

# Alternative Breeds

The Alternative breeds approach involves substitution of breeds, introducing a new (alternative) breed with a current breed to potentially increase production levels in a farm. Breed substitution involves genetic improvement of cattle and goats especially in dairy farming and meat production. Alternative breeds are introduced in order to ascertain competition between breeds based on health, fertility, performance, profits and management requirements. The substitution breeds are picked because there some traits that may be lacking in current breeds at the farm. For example, some farmers in Malawi who have introduced the Black Australop breed of chicken, either by crossbreeding with local chickens or replacing the local chicken altogether. This breed produces much more meat and lays more eggs, which increases farm production and income. This is a climate smart option as it introduces breeds that may require less water or can manage with lower quality feed – thereby reducing costs, and risks.

## MOST SUITABLE AGRO-ECOLOGICAL CONDITIONS

### Value chain



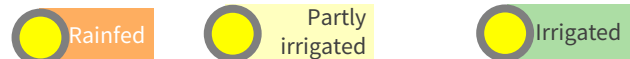
### Soil texture



### Climatic zone



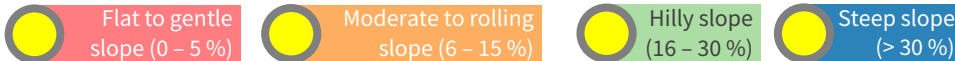
### Water source



### Annual average rainfall (mm)



### Topography



## MOST APPROPRIATE CONDITIONS AND REQUIRED INPUTS

### Farming system

Does it require collective action



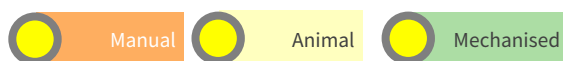
Characteristics



Farm size (ha)

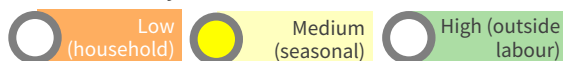


Mechanisation



### Human resources

Labour intensity – level of effort

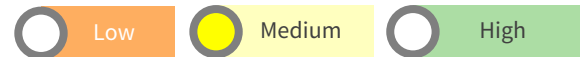


Gender/youth smart (low investment/low labour requirements)

