



## TAAT Soil health technologies

The TAAT Soil Health Toolkit is a curated collection of practical, field-validated technologies designed to support governments, the private sector and development organizations in restoring, improving and monitoring soil health at scale. The toolkit assembles context-specific soil health practices that strengthen core soil functions: water retention, nutrient cycling, carbo...

21 TECHNOLOGIES | CREATED ON JAN 12, 2026 BY MARY KAMAA MUSYOKI | LAST UPDATED JAN 21, 2026



### TECHNOLOGIES IN THIS TOOLKIT

- **Agrocates Scanner:** Soil, Feed and Leaves Nutrient Scanner
- **Pre-plant blended fertilizers and nitrogen topdressing for maize**
- **Relay intercropping of sweet potato with legumes**
- **Value Addition to Poultry Manure**
- **Banana Peels as Feed and Organic Resource**
- **Urea deep placement:** Nitrogen management for Efficient Rice...
- **Precision Fertilizer Micro-Dosing for Millet and Sorghum Yield...**
- **Contour Bunding Technique**
- **(CBT): Contour Bunds for Water...**
- **Processing and Application of Composted Manures**
- **Maize-legume rotation and intercropping**
- **Conservation agriculture:** Minimal Tillage and Surface...
- **NoduMax:** Inoculant for Soybeans
- **Zai Pits:** Water Harvesting and Soil Improvement
- **Demi-lune technology:** Rainwater harvesting method
- **SIS Framework:** Roadmap for building a soil information system
- **Soil Information Workflow:** 8 steps to develop a Soil Informatio...
- **BSFF:** Organic fertilizer for soil improvement
- **Biochar:** Biomass Charcoal for Soil improvement
- **Soybean inoculant:** Rhizobium inoculant range, various strains
- **ABC Grower:** Biominerilization of weeds for soil improvement
- **NextGen Advisory:** Digital Advisory tool for Farmers



<https://taat.africa/cph>

# 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.



 This technology is **pre-validated**.

 9.9



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

Inclusion assessment

 4

Climate impact

 7

## 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.

**11068 USD**

Cost per year

**20000 USD**

Revenue per year

**8932 USD**

Net income per year

**81 %**

ROI per year



IP  
Patent granted, Copyright, Trademark

## Sustainable Development Goals



## Categories

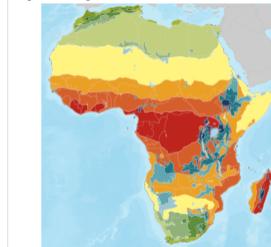
Production, Pre-production, Equipment, Analysis and Diagnostic tool

## 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



Agrocares Scanner

<https://taat.africa/jki>

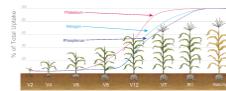
Last updated on 19 December 2025, printed on 19 December 2025

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

# Pre-plant blended fertilizers and nitrogen topdressing for maize

Unlock Maize Potential with Balanced Fertilizer Bliss!

Pre-plant blended fertilizers for maize is a technology involved to carefully mixed solid granular fertilizers, including urea, calcium ammonium nitrate, and potassium chloride, to meet maize crop nutrient needs.



This technology is **TAAT1 validated**.



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

Inclusion assessment



Climate impact



## Problem

- Traditional fertilizer application methods often lead to uneven nutrient distribution,
- Improper dosages and application schedules of mineral fertilizers are common,
- Inefficient nutrient application practices can lead to environmental losses, including nutrient runoff and leaching.

## Solution

- Implementing pre-plant blended fertilizers and nitrogen topdressing for precise and efficient nutrient delivery,
- Providing specific nutrient blends to address inadequate nutrient supply for healthier and more productive maize crops.
- Promoting responsible fertilizer use through carefully formulated blends and split applications, minimizing wastage

## Key points to design your project

The technology of pre-plant blended fertilizers and nitrogen topdressing for maize offers several benefits. Key steps to integrate this technology include:

- Identifying appropriate formulations, developing mixing protocols, brokering market entries,
- Conducting farmer demonstrations, providing financial support,
- Estimating required quantities, budgeting costs, allocating funds for training and support, developing communication materials, and forming partnerships with relevant stakeholders.

