

Non-Conventional Feeds (NCF) are either traditional or commercial animal feed-types that are not traditionally utilised as animal feed. These feeds are generally in one of two categories: by-products of agroecological industrial processes, or plants/plant materials from other processes. Examples of industrial by-products include groundnut cake, molasses and cotton seed meal, which are outputs from other processes and are found in proximity of manufacturing points, but often have a short shelf-life. Plant materials can be vegetable peels or locally available crop residues such as maize stalks and other remaining parts of harvested plants not consumed by humans. NCF decrease the demand of land to grow fodder, act as an alternative source for animal feed, resulting in the decrease of food competition between animals and humans ensuring food security. Furthermore, the use of bi-products optimises the use of raw materials and can increase profitability for the producer and the farmer.

MOST SUITABLE AGRO-ECOLOGICAL CONDITIONS

Value chain



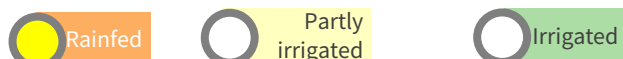
Soil texture



Climatic zone



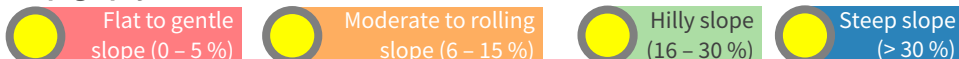
Water source



Annual average rainfall (mm)



Topography



MOST APPROPRIATE CONDITIONS AND REQUIRED INPUTS

Farming system

Does it require collective action



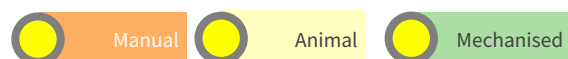
Characteristics



Farm size (ha)

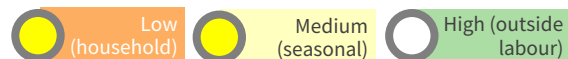


Mechanisation



Human resources

Labour intensity – level of effort

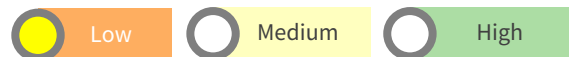


Gender/youth smart (low investment/low labour requirements)

