High-biomass Megathyrsus (Panicum) forage cultivars for cut-and-carry and grazing

High-biomass, drought-tolerant forage for reliable feed all year

Megathyrsus maximus cultivars (Mombasa, Tanzania, Massai) are high-yielding, drought-tolerant forage grasses producing 10–20 t DM/ha/year under tropical conditions. With good nutritional quality and rapid regrowth after cutting or grazing, they ensure reliable year-round feed supply while improving soil structure through their deep root systems.

Alliance

The Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT)

Solomon Mwendia

This technology is pre-validated.

Scaling readiness: idea maturity 9/9; level of use unknown

2616 USD	20400 USD	17784 USD	680 %
Cost Per hectare over 10 years	Revenue Per hectare over 10 years	Net income Per hectare over 10 years	ROI Over 10 years

IP

Open source / open access

Problem

- Seasonal feed shortages reduce milk yields and livestock weight gain, while traditional pastures produce only 2–4 t DM/ha/year, limiting year-round productivity.
- Climate variability and prolonged drought weaken conventional forage species, increasing feed insecurity in smallholder livestock systems.
- Overgrazing and shallow-rooted native grasses accelerate soil erosion and land degradation, undermining long-term pasture sustainability.

Solution

- **Higher Productivity:** Increased biomass yield (10–20 t DM/ha/year) ensures year-round feed supply.
- **Drought Resilience:** Tolerates low rainfall (500–600 mm/year), reducing seasonal feed shortages.
- **Improved Nutrition:** High crude protein (8–12%) and digestibility (55–65%) support better livestock performance.
- **Soil Sustainability:** Deep roots improve soil structure, reduce erosion, and enhance nutrient retention.

Key points to design your business plan

Megathyrsus maximus forage cultivars offer a high-return opportunity to scale quality forage seed production with relatively low infrastructure and strong, recurring market demand. With biomass yields of 10–20 t DM/ha/year and strong drought tolerance, businesses can meet the growing demand for climate-smart livestock feed, improve farmer productivity, and expand their footprint in the forage and livestock value chain. To integrate it in your business,

- Invest in certified seed production fields and proper post-harvest handling and storage systems to ensure consistent, high-quality year-round seed supply of cultivars such as Mombasa, Tanzania, and Massai.
- Partner with livestock cooperatives, agrodealers, and extension networks to build efficient distribution channels linking forage seed production to dairy and beef producers at scale.

Inclusion assessment 5

Climate impact 6

Commodities

Forage grasses

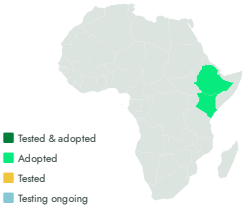
Sustainable Development Goals

1 NO POVERTY · 2 ZERO HUNGER · 5 GENDER EQUALITY · 13 CLIMATE ACTION

Categories

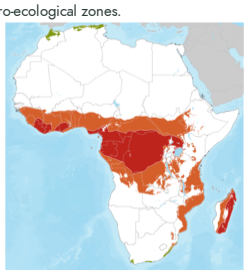
Production, Improved varieties

Tested/adopted in



Where it can be used

This technology can be used in the colored agro-ecological zones.



Target groups

Breeders, Development institutions, Farmers, Governments, Seed companies, Sellers, + 5 more