



2nd session of the validation committee

This is the second batch of technology submissions to the independent validation committee.

35 TECHNOLOGIES | CREATED ON NOV 26, 2025 BY TAAT PROFILING TEAM | LAST UPDATED NOV 26, 2025



TECHNOLOGIES IN THIS TOOLKIT

- **My Farm Trees:** A Digital Platform for Inclusive, Transparent and...
- **Hot and Aromatic Round Pepper for Culinary and Processing Use**
- **Biological control of cassava mealybug**
- **SAH:** Semi-Autotrophic Hydroponics for yam multiplication
- **Doctor Vida Pocket Device:** Mobile virus detector for sweetpotato
- **Agrocares Scanner:** Soil, Feed and Leaves Nutrient Scanner
- **AWD:** Alternate Wetting and Drying Irrigation System
- **ECO SIKa:** Clean Cooking Innovation for Gari and Salt...
- **Improved Cowpea Varieties:** Short Duration White Cowpea Varieties f...
- **Nyota Common Bean:** Early Generation, High-Yielding, Climate...
- **Beauveria Biopesticide:** Based on the entomopathogenic fungus...
- **AgWise:** Planting Date & Variety Recommendations
- **AgWise:** Specific Fertilizer Recommendations
- **Climate-Smart and Market-Preferred Yam Varieties**
- **BID Tool:** Digital platform for Business Investment Decision
- **SRE:** Seed Requirement Estimation Tool for Sweetpotato
- **Biological control of mango mealybug**
- **Crop Sprayer App:** Dosage calculator for plant protection...
- **CassQual:** Cassava Seed Quality Management system
- **CABI BioProtection Portal:** Registered BioProtectants Finder
- **Leaf-bud Cuttings:** Rapid Yam Multiplication Method
- **CABI Academy:** Learning Platform for Agricultural Advisory Services
- **PlantwisePlus Knowledge Bank:** Crop health management library
- **BASICS Model:** A Seed System Model for Cassava Transformation
- **Cassava virus indexing:** Molecular diagnostics for cassava seed health...
- **Marketing strategies for cassava seed system**
- **Capacity Building Strategies on Cassava Seed System**
- **Cassava Seed System Advocacy and Scaling Model**
- **CSE Model:** Cassava Seed Entrepreneur Business Model
- **Cassava Seed Field Multiplication Protocol**
- **eProd:** Digital Agriculture Supply Chain Platform
- **Seed Tracker:** Digital Tool for Strengthening Seed Governance an...
- **Cassava EGS Model:** Early Generation Seed Production of...
- **Improved Cassava Varieties:** Market-driven cassava breeding an...
- **MandiPlus:** Cutting dipping in insecticides for management of...



<https://taat.africa/jmq>

My Farm Trees: A Digital Platform for Inclusive, Transparent and Resilient Forest Landscape Restoration

Digital transparency and incentives for resilient landscape restoration

My Farm Trees (MFT) is a digital platform that uses blockchain technology to track forest restoration from seed collection to tree growth. It connects seed suppliers, nurseries, and farmers through mobile apps and a central dashboard, ensuring transparency, quality control, and digital payments that reward verified restoration efforts using native tree species.



Alliance



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

Commodities

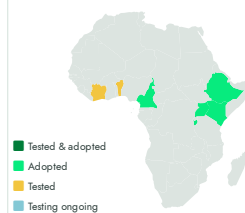
Sustainable Development Goals



Categories

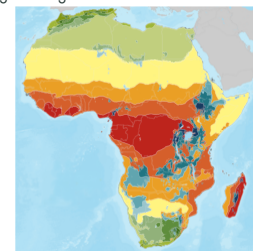
Production, Postharvest, Marketing,
Pre-production, Digital applications,
Supply chain management, + 0 more

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, Processors,

This technology is **pre-validated**.

9-9



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

Inclusion assessment

5

Climate impact

5

Problem

- Limited diversity of native species and seed sources in restoration activities
- Weak seed systems and poor linkages between suppliers, nurseries, and restoration projects
- Gender imbalances in decision-making and benefit-sharing
- Lack of reliable monitoring and verification of restoration success

Solution

- Community engagement:** Strengthens local collaboration by combining traditional knowledge and science.
- Seed collection:** Preserves diversity, creates value chains, and connects seed supply and demand.
- Nurseries:** Diversifies production, supports nursery networks, and facilitates their management.
- Tree monitoring:** Monitors plantations, estimates carbon benefits, and manages incentives.
- Natural resources:** Improves biodiversity management for more resilient systems.

Key points to design your project

My Farm Trees supports forest restoration and biodiversity by empowering farmers with digital tools blending science and tradition.

Key steps:

- Raise awareness among farmers and communities.
- Train trainers and support nurseries.
- Connect producers with seed suppliers, finances, and markets.

Plan device and data costs; ensure ongoing trainer support.

Use flyers, videos, and radio to promote the tool.

Collaborate with forestry agencies, NGOs, and research centers for smooth implementation.

90 %

The survival rate of seedlings planted using MFT technology

3500 USD

Annual benefits for the Seed collector

11000 USD

Annual benefits for the Nursery manager



Open source / open access



My Farm Trees

<https://taat.africa/cwc>

Last updated on 19 November 2025, printed on 19 November 2025

Enquiries e-catalogs@taat.africa

Hot and Aromatic Round Pepper for Culinary and Processing Use

Intense Heat, Rich Aroma, Market Ready!

These spicy and flavorful peppers grow well in hot regions and meet local taste preferences. They can support nutrition programs, income generation, and rural development goals. A practical option for seed distribution and public farming initiatives.



Commodities

Chili peppers

Sustainable Development Goals



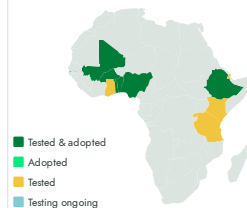
Categories

Production, Improved varieties,
Disease resistance, Yield improvement

Best used with

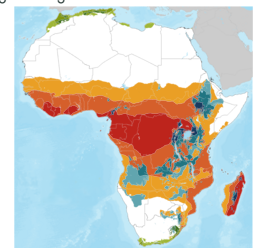
Zero Energy Cooling Chamber for Vegetables
See all 1 technologies online

Tested/adopted in



Where it can be used

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



Target groups

Breeders, Farmers, Processors,
Seed companies

This technology is **pre-validated**.

7-8



Scaling readiness: idea maturity 7/9; level of use 8/9

Inclusion assessment

4

Climate impact

7

Problem

- **Reduced Production:** Yield losses limit supply of high-heat, aromatic peppers and reduce farmer incomes.
- **Health Risks:** Heavy pesticide use threatens public health and environment.
- **Weak Seed Systems:** Poor pipelines block delivery of improved, uniform pepper varieties.
- **Low Productivity:** Low farm output limits rural development impact.

Solution

- **Disease Resistance:** Increases pepper production nationally.
- **Less Pesticide Use:** Protects health and the environment.
- **Early Maturity:** Supports farmer income growth.
- **Heat and Aroma:** Meets market and consumer demand.
- **Climate Adaptability:** Fits national food security and climate plans.

Key points to design your project

These disease-resistant round pepper varieties from WorldVeg are adapted to hot, disease-prone environments and offer reliable yields with consistent fruit quality—ideal for improving farmer income, nutrition, and climate resilience.

To integrate them into a project:

- Source seed from WorldVeg and begin local registration.
- Target areas with high disease pressure and poor-performing local varieties.
- Engage trusted cooperatives or seed multipliers to ensure quality seed production.
- Distribute through agro-dealers in appropriate package sizes for smallholders and larger farms.
- Set up demonstration plots and train farmers through local extension networks.
- Promote adoption using local languages and trusted communication channels.
- Connect producers with traders and processors to strengthen market access.
- Monitor uptake, yield performance, and market outcomes to guide scaling.

Cost: \$\$\$ **2336 USD**

All production cost for 1 hectare

ROI: \$\$\$ **up to 434 %**

over 10 harvests

6.8–18.01 t/ha

over 10 harvest

70–85 days

Days to Maturity after Transplanting

Officially released in Benin in 2025



Open source / open access



Hot and Aromatic Round Pepper for Culinary and Processing Use

<https://taat.africa/woa>

Last updated on 7 July 2025, printed on 7 July 2025

Enquiries e-catalogs@taat.africa

Biological control of cassava mealybug

Enhancing Cassava Resilience: Targeted Biocontrol with a Beneficial Wasp

Biological control with *Anagyrus lopezi* uses a natural wasp to manage cassava mealybugs without chemicals. The wasps are mass-reared, released into the field, and they lay eggs on the mealybugs—where the hatching larvae consume and kill the pests. This eco-friendly method has reduced mealybug populations by about 90% in over 20 countries, safeguarding cassava crops and saving farmers...



Commodities

Cassava

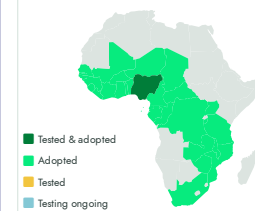
Sustainable Development Goals



Categories

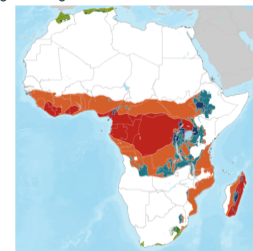
Production, Practices, Biological control

Tested/adopted in



Where it can be used

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



Target groups

Governments

 This technology is **pre-validated**.

 9.7


Scaling readiness: idea maturity 9/9; level of use 7/9

Gender assessment

 4

Climate impact

 7

Problem

- **Severe Crop Loss:** Cassava yields were decimated in the 1970s.
- **Famine:** Loss of a staple food led to widespread shortages.
- **Economic Hardship:** Millions of farmers suffered significant financial losses.
- **Ineffective Control:** Traditional pest management methods failed to contain the outbreak.

Solution

- **Natural Pest Control:** *A. lopezi* targets and kills cassava mealybugs by laying eggs inside them.
- **Restored Yields:** Its action reduces pest numbers by about 90%, allowing cassava crops to recover.
- **Eco-Friendly & Sustainable:** This method replaces harmful chemicals with a long-term, self-sustaining solution.

Key points to design your project

Integrating Cassava Mealybug Biocontrol into National Projects

1. **Pest Identification** — Confirm if the outbreak is due to cassava mealybug (CM) and assess soil and crop conditions that may affect *A. lopezi*'s efficiency. Consult entomologists for accurate identification.
2. **Technical Support & Permits** — Engage IITA for guidance and obtain a quarantine permit ensuring *A. lopezi*'s safety per FAO regulations.
3. **Importation & Release** — Import *A. lopezi*, conduct quarantine checks, and release it in selected fields under national supervision.
4. **Monitoring & Evaluation** — Track *A. lopezi*'s establishment, spread, and impact on mealybug populations, cassava yield, and farmer livelihoods.

Cost: \$\$\$

15 000 USD

Starter cultures, rearing and expert guidance

9.4 billion USD


Estimation of benefits over 40 years (1974–2013) across 27 African countries

Open source / open access



Biological control of cassava mealybug

<https://e-catalogs.taatafrica.org/gov/technologies/biological-control-of-cassava-mealybug>

Last updated on 7 April 2025, printed on 7 April 2025

Enquiries e-catalogs@taat.africa

SAH: Semi-Autotrophic Hydroponics for yam multiplication

Multiplying Seeds, Securing Harvests, Ensuring Food Security!

SAH is a low-cost licensed technology designed for mass multiplication of yam through leaf nodal cuttings, which are grown in a sterile planting medium such as peat moss, decomposed sawdust, rice husk, or cocopeat. These cuttings are placed in transparent plastic containers under controlled conditions, where they develop roots, shoots, and eventually tubers.



International Institute of Tropical Agriculture (IITA)
Pelemo Olugboyega Success

Commodities

Yam

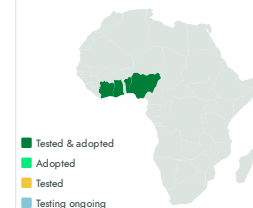
Sustainable Development Goals



Categories

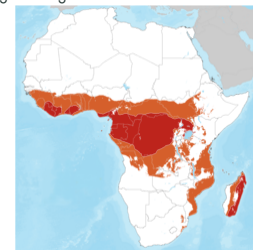
Pre-production, Practices,
Yield improvement, Seed system

Tested/adopted in



Where it can be used

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



This technology is **pre-validated**.

