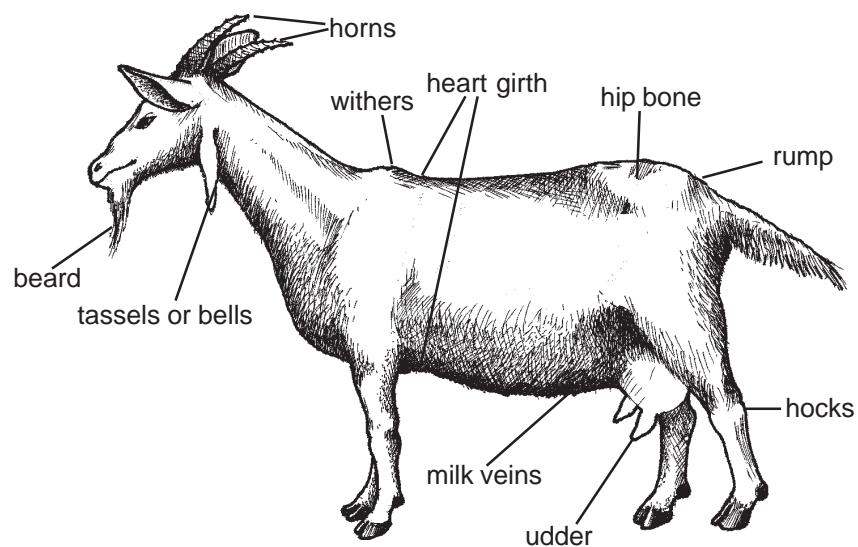
People who feed goats must know about the different parts of the animal.

Male goat external parts



NB. Male goats have a bigger body, and bigger horns than females.

Female goat external parts



NB. Only some breeds have tassels and horns.

Goat Categories

Like all animals, different categories of goat have different names.

Names	Categories	Age
Buck (Billy)	Mature male goat	Over 12 months
Doe	Mature female goat	Over 8-9 months
Kid	Young	0-4 months

Conformation of animals

When someone wants to choose an animal for breeding, culling, selling or buying purposes, he or she must look at the animal's conformation:

- body size
- udder size
- shape of body
- height to the withers
- how the animal stands

3. Physiology

Physiology is the study of the different functions of the body.

