



# **UNLOCKING PROFITABLE LIVESTOCK PRODUCTION:**

## **A PRACTICAL GUIDE TO FEED FINISHING RUMINANTS**



THE NIGERIA INCENTIVE-BASED  
RISK SHARING SYSTEM FOR AGRICULTURAL LENDING

De-Risking Agriculture • Facilitating Agribusiness



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LIMITED

# UNLOCKING PROFITABLE LIVESTOCK PRODUCTION: A PRACTICAL GUIDE TO FEED FINISHING RUMINANTS

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# Objectives:

## **Objectives:**

This manual aims to equip farmers, livestock entrepreneurs, and extension agents with practical knowledge and skills in:

- Selecting suitable animals for fattening
- Designing and managing a feedlot system
- Developing cost-effective feeding regimens
- Implementing animal health and housing practices
- Maintaining accurate records and evaluating performance
- Accessing markets and maximizing profitability

# Preamble

## Preamble

This training manual is developed as a practical guide for farmers, livestock entrepreneurs, and extension workers involved in feedlot finishing systems. It provides step-by-step instructions and key considerations for managing a successful 90-day feed finishing program, particularly for cattle.

Feed finishing is a proven approach to enhance the weight, quality, and market value of livestock within a specified period (2-3 months).

By following the methods outlined in this manual covering animal selection, feeding practices, water requirement, housing, health management, and marketing, participants will be equipped with the knowledge and confidence needed to improve productivity and profitability.

Furthermore, this manual is designed with simplicity, clarity, with local context in mind and also combines practical hands-on experience, tested models, and illustrations to support learning and its application.

We believe this manual will contribute meaningfully to the development of sustainable livestock production and agribusiness in our communities.

# Introduction

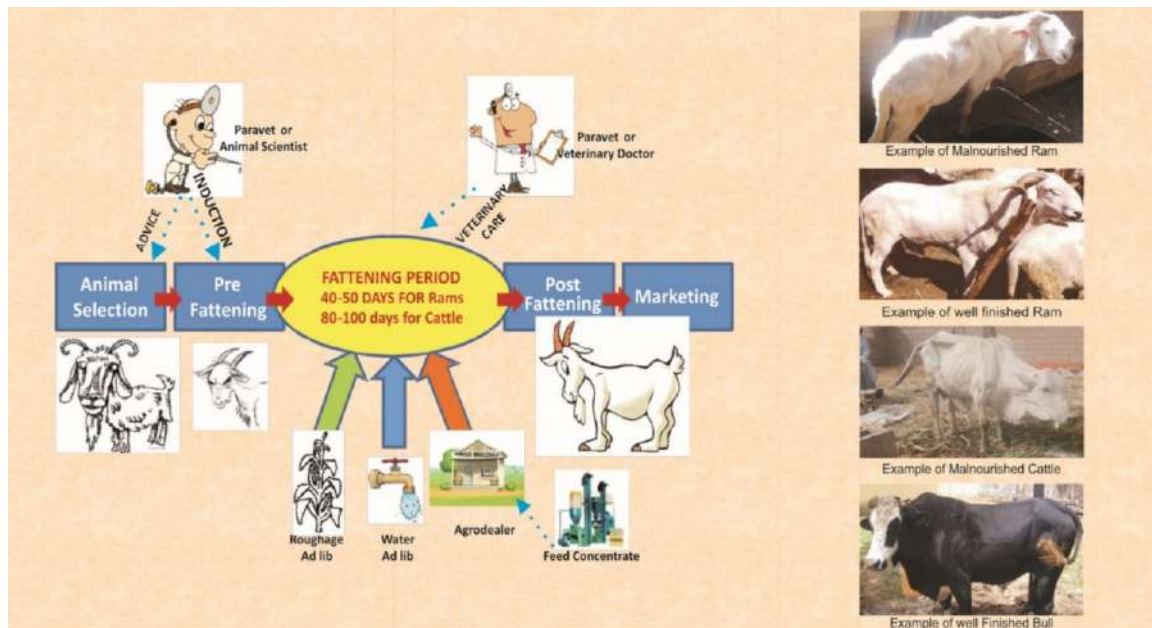
## Introduction

Small-medium scale feedlot (fattening) is vital where range-based livestock are undernourished because of nutritional stress and can therefore respond to a short period of improved nutrition and proper feeding regiment within a confined area. Feed finishing also increases farmers' productivity and improves the animals for market. The feed finishing system is therefore complimentary to the existing system of raising animals on rangelands and not one of substitution of a new technology.

