What is the role of silage?

• Animals need to receive a ration over an extended period of time in order to fatten
• To ensure the animal receives at least 15% of their weight every day it may be necessary to conserve forage as silage
• Excess forage can be cut and made into silage during the growing season then used to fatten animals in the dry season

Seasonal pasture growth
Making silage

- **Silage:**
  - This is more labour intensive
  - Requires a pit 1.5 - 2.0 m deep.
  - Young grass needs to be chopped in 4–6 cm lengths, old grass: 1-3 cm lengths and compacted in layers of 30 - 40 cm.
  - It is essential to keep air out of the completed pit so a good covering of soil is required.

**Phases of silage production and changes in oxygen, pH and bacteria**

Feeding

• Determine desired level of production

• Production levels
  – Maintenance
  – Draught
  – Pregnant and/or lactating
  – Fattening

• Influences the quantity and quality that should be fed to each animal
Forage Quantity

<table>
<thead>
<tr>
<th>Forage Intake</th>
<th>Production level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh (kg/d)</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Maintenance</td>
</tr>
<tr>
<td>15</td>
<td>Draught</td>
</tr>
<tr>
<td>25</td>
<td>Pregnant and/or lactating</td>
</tr>
<tr>
<td>30*</td>
<td>Fattening</td>
</tr>
</tbody>
</table>

*Quantity of forage intake required to meet production levels for a 200 kg animal (i.e. 15% of bodyweight per day)

Feed management plans

- Only high quality forages will meet the needs of high producing animals
- Cows with calves, bulls for fattening, and working animals require more (high quality) feed than non-productive animals
- Milk production is reduced if females are fed poor quality forages
- = slow growing calf and potentially poor health

Milk production example

<table>
<thead>
<tr>
<th>Forage Type</th>
<th>Protein content (%)</th>
<th>Digestibility (%)</th>
<th>Feed intake (kg DM/day)</th>
<th>Milk production (Litres/cow/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legume + young grass</td>
<td>12</td>
<td>60</td>
<td>9.5</td>
<td>5</td>
</tr>
<tr>
<td>Grass only</td>
<td>8</td>
<td>50</td>
<td>7.5</td>
<td>1</td>
</tr>
</tbody>
</table>
Check animals daily

• Farmers should observe animal condition and behaviour and check for:
  • A decline in the body condition.
  • Loss of interest in feed.
  • Changes in the look of the coat of the animal. A healthy animal will have a smooth, shiny coat and the animal will lick it often. A dull and rough coat is a sign of a problem.
  • Diarrhoea.

Check animals daily

• All of these are indicators of problems such as diseases, poor nutrition, lack of water, parasites and severe infections. If any of these are observed, farmers should consider all options and react quickly.
  • Animals should also be checked for ticks and other external parasites, and these removed when found.

What else can be done ......

• Pens should be cleaned after animals sold and before new animals are moved in.
• Add a little salt to the feed ration or suspend a salt lick from the pen roof.
• Farmers should remain aware as to what is happening with cattle and buffalo in their village. They should be encouraged to share their cattle fattening experiences with other farmers and district staff.

What else can be done ......

• When purchasing cattle or buffaloes from other farmers or from outside the village, farmers should check that the animals are healthy and have no obvious disease.
• Quarantine newly purchased animals for at least 2 weeks before allowing them to come in contact with healthy animals in the village.
• Animals should be handled gently and safely. If loading onto a truck, make a sloping ramp for loading.
Encouraging better feeding

- Compare ‘ad libitum’ feeding with grass only with ‘Smart feeding’.

- The aim is to show farmers how much better animals grow if they are given young grass and a protein supplement compared to grass only.

- The ‘ad libitum feeding + protein supplement’ treatment will be:
  - Recently fertilised young, leafy grass (80%), mixed with
  - Legume leaf such as Stylo or Leucaena (20%), plus
  - 1 kg of rice bran or maize meal per day.

Monitoring change

- Before beginning, estimate and record the weight and body condition of the animals. Also note the Body Condition Score (BCS) and condition of their coat.

- Then, monitor the animals frequently (maybe weekly or every 2 weeks) and discuss implementation problems and early results with the farmers.

- Continue for at least two months to ensure that it is easy to see differences.

Provide feedback

- Hold a special feedback meeting:
  - Discuss weight gain and body condition.
  - Ask for feedback from the farmers: How was it to implement? How does Smart feeding fit into their other farm work? How can it be made better? Will they continue using Smart feeding?

- If possible, calculate the cost of Smart feeding and compare to the added benefit. (This may need to be done after the farmers have sold their animals to make a full calculation of costs and benefits).