**0.3—0.5 ton/ha**

Grain yield increase

**30 %**

N uptake increase

**57 %**

P uptake increase



Trademark



International Institute of Tropical Agriculture (IITA)  
Jonga Munyaradzi

Technology from

ProPAS

Commodities

Maize

Sustainable Development Goals



Categories

Production, Inputs, Fertilizer

Tested/adopted in



Where it can be used

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



Target groups

Farmers



Pre-plant blended fertilizers and nitrogen topdressing for maize

<https://taat.africa/qxa>

Last updated on 7 November 2025, printed on 7 November 2025

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

# Relay intercropping of sweet potato with legumes



Harvest More, Worry Less with Sweet Potato-Legume Relay

## Intercropping

Relay intercropping of sweet potato with legumes is a farming method where two crops, sweet potato and legumes like beans or cowpeas, are grown together in the same field. Farmers can plant sweet potato first, then plant legumes later.



This technology is [TAAT1 validated](#).



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

Inclusion assessment



Climate impact



## Problem

- Reduced land productivity due to monoculture practices.
- Nitrogen deficiency in soil leading to lower crop yields.
- Vulnerability to crop failure and food insecurity due to pest attacks and droughts.

## Solution

- Improved land productivity through efficient utilization of available resources.
- Enhanced soil nitrogen levels through symbiotic nitrogen fixation by legumes.
- Increased resilience to pest attacks and droughts through diversified cropping systems.

## Key points to design your project

This technology boosts crop productivity, ensures food security, and fosters economic sustainability. To integrate this technology:

- Educate farmers about the benefits of intercropping sweet potato and legumes.
- Select suitable varieties based on local conditions.
- Obtain quality planting materials.
- Purchase mineral fertilizer and legume inoculants



Open source / open access



International Potato Center  
(CIP)

Kwikiriza Norman

Technology from

[ProPAS](#)

Commodities

Sweet Potato

Sustainable Development Goals



Categories

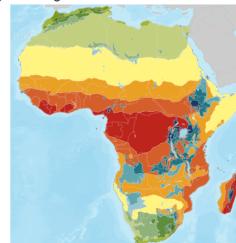
Production, Practices,  
Pest control (excluding weeds),  
Yield improvement

Tested/adopted in



Where it can be used

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



Target groups



Relay intercropping of sweet potato with legumes

<https://taat.africa/dbi>

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

# Value Addition to Poultry Manure

Transforming waste into wealth

Value Addition to Poultry Manure transforms chicken manure into nutrient-rich organic fertilizer. Composting detoxifies the manure, enhancing soil fertility and reducing reliance on chemical fertilizers.



Manure accumulated on the poultry house floor (left) and finished compost ready for use as an organic fertilizer (right)



This technology is **TAAT1 validated**.



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

Inclusion assessment



Climate impact



## Problem

- Pathogens and Unpleasant Odors:** Fresh chicken manure can contain harmful pathogens and emit an off-putting odor.
- Underutilization:** Chicken manure is often unused due to these issues.
- Environmental Impact:** Large-scale poultry farms generate significant manure, leading to unpleasant odors, groundwater pollution, and methane emissions.

## Solution

- Pathogen-Free Organic Fertilizer Production:** Converts chicken manure into safe, nutrient-rich organic fertilizer through composting, ensuring plant health and human safety.
- Sustainable Environmental Impact Mitigation:** Transforms raw chicken manure into valuable organic fertilizer, reducing odors, preventing groundwater contamination, and mitigating methane emissions.
- Cost-Efficient Waste Management:** Repurposes chicken manure into valuable organic fertilizer, reducing waste management costs and enhancing overall farm profitability.

## Key points to design your project

Poultry farming boosts women's financial independence and leadership roles. This technology transforms waste into valuable organic fertilizer, reducing odors, groundwater contamination, and methane emissions. It also reduces reliance on chemical fertilizers, supporting climate goals. This project contributes to achieving SDGs 1 (poverty reduction), 2 (food security), 5 (gender equality), and 13 (climate action).

### Key points for project step up:

- Assess & Select:** Identify farmers interested in value addition with suitable farm size and resources.
- Train & Build Capacity:** Train extension agents and farmers on composting and value-added products.
- Implement & Support:** Organize workshops, establish demonstration plots, and provide technical support and financing access.
- Market Access & Sustainability:** Connect farmers with buyers and evaluate project impact.