Fattening creates an economic option for livestock farmers to take advantage of the market opportunities by quickly enhancing livestock production through supplementary feeding of medium age cattle sheep, and goats within a limited area, resulting in increased carcass yield of about 30-40 percent during the short period of fattening (90-100 days for cattle and 50-60 days for sheep and goat).

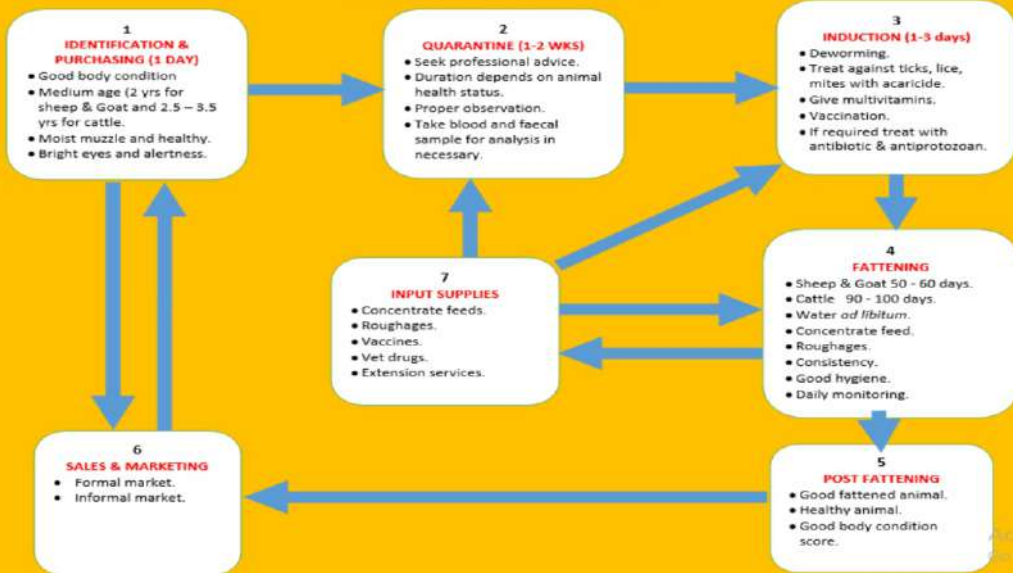


## FEED FINISHING (FATTENING)



# CYCLE

## Feed Finishing (Fattening) Cycle







## SELECTION OF ANIMALS FOR FEED FINISHING

When selecting animals for feed finishing, there are a variety of factors to consider which include:

### Freedom from diseases

- Animals for fattening should be slightly lean and healthy.
- When purchasing livestock for fattening, check that the lack of rumen fill is due to hunger not disease and anorexia.
- Observe the following during selection: smooth hair coat, good body condition, alertness, bright eyes, pink mucous membranes, moist muzzle etc.
- If possible, please seek the opinion of a practical qualified vet, animal scientist or livestock technician at initial purchase for proper guidance.

### Structural soundness

- Identify and select a suitable animal with good body formation and good disposition and constitution. Check the animal for signs of general health (skin, mobility, mouth discharges, clear eyes, alertness, liveliness etc).

