

Feeding trough and storage shed technologies

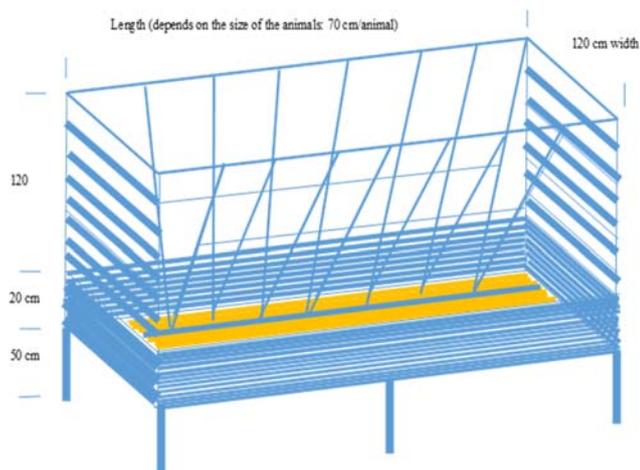
Key messages

- The use of improved feeding troughs and storage sheds enhances efficiency by minimizing wastage and quality deterioration during storage and utilization, thereby contributing towards the alleviation of dry-season feed shortages.
- As feed prices are continuously increasing, these technologies are economical beneficial to farmers.
- The technologies are gender-sensitive, as they reduce workload on women and young people who disproportionately responsible for taking care of animals around the homestead.

Introduction

Traditionally, dried feed resources—such as hay and crop residues—are stored as heaps in the open air and feeding takes place by spreading a portion on the ground. These management practices are associated with considerable loss of feed biomass and quality as a result of weather, pests, contamination and moulding. Moreover, in a cut-and carry feeding system—where fresh cultivated forages form the basic component of animal diets—traditional feeding practices incur feed biomass wastage due to trampling and defecation on the feed.

Figure 1. Two-sided feeding trough for cattle



Specifications

Feeding troughs

- Feeding troughs and storage sheds can be constructed from locally available materials; nails are the main external inputs required.
- Depending upon where the trough is placed, it can be either one- or two-sided.
- A two-sided feeding trough is desirable if it is to be located in the middle of a barn or backyard.
- A one-sided feeding trough is convenient if it is to be attached to a wall of a barn or house.
- In line with the size specification indicated in figures 1 and 2, the length of the trough depends upon the number of animals feed from it, allowing for a 70 cm per animal spacing requirement. For instance, a two-sided trough for four animals needs to be 1.4 m long, while one-sided trough for the same animals should be 2.8 m long.
- Adding a roof for feeding trough is optional, and can be done using locally available materials (grass mat), or plastic and corrugated iron sheets, depending of the capacity of the farmers.

Storage sheds

- As a basic requirement, all sheds should be built with a roof and a raised floor platform to avoid spoilage from above and below.
- The floor needs to be raised 30–40 cm from the ground and aerated with the regular clearing of the surface underneath. This ensures that the floor is protected from mould and rodent infestation.
- The size of the shed depends on the amount of feed (crop residues and hay) that need to be stored there. It is generally recommended that on average a farmer

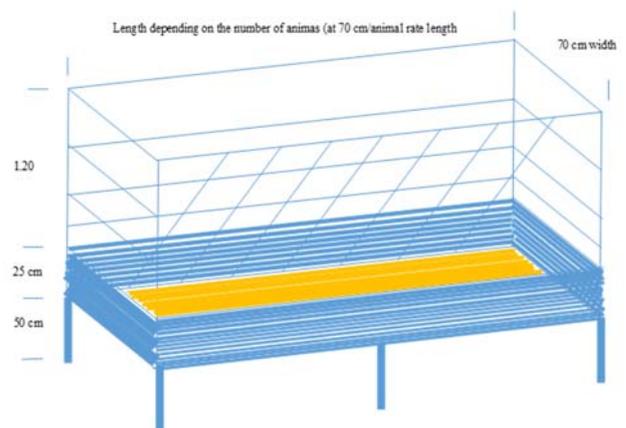
should build a shed of at least 4 m by 3 m to store his or her feed resources safely.

Benefits

- The evaluation results showed that use of a combination of feed troughs and storage sheds saves individual farmer from 30–50% of feed biomass that would be otherwise wasted.
- The labour requirement for feeding is reduced by a minimum of 10–20% due to use of feeding troughs.
- The sensory quality of crop residues and hay is preserved when stored in sheds, as opposed to when it is stored in heaps in the open air.
- The cost incurred in the construction of feeding troughs is recovered within a year, while that of storage sheds within three–four years.



Figure 2. A one-sided feeding trough for cattle



Acknowledgments

Africa RISING Ethiopia would like to thank the United States Agency for International Development (USAID) for the financial support provided to the project and to the local partners and farmers in the Amhara, Tigray, Oromia and Southern Nations, Nationalities, and People's regions for their active participation in the tree Lucerne action research activities. The contents are the responsibility of the producing organization and do not necessarily reflect the opinion of USAID or the US government.



ILRI thanks all donors that globally support its work through their contributions to the [CGIAR system](#)

The Africa Research In Sustainable Intensification for the Next Generation (Africa RISING) program comprises three research-for-development projects supported by the United States Agency for International Development as part of the U.S. government's Feed the Future initiative.

Through action research and development partnerships, Africa RISING will create opportunities for smallholder farm households to move out of hunger and poverty through sustainably intensified farming systems that improve food, nutrition, and income security, particularly for women and children, and conserve or enhance the natural resource base.

The three projects are led by the International Institute of Tropical Agriculture (in West Africa and East and Southern Africa) and the International Livestock Research Institute (in the Ethiopian Highlands). The International Food Policy Research Institute leads an associated project on monitoring, evaluation and impact assessment.

Contact: Melkamu Bezabih(ILRI); Kindu Mekonnen(ILRI); Aberra Adie(ILRI); Peter Thorne(ILRI)

africa-rising.net