1. Digestive system
2. Reproductive system
3. Muscle system
4. Milk system

Digestive System

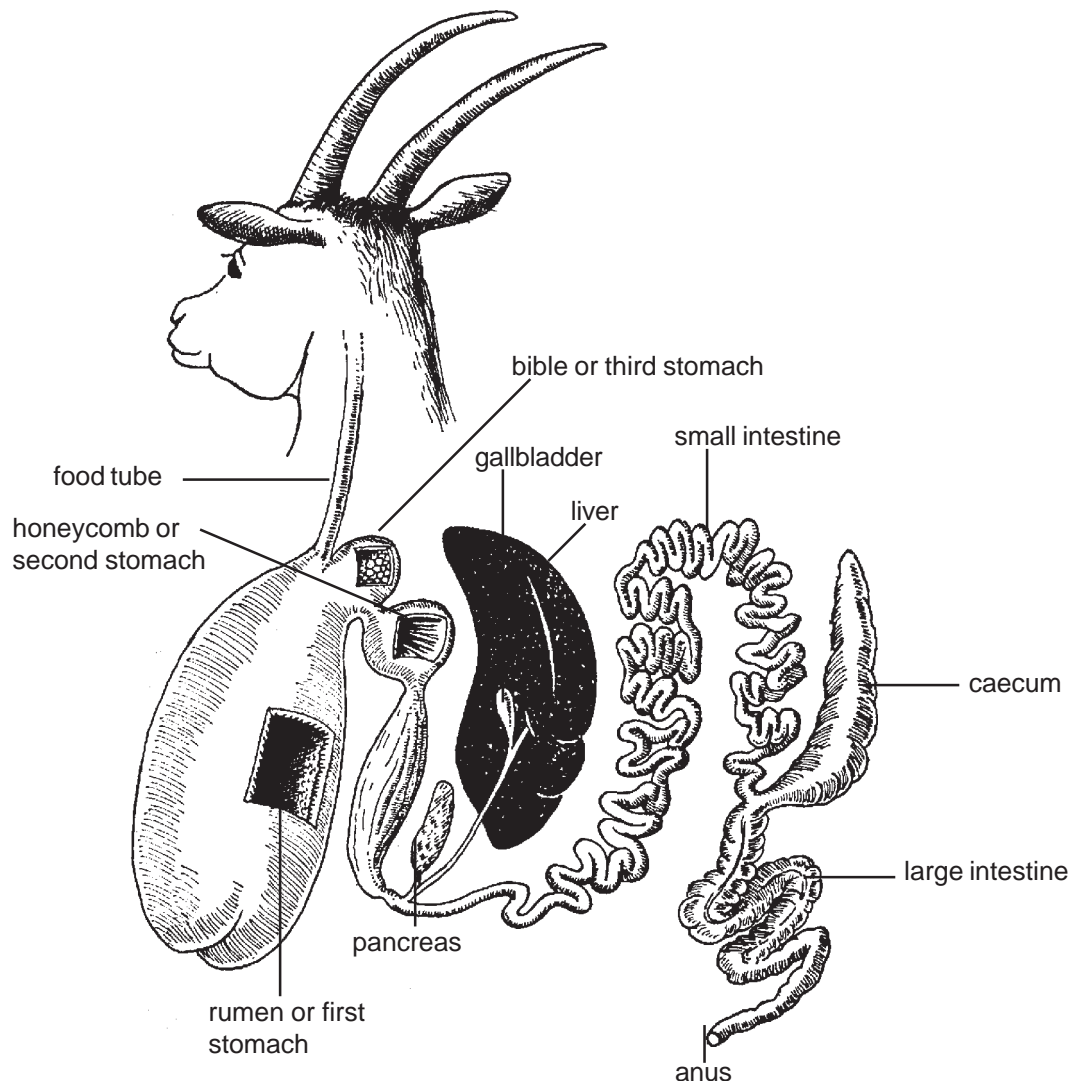


Fig. 1.1

The **Digestive system** enables the animal to break down its food into smaller particles so that they can be absorbed through the walls of the digestive tract (especially the ileum) and enter the blood stream for body use.

Functions of parts of digestive system

A goat is a **ruminant**, that is it chews its food twice. It is different from that of man. Ruminants have four stomachs. Figure 1.1 shows the digestive system of a goat.

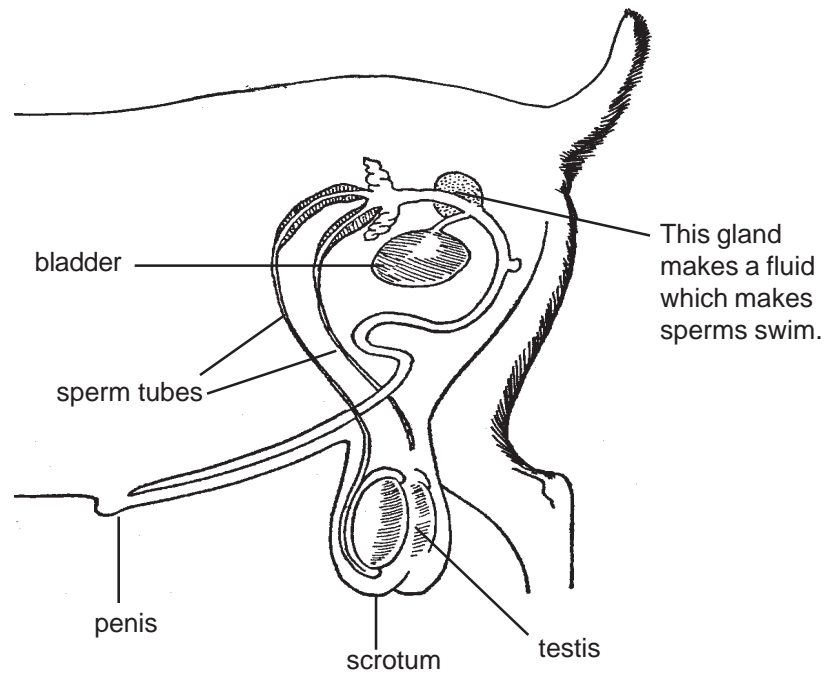
The alimentary canal (digestive system) starts from the mouth and ends with the anus.

Mouth:	It chews the food and also secretes saliva to soften it. The food is then pushed down the oesophagus.
Oesophagus:	The food transits through the oesophagus down to the rumen by the action of peristalsis waves.
Stomach:	This is the site of huge churning, storing and grinding of food. It also controls the transit of food.
Ruminant:	This is the biggest sac of the four stomachs. It is the site of storage, absorption and huge churning actions. The food is being digested here by the actions of millions of microbes.
Reticulum:	It sorts out the big particles which return to the rumen and cause rumination from the small particles which pass directly to the omasum.
Rumination:	Rumination is when, the rumen being full, the animal often lie down in the shade. The undigested grass or cud is passed.
Caecum:	The sac is responsible for the fermentation of non-digestible parts of the food caused by a microbe population.
Rectum/anus:	They are the terminal parts of the digestive tract. They serve as the passageway of wastes and excrement to the outside.
Annexe glands:	<div><div>1. Pancreas:</div><div>It is responsible for the secretion of the pancreatic juice.</div><div>2. Liver:</div><div>It is where bile is made and stored in the gall bladder.</div></div>
Enzymes:	Enzymes are catalysts which speed up the process of digestion without their being used up.