# HOW TO CHECK THE HEALTH & STRUCTURAL SOUNDNESS OF RUMINANTS:

## OBSERVATION

Distance and close step by step observation, animal behaviour and response to its surroundings

## HEAD & NECK REGION

- Upright head
- Eyes moist and mucus membrane pinkish
- Ears stiff and responsive
- Mouth & teeth: clean with no discharge
- Nose: clean & no discharge, good breath
- Muzzle: moist

## GOOD SELECTION

Animal ready for induction

## BACK/LOIN REGION

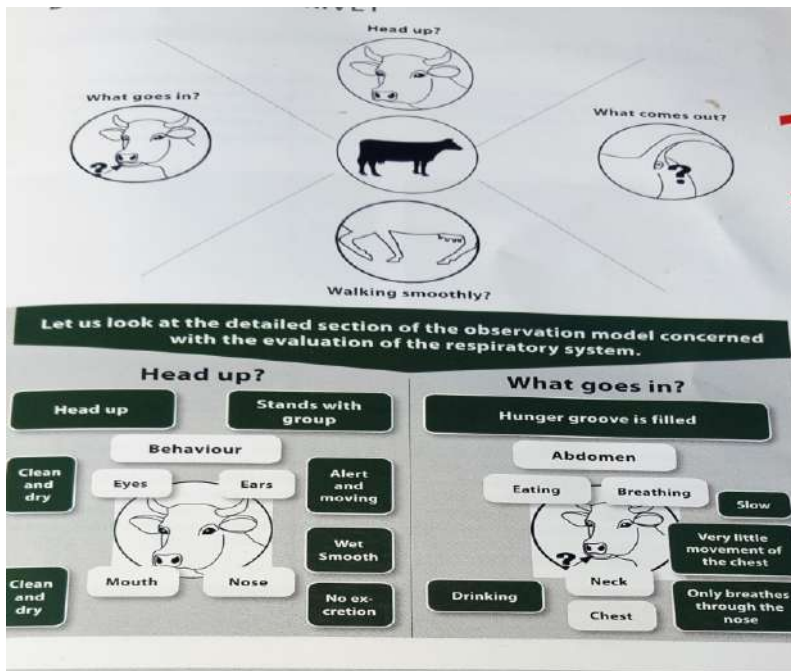
- Check for body fat & muscle reserve by feeling the loin area & pin bone
- Observe tail movement
- Check anal region for any discharge
- Check scrotal/testicle

## MUSCULO-SKELETAL

- Standing strong
- Lying down upright on sternal recumbency with straight head
- No lameness
- No deformity
- Walk smoothly

## BODY/TRUNK REGION

- Smooth hair coat
- Rumen fill
- Rumen movement
- Rip cage & chest movement
- Straight back and hump response to touching
- Good/average body condition