**30,000 USD**

organic fertiliser production plant of  
15 ton per hour

**3,000 USD**

15 m3 anaerobic digester able to  
process 300 kg of poultry manure per  
day



Open source / open access



Value Addition to Poultry Manure

<https://taat.africa/hoj>

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

**ILRI**  
INTERNATIONAL  
LIVESTOCK  
RESEARCH  
INSTITUTE

**International Livestock  
Research Institute (ILRI)**  
Tunde Amole

Technology from

ProPAS

Commodities

Poultry

Sustainable Development Goals



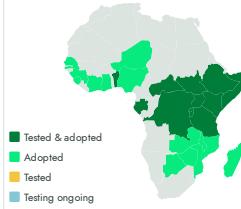
Categories

Pre-production, Practices,  
Animal waste management

Best used with

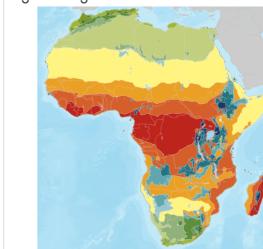
Biosecurity for Disease Prevention, Low-Cost Cage and Free-Range Containment  
See all 2 technologies online

Tested/adopted in



Where it can be used

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



Target groups

# Banana Peels as Feed and Organic Resource

## From Waste to Resource

Banana and plantain peels offer a sustainable solution to waste disposal, serving as valuable resources for animal feed, soil input, and cooking ingredients.

Proper processing detoxifies the peels, making them suitable for consumption by animals and contributing to waste reduction in regions where plantains and cooking bananas are common.



An industrial green banana peeler able to process 600 units per hour



This technology is **TAAT1 validated**.



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

Inclusion assessment



Climate impact



## Problem

- Waste accumulation due to the disposal of banana and plantain peels.
- Concerns regarding the chemical composition and nutrient ratios of the peels, especially when used as animal feed.
- Difficulty in removing peels from green bananas and plantains, leading to inefficiencies in processing.
- Restrictions on using raw peels in poultry feed due to the presence of anti-nutritional compounds like tannins and oxalate.
- Challenges in effectively utilizing peels, such as feed refusal due to high tannin content and the need for proper processing techniques to detoxify peels.

## Solution

- Banana and plantain peels are valuable components in livestock and poultry diets.
- Dried peels contain essential nutrients like potassium, phosphorus, iron, calcium, magnesium, and sodium.
- Utilizing peels reduces waste accumulation and promotes sustainable resource management.
- Treated and composted peels serve as beneficial organic inputs for soil improvement.
- Green peels provide an energy source in animal diets due to their carbohydrate content.
- Fresh peels with high moisture content help animals stay hydrated.
- In smaller quantities, peels find use in cooking, water purification, and manufacturing beauty and health products.

## Key points to design your project

- Technology utilizes banana and plantain peels for animal feed and compost.
- Enhances food security and promotes sustainable resource management.
- Improves soil health, aids carbon sequestration, and supports climate resilience.
- Steps to incorporate technology include understanding nutrient composition, sourcing machinery, and marketing products.
- Costs vary for machinery, with single belt peeler at USD 3500 and larger multi-channel machines at USD 16,000.
- Consider delivery expenses and collaborate with agricultural institutions for widespread adoption.

**16,000 USD**

Larger multi-channel 2.0 kWatt machines

**IP**

Open source / open access



Banana Peels as Feed and Organic Resource

<https://taat.africa/xlj>

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



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

John Derera

Technology from

ProPAS

Commodities

Bananas & plantains

Sustainable Development Goals



Categories

Pre-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

Breeders

# Urea deep placement: Nitrogen management for Efficient Rice Fertilization

Boost rice yields and save on fertilizer costs through efficient nitrogen management

Deep Urea Placement involves drilling urea granules into rice fields, optimizing nutrient uptake, soil fertility, and productivity. Placed 7 to 14 centimeters deep, it ensures consistent nitrogen supply, particularly suitable for lowland rice farming with clay soils.



**AfricaRice**

**Africa Rice Center**  
Sali Atanga Ndindeng

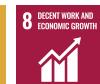
Technology from

[ProPAS](#)

Commodities

Rice

Sustainable Development Goals



Categories

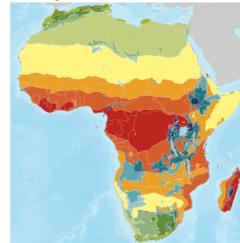
Production, Practices,  
Fertilizer management

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 [TAAT1 validated](#).

 8.8

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

Inclusion assessment

 4

Climate impact

 7

## Problem

- Inefficient Nitrogen Utilization.
- Environmental Pollution due to traditional urea application.
- Low Grain Productivity due to high nitrogen losses from current urea practices.
- High production costs without proportional yield increases.
- Limited irrigation in optimizing traditional urea application under varying rainfall.
- Climate disturbances causing by greenhouse gas emissions from conventional urea application.