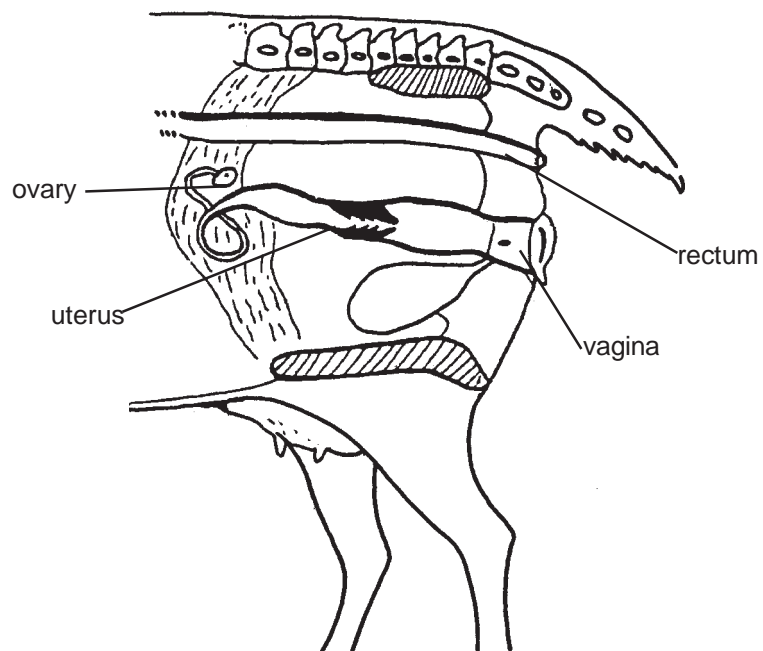
Reproductive system

Parts of the Reproductive System

Male reproductive organs



Female reproductive organs



2.2 Functions of the parts of the reproductive system

The reproductive system enables the animals to reproduce. First we are going to look at the male reproductive organs.

a. Male reproductive organs

The male reproductive system consists of a pair of testes, a penis, sperm ducts, seminal vesicles, urethra and the urethral glands.

Testes: This is where spermatozoa (male gametes) are made. The spermatozoa are stored in an organ attached to the testes called the epididymis. Vas deferens (sperm ducts) carry the sperm to the seminal vesicles where it is stored ready for use.

Seminal vesicles: It is where sperm are stored.

Prostate gland: It produces fluids in which the sperm can swim.

Semen The name given to the mixture of seminal fluid and sperm.

Penis: This is the male sexual organ. It permits the transit of semen into the female reproductive system.

Urethra gland: This is responsible for the clearance of the urethra.

Urethra: This tube serves as the passageway for both the semen and urine.

b. Female reproductive organs

The female reproductive system consists of ovaries, fallopian tubes, uterus, vagina and vulva.

Ovaries: This is where ova are formed and developed.

Fallopian tubes: These are the site of fertilization of the ovum. They also have the function of receiving the ovum during ovulation.

Uterus: Also called **calf bed**.
This is the important fundamental of gestation.
It is the area of **mother-foetus** exchange.
It permits the expulsion of the foetus at the end of gestation or during parturition.

Cervix: Normally closed but open during ovulation or when the animal is in heat.

Vagina: This is the female sexual organ. This is where semen are deposited during mating.

Vulva: This is the external sex organ.

Muscle System

As in every farm animal, the main reason for raising goats is for their meat. The muscle system enables the animal to move by the contraction and expansion of the muscles.

The muscles are the red meat which is used for eating whenever an animal is slaughtered. It is a very good source of protein (body building food).

The function:

- source of protein
- enables animal to move
- protect bones, arteries and veins.

Milk System

The milk system of the goat enables the animal to produce milk. The milk is therefore used for feeding the younger ones and sometimes can be used by human beings for drinking or making milk products such as cheese.

The milk is important:

- because the first milk produced during parturition, called colostrum, contains certain antibiotics which prevent disease
- for feeding the young ones up to weaning
- as a source of fat and protein
- as a source of income for goat farmers.

4. Nutrition

Definition of food

Food is described as a chemical combination of materials which, when taken into the body, can be used to produce the energy vital for body processes such as breathing, excretion and blood circulation, for growth and milk production, for the repair of tissues and for production.