# STRUCTURAL SOUNDNESS

## Front View



Normal



Turned Out



Turned In

## Rear Side View



Correct

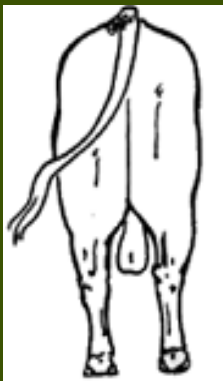


Too Stright

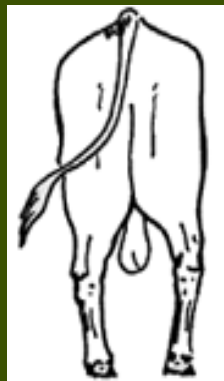


Sickle-hocked

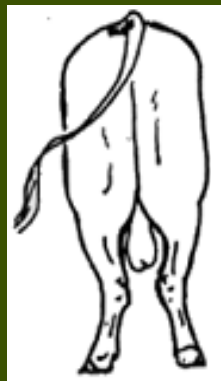
## Rear View



**Correct**



**Bow-legged**



**Cow-hocked**

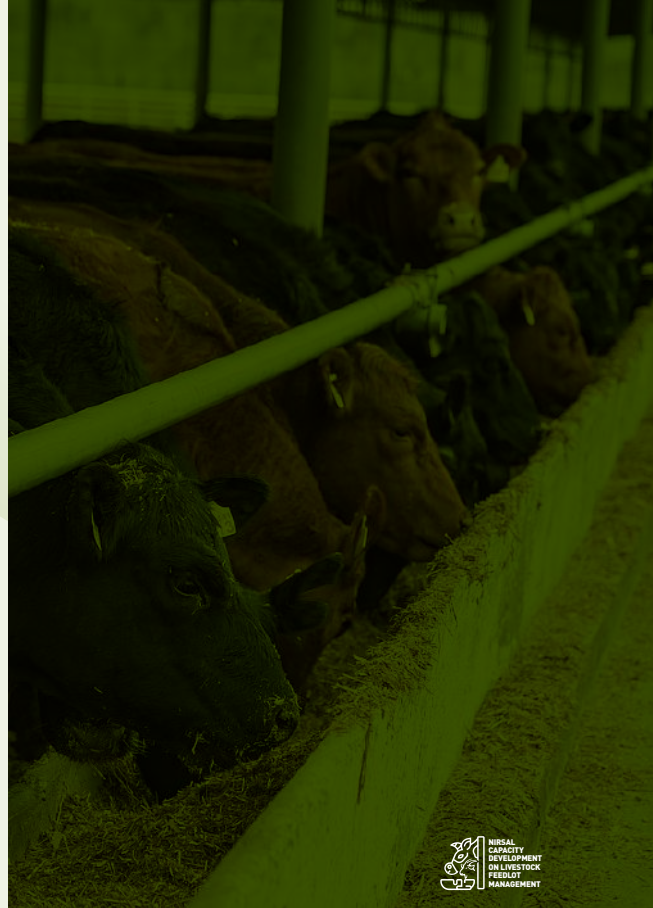
## AGE METHOD OF CATTLE AGE DETERMINATION USING HORNS

Select animals that are not too young or too old. It is advisable to select animals that are within 2.5 – 3.5 years old for cattle (2 - 6 permanent incisor teeth) and 1.5 – 2.5 years for sheep and goats ( 2 - 4 permanent incisor teeth).

## TEETH METHOD OF AGE DETERMINATION







The approximate age of cattle, sheep and goats may be determined by examining their teeth as illustrated in diagrams below.

- 12 months - First ring
- 20 - 24 months - Second ring
- 30 - 32 months - Third ring
- 40 - 46 months - Fourth ring
- 54 - 60 months - Fifth ring
- Fifth year, the three first rings are indistinguishable
- At the eighth year all the rings are visible