9·7



Scaling readiness: idea maturity 9/9; level of use 7/9

Inclusion assessment

2

Climate impact

5

Problem

- **Insufficient Seed Supply:** The production of seed yam is inadequate to meet national food security needs.
- **High Seed Costs:** Seed yam accounts for up to **50% of total production costs**, making it unaffordable for many farmers.
- **High Seed Consumption from Previous Harvests:** Farmers typically **use up to 33% of their previous year's harvest** as seed, reducing food availability for consumption and sale.

Solution

- **High Multiplication Rate:** A **single box of 25 seedlings** can yield up to **500 plants in 90 days**, and over **1,000 plants** when transplanted into pots for further multiplication.
- **Space Efficiency:** **1 million planting materials** can be produced within **60 square meters**, ensuring year-round supply.
- **Scalability:** The technology is adaptable for **formal seed systems and commercial seed enterprises**, supporting the growth of the yam seed sector.

Key points to design your project

Semi-Autotrophic Hydroponics (SAH) enables year-round, cost-effective yam seed multiplication, addressing seed shortages and high production costs. To integrate this technology,

- Estimate plantlet needs (50,000 for 16 hectares), factor in delivery and import costs, and include training for successful implementation.
- Collaborate with agricultural institutes and seed companies to ensure sustainable integration and increased food security.

60,000 USD

Construction or acquisition of the fixed assets

10,000—25,000 USD

Labor cost in West Africa per year

20,000 USD

Laboratory setup including shelving

15,000 USD

Consumables (Substrates, plastic box, nutrients and non-consumables and maintenance)



Open source / open access



SAH

<https://taat.africa/ouy>

Last updated on 28 October 2025, printed on 28 October 2025

Enquiries e-catalogs@taat.africa

Doctor Vida Pocket Device: Mobile virus detector for sweetpotato

Low-cost, portable, detect sweet potato viruses—anywhere!

SmartLAMP SPOT is a smartphone-operated molecular diagnostic device using Loop-Mediated Isothermal Amplification (LAMP) to detect three key sweetpotato viruses: SPCSV, SPFMV, and SPLCV. It delivers laboratory-grade accuracy (100% agreement with Genie III) without requiring lab infrastructure, skilled personnel, or electricity. Each test takes ~40 minutes and can be performed on-site using a power bank.



**International Potato Center
& Doctor Vida**
Helena Gonçalves

Commodities

Sweet Potato

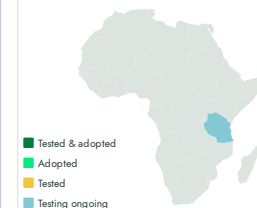
Sustainable Development Goals



Categories

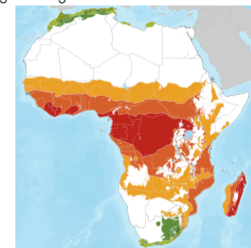
Production, Pre-production, Equipment,
Pest control

Tested/adopted in



Where it can be used

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



Target groups

Governments, Seed companies,
Researcher center,
Advisory and Extension Services

⚠️ This technology is not yet validated.

7.5



Scaling readiness: idea maturity
7/9; level of use 5/9

Inclusion assessment

4

Climate impact

3

Problem

- Sweetpotato viral diseases severely impact food security and seed system health in tropical countries.
- Diagnostic techniques such as PCR and ELISA require specialized labs and trained personnel, which are scarce in rural or remote areas.
- Delays in virus detection hamper timely certification and disease control, limiting effective national surveillance and seed certification programs.

Solution

The DoctorVida Pocket LAMP device provides an affordable, field-ready solution for timely and accurate detection of major sweetpotato viruses, strengthening national plant health programs.

- Demonstrated 100% concordance with laboratory-grade virus testing equipment.
- Portable and operable via smartphones and power banks for rural and remote deployment.
- Reduces per-test costs by about 40%, enabling broader and more frequent virus monitoring.

Key points to design your project Key activities to consider:

- Equip regional inspection units or labs with testing kits
- Develop or update SOPs for field testing and data handling
- Train inspection teams and integrate test results into existing seed certification databases
- Coordinate with ILTA/CIP for supplies, training, and software
- Include DoctorVida in clean seed and phytosanitary regulations

2 years

warranty period

4 years

Lifespan



Open source / open access



Doctor Vida Pocket Device

<https://taat.africa/wiy>

Last updated on 28 October 2025, printed on 28 October 2025

Enquiries e-catalogs@taat.africa

Agrocares Scanner: Soil, Feed and Leaves Nutrient Scanner

Scan Nutrients. Get Answers. Act Fast.

The Nutrient Scanner gives government teams a quick and portable way to assess soil and crop nutrition in the field. It scans samples with NIR light, connects to a smartphone, and sends data to the cloud for instant nutrient analysis and recommendations. It supports data-driven extension without needing a lab.



AgroCares
Mukami Gitau

Commodities

Maize, Wheat, Cassava, Soybean, Canola,
Sorghum/Millet, + 3 more

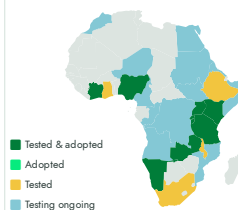
Sustainable Development Goals



Categories

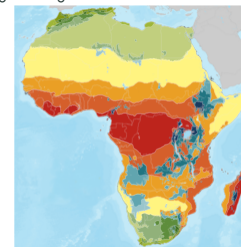
Production, Pre-production, Equipment,
Analysis and Diagnostic tool

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, + 4 more

This technology is **pre-validated**.

9-9



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

Inclusion assessment



Climate impact



Problem

- **Limited Extension Capacity**
Agents can't diagnose nutrient issues on-site.
- **Fertilizer Inefficiency**
Blanket application leads to waste and low yields.
- **Labs Out of Reach**
Testing services are slow, costly, and hard to scale.
- **No Field-Level Data**
Policies lack current soil fertility insights.

Solution

- **Field-Ready Tool for Agents:** Extension staff can test and advise farmers instantly.
- **Smarter Fertilizer Use:** Reduce waste with precise nutrient recommendations.
- **Rural Reach Made Easy:** Works offline for scanning; syncs later.
- **Improves Soil Data Systems:** Generates real-time info to support planning and policy.

Key points to design your project

Modernize soil and crop advisory with on-site diagnostics.

- **Equip extension agents** with handheld scanners and apps.
- **Train staff and embed testing** into regular field visits.
- **Use scan data** to guide fertilizer policy, subsidies, and restoration programs.
- **Engage communities and local leaders** to increase adoption.
- **Monitor results** to adjust strategy and maximize impact.



Patent granted, Copyright, Trademark



Agrocares Scanner

<https://taat.africa/jki>

Last updated on 30 October 2025, printed on 30 October 2025

Enquiries e-catalogs@taat.africa

AWD: Alternate Wetting and Drying Irrigation System

Dry Out the Methane. Green Up Your Harvest.

Alternate Wetting and Drying is a scheme-ready water-management protocol for irrigated rice. It replaces continuous flooding with controlled wet–dry cycles triggered by a subsurface water threshold, improving water productivity, maintaining yields, and reducing methane.



International Rice Research Institute (IRRI)
Adebayo Oke

Commodities

Rice

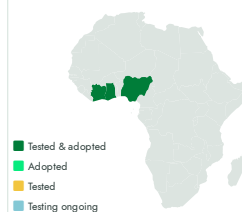
Sustainable Development Goals



Categories

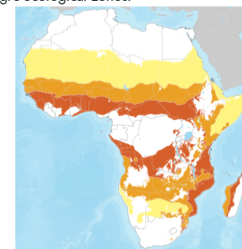
Production, Practices, Water management

Tested/adopted in



Where it can be used

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



Target groups

Farmers

! This technology is **not yet validated**.

8.5



Scaling readiness: idea maturity 8/9; level of use 5/9

Inclusion assessment

Climate impact



Problem

- Existing schemes cannot serve all farmers/hectares with current water under continuous flooding.
- Over-extraction of canals/groundwater threatens long-term water security.
- Rice methane is a significant source of national greenhouse gases, undermining climate targets.
- Public costs rise with pumping/electricity for irrigation service.
- Lack of a simple, standard water-management protocol reduces scheme efficiency.

Solution

- Boosts Water Security** by maximizing rice production with less water.
- Achieves Climate Goals** by cutting methane emissions by 30–50%.
- Supports Food Security** by maintaining stable yields despite limited water.
- Aligns with Sustainable Policies** (e.g., climate adaptation and resource management).
- Improves Irrigation Management** by providing a protocol for controlled wet–dry cycles.

Key points to design your project

Alternate Wetting and Drying (AWD) is a **water-saving** rice irrigation method that reduces **methane emissions** by **30–70%** and **irrigation water use** by **15–30%**. It supports **climate action (SDG 13)**, **clean water (SDG 6)**, and higher **farmer income (SDG 1)**. With inclusive training, it also strengthens **women's roles in water management (SDG 5)**.

To implement AWD, start by supporting **national strategies**, updating **irrigation quotas**, and aligning **agriculture** and **water institutions**. Basic **monitoring systems** and **financial incentives** like **carbon credits** help track and reward adoption.

Field-level work includes improving **irrigation infrastructure**, **land leveling**, and using simple **field tubes** to monitor water. Farmers irrigate only when the water drops **15 cm below** the surface. Training should cover this tool, **straw** and **fertilizer management**, and be inclusive of both **men and women**.

Work with partners like **IRRI**, **AfricaRice**, **local extension services**, and **farmer cooperatives**. Use **demo plots**, **visual tools**, and **simple messaging** to show farmers that AWD protects **yields**, reduces **water costs**, and increases **net income**.

15–30 %

Water use reduction

48 %

Greenhouse Gas Emissions
Reductions



Open source / open access



AWD

<https://taat.africa/pka>

Last updated on 14 November 2025, printed on 14 November 2025

Enquiries e-catalogs@taat.africa

ECO SIKA: Clean Cooking Innovation for Gari and Salt Processing

An affordable clean-energy solution that empowers women salt and gari producers to adapt to climate change!

The cooking stove is a rectangular structure designed for agrifood processing. It measures approximately 3.5 meters in length and efficiently integrates four independent combustion chambers within a single frame. This system relies on controlled air injection to manage the fire. A fan, positioned at the rear of each chamber and powered by solar panels, is manually operated via a switch to regulate the oxygen supply.



Laboratory of Applied Ecology, University of Abomey-Calavi
Padonou Elie Antoine

Commodities

Cassava, Salt

Sustainable Development Goals



Categories

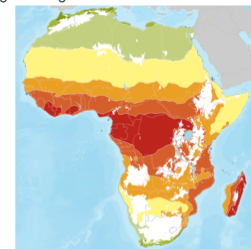
Post-production, Equipment,
Agrifood processing

Tested/adopted in



Where it can be used

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



Target groups

Development institutions, Governments,
Processors, Manufacturers,
Advisory and Extension Services,

 This technology is **not yet validated**.

 9.4



Scaling readiness: idea maturity 9/9; level of use 4/9

Inclusion assessment



Climate impact



Problem

- **Environmental Degradation:** Traditional cooking methods rely heavily on wood fuel, causing rapid deforestation and biomass depletion, which contributes to biodiversity loss.
- **Public Health Strain:** Inefficient stoves produce high levels of toxic smoke, leading to severe health risks (respiratory diseases) among communities and workers.
- **Climate Risks:** Unregulated fires result in incomplete combustion, releasing significant CO₂ and hindering national climate goals.