Purposes of feeding

- a. Maintenance: The food the animal needs to keep alive and fit.
- b. Production: The food the animal needs in order to grow and produce milk.
- c. Reproduction: A breeding goat such as a pregnant nanny needs high quality and quantity feed for reproduction.

The main sources of feed

Plants and pastures are the main sources of feed. Most goats in this country obtain their food by grazing on plants.

Dietary requirements

- a. Energy food
- b. Protein
- c. Vitamins
- d. Minerals
- e. Water

Energy food: To produce energy for vital body processes (breathing, moving etc.)

Protein: To provide amino-acids for building and repairing body tissues and, the sex hormones of animals.

Minerals: Essential for the growth and function of animals.

Vitamins: Plays an important role in maintaining animal health.

Water: Helps in digestion, carries nutrients to individual cells of the body, cools the body temperature and helps in excretion of waste.

Energy and protein

Goats need energy food and protein for regular growth. Energy is needed by the processes within the body while protein is needed for growth and development.

A young goat needs more food than older goats. This means greater food allocation for younger goats. The reason for this is the great maintenance energy requirement of the young goat.

During pregnancy, energy food and protein are greatly needed for the growth and development of the foetus. During the last month of pregnancy the animal needs twice as much energy food and protein as usual.

If there is no good source of feed to supply energy food and protein, the mother goat will use up her own body reserves. This will cause a drop in milk flow and the possibility of good production will be reduced.

Feed intake

Different kinds of goats eat at different levels. A milk goat takes 5-8% of its body weight while a meat goat takes 3%. Climate affects feed intake. During highly humid days, the animals find it hard to lose heat during digestion. As a result the animal will not eat as much food.

If there is not enough water, too, the goat will not take enough food.

Feeding young goats

A baby goat should be given its own mother's milk because of the presence of colostrum which contains antibodies which help to keep the animal healthy. If there is no goat's milk available for kids it is advisable to provide milk from other sources using a baby bottle. Cow's milk or even powdered milk will be a good source. However it must be warm when given to the kid.

Feed composition

It seems that, under Pacific conditions, diets should be formulated to supplement grazing at critical periods of production, to improve efficiency in general, to improve reproductive efficiency or during extensive dry periods when there is little grass.

The diets should incorporate maximum levels of locally available crop residues, agro-industrial by-products and non-conventional feedstuffs. It should also be nutritionally balanced and be economical.

The provision of pre-weaning concentrated supplements for kids could be adapted to the available products, for example grated fresh coconut residues in combination with chopped cassava roots and lucaena, vigna beach bean, could serve the purpose in variable quantities.

A roughage feeding regimen should be provided for growing or fattening does three weeks after mating, mid-pregnant does and late-pregnant does from 4-50 kg live weight.

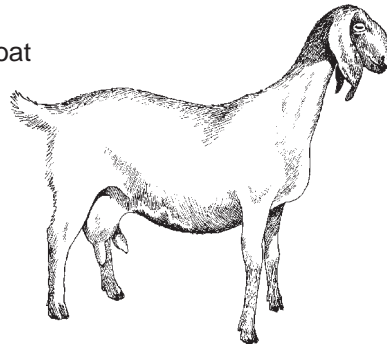
Other by-products that could be included in supplementation for goats are banana fruit, plant parts, copra meal, sea cucumbers, poultry, manioc and litter, cocoa husks, fruit processing factory by-products and others.

Does with multiple kids need extra feed for additional milk production and as a result need special consideration for good quality roughage and browsing but young and actively growing animals need supplementary feeding as well to ensure optimum growth.

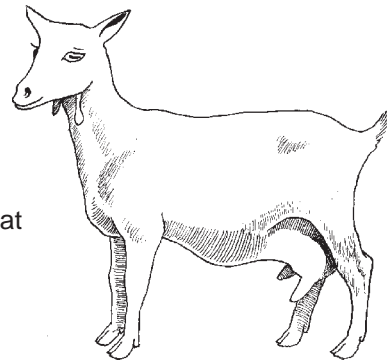
5. Breeding

Type of breeds

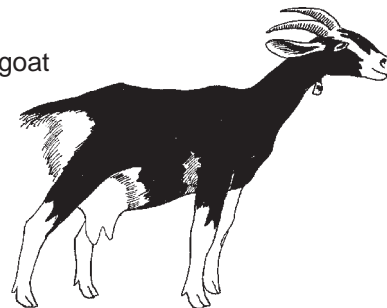
Anglo-Nubian goat



White Sanen goat



A British Alpine goat



Galla



Local Vanuatu heterozygotes

- Well adapted to local conditions
- Kept mainly for meat
- Both male and female are horned
- Polled conditions are available
- White, black brown and grey are available

Advantages and disadvantages of exotic and local breeds

A. Exotic breeds:

1. Advantages:

- a. New breeding stock
- b. Good conformation

2. Disadvantages:

- a. Not resistant to local conditions e.g. climate, pests and diseases.
- b. Risk of poor blood
- c. Expensive in form of ordering of animals
- d. The restrictions of quarantine regulations

B. Local breeds:

1. Advantages:

- a. Resistant to local conditions e.g. climate, pests and diseases
- b. Accustomed to the type of feeds available locally.