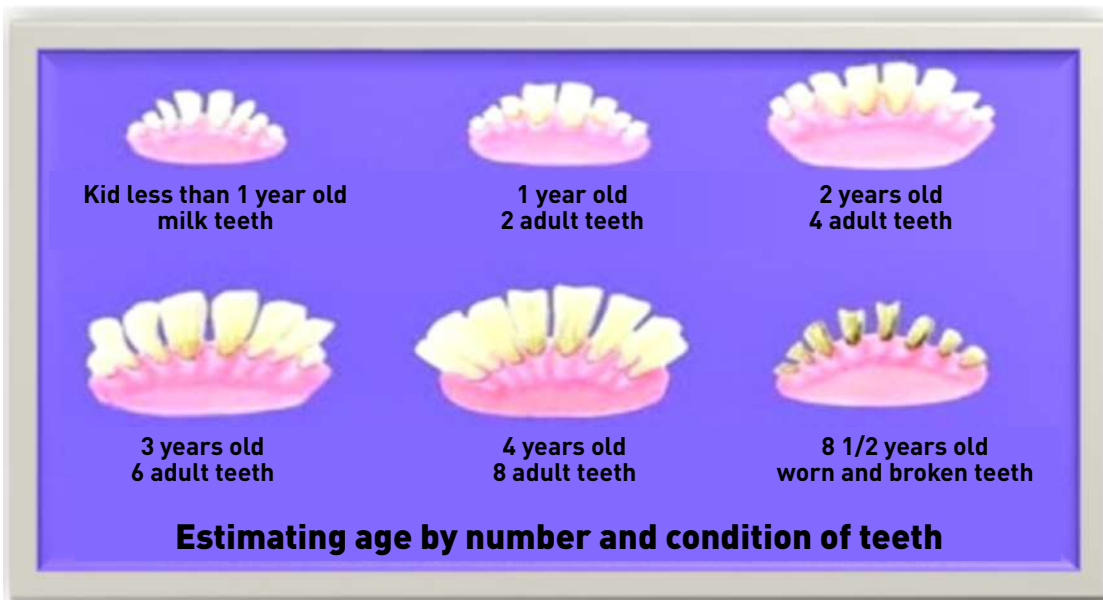




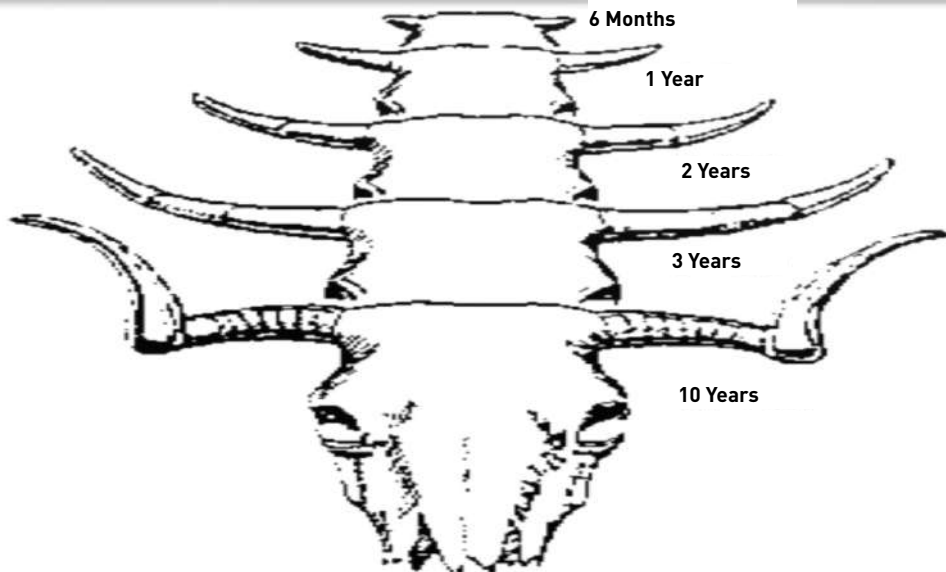
## AGE DETERMINATION FOR CATTLE USING TEETH

	<p><b>0</b>  <b>0 PERMANENT INCISORS</b>          - Up to 18 months</p>
	<p><b>0 - 2</b>  <b>0 - 2 PERMANENT INCISORS</b>          - Up to 30 months</p>
	<p><b>0 - 4</b>  <b>0 - 4 PERMANENT INCISORS</b>          - Up to 36 months</p>
	<p><b>0 - 7</b>  <b>0 - 7 PERMANENT INCISORS</b>          - Up to 42 months</p>
	<p><b>0 - 8</b>  <b>0 - 8 PERMANENT INCISORS</b>          Any Age</p>
	<p><b>8 PERMANENT INCISORS</b>          Over 42 Months</p>

