

# Climbing Bean with High Yield and N Fixation

Growing Prosperity: Climbing Beans for Food Security & Income Growth



Climbing beans, with their long vines and high growth, are a valuable crop for small-scale farmers in Sub-Saharan Africa. Improved varieties, bred for productivity, resilience, and superior nitrogen-fixing abilities, contribute significantly to food security and income in the region. These beans are also processed into various products for local and international markets.

✓ This technology is **TAAT1 validated**.
8·7
Scaling readiness: idea maturity 8/9; level of use 7/9

Gender assessment 4

Climate impact 7

### Problem

- Agricultural Challenges:** Limited yields and susceptibility to pests and diseases affect small-scale farmers.
- Environmental Stresses:** Drought, poor soil quality, and nitrogen-depleted soils hinder bean cultivation.
- Food Insecurity:** These challenges contribute to food insecurity and malnutrition in small-scale farming communities.

### Solution

- Higher Yields:** Climbing beans yield more than bush beans.
- Pest/Disease Resistance:** These varieties resist common pests and diseases.
- Stress Tolerance:** They thrive in adverse conditions.
- Nitrogen Fixation:** The technology reduces fertilizer costs.
- Food Security:** They provide a reliable food source for small-scale farmers.

### Key points to design your project

To incorporate this technology into a project, the following steps are recommended:

- Promotion:** Highlight the benefits of improved climbing beans to attract interest.
- Seed Transfer:** Introduce elite varieties to seed multipliers for propagation and distribution.
- Market Connection:** Connect bean producers with buyers and food processors to ensure a ready market.
- Financial Support:** Provide financial aid to farmers for necessary investments in quality seed, fertilizer inputs, and staking.
- Streamlining Operations:** Make netting available to commercial producers to simplify trellising operations.

Additionally, consider the technology cost, seed requirements per hectare, delivery cost, import clearance, and duties. Training and communication support should be provided, and practices that enhance nitrogen fixation, pest and disease management, and drought resistance should be associated with this technology. Collaboration with agricultural development institutes and seed multiplication companies is recommended for implementation. The technology is available in various agroecosystems across Sub-Saharan Africa.

<b>4.6 t/ha</b> Potential yield	<b>92 kg</b> N fixed per ha	<b>28 %</b> Increase in bean consumption	<b>IP</b> Trademark
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Alliance

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

Technology originally documented by  
**ProPAS**

Commodities  
Common bean

Sustainable Development Goals

Categories  
Production, Improved varieties, Disease resistance, Insect resistance

- Best used with
- [Low-Cost Staking for Climbing Beans >](#)
  - [Seed Inoculation with Rhizobia >](#)
  - [Seed dressing of Seed with Fungicide and Insecticide >](#)