2. Disadvantages:

- a. Small body conformation
- b. A lot of crosses decreases the quality of the goat.

Selection of breeding stock

Goats are very unpredictable animals. A pure breed animal may be as good as a scrub in feeding terms. All goats have similar eating habits.

Therefore factors to consider in making a good selection include:

- a. Pure breed animals are more desirable, depending on whether they are meat, milk or dual purpose animals.
- b. Offspring of pure breeds are worth more on the market.
- c. Stock sales are more important economically than milk production.
- d. Breeding and feeding performances of an animal.

Breeding methods

Two breeding methods are used in goat breeding

- a. Natural breeding
- b. Artificial insemination

Goats are bred for two main purposes:

- a. Meat
- b. Milk

Breeding season

Goats are believed to breed throughout the year with two intensive mating periods.

- March to June
- September to November

Servicing

There is very little information on servicing of male goats. Pregnancy is evident. Servicing could be dependent on management and environmental influence.

Puberty and age of first breeding:

- Does come to puberty at age 5-10 months
- The weight could be 7-20 kg. It all depends on age, type of birth, level of nutrition. Good age of kidding is 12-24 months.
- Reproductive efficiency increase with age.

Doe on heat

It is important to know how to determine when a doe is “on heat”. A doe on heat is easily recognized when a buck is around. The doe normally approach the buck wherever he is.

- A doe in oestrus cycle may drop its milk production
- There is a mucus discharge from the vagina

Does come on heat every 21 days and will stay on heat for a few hours to 3 or 4 days.

Gestation

A doe that does not come back on heat should be taken as being fertilized and is in its gestation period. She will need a lot of good care at this stage.

The gestation period of a doe is 155 days. Gestation is the period from the sperm of the buck fertilizing the egg of the doe to the kidding of the young.

Kidding

The farmer should be prepared for the end of the gestation period.

- a. The final day of the gestation period should be calculated carefully. Female goats usually give birth to their young without any problems. However if there is any difficulty foreseen, it is advisable to seek the help of a veterinary officer or an experienced farmer.
- b. Kidding rate: The best rate is to breed does three times in two years. A doe can be bred to give birth twice a year provided good management and feeding are practised. It is very common practice in Vanuatu to undermanage livestock. It would be best to stick to a kidding rate of 3 in two years.

Litter size

Normal litter size is 1 to 2. It is not uncommon to have litter of 3 to 5.

Litter size will again depend on the management of feed. Kid mortality is also common in goat breeding. Factors affecting goat mortality are:

- a disorder in early life
- parasitic orders.

Birthweight

The birth weights of kids range from 1.4-3.5 kg.

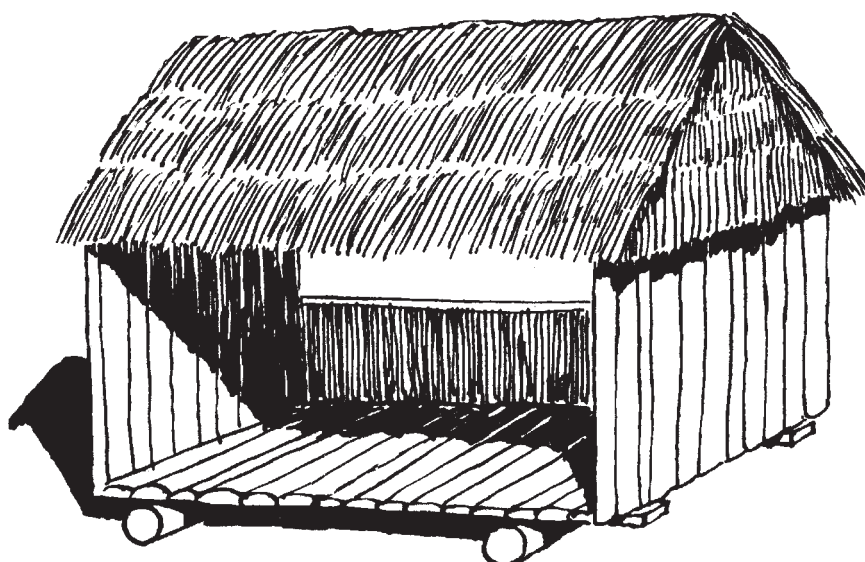
Birth weights are influenced by breed, age of doe, nutrition level and body weight of the doe.