## AGE DETERMINATION FOR SHEEP AND GOAT USING TEETH



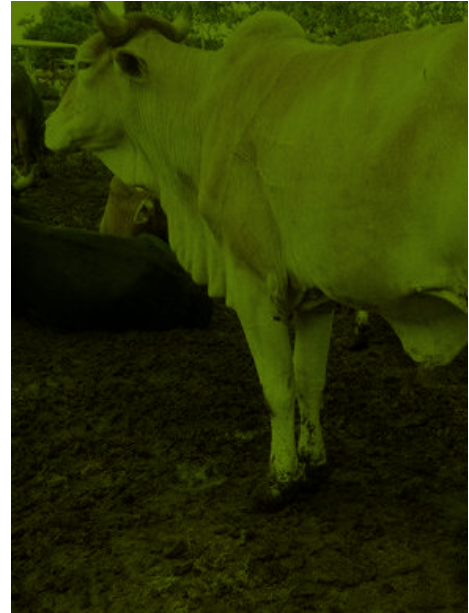
## AGE DETERMINATION USING HORNS



Horn Rings

## INDUCTION

- a. Quarantine newly acquired animals for 1 - 2 weeks and vaccinate depending on source and history/records
- b. De-worm against endo-parasites like flukes, roundworm, hookworms, tapeworms etc.
- c. For cattle vaccinate with CBPP, HSV and black quarter vaccine and if available also vaccinate against FMD
- d. For sheep and goat, vaccinate with PPR vaccine
- e. Also use acaricides for ecto-parasite like mites, lice, fleas and ticks.
- f. Give multi-vitamins: for improved appetite.
- g. where necessary, use antibiotics and anti - protozoans for other infectious conditions after seeking vet/paravet advise.



# ANIMAL FATTENING (FEED FINISHING)

## Watering

Provide clean drinking water continuously and replace regularly. Water helps with nutrient transportation, metabolism, and lubrication in the body, and plays a very important role in animal nutrition. Emphasis should always be on providing clean water to encourage feed consumption and increase weight gain.

There is a saying “no water, no fattening”.

## Feeds & Feeding

1. Roughage feeding: Preferably ad-libitum (without restriction). Give 2 - 2.5 % of body weight in dry matter depending on feed quality.
  - I. Ram weighing 40kg will consume 2.5 % body weight of dry matter roughage (1.0kg) per day, i.e.70% is green fodder and 30% crop waste. Always give 10% allowance for wastages.
  - ii. For cattle weighing 300kg, give 7.5kg dry matter

roughage per day.

- iii. Roughage examples include hay, kaikayi, kowa, cowpea / groundnut hums, enhance crop residues
  - iv. Propagation of hybrid Napier grass as substitute for roughage/fodder can help reduce concentrate cost.
  - v. Any other available roughage within your locality.
2. Concentrate feeding: Give 2-3% of animal body weight in dry matter per day depending on the quality of roughage provided.

If good quality roughage is provided, give 2% of body weight in concentrate. For average quality roughage give 2.5%, and if roughage is of poor quality give 3% of animal body weight for concentrate per day.

- I. A 40kg ram will consume 0.1kg concentrate per day with good quality roughage.
- ii. A 300kg bull will consume 4-6kg concentrate/day with good quality roughage.

- iii. Example of local ingredient energy source: for concentrate blending includes Maize/maize offal/bran. Wheat offal, cassava chips, molasses, Jaggery, sugars syrup etc
- iv. Example of local ingredient protein source: Includes, Cotton seed cake, PKC, GNC, Beni seed etc
- v. Examples of local micro& macro mineral sources includes, limestone, bone, meal, salt, salt lick premix etc
- vi. Compounded concentrate feed from feed millers

## **WATERING: - CLEAN WATER SHOULD BE PROVIDED ALL THE TIME**

Sample sizes of ½ kg, 1 kg and 2 kg concentrates for ease of measurement.





## FEED AND WATER TROUGHS

Simple equipment is required for fattening operations including troughs for feed and water, and hay racks for roughage. Water and feed troughs can be constructed from a drum cut in half as they are not easily damaged.

Strong plastics and metal buckets or basins can also be used for feeding and watering. The troughs should be provided to raise the feed and water off the ground to avoid wastage and prevent contamination by faeces and urine. The troughs should be stable so that the animal cannot tip the feed or the water onto the ground. Troughs should be raised off the ground by at least 40cm.

Drinkers should be put at some distance from the feeders to reduce frequency of soiling the watering point.

