

Advanced Weed Management: Mechanical and Chemical Weed Management



Weed Management for Optimal Yield

The Mechanical and Chemical Weed Management technology combines mechanical and chemical methods to control weeds in agricultural fields effectively. It aims to maximize crop yields by removing weeds throughout the growing season, improving crop health, and boosting agricultural productivity.

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

Gender assessment 4

Climate impact 7

Problem

- Common beans suffer significant yield losses due to weed encroachment.
- Weeds compete with beans for resources, hindering root and shoot development.
- Weed infestation can lead to pest and disease issues for common beans.
- Allelopathic chemicals from weeds harm common bean root systems.
- Shading by tall weeds increases the risk of bean stem lodging.
- Manual weed removal is labor-intensive and costly, impacting bean farming productivity.

Solution

- Increased productivity and higher yields
- Reduced labor and costs compared to manual weed removal
- Enhanced crop health by eliminating weeds that harbor pests and diseases
- Adaptability to various common bean growing areas
- Improved profitability and economic sustainability for farmers

Key points to design your project

The technology enhances agricultural productivity, promotes food security, and creates employment opportunities while streamlining weed management and preserving land quality. To integrate it into your project:

- Raise awareness and provide capacity development.
- Facilitate access to financial support.
- Estimate costs for fertilizers and mechanical weeders.
- Consider delivery costs and import clearance.
- Provide training and post-training support.
- Develop communication materials.
- Integrate with other management practices.
- Collaborate with relevant institutions and suppliers.

250—500 USD		ROI: \$\$\$ 35 %	
Mechanical weeders/unit		Net profit from implementing the technology in Ethiopia	
27 USD	46 USD/ha	743 USD	IP
Pre-emergent herbicide and labor/Ha	Equipment and labor	Net profit per Ha from implementing the technology in Ethiopia	Open source / open access

Alliance

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

Technology from **ProPAS**

Commodities
Common bean

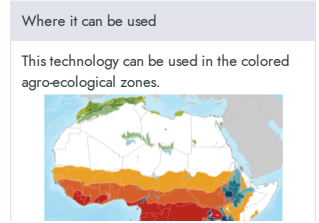
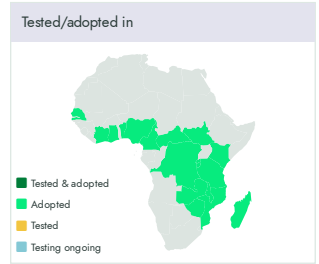
Sustainable Development Goals

+ 1 more

Categories
Production, Equipment, Weed control

Best used with

- [Integrated Management of Insects, Diseases and Weeds in common bean >](#)





<https://e-catalogs.taatafrica.org/gov/technologies/advanced-weed-management-mechanical-and-chemical-weed-management>

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