6. Housing and Fencing

Housing

Goats need to be able to keep dry and have a dry place to sleep. A good goat house has a roof to keep out the rain and walls to keep strong wind from coming through. Goats need to have fresh air, so there must be an opening in the wall high up to let air come in.

It is best if the floor slopes to the front of the house and can be kept clean. Goats like dead grass or other dry material to sleep on.



Housing should be well ventilated and provide shelter from sun, rain and cold winds. Kids must be protected from being attacked by dogs and other predators.

Fencing

Goats like any other animals if not fenced properly will damage other people's gardens or properties.

There are several reasons why the goats need fences or yards.

- to control the stock
- to control the pasture
- to provide a safe and efficient way of handling and inspecting the animals.
- to help in holding the goat still for ear tagging, castration, de-horning, drenching, treatment of wounds and treatment of external parasites.
- to keep sick, diseased or injured animals where they can be treated easily and allow them to rest undisturbed.

Types of fences and posts

1. Natural boundaries
In most areas around Vanuatu, goats are kept on small islands which means they can move around the island freely browsing the young plants or shrubs around the island. Sometimes the natural plants i.e. narara and burao are used for fencing but maintaining them is a problem.
2. Standard pig wire with 3 or 4 strains of wire above
This type of fencing is not commonly used on the islands due to the cost involved and because most farmers only practise subsistence farming. The fence must be 3 metres high to prevent goats jumping over the fence.

Tethering

Tethering is another method of restricting an animal to one area. One end of a rope is tied to the goat, usually round the neck or the horns, and the other end to a post or tree stump. The length of the rope determines the feeding area. The animal can be moved easily to another feeding area.

Advantages

- It is cheaper than fencing.
- It is more secure.

Disadvantages

- It requires more labour.
- The animals' behaviour can be irritating.

7. Goat Management

Management is the way we organize, control and care for the goats in our herd.

There are three different types of goat management namely:

- extensive
- semi-intensive
- intensive

Extensive: Under this management system, goats are allowed to graze freely over a large area of land. The owner may build some houses for the goats to get shelter at night and when it is raining heavily.

Semi-intensive: Under this management system, goats are controlled to some extent. They are grazed within fenced ranges. The owner builds houses for the animals and gives them some special rich food supplements as well, but also the goats go out each day to graze. Animals are not allowed to run wild.

Intensive: Under this system, goats are controlled all the time. They are closely supervised. They may be kept all the time in houses or in pens with high fence and a house in the middle.

Stocking rate

The stocking rate is the number of animals per unit of land.

- Semi-Intensive: 16 to 40 goats per hectare
- Extensive: 1 to 40 goats per hectare.

Record Keeping

An essential ingredient for good management is the need to keep **records**.

Important features about good record keeping:

- a. Records are intended to help you improve the management of your system.

They must be:

- simple and understandable
- easily accessible.

- b. Avoid over-transfer of information from one record sheet to another.

There are three kinds of records:

1. A diary: Any time any work is done, it should be recorded with the date. A diary is useful because it tells you how long it takes to do the job.
2. Record of cost: Any time you buy something for the project, this must be recorded.
3. Records of returns: This is all the money that is received when the goats are sold.

DATE	WORK DONE
January 7	Cleared place for goat house. Dug drains.
January 10	Bought barbed wire (fence).
February 5	Put in corner posts of goat fence.
February 20	Cut wood for fence.
March 9	Build small house inside the fence.
March 15	Bought four goats.
March 25	Made water trough.

4. Financial records

It is the record of money used/spent and money gained from the project/farm.

RETURNS			COST		
Date	Item	Amount	Date	Item	Amount
	Sold 2 Billy goats	VT 8 000		Medicines	VT 800
	Sold 2 Kids	VT 6 000		Bought 2 breeding Billies	VT 4 000

Identification

When there are only a few animals, appropriate names may be convenient. With a traditional goat farm, where there are more animals, marks are applied. This is to determine the ownership of the animals. It is necessary on large farms.

There are two main identification techniques/methods, usually done in the ears (the least valuable part of the carcass, at least in terms of commercial goat keeping).

The two methods are:

- ear tagging
- ear notching

Tagging

The rationale here is to affix a numbered tag to the ear of the goat. Tags may be metallic or plastic.

- Metallic tags are preferred for use on younger goats as they tend to fasten better on their small ears.
- Plastic tags are generally used on older animals. Plastic tags may also be coloured coded, e.g. white, red, yellow, green, blue, etc.