Solution

- **Climate Action & Health (SDGs 3, 13):** The ECO SIKA stove produces **no direct emissions during cooking**, significantly reducing air pollution and associated health risks.
- **Forest Conservation (SDG 15):** The stove cuts demand for wood fuel by up to **50%** by using agro-residues, protecting local forests and biodiversity.
- **Increased Efficiency:** Improves combustion efficiency by over **25%** through controlled air injection, optimizing the use of energy resources

Key points to design your project

To successfully integrate the ECO SIKA stove into national programs, the following conditions are necessary:

- **Solar Power Infrastructure:** Requires that the project or community establish a reliable solar panel system to power the fan and air injection system.
- **Flexible Energy Strategy:** Policy must account for operations with or without batteries; without batteries, use is restricted only to sunny periods.
- **Sustainable Fuel Supply Chain:** Requires a guaranteed local supply chain for the approved ecological charcoal or carbonized palm nut shells (agro-residues) to maintain the low-cost and environmental benefits, ensuring producers move away from firewood.
- **Training and Safety Standards:** Must implement training programs to ensure workers wear gloves and operate the fan/switch safely.



Open source / open access



ECO SIKA

<https://taat.africa/iwv>

Last updated on 27 October 2025, printed on 27 October 2025

Enquiries e-catalogs@taat.africa

Improved Cowpea Varieties: Short Duration White Cowpea Varieties for Boiled Grain Market

High-yielding, early maturing, and striga-resistant cowpea varieties for farmers!

The early-maturing IITA cowpea varieties can be harvested within 65–76 days, enabling multiple cropping cycles per season. With high yields above 1.5 t/ha, resistance to Striga, Alectra, and major diseases, and drought tolerance, they support food security. Their attractive, fast-cooking, nutrient-rich seeds contribute to improved nutrition and national agricultural productivity.



**International Institute of
Tropical Agriculture (IITA)**
Ousmane Boukar

Commodities

Cowpea

Sustainable Development Goals



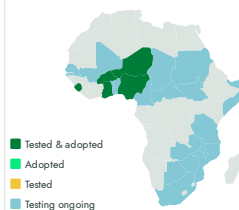
Categories

Pre-production, Improved varieties,
Disease resistance, Weed resistance, + 0
more

Best used with

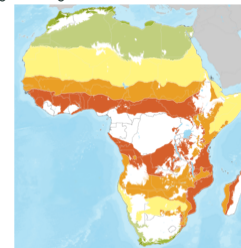
Hermetic Bags for Safe Storage of grain
See all 1 technologies online

Tested/adopted in



Where it can be used

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



Target groups

! This technology is **not yet validated**.

9-7



Scaling readiness: idea maturity
9/9; level of use 7/9

Inclusion assessment

5

Climate impact

7

Problem

- Persistently low productivity (500 kg/ha) among smallholder farmers
- Crop losses from parasitic weeds (Striga, Alectra) and diseases
- Climate change effects: drought, declining soil fertility
- High malnutrition rates due to limited protein intake

Solution

- Increased national cowpea output to boost food availability and reduce imports
- Enhanced farmer resilience to climate variability
- Improved nutrition through high-protein cowpeas

Key points to design your project

IITA's Improved Cowpea Varieties mature in 65–76 days and yield 2.5–2.7 t/ha, overcoming Striga, Alectra, drought, and major diseases. Adapted to the Sahel and Sudan Savanna, these medium-to-large, white, fast-cooking seeds improve nutrition and farmer incomes while building climate resilience. Ideal for smallholders, development programs, and agribusinesses aiming to enhance food security, livelihoods, and sustainable cowpea production in Africa.

6.5 USD

Per kg from seed company

12.5 %

From farmer's perspective



No formal IP rights



Improved Cowpea Varieties

<https://taat.africa/uqm>

Last updated on 3 September 2025, printed on 3 September 2025

Enquiries e-catalogs@taat.africa

Nyota Common Bean: Early Generation, High-Yielding, Climate-Smart & Nutrient-Rich Variety

Powering Nutrition, Productivity, and Resilience!

Nyota is a fast-maturing (60–70 days), drought-tolerant common bean variety that supports food security and climate-smart agriculture. With yields of 1.4–2.0 tons/ha and biofortification in iron and zinc, it enhances nutrition and smallholder resilience. Its adaptability makes it a strategic tool for national agricultural and public health goals.



Kenya Agricultural and Livestock Research Organization (KALRO)
Karanja D.

Commodities

Common bean

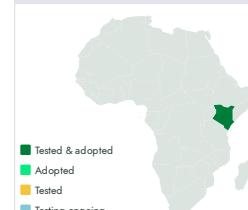
Sustainable Development Goals



Categories

Pre-production, Improved varieties,
Disease resistance, Yield improvement

Tested/adopted in



Where it can be used

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



Target groups

Farmers, Processors, Seed companies,
Researcher center

⚠️ This technology is not yet validated.

7•8



Scaling readiness: idea maturity
7/9; level of use 8/9

Inclusion assessment

4

Climate impact

7

Problem

- **Low productivity** of traditional bean varieties limits national food self-sufficiency.
- **Long maturity periods** reduce cropping intensity and annual food supply.
- **Micronutrient deficiencies**, especially iron and zinc, remain widespread and affect public health, particularly in children.

Solution

Nyota enhances national food security with high yields and fast maturity, enabling multiple harvests per year. Its iron and zinc biofortification addresses micronutrient deficiencies, while drought tolerance supports climate resilience. This variety aligns with government goals for nutrition and sustainable agriculture.

Key points to design your project

Nyota Common Bean is a high-yielding, drought-tolerant, and nutrient-rich variety that boosts food security and nutrition while supporting climate resilience in Sub-Saharan Africa. To integrate Nyota into your project,

- calculate seed needs based on 60–80 kg/ha, budget for procurement and delivery, and provide farmer training and communication support.
- Collaborate with research institutes and seed companies to ensure successful adoption and link Nyota with soil fertility and pest management practices for optimal results.



Open source / open access



Nyota Common Bean

<https://taat.africa/ury>

Last updated on 29 October 2025, printed on 29 October 2025

Enquiries e-catalogs@taat.africa

Beauveria Biopesticide: Based on the entomopathogenic fungus *Beauveria bassiana*

A Sustainable, Profitable Solution for Diamondback Moth and Beyond!

This biopesticide utilizes *Beauveria bassiana*, an entomopathogenic fungus, specifically isolate Bb11, to control pests like the cabbage moth (*Plutella xylostella*). The fungus produces conidia spores that attach to the insect's cuticle, germinate, and penetrate internal tissues, leading to the insect's death. It is a natural, eco-friendly alternative to chemical pesticides, safe for humans, animals, and beneficial insects, and is effective in Integrated Pest Management (IPM) systems for sustainable crop protection.



This technology is **not yet validated**.



Scaling readiness: idea maturity 6/9; level of use unknown

Inclusion assessment

Climate impact  7

Problem

- Smallholder farmers face major crop losses due to pests like fall armyworm, aphids, and whiteflies.
- Overuse of chemical pesticides has led to pest resistance, reducing effectiveness.
- Synthetic pesticides pose risks to human health, pollinators, and ecosystems.
- Affordable and eco-friendly alternatives are limited or inaccessible to farmers.
- Climate change is worsening pest outbreaks and expanding their range.

Solution

- Uses the natural fungus *Beauveria bassiana* to biologically control harmful insect pests.
- Effectively targets pests like fall armyworm, aphids, whiteflies, and borers without harming beneficial insects.
- Reduces dependence on chemical pesticides, lowering environmental and health risks.
- Can be integrated into climate-smart and organic farming practices.
- Supports sustainable pest management and preserves biodiversity.
- Suitable for smallholder use—safe, affordable, and easy to apply.

Key points to design your project

Beauveria bassiana (Bb11) is a locally validated, eco-friendly biopesticide that effectively controls pests like diamondback moths, fall armyworms, and aphids. It reduces reliance on chemical pesticides, supports food security, and preserves biodiversity.

To integrate Bb11 into government programs:

1. **Estimate needs** by crop and pest pressure.
2. **Verify local availability** or plan for import.
3. **Train farmers and extension agents** on application.
4. **Raise awareness** through educational materials.
5. **Promote IPM strategies** for long-term effectiveness.
6. **Collaborate with partners** for broad adoption.



International Institute of Tropical Agriculture (IITA)
Manuele Tamo

Commodities

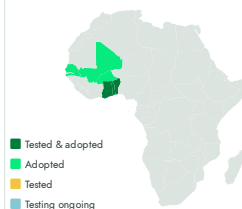
Sustainable Development Goals



Categories

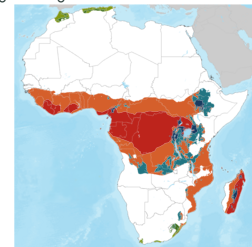
Production, Inputs, Pesticide, Biocontrol

Tested/adopted in



Where it can be used

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



Target groups

Farmers, Researcher center

Cost: \$\$\$ **270 USD**

Total cost to implement the technology

20 USD/day

Additional workforce required

ROI: \$\$\$ **48.15 %**

Revenue per dollar invested

20 USD/day

Cost associated with training

50 USD/ha

Location cost for specialized tools



<https://taat.africa/udx>

Last updated on 19 September 2025, printed on 19 September 2025

AgWise: Planting Date & Variety Recommendations

Plant the Right Variety, in the Right Place, at the Right Time.

AgWise operates as a strategic decision-support infrastructure by integrating national weather forecasts, satellite imagery, and agro-ecological models. It provides optimal planting windows and strategic guidance for zone-based varietal deployment. This scientific foundation allows Ministries to align input distribution schedules and extension campaigns with actual climate realities, stabilizing yields and reducing planting failures.



CGIAR Sustainable Farming Program
Wuletawu Abera

Technology from

[CASH from EIA](#)

Commodities

Rice, Maize, Soybean, Wheat, Cassava, Potato

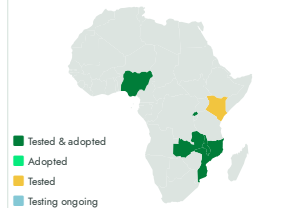
Sustainable Development Goals



Categories

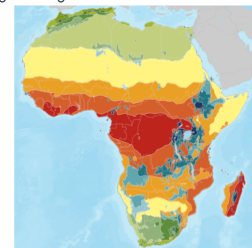
Production, Digital applications, Advisory and information service, Crop management

Tested/adopted in



Where it can be used

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



Warning: This technology is **not yet validated**.

7.5



Scaling readiness: idea maturity 7/9; level of use 5/9

Inclusion assessment

4

Climate impact

7

Problem

- Static calendars prevent alignment of national planting campaigns with real weather patterns.
- Lack of agro-ecological zoning tools promotes improved varieties poorly adapted to local environments.
- Planning misalignment reduces national crop yields and leads to the inefficient use of resources (water/fertilizers).
- Ministries lack tools to transform forecasts into actionable advice, relying on expensive, reactive crisis management.

Solution

- Distribute Seeds Strategically**
Align varieties with suitable agro-ecological zones.
- Support Zoning and Planning**
Use data to update seed zoning and extension tools.
- Update Seed Catalogues**
Add zone-specific recommendations for each variety.

Key points to design your project

AgWise is a modular digital platform that delivers precise agronomic advice — weather advisories, variety choice, fertilizer recommendations and optimal planting dates — using empirical and process-based analytics to boost smallholder productivity, profitability and resilience.

Integrating AgWise requires: committed partners (research, extension, EIA), simple multi-channel interfaces, hands-on training and field support, demonstration plots, and a feedback loop for continuous improvement.

Key requirements: geo-tagged agronomic data, soil & weather maps, seasonal forecasts, empirical/process models, R-based workflows and adequate compute/storage.



Unknown



AgWise

<https://taat.africa/wbt>

Last updated on 27 October 2025, printed on 27 October 2025

Enquiries e.catalogs@taat.africa

AgWise: Specific Fertilizer Recommendations

Farm Smarter, Not Harder

A free, open digital tool that turns national soil and weather data into exact fertilizer plans for every farmer. Extension agents deliver the advice straight to farmers, boosting yields and trimming fertilizer waste, so ministries get bigger harvests, lower subsidy costs and cleaner environmental outcomes.



CGIAR
SUSTAINABLE
FARMING

CGIAR Sustainable Farming Program
Wuletawu Abera

Technology from

CASH from EiA

Commodities

Maize, Rice, Soybean, Cassava, Wheat, Potato

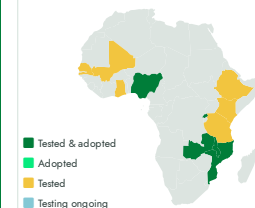
Sustainable Development Goals



Categories

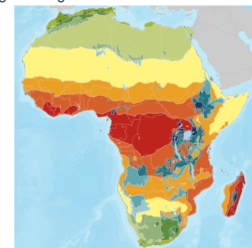
Production, Digital applications, Advisory and information service, Crop management

Tested/adopted in



Where it can be used

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



! This technology is **not yet validated**.