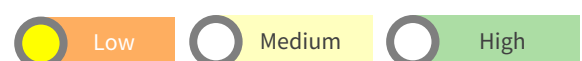


### Financial resources

Initial investment



Maintenance Costs



Access to finance capital or credit required



### Enabling Environment

Extension support



Access to inputs



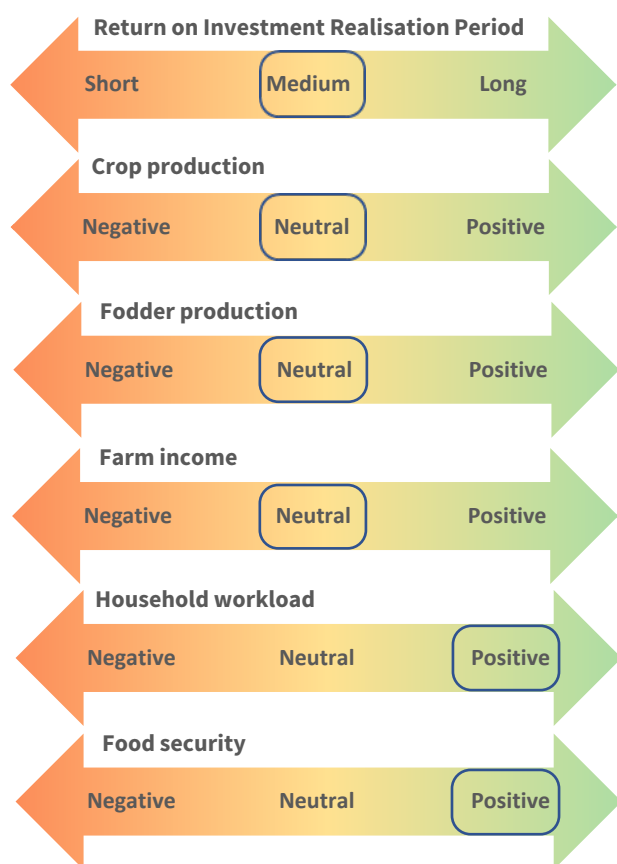
Market access



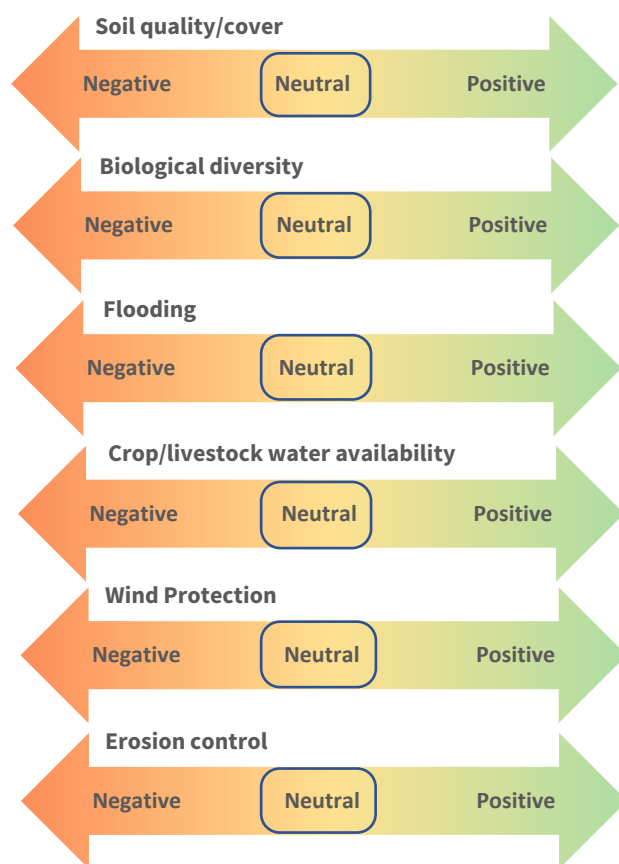
The purpose of this technical brief is to guide where this **practice, technology or strategy** could be applied. It may be applicable in other circumstances, but this brief focuses on where it is possibly **most suitable**. Content is general, and should be contextualised depending upon locality. The 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 leverage alternative breeds:**

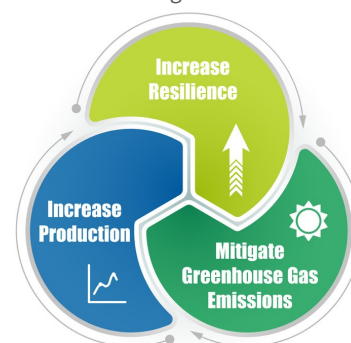
- **Step 1:** Consult with national agricultural research and extension services to identify adaptable breeds available in the country/region, noting type of traits suitable for the particular ecological zone, and how to access stock. Traits to focus-on include health, milk production, disease tolerance, fertility, economic performance and adaptation to climate change and climate variability. Assisting with sourcing potential alternative breeds is a key role for Extension Officers.
- **Step 2:** Before selecting a substitution breed, the current breed must be evaluated to identify traits that are lacking, as well as compatibility. This will help in identifying traits that need to be improved.
- **Step 3:** Determine the cost effectiveness of the new breed to the area and or farmer, in terms of feed conversion rates, disease resistance, environmental conservation etc.
- **Step 4:** Consistently keep record of the livestock performance and behaviour for discussion with other farmers and extension officers.

## CLIMATE SMART AGRICULTURE OUTCOME(S)

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

Switching to alternative breeds can increase productivity in meat, milk and egg production.

Changing to alternative breeds can form part of a successful adaptation strategy as climates change.



## SUMMARY/KEY ISSUES

### Benefits

- Alternative breeds are used to improve the genetic qualities of livestock.
- This agricultural practice improves biological diversity, ensures food security, increases farm income and most importantly reduces risk as cross breeds in future will be more resilient to climatic variations.

### Drawbacks

- Requires research to identify suitable breeds.
- Livestock will require frequent monitoring to ensure cross-breeding is yielding required results.
- Replacement breeds should also be monitored to ensure they are adjusting to the local conditions.

## REFERENCE MATERIAL

### CCARDESA Related Content

- CCARDESA, 2019. Technical Brief 17, Climate Smart Genetic Improvement Options for Livestock.

### Additional Information

- Journal of Animal Breeding Genetics, 2011. [Community based alternative breeding plans for indigenous sheep breeds in four agroecological zones of Ethiopia](#). Ethiopia.
- The Food and Agriculture Organisation (FAO), 2010. [Breeding strategies for sustainable management of animal genetic resources](#). Rome, Italy.