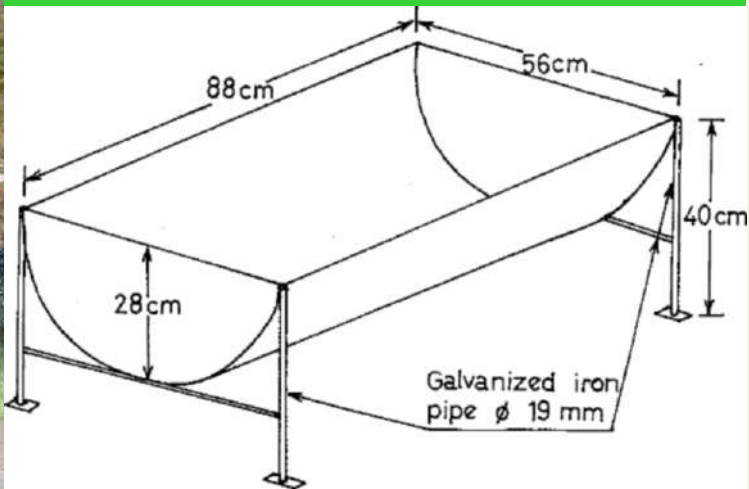
In a larger scale fattening operation, feeders and waterers can be constructed with concrete.

**Feeding racks for hay and troughs for concentrate**



**Different containers design for water troughs**



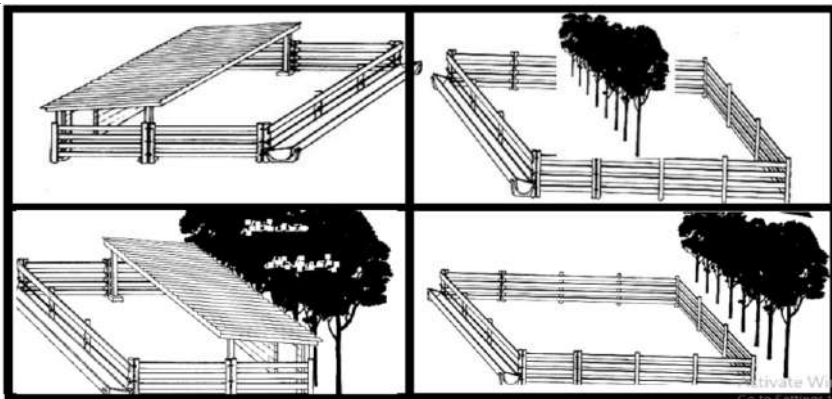


## HOUSING / MANAGEMENT

- Provide appropriate housing which promote excellent health, ventilation and welfare for livestock.
- Housing model should be very simple and inexpensive by utilising local materials. Standard requirement for animal housing should include sufficient space, shade, feeding and watering area, and handling facilities. The site should be well drained and allow for free air circulation. Local materials should be used wherever possible.

- Provide shade preferably with insulated materials for roofing and adequate cross ventilation.
- Cattle 10 - 15 sq. meter / animal
- Sheep/Goat 2 - 5 sq. meter / animal
- Area should be confined to limit movement, and tethering is not necessary in a confined space.
- Feeders should be slightly raised above floor level to reduce contamination (about 40 cm).
- Drinkers should be put at some distance from the feeders.
- Schedule manure removal daily to enhance animal hygiene and sustained feed intake.

**Some  
typical  
housing  
models for  
feed finishing**



## RECORD KEEPING, MARKETING AND SALES OF ANIMALS

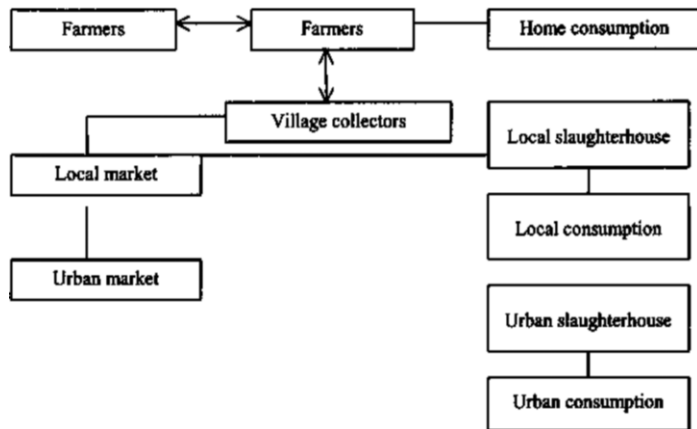
**Good records should have the following details.**

- Growth or weight records kept periodically by recording the body weight of animals.
- Health records: including morbidity, symptoms, mortality and diagnosis, treatments, etc.
- Feed consumption: the amount of concentrate fed daily should be recorded to calculate profitability.
- Financial records: all expenses and receipts of each cycle of the fattening operation should be recorded. This is essential to calculate profitability.
- Dates: Dates all animals enter and leave the feedlot.