7.5



Scaling readiness: idea maturity 7/9; level of use 5/9

Inclusion assessment



Climate impact



Problem

- **Leaky subsidies:** Blanket packages drain funds.
- **Outdated tools:** Extension lacks digital support.
- **Yield gaps:** Productivity still lags.
- **Emissions pressure:** N₂O levels keep rising.
- **Poor tracking:** Impact data stay missing.

Solution

- **Smarter subsidies:** Integration with e-voucher tools funds only the fertilizer each field needs, protecting budgets.
- **Digital extension:** Advice delivered via SMS or tablets equips officers with up-to-date, site-specific guidance.
- **Traceable results:** Dashboards track uptake, yields, and emissions, easing policy monitoring.

Key points to design your project

AgWise is a comprehensive digital platform offering weather advisories, variety selection, fertilizer recommendations, and optimal planting dates. By leveraging empirical and process-based analytics, AgWise enhances productivity, profitability, and sustainability for smallholder farmers.

Key Integration Steps:

- **Partnership:** Collaborate with agricultural research institutions and EiA experts. Partner with local extension agents for effective dissemination and use.
- **Awareness and Training:** Conduct dissemination events and training sessions for farmers and extension agents. Provide hands-on training on all AgWise features.
- **Infrastructure and Accessibility:** Assess and upgrade necessary infrastructure, including internet connectivity and hardware availability. Address digital literacy of farmers.
- **On-field Assistance:** Deploy extension agents for on-field support and troubleshooting.
- **Accessible Interfaces:** Make AgWise available via smartphone apps, IVR systems, chatbots, and printed guides.
- **Demonstration Plots:** Establish demonstration plots to showcase AgWise recommendations in real farming conditions.
- **Feedback Mechanism:** Implement a feedback system to gather and act on farmer input for continuous improvement.
- **Expansion:** Plan for AgWise expansion to additional regions and crops with region-specific recommendations.

69 % in Rwanda

Potato yield increase



Unknown



AgWise

<https://taat.africa/oqe>

Last updated on 27 October 2025, printed on 27 October 2025

Enquiries e-catalogs@taat.africa

Climate-Smart and Market-Preferred Yam Varieties

More yield, better quality, stronger resilience!

Improved yam varieties are climate-smart, high-yielding, and early-maturing crops developed by IITA and partners. They produce 20–30 tons per hectare (compared to 5–10 from local yams), mature in 7–8 months, and are resistant to major pests and diseases. With uniform, consumer-preferred tubers and compatibility with modern seed multiplication methods, they strengthen food security and national seed systems.



International Institute of Tropical Agriculture (IITA)
Pelemo Olugboyega

Commodities

Yam

Sustainable Development Goals



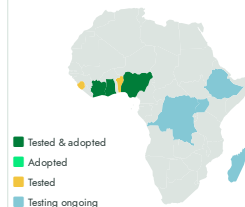
Categories

Pre-production, Improved varieties, Disease resistance, Yield improvement

Best used with

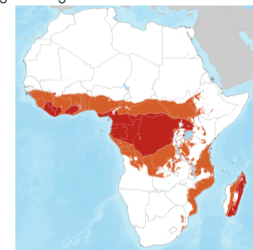
Semi-Autotrophic Hydroponics for yam multiplication
See all 1 technologies online

Tested/adopted in



Where it can be used

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



Target groups

This technology is **pre-validated**.

9.7



Scaling readiness: idea maturity 9/9; level of use 7/9

Inclusion assessment

Climate impact

4

1

Problem

- Low national productivity from traditional yams (5–10 t/ha).
- Heavy losses due to pests, diseases, and drought.
- Long 10–12 month production cycles tie up land.
- Farmers lack affordable, quality seed yams.

Solution

- Boost yields to 20–30 t/ha, strengthening food supply.
- Pest/disease resistance reduces losses and pesticide costs.
- Early maturity allows double cropping and efficient land use.
- Seed yam compatibility improves affordability and availability.
- Storability and consumer traits enhance markets and nutrition.

Key points to design your project

Improved yam varieties address yield gaps, pest/disease losses, and climate stress in Sub-Saharan Africa. To integrate, focus on seed multiplication using minisetts and hydroponics to lower costs and boost availability.

- Train farmers, especially women and youth, on agronomy and pest management.
- Use flyers, videos, and radio to raise awareness.
- Budget for certified seed procurement, delivery, and training support.
- Combine with sustainable practices like soil fertility management and mulching.

Collaborate with IITA, national institutes, seed companies, and community groups. This approach strengthens food security, climate resilience, and rural livelihoods.



Open source / open access



Climate-Smart and Market-Preferred Yam Varieties

<https://taat.africa/nkw>

Last updated on 3 November 2025, printed on 3 November 2025

Enquiries e.catalogs@taat.africa

BID Tool: Digital platform for Business Investment Decision

Turning business ideas into investment-ready plans!

The BID Tools equips governments with a standardized platform to evaluate agribusiness investment opportunities and monitor enterprise performance. With modules covering business planning, financial feasibility, and risk analysis, it strengthens evidence-based policymaking and supports public–private partnerships.



International Potato Center (CIP)

Kwame Ogero

Commodities

All Crops

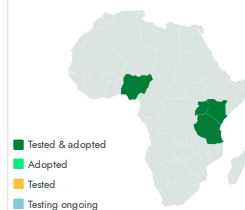
Sustainable Development Goals



Categories

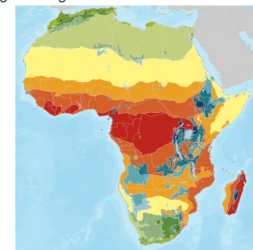
Pre-production, Digital applications, Advisory and information service, Financial Access and Digital Extension Services

Tested/adopted in



Where it can be used

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



Target groups

Development institutions, Farmers, Governments, Processors, Seed companies, Sellers, + 4 more

This technology is **pre-validated**.

7-7



Scaling readiness: idea maturity 7/9; level of use 7/9

Inclusion assessment

5

Climate impact

2

Problem

- Many seed businesses face high financial risks, which threatens national food security goals.
- Weak management capacity in enterprises makes it harder to deliver reliable seeds to farmers.
- Lack of inclusive models limits opportunities for women, youth, and smallholders to benefit.
- Limited tools for risk management make seed systems more vulnerable to shocks.

Solution

- Provides clear financial and risk insights for better policy design.
- Strengthens seed enterprises to deliver reliable services.
- Promotes inclusive models that engage women, youth, and smallholders.

Key points to design your project

- Integrate the BID Tool into national programs to strengthen seed enterprises and guide policy decisions.
- Provide staff with access, training, and technical support.
- Collaborate with extension services and research partners for effective oversight.



Open source / open access



BID Tool

<https://taat.africa/quh>

Last updated on 29 September 2025, printed on 29 September 2025

Enquiries e-catalogs@taat.africa

SRE: Seed Requirement Estimation Tool for Sweetpotato

Optimize Seed Supply with SRE!

The SRE Tool provides national-level forecasts for sweetpotato, cassava, and yam seed demand, helping governments allocate resources efficiently, plan production strategies, and build resilient seed systems.



International Potato Center (CIP)
Kwame Ogero

 This technology is **pre-validated**.

 **9-7**



Scaling readiness: idea maturity 9/9; level of use 7/9

Inclusion assessment

 **4**

Climate impact

 **2**

Problem

- **Mismatch between policy targets and supply realities:** Uganda projected 228,000 bags of sweetpotato QDS for 2026 but current supply can only meet 9.6%.
- **Poor data visibility for planning:** Lack of accurate adoption and replacement cycle data undermines national strategies.
- **Underproduction limits impact of improved varieties:** Farmers face shortages, reducing productivity and food security.

Solution

- **Evidence-based decision support:** National-level demand projections guide allocation of resources and subsidies.
- **Efficient public investment:** Reduces wastage from oversupply and ensures financial support goes where gaps exist.
- **Strengthened resilience:** Helps governments build robust, climate-resilient seed systems that deliver improved varieties to farmers consistently.

Key points to design your project

The SRE Tool provides national-level forecasts of seed demand for sweetpotato, cassava, and yam, helping governments plan production strategies and allocate resources efficiently. By using adoption rates, replacement cycles, and farmer purchase behavior, it ensures improved varieties reach farmers on time. The tool reduces wastage, strengthens seed system resilience, and supports evidence-based policy and investment decisions.



Unknown

Commodities

Sweet Potato, Cassava, Yam

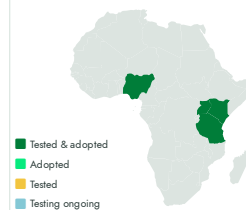
Sustainable Development Goals



Categories

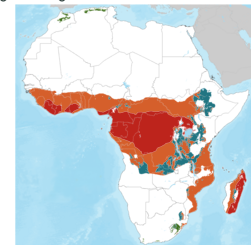
Pre-production, Digital applications

Tested/adopted in



Where it can be used

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



Target groups

Development institutions, Farmers, Governments, Seed companies, Researcher center, Advisory and Extension Services



SRE

<https://taat.africa/njt>

Last updated on 29 September 2025, printed on 29 September 2025

Enquiries e-catalogs@taat.africa

Biological control of mango mealybug

Natural Allies for Mango Mealybug Control

A proven biological control method cuts mango mealybug infestations by 95%—no chemicals needed. Already established in 18 African countries, it offers long-term protection for mango production and export potential at very low cost.



 This technology is **pre-validated**.

 **9.7**



Scaling readiness: idea maturity 9/9; level of use 7/9

Inclusion assessment

 **3**

Climate impact

 **5**

Problem

- **Invasive Pest Outbreak:** The mango mealybug (MM) invaded Africa in the 1980s, severely affecting fruit trees.
- **Economic Losses:** The infestation caused significant financial damage for farmers and local agriculture.
- **Agricultural Sustainability Threat:** The pest compromised fruit production, impacting food security and long-term sustainability.
- **Demand for Eco-Friendly Control:** The situation underscored the need for sustainable, biological pest control alternatives to harmful chemicals.

Key points to design your project

This biocontrol solution is low-cost, ready for scale, and aligned with sustainable agriculture goals. It requires minimal infrastructure—only coordination with national plant protection services for release and monitoring. Research costs are already covered, and implementation needs are limited to technical support and biological material. Its track record in multiple countries shows clear return on investment, making it an efficient addition to programs focused on resilient food systems, agroecology, and pesticide reduction.

10000 USD

Starter cultures, rearing and expert guidance



No formal IP rights

Commodities

Mango

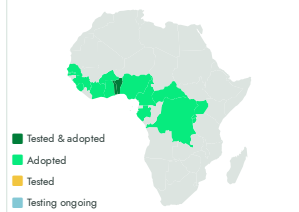
Sustainable Development Goals



Categories

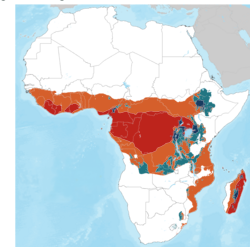
Production, Practices, Biological control

Tested/adopted in



Where it can be used

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



Target groups

Governments



Biological control of mango mealybug

<https://taat.africa/dlu>

Last updated on 30 June 2025, printed on 30 June 2025

Enquiries e-catalogs@taat.africa

Crop Sprayer App: Dosage calculator for plant protection products

Optimizing Pesticide Application for Sustainable Agriculture

The Crop Sprayer app enables users to determine the appropriate amount of pesticide concentrate needed based on sprayer type and application area. It calculates the total product required, the number of sprayer tanks needed, and adjusts calculations for different sprayer sizes. The app operates offline after initial download, requiring minimal device storage space.



