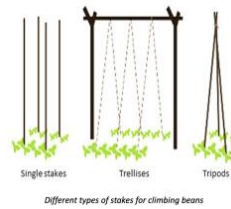


## Low-Cost Staking for Climbing Beans

Empowering Beans, Sustaining Growth!

The Low-Cost Staking practice provides affordable solutions for supporting climbing bean cultivation, aiming to reduce reliance on wooden stakes and mitigate deforestation caused by their overharvesting.



This technology is **TAAT1 validated**.

8-8



Scaling readiness: idea maturity: 8/9; level of use: 8/9

Cost: \$\$\$\$

300 %

Increase in yields compared to bush beans

20,000—50,000

stakes per hectare

Staking density for highest yields

2 meters

Height of stakes for highest yields

~200,000

plants

Plant population per hectare



Open source / open access

### Problem

- Farmers face expense issues with plant support, leading to yield losses.
- Shortage of wooden stakes affects plant density and yield.
- Overharvesting of stakes harms forests and afforestation efforts.
- Knowledge of optimal density and stake length varies with method.

### Solution

- Offers farmer-acceptable, lower-cost staking innovations.
- Utilizes tripod arrangements and string trellises to reduce wooden stakes.
- Recommends the use of agroforestry species and tall grasses for stakes.
- Improved yield and climbing bean production.

### Key points to design your business plan

- The Low-Cost Staking for Climbing Beans technology reduces cultivation costs with innovative staking methods.
- It enhances bean yields, improving farmers' productivity and income.
- Job creation, particularly in rural areas, is promoted through increased bean cultivation.
- The technology advocates for eco-friendly practices, reducing the need for deforestation in stake production and supporting environmental conservation.
- Recommended species for staking include *Acacia angustissima*, *Alnus acuminata*, Bamboo, *Calliandra calothyrsus*, *Gliricidia sepium*, *Sesbania sesban*, *Vernonia amygdalina*, and Elephant Grass (*Pennisetum atropurpureum*).
- Accessible through agricultural extension services, research institutions, local farming communities, and organizations focused on sustainable agriculture and rural development.
- Integration with complementary technologies like Climbing Bean with High Yield and N Fixation can further enhance operational efficiency.

Alliance



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

Technology from

ProPAS

Commodities

Common bean

Sustainable Development Goals



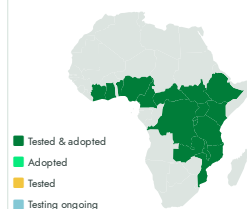
Categories

Production, Practices, Yield improvement, Production system

Best used with

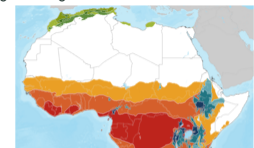
- [Climbing Bean with High Yield and N Fixation >](#)

Tested/adopted in



Where it can be used

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



Gender assessment

4

Climate impact

7



Low-Cost Staking for Climbing Beans

<https://taat.africa/hvz>

Last updated on 22 May 2024, printed on 15 May 2025

Enquiries [e-catalogs@taat.africa](mailto:e-catalogs@taat.africa)