All records, to be of value, must be accurate, neat and complete. One way of making sure that records are accurate is by filling them in as soon as possible after each operation or transaction and by checking them regularly. If possible, records should be updated everyday

Sample budget table for feed finishing, excluding capital cost

ITEMS	DESCRIPTION	QTY	UNIT PRICE	AMOUNT
Animal Purchased (Cattle,	Healthy and attractive			A
Supplemental Feed. e.g. commercial feed, compounded feed (CSC, Offal, BDG, maize & wheat bran	Sheep & Goat (40kg wt) at 1.5-2% of body wt= 0.6 kg-1 kg/day for 50 days which is equivalent to 30 kg (1.2 bag of 25 kg/animal). Cattle (300 kg wt) at 1.5-2 % of body weight DM = 4.5-6.0 kg/day for 90 days which is equivalent to 270 kg (16 20 bags of 25 kg).			A
Salt Lick				A
Roughages	Home grown Napier/bracharia grass, bean husk, Sorghum pinnacle, cowpea, soya & groundnut			A
Induction/healthcare				A
Transportation				A
Technical Support				A
Sum total				sum A's
Sales of Bulls				B
Total Operational Cost/Expenditure (A)		Sum A's		
Revenue from Sales (B)		B		
Net Returns (B – A)		B – sum A's		



- Others are sold to village collectors, who serve as middlemen and link producers to broader markets.
- From the collectors, animals are channelled through three main routes:

1. **Local market**, which may lead to sales in the **urban market**.
2. **Local slaughterhouses**, which supply meat for **local consumption**.
3. **Urban slaughterhouses**, which process animals for **urban consumption**.

This structure highlights the different stages and stakeholders in the livestock value chain—from production, collection, and slaughter to final consumption—supporting both rural and urban food systems.

The diagram presents the flow of animals from producers to final consumers in a structured market system.

- The process begins with farmers, who are the main producers.
- Some animals are kept by farmers for home consumption, fulfilling household needs.

#### Key takeaway:

Understanding this flow helps identify where interventions or improvements (e.g., better pricing, infrastructure, or regulation) could strengthen the value chain and benefit all actors involved.

## Monitoring & Evaluation:

To track performance and ensure success of feed finishing operations, implement the following:

1. Weight Monitoring: Record weights weekly to track growth trends.
2. Feed Logs: Track daily feed intake and calculate feed conversion ratios.
3. Health Records: Maintain logs of vaccinations, treatments, and observed symptoms.
4. Financial Records: Compare input costs with market prices to evaluate profitability.
5. Feedback Tools: Conduct periodic evaluations or surveys to assess training and operational effectiveness.



## CONCLUSION

Feed finishing is a smart way to improve the weight, quality, and value of animals in a short time. By following the steps in this manual—like choosing the right animals, feeding them well, keeping them

healthy, and selling them at the right time—farmers can earn more money and grow their business. With good care and planning, feedlots can be a successful and reliable way to raise livestock. We hope this guide helps you get started and do well in your feed finishing journey.

## FINAL CHECKLIST

- Have preference for animals from within a similar ecological zone.
- Select and purchase health animals that will easily respond to fattening
- Purchase animals of correct age.
- Avoid animals with physical defects such as lameness, blindness and malformation.
- De-worm animals on arrival & provide the right type of feed.
- Ensure continuous access to water and feed.
- Maintain high level of sanitation.
- Animals fed a supplementary feed outperform other animals by a factor of two to one.
- The net benefit for animals in the feed finishing program is significantly better than other animals that were traditionally fed.
- Fattening animals (Goats, Sheep and Cattle) for festive periods can provide significant benefit to household income.