CABI PlantwisePlus

CABI PlantwisePlus
Claire Palmer

Commodities

All Crops

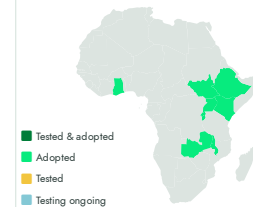
Sustainable Development Goals



Categories

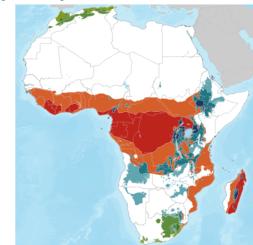
Production, Digital applications,
Advisory and information service,
Pest control

Tested/adopted in



Where it can be used

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



Target groups

Farmers, Sellers,
Advisory and Extension Services



This technology is **pre-validated**.

9.7



Scaling readiness: idea maturity
9/9; level of use 7/9

Gender assessment

3

Climate impact

2

Problem

- **Crop Loss:** Farmers lose up to 40% of their crops to pests and diseases, significantly reducing yields and income.
- **Pesticide Misuse:** Up to 75% of pesticide applications are either misused or overused, leading to ineffective pest control and wasted resources.
- **Health and Environmental Impact:** Misapplied pesticides can adversely affect human health, harm non-target organisms, and damage the environment.

Solution

- Enhance food security and protect the environment with precise pesticide dosing that reduces waste.
- Ensure compliance with national standards through data-driven pesticide management.
- Improve crop protection efficiency via informed resource allocation.

Key points to design your project

- **Enhance Food Security:** Implement the Crop Sprayer App to promote precise pesticide application, reducing crop losses and increasing agricultural productivity.
- **Ensure Regulatory Compliance:** Utilize the app to support farmers in adhering to national pesticide regulations, fostering safer agricultural practices.
- **Promote Environmental Sustainability:** Encourage the adoption of the app to minimize pesticide overuse, thereby protecting ecosystems and public health.

0 USD

Crop sprayer App



Open source / open access



Crop Sprayer App

<https://taat.africa/wen>

Last updated on 1 April 2025, printed on 15 May 2025

Enquiries e-catalogs@taat.africa

CassQual: Cassava Seed Quality Management system

Enhancing cassava productivity through healthy planting material

The system aligns with national seed regulations to ensure quality from breeder seed to farmer distribution. Regulators oversee certification and promote community-based Quality Declared Seed (QDS) models. Digital tools like Seed Tracker and PlantVillage Nuru streamline inspections and disease diagnostics.



Commodities

Cassava

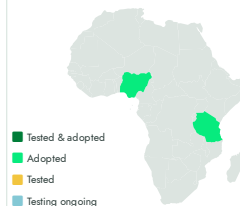
Sustainable Development Goals



Categories

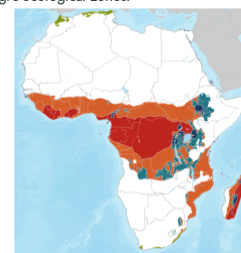
Pre-production, Practices,
Pest control (excluding weeds), Seed system

Tested/adopted in



Where it can be used

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



Target groups

Breeders, Seed companies,
Advisory and Extension Services,
Seed Regulators

This technology is **pre-validated**.

9/9



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

Inclusion assessment



Climate impact



Problem

- High spread of viral diseases (CMD, CBSD) reducing national cassava yields
- Weak or non-existent cassava seed certification frameworks
- Limited capacity to trace and monitor seed distribution

Solution

- Official inspection protocols and standards to maintain seed quality
- Adoption of digital tools for real-time seed system monitoring
- Labeling systems to improve traceability and market transparency
- National strategies that integrate cassava into regulated seed systems
- Protocol for self-certification by QDS or community level seed producers

Key points to design your project

The Cassava Seed Quality Management System strengthens national seed systems by formalizing cassava certification and improving farmer access to clean, high-yield planting material.

- It aligns with national food security and climate goals, contributing to SDGs 2, 5, 13, and 15.
- Governments can adopt it by aligning policies, developing certification guidelines, training inspectors, and supporting field-level implementation with digital tools.
- Supporting CSEs at QDS or community level to self-certify using Seed Tracker will increase the coverage and cost-efficiency of seed quality management

251,400 USD

To set up the system

916 %

ROI calculated for a scenario involving 300 seed producers

60,000 USD

Annual monitoring cost

25,000 USD

Annual certification costs

135 %

Yield increased



Open source / open access



CassQual

<https://taat.africa/jxt>

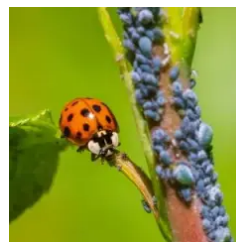
Last updated on 30 June 2025, printed on 30 June 2025

Enquiries e-catalogs@taat.africa

CABI BioProtection Portal: Registered BioProtectants Finder

The largest free resource for biological plant protection!

The CABI BioProtection Portal is a multilingual tool providing access to verified, nationally registered biocontrol and biopesticide products by crop and pest. It supports regulatory alignment and informed decision-making. The platform works online and offline, with scientific resources to guide IPM integration at scale.



CABI

Emma Jenner

Commodities

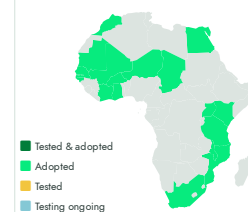
Sustainable Development Goals



Categories

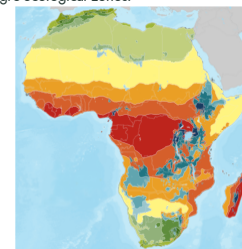
Digital applications,
Advisory and information service,
Pest control

Tested/adopted in



Where it can be used

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



Target groups

Governments, Sellers, Manufacturers,
Researcher center,
Advisory and Extension Services

This technology is **pre-validated**.

9-9



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

Inclusion assessment

3

Climate impact

5

Problem

- Plant pests threaten national food security and farmer livelihoods.
- Heavy reliance on chemical pesticides raises public health and environmental concerns.
- Bioprotection products are safer but underused due to limited awareness and guidance.
- Lack of centralized, trusted information on registered products weakens policy and extension efforts.

Solution

- Supports evidence-based crop protection policies and programs.
- Provides access to a verified list of nationally registered bioprotection products.
- Strengthens extension services with scientific resources and offline tools.
- Aligns pest control strategies with public health, environmental, and regional goals.

Key points to design your project

The CABI BioProtection Portal is a decision-support tool advancing sustainable agriculture by providing access to country-specific registered bioprotection products. Integration focuses on:

- Awareness campaigns for stakeholders, training extension agents to use the platform effectively,
- Enabling offline access for field users, and embedding the Portal into national pest management and regulatory frameworks.



Copyright



CABI BioProtection Portal

<https://taat.africa/pfq>

Last updated on 24 July 2025, printed on 24 July 2025

Enquiries e-catalogs@taat.africa

Leaf-bud Cuttings: Rapid Yam Multiplication Method

Yam leaf-bud cuttings, rapid quality seed production!

Leaf-bud Cuttings enable rapid yam seed multiplication by using vine segments instead of bulky tubers. One vine produces 100–300 new plants, reducing seed shortages and costs. It's a scalable, clean, and efficient method to strengthen national food security and seed systems.



IITA

Beatrice Aighwi

Commodities

Yam

Sustainable Development Goals



Categories

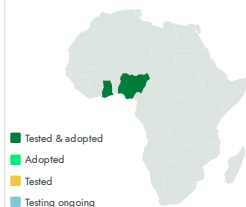
Pre-production, Practices, Seed system

Best used with

Semi-Autotrophic Hydroponics for yam multiplication

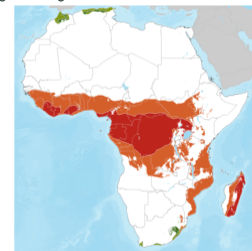
See all 1 technologies online

Tested/adopted in



Where it can be used

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



Target groups

Farmers, Seed companies,



This technology is **pre-validated**.



Scaling readiness: idea maturity 9/9; level of use 7/9

Inclusion assessment



Climate impact



Problem

- Up to 30% of food harvest is used for seed, reducing food availability for the population.
- Poor seed quality contributes to crop loss and food insecurity—up to 40% of seeds may rot after planting.
- High cost of seed yam (up to 60% of production cost) and lack of quality standards hinder national productivity targets.
- Traditional methods have a very low seed multiplication rate (only 1:3), slowing the adoption of improved varieties.

Solution

- Vine cuttings multiply seed 100 times faster than traditional tubers, boosting food security and reducing seed costs.
- Healthier seeds mean less crop loss and better yields, supporting national agricultural goals.
- More affordable, quality seed strengthens rural livelihoods and helps farmers adapt to climate change.

Key points to design your project

LBC technology boosts yam production by enabling farmers to multiply seed using vine cuttings instead of bulky tubers. This is a smart solution to improve food security, farmer income, and seed system resilience nationwide. to integrate in your project,

- Support national agricultural programs to train extension agents and seed producers on vine cutting protocols.
- Allocate public funding or incentives to help scale local nurseries for rapid multiplication of certified yam seeds.



Open source / open access



Leaf-bud Cuttings

<https://taat.africa/xpi>

Last updated on 1 July 2025, printed on 1 July 2025

Enquiries e-catalogs@taat.africa

CABI Academy: Learning Platform for Agricultural Advisory Services

Learn, Advise, Transform Agriculture!

CABI Academy strengthens national extension systems through self-paced, accredited training on plant health, pest control, and sustainable practices. It builds the skills of frontline advisors, helping governments improve farmer productivity, food security, and climate resilience.



CABI
Sarah Fleming

Commodities

All Crops

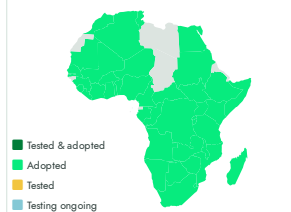
Sustainable Development Goals



Categories

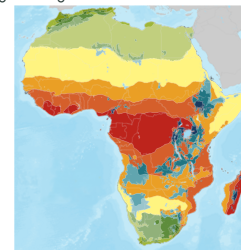
Production, Post-production, Marketing,
Pre-production, Digital applications,
Digital Advisory and Extension

Tested/adopted in



Where it can be used

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



Target groups

Farmers, Advisory and Extension Services

This technology is **pre-validated**.

9.7



Scaling readiness: idea maturity
9/9; level of use 7/9

Inclusion assessment



Climate impact



Problem

- Extension agents lack access to updated, practical training.
- Most training materials aren't suited for rural or low-data environments.
- Scaling consistent advisory services across regions is difficult.
- Complex technical content limits field-level application.

Solution

- Trains extension agents with practical, science-based knowledge.
- Works in rural, low-data environments—easy to scale nationwide.
- Strengthens national advisory services and policy delivery.
- Builds capacity using global research and education expertise.

Key points to design your project

Embed CABI Academy into national training programs to upskill extension agents with science-based, easy-to-access courses. to integrate in your project,

- Promote the Academy as a national training tool for extension officers.
- Include it in public staff development and certification programs.
- Support access in rural areas through digital centers or mobile devices.
- Align it with national agricultural education and advisory strategies.



Copyright



CABI Academy

<https://taat.africa/xjw>

Last updated on 12 November 2025, printed on 12 November 2025

Enquiries e-catalogs@taat.africa

PlantwisePlus Knowledge Bank: Crop health management library

Knowledge, resources, and tools for plant health!

The Crop Health Knowledge Library offers over 15,000 science-based resources, pest ID tools, and real-time alert systems to support extension services, guide national response plans, and align with your agricultural policies. It's a smart, ready-to-use solution for improving food security and sustainable farming.



This technology is **pre-validated**.



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

Inclusion assessment



Climate impact



Problem

- Up to 40% of national crop production is lost to pests and diseases each year.
- Climate change is accelerating pest outbreaks, threatening food security and stability.
- Extension workers lack real-time access to localized, science-based crop health information.
- Delayed responses and weak surveillance reduce the effectiveness of national plant protection systems.

Solution

- Free, science-based crop health resources tailored to your country's needs.
- Digital diagnostic tools and pest alerts to support extension and rapid response.
- Strengthens national surveillance and early warning systems.
- Helps train and equip extension workers with up-to-date knowledge.

Key points to design your project

The Crop Health Knowledge Library is a free, science-based digital platform offering country-specific resources and pest management tools to strengthen national plant health systems.