Advantages

- Ease of reading number, especially when tags are big.
- Easy to affix the tags on ears.
- When tags are colour coded, it makes it easier to carry out breeders' management operations. For example, the manager could plan the breeding programme such as: The billy with the red tag always mates with the nanny with the yellow tag.
- Cheap method of identification.
- Usually easy to read and identify.
- Can be done on all breeds of goats irrespective of skin colour.

Ear Notching

Two examples of notching are given on the next page.

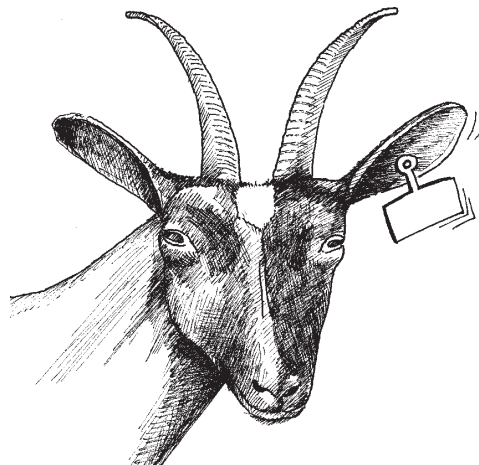
Disadvantages

- The cuts made in the skin act as sites for potential disease causing (pathogenic) microorganisms to gain entry into the body of the goat. If the health status of the farm is poor, this method of identification may create health problem.
- When the goats fight, they use their heads and could distort the cuts (notches) made and thus destroy the identification of the goats.

Ear notching



Ear tagging



Other Management Practices

The following procedures may also be carried out.

De-horning

De-horning means the removal of horns.

De-horning is normally carried out for the following reasons:

- to prevent injury to the animal and human
- to enable easier handling of the animal
- to reduce bruising of the carcasses.

Methods of de-horning

Young animals are de-horned early in life when the horn buds are still small. If done early, the animal does not experience any stress.

The area around the horn bud is clipped and excess hair is removed.

The bud is then burnt off by any of the following methods:

a. Hot iron

The hot iron is the ideal method. To ensure that the bud is completely burnt off, the iron must be red hot.

If a proper de-horning iron is not available, then any iron can be used. Light the fire, put the iron into and wait until it is red hot. The hot iron is taken out of the fire and used on the goat.

The advantage is that there is no blood loss or open wound which can cause infection and stress is therefore minimized.

b. Caustic soda stick

Caustic soda has the disadvantage that when it rains or the area around the head gets wet, the caustic soda runs, usually down the face, thus burning any area in contact.

To prevent this happening, grease is painted around the head and down part of the face to prevent contact with the caustic soda, thus avoiding burning.

Its advantage is that there is no blood loss or open wound which can cause infection and stress is therefore minimized.

An important point to note is that caustic soda sticks are not readily available in most areas of the Pacific.

For older animals, it is difficult to burn off the horn. De-horning of older animals is therefore a stressful practice. The severity of the stress depends on how much of the horn is removed and how old the animal is.

c. Tipping

The tip of the horn is removed with either a hacksaw, an emery file or a cutter. The amount removed varies, but the objective is to expose the sensitive area. Thus animals, when using the horn for fighting, will feel pain. The recommended length to be removed should be enough to allow bleeding to take place. Often, the horn is completely removed, leaving a gaping hole on the head.

The practice is bloody and messy. It also leaves an open wound, which encourages infection. Furthermore, this open wound attracts flies and other insects. Therefore this practice should not be done during summer or never in areas where screw worm is a problem.

De-scenting

Just behind the horns of the billy goat are two of the major scent glands. These are easy to locate by palpation. They can be removed by either burning or surgery. If de-scenting is considered important, then it is advisable for it to be carried out at the same time as de-horning.

Methods

a. Burning

The hairs in the area behind the horns are clipped. The glands are located as hard movable lumps just underneath the skin. The lumps are burned off in the same manner as horn buds. As there is no open wound, insects are not likely to be a problem and the chance of an infection is minimized.

b. Surgery

The procedure requires aseptic conditions and sterile clean equipment.

After preparation of the area, an incision is made in the skin over the glands. A blunt instrument, such as the end of the scalped blade holder, is then used to separate the skin from the gland. When completed, the gland is severed and removed.

The open wound provides an excellent entry point for infection.

Castration

Castration is the removal of the testicles of the male. The reasons for castration are:

- to prevent breeding thus allowing the running together of different sexes
- to prevent male aggressiveness
- to remove male odour in boars.

Methods of castration

a. Rubber rings:

Rings can be used on pendulous testes, as in cattle, goats and sheep. The objective is to cut off the blood supply, thus the ring is placed above the testes. Eventually, the testes fall off.