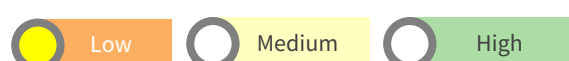


Financial resources

Initial investment



Maintenance Costs



Access to finance capital or credit required



Enabling Environment

Extension support



Access to inputs



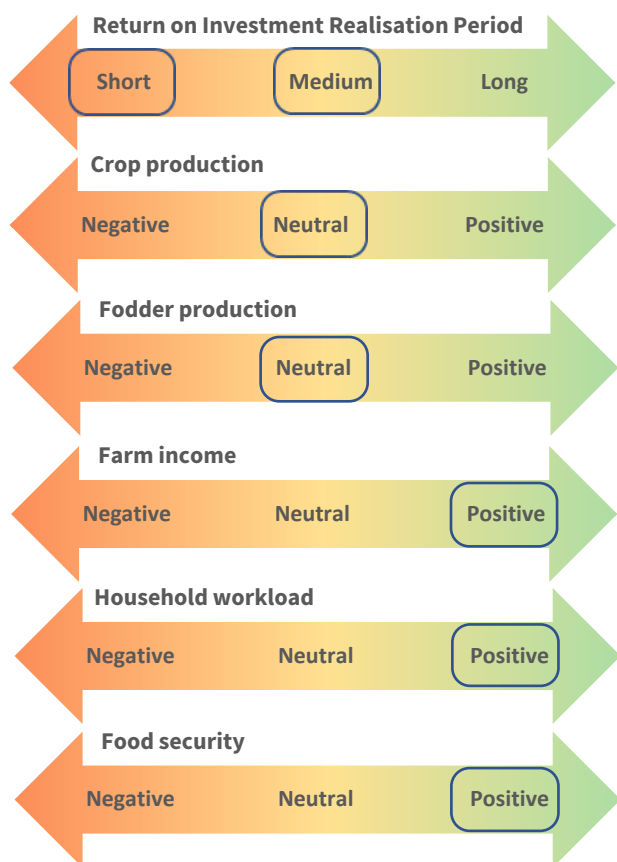
Market access



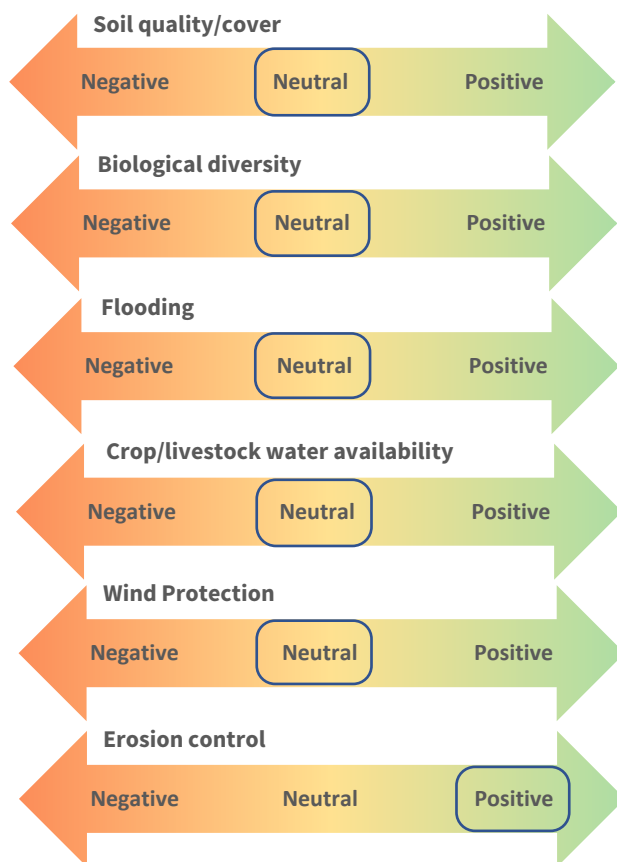
The purpose of this technical brief is to guide where this **practice, technology or strategy** could be applied. It may be applicable in other circumstances, but this brief focuses on where it is possibly **most suitable**. Content is general, and should be contextualised depending upon locality. The brief provides an overview, details of appropriate agroecological characteristics, appropriate conditions and inputs, possible outcomes and impacts, how the **practice, technology or strategy** should be applied, potential benefits and drawbacks, and provides suggestions for further reading in terms of CCARDESA materials and other sources, including those used to develop this technical brief.

POSSIBLE IMPACT/OUTCOMES

Socio-Economic Impacts Positive or Negative



Ecological Impacts Positive or Negative



These descriptors indicate whether the practice, technology or strategy has a positive, neutral, or negative impact or outcome. Those with no box are deemed not-applicable.

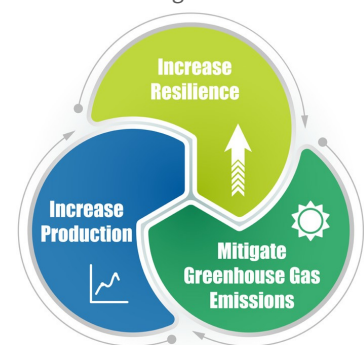
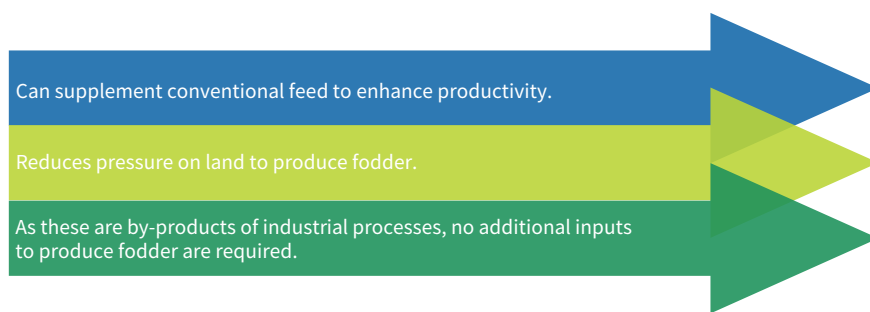
TECHNICAL APPLICATION

To effectively implement NCF practices:

- **Step 1:** Determine potential sources of NCFs in the local area and consider if the potential products are suitable (provide enough energy, are digestible, palatable to livestock animals, etc) and require additional investment to access or use.
- **Step 2:** Collect for free/negotiate lower rates with producers of agroecological industrial process byproducts or plant materials to gain access to their 'waste' materials.
- **Step 3:** Determine how sustainable and consistent the supply will be from the providers. If possible, identify a range of suppliers to mitigate potential losses of stockpiled NCFs.
- **Step 4:** Before being used as feed, NCF's from agroecological processes must be appropriately processed - (grinding (8 mm) and pelleting) and mixed into a uniform blend. Hence, labour requirements may increase. This could be mechanised.
- **Step 5:** Livestock should be monitored when these feeds are introduced to ensure digestibility of the product for the animals.
- **Step 6:** Based on advice from the suppliers of agroecological industrial process byproducts, ensure appropriate storage of materials to avoid loss of nutrition, pests and waste.

CLIMATE SMART AGRICULTURE OUTCOME(S)

Reflecting how this **practice, technology or strategy** contributes to Climate Smart Agriculture outcomes



SUMMARY/KEY ISSUES

Benefits

- The use of NCFs could be a cheap and good source of nutrients for livestock.
- NCF act as an alternative source for animal feed, resulting in a decrease of food competition between animals and humans.

Drawbacks

- NCF's need to be handled properly to avoid formation of moulds that are not good for animal health.
- Farmers need to acquire skills on how best to conserve these residues for animal consumption, like drying before storing to avoid the loss of nutritional value.

REFERENCE MATERIAL

CCARDESA Related Content

- CCARDESA, 2019. Technical Brief 14, Climate Smart Diet Management Options for Livestock.

Additional Information

- Food and Agriculture Organisation, 1990. [Animal Feed Resources in Asia and the Pacific](#). Rome, Italy.
- CGIAR, 2002. [Evaluation of non-conventional agro-industrial by-products as supplementary feeds for ruminants: In vitro and metabolism study with sheep](#). Montpellier, France.
- Food and Agriculture Organisation, 1985. [Non-Conventional Feed Resources in Asia and the Pacific](#). Rome, Italy.