- Train extension officers and inspectors to use the platform's digital tools and resources.
- Facilitate access to the platform and offline app for rural and low-connectivity areas.
- Incorporate the Library into national agricultural training curricula and policies.



Open source / open access



Commodities

All Crops

Sustainable Development Goals



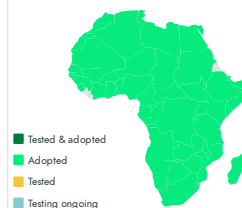
Categories

Production, Pre-production,
Digital applications,
Advisory and information service,
Crop management, + 1 more

Best used with

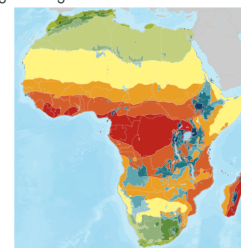
Learning Platform for Agricultural Advisory
Services, Registered BioProtectants Finder,
Dosage calculator for plant protection
products
See all 3 technologies online

Tested/adopted in



Where it can be used

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



PlantwisePlus Knowledge Bank

<https://taat.africa/rge>

Last updated on 1 July 2025, printed on 1 July 2025

Enquiries e_catalogs@taat.africa

BASICS Model: A Seed System Model for Cassava Transformation



An economically sustainable integrated cassava seed system!

The **BASICS Model** is a full-package solution to modernize cassava seed production and distribution. It moves away from giving free stems to farmers and instead supports a **commercial approach** where certified cassava seeds (stem cuttings) are produced, inspected, and sold by trained seed entrepreneurs.



This technology is **pre-validated**.

8•8



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

Inclusion assessment



Climate impact



Problem

- Cassava yields remain low due to farmers using infected, uncertified planting material.
- This increases food insecurity and keeps rural incomes low.
- Most national seed systems lack regulation and traceability.

Solution

- **Reliable access to improved varieties:** BASICS ensures farmers get **disease-free, high-yielding** planting materials.
- **Disease control through virus indexing:** Early-generation seed is tested and verified to be virus-free using diagnostics tools, reducing disease incidence.
- **Sustainable business model:** Seed is **sold, not given away**, creating **local jobs** and ensuring long-term supply through seed entrepreneurs.
- **Digital monitoring:** Tools like **Seed Tracker** support regulators and seed producers in quality control, increasing transparency and traceability.
- **Boosted yields:** Adoption of the system can **double cassava yields** from less than 10 tons/ha to **20 tons/ha or more**.

Key points to design your project

Cassava demand is rising fast with new processing industries. To implement it:

- Identify market-demanded and registered cassava varieties for promotion through the seed system
- Set up a public or hybrid early-generation seed (EGS) unit.
- Install SAH labs to rapidly multiply improved varieties.
- Support youth-led Cassava Seed Entrepreneurs (CSEs) as a job creation tool.
- Strengthen regulatory agencies for quality assurance.



Open source / open access



IITA and Sasakawa Africa Association
Dr Godwin Atser

Commodities

Cassava

Sustainable Development Goals



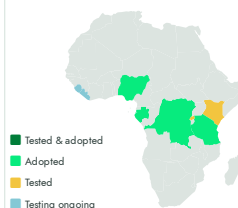
Categories

Pre-production, Practices,
Yield improvement, Seed system

Best used with

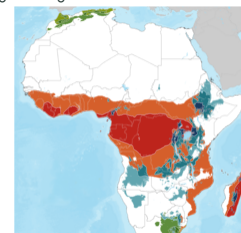
Early Generation Seed Production of Cassava, Capacity Building Strategies, Marketing Strategies, Molecular diagnostics for cassava seed health certification, Cassa...
See all 14 technologies online

Tested/adopted in



Where it can be used

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



BASICS Model

<https://taat.africa/fig>

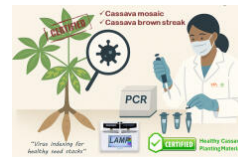
Last updated on 27 May 2025, printed on 11 June 2025

Enquiries e-catalogs@taat.africa

Cassava virus indexing: Molecular diagnostics for cassava seed health certification

Virus diagnostic tool for cassava seed health certification by seed producers and seed certifiers.

Cassava virus indexing is a method used to detect and remove virus-infected cassava plants early in the seed production process. It uses advanced diagnostics like **PCR** and **LAMP** to ensure only virus-free plants are used. This helps maintain seed quality, strengthens crop health, and supports seed certification efforts, making it essential for seed producers and certifiers in cassava-growing regions.



Commodities

Cassava

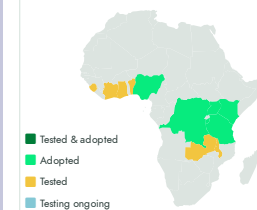
Sustainable Development Goals



Categories

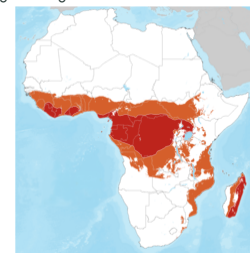
Pre-production, Practices,
Pest control (excluding weeds), Seed system

Tested/adopted in



Where it can be used

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



Target groups

Breeders, Seed companies,
Advisory and Extension Services,
Seed Regulators

 This technology is **pre-validated**.

 9-8

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

Gender assessment



Climate impact



Problem

- Virus-infected cassava planting materials are often unknowingly used in seed production.
- Vegetative propagation (e.g., stem cuttings) increases the risk of virus transmission.
- Cassava crops are highly vulnerable to damaging viruses like CMD (Cassava Mosaic Disease) and CBSD (Cassava Brown Streak Disease).
- Lack of effective screening tools leads to poor seed quality and crop losses.

Solution

- Accurate detection** of viruses using PCR and LAMP techniques.
- Virus-free planting material** selection for better seed quality.
- Improved seed certification** by enabling diagnostic-based certification.
- Increased crop resilience** and yield by using healthy seeds.

Key points to design your project

Cassava Virus Indexing helps improve seed quality and prevent virus spread in cassava production. It supports food security and seed certification by detecting infected planting materials early.

To adopt it in your projects:

- Estimate testing needs and equipment (PCR, LAMP kits, reagents).
- Budget for lab setup (USD 3/sample).
- Train staff on sample collection, diagnostics, and analysis.
- Create awareness materials for seed stakeholders.
- Partner with research centers and seed certifiers for smooth integration.

20,000 USD

Initial setup cost for a diagnostic lab

3 USD

Cost per sample for testing



No formal IP rights



Cassava virus indexing

<https://taat.africa/tsk>

Last updated on 12 May 2025, printed on 15 May 2025

Enquiries e-catalogs@taat.africa

Marketing strategies for cassava seed system

Sell Smart, Grow Fast



International Institute of Tropical Agriculture (IITA) & Sahel Consulting Agriculture and Nutrition Limited
Temi Adegoroye

Marketing Strategies is a practical toolkit that helps cassava seed producers improve market access and visibility. It offers guidance on customer targeting, product positioning, and demand-driven marketing. By tackling issues like low awareness, weak customer ties, and poor pricing, it supports seed entrepreneurs, especially those working with vegetatively propagated crops, in building trusted, profitable, and resilient businesses.



This technology is **pre-validated**.



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

Inclusion assessment



Climate impact



Problem

- **Low farmer awareness** of high-quality certified cassava seeds
- **Preference for traditional planting materials**, limiting demand for certified seeds
- **Weak market linkages** between seed producers and buyers
- **High transport costs**, creating bottlenecks in seed distribution
- **Limited access to affordable certified seeds**, due to high prices and lack of financing
- **Limited reach of traditional marketing channels**, such as radio and extension services
- **Underutilization of digital marketing tools**, reducing visibility and customer engagement
- **Barriers to business growth and seed adoption** for producers of vegetatively propagated crops (VPCs) like cassava

Solution

- **Increase awareness** through campaigns and demo plots.
- **Improve affordability** with flexible pricing and financing.
- **Train seed producers** in marketing and customer engagement.
- **Strengthen distribution** via dealers, cooperatives, and direct delivery.
- **Leverage digital tools** (SMS, radio, marketplaces).
- **Build trust** with branding and certification.
- **Support local marketers** with low-cost promotion strategies.

Commodities

Cassava

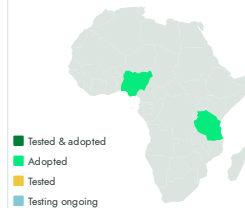
Sustainable Development Goals



Categories

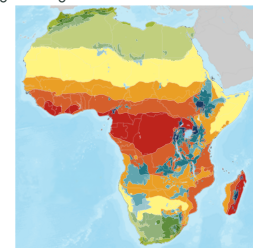
Production, Marketing, Policies

Tested/adopted in



Where it can be used

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



Target groups

Farmers, Processors, Seed companies, Advisory and Extension Services

Key points to design your project

The **Marketing Strategies toolkit** helps cassava seed producers boost visibility, build trust, and increase demand for certified seeds. It supports climate and gender goals by promoting inclusive, data-driven marketing. Key steps include stakeholder engagement, training on marketing and branding, use of digital channels, and monitoring adoption. The toolkit includes ready-to-use materials and can be tailored to local needs with support from partners like IITA.



Open source / open access



Marketing strategies for cassava seed system

<https://taat.africa/yav>

Last updated on 28 October 2025, printed on 28 October 2025

Enquiries e-catalogs@taat.africa

Capacity Building Strategies on Cassava Seed System

From Knowledge to Yield — Empowering Cassava Seed Systems.

Building Capacity is a hands-on toolkit that helps cassava seed producers get better at what they do. It provides easy-to-use training materials, business tips, and ways to work better with others. The goal is to improve seed quality, increase harvests, and help seed businesses grow in a way that lasts.



International Institute of Tropical Agriculture (IITA) & Sahel Consulting Agriculture and Nutrition Limited
Temi Adegoroye



This technology is **pre-validated**.

9-8



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

Inclusion assessment

4

Climate impact

7

Problem

- **Limited Technical Skills** — Many seed producers lack the know-how for quality seed production.
- **Weak Business Knowledge** — Producers struggle to run seed ventures as profitable businesses.
- **Poor Market Access** — Limited connections to buyers reduce sales and visibility.
- **Weak Regulatory Links** — Little collaboration with seed authorities leads to certification issues.

Solution

- **Targeted Training** — Builds technical skills based on producers' real needs.
- **Business Tools** — Strengthens seed business planning and management.
- **Market Access** — Helps producers connect with more buyers.
- **Regulatory Support** — Improves compliance with seed quality standards.
- **Demo Fields** — Offers hands-on learning opportunities.
- **Needs Assessment** — Identifies gaps to guide training.
- **Impact Tracking** — Monitors progress and results.

Key points to design your project

The *Building Capacity* toolkit strengthens cassava seed systems by addressing gaps in skills, market access, and regulations. To implement, first **profile seed producers** and **assess their needs**, then **develop tailored training** and **offer hands-on learning opportunities**. **Build partnerships with institutions and regulators** to ensure alignment with industry standards. **Establish monitoring mechanisms** using key metrics to track progress and impact. Additionally, **train local trainers** to ensure ongoing support and capacity building. This approach fosters sustainable, profitable seed systems for cassava.

3,000 USD

Training manual development

3,000 USD

Training Venue and other facilities

10,000 USD

Facilitators Expense

10,800 USD

Cost of printing the training materials



Unknown

Commodities

Vegetatively Propagated Crops

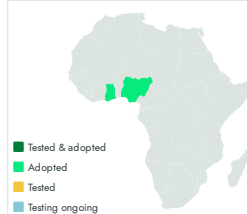
Sustainable Development Goals



Categories

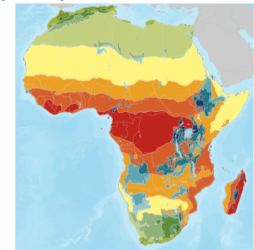
Pre-production, Policies

Tested/adopted in



Where it can be used

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



Target groups

Farmers, Seed companies



Capacity Building Strategies on Cassava Seed System

<https://taat.africa/jqs>

Last updated on 28 October 2025, printed on 28 October 2025

Enquiries e-catalogs@taat.africa

Cassava Seed System Advocacy and Scaling Model

From Advocacy to Action: Replicating Success with Lasting Investment

This model helps governments and development partners build strong national cassava seed systems. It promotes long-term solutions by integrating proven technologies—like Early Generation Seed, SAH, and digital tools—into national plans and policies. Through coordinated advocacy and planning, the model strengthens local leadership, supports seed entrepreneurs, and improves farmer access to clean, improved cassava seed. It has already been used in over 10 countries, showing strong potential for scaling and sustainability.



