

## Context

- In semi-arid areas unavailability of roughages for livestock is a challenge
- Therefore, inadequate nutrients especially crude protein and energy result in reduced livestock productivity
- The situation is likely to worsen with the adverse effects of climate change
- Concomitantly, the livelihood of the livestock producers in the semi arid areas get compromised,
- Identifying forages that could contribute to addressing the concern is a worthwhile undertaking

## Our innovative approach

- Selecting forages legume with traits that increases chances of adaptation to the selected environment and context – Semi arid and poor soils
- The legumes selected are annuals thus can be grown during the rain season and a get high biomass for livestock
- Conservation as hay is possible and feed during scarcity. Hay production is usually easier than silage as comparatively does not take huge investments.
- After establishment, shading will be introduced to mimic shading by trees

### Legume varieties (from ICARDA)

IGC-2012-14-7-25

X2009-24-12S-30

IGC-2011-22-412

IGC-2012-67-13-1

IGC-2012-76-5-47



INITIATIVE ON

Livestock and Climate

## Integration of shade-tolerant forages in the one million trees initiative of Lukenya University

- Selected legume Grass pea (*Lathyrus sativus* L) varieties are cool-weather plants that we hypothesize will also perform well under shade
- Grass pea is quite tolerant to limited soil moisture and does well in nutrient-poor soils characteristic in the targeted area- semi arid
- Varieties that are low in  $\beta$ -ODAP ( $\beta$ -N-oxalylamino-L-alanine acid) a neurotoxin are preferable , but the toxin usually centered in seeds, while for the rest of biomass is what is targeted in this case for livestock
- Grass pea is a good source of protein for the animals CP 21 -24%
- The varieties will also be compared against other forage varieties hypothesized to be drought tolerant

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## Progress/outcomes

- Partnership established with Lukenya University already,
- ICARDA has selected 5 grass pea varieties from their breeding program that are low in  $\beta$ -ODAP but high in biomass yields
- Seeds have been shipped and received in Kenya and waiting for planting establishment in short rains October – December 2023, at Lukenya University located in Seri- Arid environment
- Land preparation at Lukenya is underway- and planting/establishment will be done in October 2023



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