

## Brachiaria Forage - Livestock System

**Technical brief on:** Brachiaria forage-livestock system

**Lead partner:** CIMMYT

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**Other partners involved:** NIBIO, HU, IAKIB, KENAFF, NMBU, SFHC, RAB, SUA, UoM, Alterra and ARC South Africa

**Objective:** To promote Brachiaria forage technology for improving livestock productivity in Ethiopia, Kenya, Rwanda and Tanzania.

### Why Brachiaria grass?

Brachiaria is a perennial tropical forage with productive lifespan of about 20 years. This native African grass is well adapted to drought and low fertility soils. Other attributes of Brachiaria grass includes (i) high dry biomass production, (ii) high nutritive value, (iii) deep and large root system, (iv) efficient user of nitrogen fertilizer, (v) mitigates greenhouse gas emission, and (vi) increase livestock productivity (Ghimire et al., 2015). The cultivation of Brachiaria for pasture production has been spurred in Africa following the pioneering work of ILRI/BecA, KALRO and RAB that demonstrated significant benefits of Brachiaria grass on the livestock productivity including 15 to 40 percent increase in milk production (Njarui et. al., 2016).



**Figure 1:** Brachiaria pasture production in farmer's field in Kenya

### Brachiaria technologies for Sub-Saharan Africa

Three critical factors of successful Brachiaria forage production include suitable cultivars, propagations methods and forage conservation technology.

- 1) Farmers participatory evaluation of selected Brachiaria cultivars in Kenya and Rwanda revealed that *Brachiaria brizantha* cv. MG-4, *B. brizantha* cv. Piata, *B. brizantha* cv. Xaraes and *B. decumbens* cv. Basilisk were the most suitable for East Africa. Basilisk had a high level of drought tolerance and stable biomass production.
- 2) Brachiaria propagates sexually (seeds) and asexually (vegetative tillers), and protocols are available for both propagation methods. Initial establishment usually performed through imported seeds, and root splits are commonly used for subsequent establishment.
- 3) The hay production technology is available, and farmers are using this technology for conserving Brachiaria grass for dry season.

## Upscaling Brachiaria forage technology

The benefits of Brachiaria grass in alleviating livestock feed shortage and improving livestock productivity in East Africa have been well documented (Ghimire et al., 2015; Njarui et al., 2016). Brachiaria technology is currently being promoted by various governmental and non-governmental organizations including InnovAfrica Project in sub-Saharan Africa. The InnovAfrica is committed to rapid upscaling of Brachiaria pasture to thousands of smallholder dairy farmers in Ethiopia, Kenya, Rwanda and Tanzania, who can readily realize benefit of the technology. The program engages farmers and other members of multi actor platform in the innovation process, brings together all relevant stakeholders for synergetic outcomes, capacitates actors of forage-livestock value chain, and leverage the power of conventional and ICT based technologies including village knowledge centres for timely delivery of information. Upscaling efforts will also focus on job creation by establishing agribusiness along the forage-livestock value, and on advocacy to influence policy to create favourable environment including input supply, credit, infrastructure and market.

### Critical steps of upscaling Brachiaria grass

1. Understanding farmers needs	2. Take inventory of related technology
3. Prepare database on forage and livestock production system	4. Technology validation (participatory evaluation)
5. Capacity development of farmers and other stakeholders	6. Upscaling and out scaling technology using individual, group and mass approaches
7. Explore new and existing network for promoting technology	8. Stakeholder meetings and workshops
9. Sharing knowledge using conventional and new technology e.g. ICT	10. Resource mobilization
11. Agro-business development	12. Advocacy and influence policy

### Key messages

Brachiaria grass is an important forage that has potential to alleviate livestock feed shortage in the sub-Saharan Africa. Adoption of the Brachiaria forage technology will improve food and nutrition security, income and livelihood of the smallholder farmers in the region through improved livestock productivity and creating more jobs. Moreover, Brachiaria improves soil and environmental health and enhances resiliences of African livestock agriculture.

### References & links

- Ghimire et al. (2015). Climate-smart Brachiaria for improving livestock production in East Africa: Emerging opportunities. pp. 361-370. In Sustainable Use of Grassland Resources for Forage Production, Biodiversity and Environmental Protection. Edited by Vijay, D., M. Srivastava, C. Gupta, D. Malaviya, M. Roy, S. Mahanta, J. Singh, A. Maity and A.K. Ghos. Proceedings of 23rd International Grassland Congress, 20-24 Nov. 2015, New Delhi, India.
- Njarui et al. (2016). Climate smart Brachiaria grass for improving livestock production in East Africa – Kenya experiences. Kenya Agricultural and Livestock Research Organization, Nairobi, Kenya, p. 271.



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