Commodities

Cassava

Sustainable Development Goals



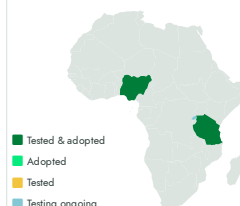
Categories

Pre-production, Policies

Best used with

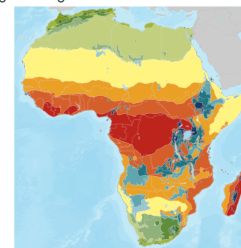
Cassava Seed Monitoring System, Early Generation Seed Production of Cassava
See all 2 technologies online

Tested/adopted in



Where it can be used

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



Target groups



This technology is **pre-validated**.

9-9



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

Inclusion assessment



Climate impact



Problem

- Free seed distribution creates market distortions, dependency, and blocks private seed business development.
- Innovative models remain small due to lack of advocacy, funding, and policy integration.
- Weak advocacy and coordination prevent innovations from influencing national decisions and attracting investment.
- Short-term, project-based approaches end without lasting impact or sustainability mechanisms.

Solution

- Promotes commercial seed systems to reduce dependency on free seed.
- Helps scale successful models by integrating them into national policies and budgets.
- Builds advocacy platforms to align governments, donors, and seed actors.
- Replaces short-term projects with long-term, coordinated national programs.

Key points to design your project

This model helps governments lead the reform of cassava seed systems through national policies, coordinated action, and sustainable investment.

Key Points:

- **Contact IITA early** to access tools and technical support.
- **Secure institutional buy-in** from ministries or national research systems.
- **Host stakeholder workshops** to align roles and responsibilities.
- **Use MoUs or agreements** to formalize collaboration with partners.
- **Integrate into existing platforms** like cassava task forces or seed programs.
- **Apply standardized tools** for advocacy, training, and monitoring.
- **Commit public funding** to demonstrate ownership and attract donor support.
- **Start with a seed system assessment** to identify key gaps.
- **Strengthen existing institutions** rather than creating new ones.
- **Scale progressively** based on available resources and capacity.



Open source / open access



Cassava Seed System Advocacy and Scaling Model

<https://taat.africa/ito>

Last updated on 30 June 2025, printed on 30 June 2025

Enquiries ecatalogs@taat.africa

CSE Model: Cassava Seed Entrepreneur Business Model

Transforming Cassava Farming Through Entrepreneurial Innovation!

The CSE Business Model empowers local entrepreneurs by providing training and certification in seed production and a straightforward digital quality-control platform, links them to buyers through pre-agreed contracts and cooperative financing, and has scaled to deliver over 11 million disease-free cuttings annually in Tanzania and Nigeria.



Commodities

Cassava

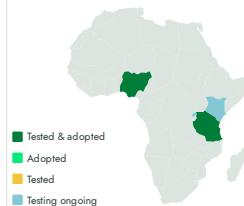
Sustainable Development Goals



Categories

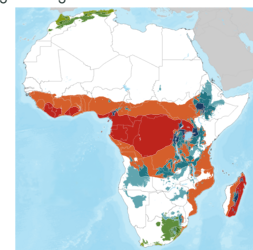
Pre-production, Practices,
Yield improvement, Seed system

Tested/adopted in



Where it can be used

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



Target groups

Farmers, Processors, Seed companies,
Advisory and Extension Services,
Seed Regulators

This technology is **pre-validated**.

9:3



Scaling readiness: idea maturity 9/9; level of use 3/9

Inclusion assessment

3

Climate impact

7

Problem

- Informal seed sharing and free handouts spread pests and diseases.
- Farmers lose over 50 % of potential yields due to poor-quality cuttings.
- Dependency on donations discourages local investment.

Solution

- Train and register CSE entrepreneurs to produce certified seed.
- Deliver 83 million clean cuttings/year in Tanzania, generating USD 1.5 M.
- Strengthen local seed systems for sustainable yield gains.

Key points to design your project

- Professionalize cassava seed systems by onboarding CSEs into formal roles, boosting food security, gender inclusion and climate resilience.
- Engage regulators, extension services and community groups with MoUs to define roles, data sharing and policy alignment.
- Deploy SeedTracker™ for digital plot registration, real-time dashboards and e-certification, supported by “train-the-trainer” workshops.
- Mobilize SACCOS/RLF finance, seed-production grants, M&E analytics and policy briefs to scale, sustain and refine the model.

79 %

ROI estimated by the technology provider



Open source / open access



CSE Model

<https://taat.africa/oqg>

Last updated on 30 June 2025, printed on 30 June 2025

Enquiries e-catalogs@taat.africa

Cassava Seed Field Multiplication Protocol

From planting to certification—seed production made simple.

This approach helps governments improve food security by ensuring farmers have access to high-quality cassava seeds. Using efficient multiplication methods like SAH plantlets, it boosts seed production and supports agricultural productivity through public-private collaboration.



 This technology is **pre-validated**.

 **9-9**



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

Inclusion assessment

 **4**

Climate impact

 **5**

Problem

- **Inadequate seed supply:** Farmers lack access to reliable, disease-free cassava seeds, affecting food security and productivity.
- **Slow seed multiplication:** Traditional methods fail to meet the increasing demand for certified cassava seeds.
- **Disease spread:** Use of infected planting materials contributes to the spread of harmful cassava diseases.

Solution

- **Efficient seed multiplication:** Using SAH plantlets and pencil stems, seed production is faster and more reliable.
- **Improved food security:** Guarantees a steady supply of certified, disease-free seeds to farmers.
- **Public-private collaboration:** Governments can partner with the private sector to scale up seed production and distribution.

Key points to design your project

Governments create the regulatory framework and support infrastructure for cassava seed production.

Key Elements:

- Enforce seed certification standards through agencies like **NASC** and **TOSCI**.
- Support seed entrepreneurs with financial assistance and training.
- Build infrastructure, especially irrigation systems, for seed production.
- Develop policies that support the growth of the cassava seed industry.
- Promote the adoption of tools like **SeedTracker** and **PlantVillage Nuru**.

1,864 USD/ha

Production Cost

77.88 %

ROI

3,316 USD/ha

Revenue



IP

No formal IP rights

Commodities

Cassava

Sustainable Development Goals



Categories

Pre-production, Practices, Seed system

Best used with

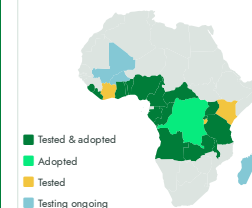
Semi Autotrophic Hydroponics for Cassava

Multiplication, Early Generation Seed

Production of Cassava

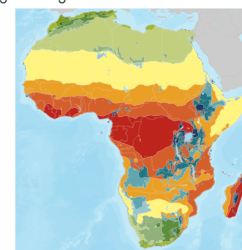
See all 2 technologies online

Tested/adopted in



Where it can be used

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



Target groups



Cassava Seed Field Multiplication Protocol

<https://taat.africa/lpi>

Last updated on 30 June 2025, printed on 30 June 2025

Enquiries e-catalogs@taat.africa

eProd: Digital Agriculture Supply Chain Platform

Structure, Trace, Scale & Connect with Solutions

eProd is a digital platform that helps governments organize farmer data, monitor production, ensure traceability, and improve service delivery across agricultural value chains. It works offline, supports SMS alerts, and interoperates with advisory and financial systems.



eProd Solutions Ltd
Almut van Casteren

Commodities

All Crops

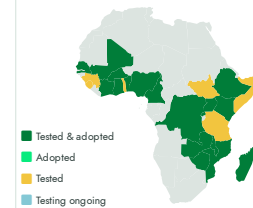
Sustainable Development Goals



Categories

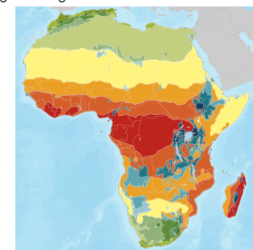
Production, Market, Digital applications,
Supply chain management,
Advisory and information service, + 2 more

Tested/adopted in



Where it can be used

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



Target groups

Breeders, Development institutions,
Governments, Processors, Seed companies,
Researcher center, + 3 more

This technology is **pre-validated**.

9-7



Scaling readiness: idea maturity 9/9; level of use 7/9

Gender assessment



Climate impact



Problem

- **Unstructured farmer networks** make coordination and service delivery difficult.
- **Inefficient value chains** reduce productivity and farmer income.
- **Limited market and export access** due to lack of traceability and compliance systems.
- **Poor access to finance** for farmers without reliable data.
- **Low digital adoption** caused by weak infrastructure, high costs, and low skills.
- **Lack of real-time data** hinders planning, climate response, and policy impact.

Solution

- **Farmer Registration:** Register, map, and track farmers nationwide.
- **Value Chain Digitization:** Streamline contracts, production, and payments.
- **Market Access:** Enable traceability and QR codes for exports.
- **Export Compliance:** Meet EUDR and other export data requirements.
- **Finance Access:** Build digital profiles to support farmer loans and subsidies.
- **Rural Connectivity:** Works offline and on basic phones.
- **Central Coordination:** One platform for all actors and programs.
- **Real-Time Alerts:** Monitor pests and crops for fast action.
- **Custom Integration:** Connect with other government or donor systems as needed.

Key points to design your project

Governments looking to modernize agriculture can integrate eProd, a digital supply chain management system designed to support farmer profiling, production tracking, traceability, and international compliance. eProd enables efficient coordination of agricultural projects, improves market access for smallholders, and supports food security goals.

Integration involves eight key steps:

1. **Initial engagement** with eProd to define project needs;
2. **Licensing** based on farmer numbers, starting at 1,254 USD/year for 1,000 farmers;
3. **Infrastructure setup** with Android devices and internet access;
4. **Data preparation** for system customization;
5. **Training and capacity building** for government staff;
6. **Pilot testing** in a selected region;
7. **Full-scale deployment** across project areas; and
8. **Ongoing support and evaluation** to ensure impact and sustainability.

eProd is scalable, multilingual, and works offline—making it suitable for rural environments and large public programs.

1,250—5,020 USD

Annual subscription depending on project size



No formal IP rights



eProd

<https://taat.africa/bbd>

Last updated on 2 May 2025, printed on 15 May 2025

Enquiries e-catalogs@taat.africa

Seed Tracker: Digital Tool for Strengthening Seed Governance and Certification Systems

Build an efficient seed system!

SeedTracker is a web- and mobile-based application designed for national and decentralized seed system management. It enables registration of seed producers and fields, records inspection activities, provides real-time access to certification status, and generates georeferenced data for decision-making. It works offline and in multiple languages, making it suitable for rural deployment. Regulatory agencies can use it to oversee field activities remotely, support decentralized certification, and build national seed databases.



Commodities

All Crops

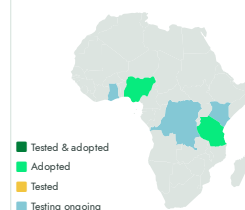
Sustainable Development Goals



Categories

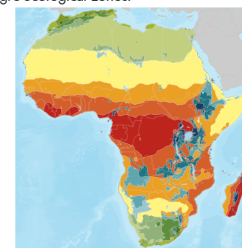
Pre-production, Digital applications,
Supply chain management,
Advisory and information service, + 0 more

Tested/adopted in



Where it can be used

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



Target groups

Seed companies,
Advisory and Extension Services

This technology is **pre-validated**.

9-7



Scaling readiness: idea maturity 9/9; level of use 7/9

Inclusion assessment



Climate impact



Problem

- **Fragmented seed certification systems:** Many countries still rely on paper-based, decentralized systems, making it difficult for regulators to ensure compliance and quality.
- **Limited oversight in rural areas:** National agencies struggle to monitor seed activities in distant communities.
- **Weak data systems:** Planning for seed demand, pest outbreaks, and variety deployment is limited due to poor data availability.

