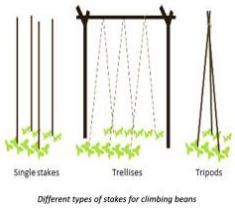
Low-Cost Staking for Climbing Beans

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.



Different types of stakes for climbing beans

Alliance

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

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This technology is TAAT1 validated.

8·8 Scaling readiness: idea maturity 8/9; level of use8/9

Project adoption 1

Technology integrated in the ENSURE project.

Inclusion assessment 4

Climate impact 7

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 program

This technology promotes affordable and sustainable staking systems for climbing beans using locally available materials and innovative plant support methods. It can be integrated into climbing bean value chain development, food security, climate-smart agriculture, sustainable intensification, agroforestry, and rural livelihood programmes. By reducing production costs, improving resource-use efficiency, and decreasing pressure on forest resources, the technology strengthens sustainable bean production while creating new income opportunities for women and smallholder farmers. It supports SDGs 1 (No Poverty), 2 (Zero Hunger), 8 (Decent Work and Economic Growth), and 12 (Responsible Consumption and Production).

To successfully integrate this technology, consider the following key actions:

- Identify climbing bean production areas where affordable staking systems can improve productivity and environmental sustainability.
- Establish partnerships with the Alliance of Bioversity International and CIAT, national research institutions, extension services, agroforestry programmes, and farmer organizations to strengthen technology dissemination.
- Strengthen technical capacity through Farmer Field Schools on sustainable staking methods, integrated climbing bean production, and efficient use of locally available materials while supporting demonstration activities.
- Monitor technology adoption, bean productivity, reductions in staking costs, pressure on forest resources, and programme outcomes.

300 %
Increase in yields compared to bush beans

20,000—50,000 stakes per hectare

2 meters
Height of stakes for highest yields

~200,000 plants
Plant population per hectare

IP
Open source / open access

Technology from

ProPAS

Commodities

Common bean

Sustainable Development Goals

Categories

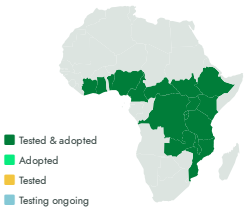
Production, Practices, Yield improvement, Production system

Best used with

Climbing Bean with High Yield and N Fixation

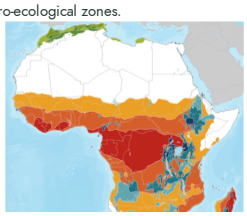
See all 1 technologies online

Tested/adopted in



Where it can be used

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



Staking density for
highest yields