Advantages

- They are easy to put on.
- There is no open cut, thus infection is minimized.
- The animal suffers no stress.

Disadvantages

- The ring can break, thus preventing castration.
- Occasionally, the tissues below the ring can become necrotic, leading to infection.

b. Burdizzo:

A burdizzo is an instrument that is used to crush the spermatic chord and the blood vessels. The burdizzo is placed on the skin which crushes the chord.

Advantages

- Easy to apply
- Infection is rare because there is no open wound
- The animal suffers little stress.

Disadvantage

- It is easy to miss the chord, thus castration is not effected.

c. Knife:

A knife or a sharp instrument is used. Great care must be observed to prevent bleeding. To minimize bleeding, the chord is either cut with an emasculator, or pulled gently until it breaks or tied and cut.

Advantage

- Certainty of the removal of the testes.

Disadvantages

- The open wound can lead to infection
- The animal experiences a lot more stress
- Excessive bleeding.

To avoid the above, castration must be carried out in young animals and good hygiene must be observed. The usage of emasculators reduces bleeding.

Paring

Paring is the trimming of hooves. If an animal continues to walk on soft ground, the hooves grow out of shape. A sharp knife can be used to trim off the dead parts and shape the hooves to normal size.

Drenching

A means of administering of medication to horses, cattle, sheep and goats, but rarely to pigs. Liquid medicines like **Nilverm** are used for deworming. Care must be taken to avoid injury and materials going into the lungs.

Equipment:

- a. tubes
- b. drench guns

Culling

A farmer cannot afford to keep animals that are not producing or providing products that have no economic value. They must be culled (taken out) from the herd and slaughtered.

Cull animals which are:

- too old
- infertile
- diseased animals
- dangerous animals.

These animals can be slaughtered or killed and diseased animals can be buried or burnt.

Handling of Goats

- Train the animals to be tame.
- Approach the animal with an easy movement. Do not shoot or chase an animal in the paddock.
- Protect the animals from predator/bad weather.
- Check feed and water regularly and supply if required.
- Give assistance if difficulties arise or occur (trouble shooting).
- Control diseases and pests.

Marketing of Goat Products

Selling the goat is no problem as people round about will buy them. However some people do not like goat meat, because of the smell or taint. The carcass or body of the goat does not contain much fat and weighs from 16 to 27 kilogram dressed. Because the carcasses are not large, they are much more useful in a village than cows, which are often big to be eaten all at once.

Economic constraints

Most goat farmers remain at a subsistence level of production even though they aspire to expand. This is because of the lack of collateral to enable them to draw on development loans. Also most islands in the region lack government loan schemes to bring the goat industry up to the commercial level.

Goat meat and milk are not yet acceptable to most people in the region because of the taint and producers are not yet confident about the market situation for their produce.

8. Health, Disease and Pests

Healthy goat

A healthy goat can be recognized by its healthy growth, behaviour and appearance.

A healthy goat will have the following characteristics:

- bright looking eyes
- can eat properly
- coat is smooth and shiny
- has pink mucus membranes of the eye, mouth, nose and vulva
- good intake of food and water
- good round and firm droppings

There are two major health problem and these are:

- **Internal parasites** and **Foot rot**.

The two tables on the following pages give details of internal parasites and external parasites, including foot rot.

Internal Parasites Table

PARASITES	SYMPTOM
A. Stomach 1. Haemonchus 2. Ostertagia 3. Trichostrongylus	Anaemia Diarrhoea 'Bottle-jaw' Potbellied
B. Intestinal 1. Trichostrongylus 2. Nematodirus 3. Bunostomum 4. Moniezia 5. Strongyloides	Anaemia Diarrhoea 'Bottle-jaw' Potbellied Loss of condition
C. Lung Worms 1. Dictyocaulus	Cough - dry Hacking type
D. Whip Worms 1. Trichuris	Intermittent/chronic Diarrhoea/blood Loss of weight
E. Flukes 1. Fascioloides	Anaemia, Etyma 'Bottle-jaw' Emaciation
F. Coccidia (Protozoan) 1. Eimeria	Anaemia Weight loss

External Parasites Table

PESTS	CAUSES	SYMPTOMS	PREVENTION/ CONTROL
a. Foot Rot	Bacteria	Lameness in one or more feet.	Regular trimming of hooves. Dipping in 4-10% of formalin or copper sulphate paste every 2 weeks in wet season and three weeks in dry season.
b. Lice	Parasite	Feed on the skin and burrow into the hair follicles which cause itching. Excessive scratching against sides of barns, fence post and wire. Weight loss. Decreased milk production. Appearance of dry, crusty or scrubby area on the back, side of face and underside of neck.	Spraying with emulsifiable concentrate every alternate month.