Solution

- **Centralized certification and registration system:** Allows regulators to digitally record and validate seed field inspections and certification at all levels.
- **Digital traceability:** Tracks each seed lot from registration to sale, helping prevent fraud and improving transparency.
- **Georeferenced seed data:** Provides evidence for better planning, resource allocation, and response to seed system gaps.

Key points to design your project

The **SeedTracker** technology ensures traceability and quality assurance for cassava planting materials, enhancing smallholder farmers' access to high-quality, climate-resilient varieties.

- It supports national priorities on climate resilience, gender inclusion, and SDGs, empowering governments to make data-driven decisions.
- Key activities include stakeholder mobilization, capacity building, digital certification integration, real-time monitoring, and impact tracking. A toolkit with training materials and dashboards is available to support implementation.



No formal IP rights



Seed Tracker

<https://taat.africa/zzj>

Last updated on 26 November 2025, printed on 26 November 2025

Enquiries e-catalogs@taat.africa

Cassava EGS Model: Early Generation Seed Production of Cassava

Breeder & Foundation Cassava Seeds—Always Within Reach

This model helps government projects secure a steady supply of quality cassava seeds by linking research centers with certified seed producers. It ensures national standards, supports disease control, and improves farmer access to reliable planting material, making large-scale cassava production more effective.



International Institute of Tropical Agriculture (IITA)
Elohor Mercy Diebiru-Ojo

Commodities

Cassava

Sustainable Development Goals



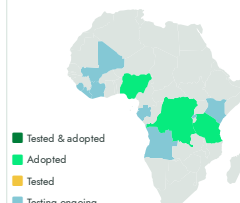
Categories

Pre-production, Practices, Seed system

Best used with

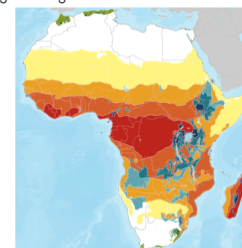
Cassava Seed Field Multiplication Protocol
See all 1 technologies online

Tested/adopted in



Where it can be used

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



Target groups

Breeders, Development institutions,

This technology is **pre-validated**.

9-9



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

Inclusion assessment

4

Climate impact

6

Problem

- **Limited Certified Seed for Scaling:** Not enough certified cassava cuttings for large-scale distribution.
- **Poor Seed Quality:** Poor quality seeds make it hard to improve national cassava yields.
- **Traceability Problems:** Difficult to control and trace where seeds come from.
- **Slow Rollout of New Varieties:** Delays in getting new improved varieties to farmers.

Solution

- **Better Seed Distribution:** Organizes and expands access to certified seeds nationwide.
- **Higher Seed Quality:** Regular checks guarantee only healthy seeds reach farmers.
- **Seed Traceability:** Seeds can be tracked for better monitoring and control.
- **Quicker Release of New Varieties:** Fast-tracks improved varieties from research to farmers.

Key points to design your project

The Cassava EGS Model helps build strong national seed systems. To implement it successfully, consider the following:

- Focus on building a lasting seed system, not just seasonal distribution.
- Budget for initial investment in training, farm setup, and inspections.
- Ensure the seed certification system is functional—or plan to strengthen it.
- Allow one full season for breeder seed multiplication and planning for scale.
- Secure access to breeder seed early through formal agreements with research centers.
- Support seed companies or cooperatives with training and resources.
- Raise farmer awareness about certified seed through demos and outreach.
- Use tools like SeedTracker for monitoring, certification, and traceability.
- Start in regions with high cassava demand or agro-industrial potential.
- Coordinate across ministries and contact **IITA GoSeed** for technical support in setting up and scaling the model.

1,753.20 USD

Production Cost/ hectare for seed companies

82 %

Return on investment / year for seed companies

3,195 USD

Revenue/hectare for seed companies



No formal IP rights



Cassava EGS Model

<https://taat.africa/ssl>

Last updated on 30 June 2025, printed on 30 June 2025

Enquiries ecatalogs@taat.africa

Improved Cassava Varieties: Market-driven cassava breeding and promotion system

Improved cassava varieties crucial for enhancing food security, increasing farmer incomes, and reducing poverty in Africa.

This technology is a demand-led cassava breeding system that develops and promotes improved varieties tailored to market needs. It defines product profiles (e.g., fresh market, processing, biofortified) through stakeholder input, applies standard breeding and field testing, and works with regulators to release farmer-friendly varieties. Adoption is driven through demos, launch events, and media campaigns, ensuring better market alignment and wider uptake.



**International Institute of
Tropical Agriculture (IITA)**
Mercy Diebiru-Ojo

Commodities

Cassava

Sustainable Development Goals



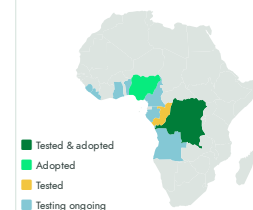
Categories

Production, Marketing, Improved varieties,
Disease resistance, Insect resistance, + 0
more

Best used with

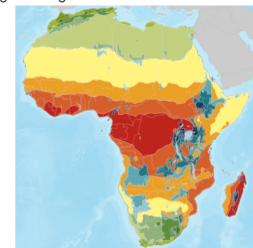
Cassava seed-bulking farms, Marketing
strategies for cassava seed system, Capacity
Building Strategies on Cassava Seed System,
Cassava Seed Field Multiplication Protocol,...
See all 5 technologies online

Tested/adopted in



Where it can be used

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



This technology is **pre-validated**.

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

Inclusion assessment **4**

Climate impact **5** **1**

Problem

- Poor alignment between available cassava varieties and market demands
- Low adoption of improved varieties by farmers
- Weak stakeholder engagement in variety development
- Limited availability of breeder/pre-basic seeds
- Delays in official variety release processes
- Inadequate promotion and awareness of new varieties

Solution

- Breeding cassava varieties tailored to market demands
- Involving stakeholders in defining preferred product traits
- Using structured trials to validate variety performance
- Supporting formal variety release and registration
- Promoting new varieties through demos and media campaigns

Key points to design your project

This initiative aims to improve cassava productivity by developing market-demanded varieties.

- Includes demonstration trials, awareness campaigns, and events to boost adoption.
- Enhances yields and farmer incomes by integrating these varieties into national seed systems.
- Backed by CGIAR and national institutions in countries like Nigeria and Tanzania.



Open source / open access



Improved Cassava Varieties

<https://taat.africa/oez>

Last updated on 28 October 2025, printed on 28 October 2025

Enquiries e-catalogs@taat.africa

MandiPlus: Cutting dipping in insecticides for management of cassava whiteflies

Dip once, Defend for months — MandiPlus controls whiteflies, reduces viruses and boosts cassava yield



MandiPlus is a simple treatment for cassava cuttings that protects them from pests and diseases by soaking them in a mix of insecticide, fungicide, and a binder. This helps farmers use shorter cuttings, improves plant growth and yield, and makes planting cheaper and easier, especially for small farmers.



This technology is **pre-validated**.



Scaling readiness: idea maturity 9/9; level of use 7/9

Inclusion assessment

Climate impact



Problem

- Whiteflies damage cassava plants by feeding on them and spreading viruses
- Viruses like Cassava Mosaic Disease (CMD) and Cassava Brown Streak Disease (CBSD) cause up to 50% or more yield losses
- These issues have led to food insecurity and repeated famines in parts of Africa
- Economic losses from pest and virus damage exceed US\$1.25 billion in several countries
- Rising whitefly populations worsen crop damage and disease spread
- Smallholder farmers struggle to access healthy, disease-free planting materials
- MandiPlus protects cassava cuttings from pests and diseases, improving plant health and yields

Solution

- MandiPlus coats cassava cuttings with insecticide, fungicide, and binder to protect against whiteflies and diseases.
- It reduces whitefly populations by 85-88% and lowers virus diseases like CMD and CBSD by nearly half.
- The treatment improves sprouting and growth, increasing stem number by 119% and root yield by 50%.
- Allows use of shorter cuttings, reducing planting material needs and costs.
- Simple soaking application makes it easy for small farmers to use without complex equipment.
- Safety gear is recommended to protect farmers during application.
- Affordable and scalable, designed to boost cassava yields and incomes in virus-affected regions.



Cassava & Fruits

Embrapa; Syngenta Foundation, IITA
Eder Jorge de Oliveira

Commodities

Cassava

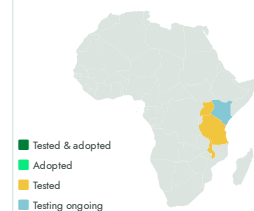
Sustainable Development Goals



Categories

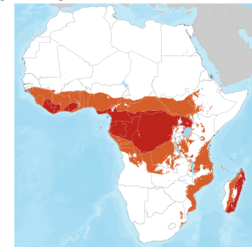
Production, Inputs, Pesticide

Tested/adopted in



Where it can be used

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



Target groups

Breeders, Farmers, Seed companies

Key points to design your project

MandiPlus is a low-cost, easy-to-use cassava seed treatment that boosts yields and reduces pests and diseases, while supporting food security and farmer incomes.

To integrate it into your project:

- Plan inputs & costs:** Estimate chemicals and supplies (USD 600/ha).
- Secure supply chain:** Identify reliable sources, manage delivery, storage, and compliance.
- Build capacity:** Train farmers and extension workers, with ongoing support.
- Raise awareness:** Use flyers, videos, and radio in local languages.
- Link with best practices:** Combine with good planting, soil, and pest management.
- Foster partnerships:** Engage research bodies, extension services, agro-dealers, and cooperatives.

Cost: \$\$\$ **600 USD/Ha**

Pesticide cost

ROI: \$\$\$ **471 %**

Return with MandiPlus-treated cuttings





MandiPlus

<https://taat.africa/zbi>

Last updated on 8 September 2025, printed on 8 September 2025

Enquiries e-catalogs@taat.africa



2nd session of the validation committee

<https://taat.africa/jmq>

ABOUT US

TAAT

TAAT, Technologies for African Agricultural Transformation, is an African Development Bank initiative to boost agricultural productivity by rapidly rolling out proven technologies to more than 40 million smallholder farmers.

TAAT aims to double crop, livestock, and fish productivity by 2025 by engaging both public and private sectors to expand access to productivity-increasing technologies across the continent. TAAT advises African government who receive funding from international financial institutions such as the African Development Bank to help them integrate the best agricultural technologies in their development projects. TAAT also offers technical assistance for the integration of these technologies, when needed.

TAAT Technologies

TAAT definition of agricultural technologies is very broad: they include improved varieties, inputs, equipment, agricultural infrastructure, practices and agricultural policies. In short, any solution to an agricultural constraint. TAAT technologies have been developed by a wide variety of organizations: the CGIAR, other international research institutions, national research organizations, or the private sector.

TAAT Clearinghouse

Within TAAT, the Clearinghouse has the remit to select, profile and validate agricultural technologies, and showcase them in online

catalogs to support the advisory role that the Clearinghouse offers to governments and the private sector. The Clearinghouse strives to be an 'honest broker' of technologies through its selection, profiling, validation and advice.

TAAT e-catalogs

The e-catalogs are designed to be used by decision-makers within governments, private sector companies or development organizations. They facilitate the search for appropriate solutions that are adapted to local conditions and requirements, and provide all necessary information, presented in jargon-free and easy to analyze technology profiles. Once a decision-maker has selected a technology of interest, the e-catalogs facilitate their direct contact with those who can help them implement the technology, whether they are a research group or a private company.

TAAT Technology Toolkits

Technology toolkits are hand-picked selections of technologies from the TAAT e-catalogs. We offer some curated toolkits for specific cases, and registered users can create their own toolkits, showcasing their selection of technologies. Toolkits can be used online and shared as links, as mini e-catalogs, they can also be downloaded, saved, shared or printed as collections of technology pitches in PDF format (pitches are one-page summaries of technology profiles, available for all technologies on the e-catalogs).

CONTACT

Chrys Akem – TAAT Program Coordinator: +234 8169020531

Dr Solomon Gizaw – Head, TAAT Clearinghouse: +251 900461992

taat-africa@cgiar.org <https://e-catalogs.taat-africa.org>