## Solution

- Large granules release nitrogen slowly, optimizing absorption by rice crops, reducing waste, preserving the environment and preventing contamination.
- Direct nitrogen delivery enhances soil fertility, promoting healthier rice crops and higher yields.
- Subsoil placement contributes to increased drought resilience in farming systems.
- Single-season application reduces labor and overall production costs.
- Suited for diverse agroecologies, benefiting both subsistence and commercial rice farmers.

## Key points to design your project

1. Evaluate the required product quantity and cost, considering USD 0.4-0.8 per kilogram and a recommended rate of 0.25 tons per hectare.
2. Consider the technology's supply location, factoring in delivery costs and potential import duties.
3. Trainers can provide support during installation; budget for training and post-training assistance.
4. Develop communication materials for technology promotion.
5. Enhance the improved maize variety with companion planting, foliar micronutrient addition, engineered irrigation, motorized weeders, and RiceAdvice digital support.
6. Collaborate with agricultural institutes and agro-dealers for nationwide implementation.

**0.25 ton**

**100–200 USD**

**10 USD**

 IP

Recommended rate per Ha

Equivalence cost for the recommended rate per Ha

plunger-type applicator

Open source / open access



Urea deep placement

<https://taat.africa/azj>

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

# Precision Fertilizer Micro-Dosing for Millet and Sorghum Yield Enhancement



Smarter Fertilizer, Stronger Crops: Maximize Growth with Minimal Input

The Fertilizer Micro-Dosing for Enhanced Yield and Efficiency Technology is a practice that involves applying small amounts of fertilizer in shallow holes at the base of each plant. This precise method is low-risk, affordable, and efficient.



This technology is **TAAT1 validated**.



Scaling readiness: idea maturity

8/9; level of use 7/9

Inclusion assessment



Climate impact



## Problem

- Nutrient deficiencies in millet and sorghum
- Inefficient and risky fertilizer application methods
- Insufficient nutrient replenishment and gradual soil fertility decline
- Crop failure risk due to drought discouraging fertilizer investment

## Solution

- Addressing nutrient deficiencies in millet and sorghum
- Providing a low-risk and precise fertilizer application method
- Fostering rapid crop growth

## Key points to design your project

Micro-Dosing addresses nutrient deficiencies in millet and sorghum with precise, low-risk fertilizer application, promoting rapid growth, reducing environmental impact, and benefiting women. It aligns with climate-smart practices, enhances agricultural efficiency, and reduces poverty.

To integrate Micro-Dosing:

- Identify suitable fertilizers: Millet (50 kg/ha, 16,666 plants), Sorghum (100 kg/ha, 26,666 plants). Use NPK (15-15-15) or DAP fertilizers.
- Plan logistics: Include delivery costs, import clearance, and distribution to project sites.
- Raise farmer awareness through training and communication tools (flyers, videos, radio).
- Combine with stress-resistant crop varieties and Striga management for better results.
- Partner with agricultural institutes and fertilizer distributors for implementation.

This technology is applicable in Chad, Ethiopia, Kenya, Sudan, Tanzania, Burkina Faso, Mali, Niger, Nigeria, Senegal, and Zimbabwe.



**International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)**  
Dougbedji Fatondji

Technology from

ProPAS

Commodities

Sorghum/Millet

Sustainable Development Goals



Categories

Production, Practices,  
Fertilizer management

Best used with

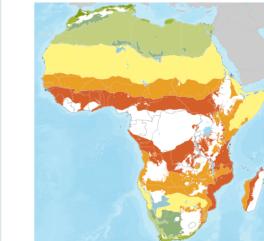
Millet and Sorghum Varieties for Better Nutrition and Stress Resistance, Dual-purpose Millet Varieties for Crop and Livestock Integration, Proactive Management of Striga...  
See all 3 technologies online

Tested/adopted in



Where it can be used

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



Open source / open access



Precision Fertilizer Micro-Dosing for Millet and Sorghum Yield Enhancement

<https://taat.africa/cui>

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

# Contour Bunding Technique (CBT): Contour Bunds for Water Harvesting

CBT: Nurturing Crops, Conserving Soil, and Cultivating Resilience

The "Contour Bunding Technique (CBT)" is a farming strategy used in Africa's dry areas. It uses small walls built along field curves to collect water, reduce runoff, and prevent soil erosion. This enhances the soil's water retention, making it a practical solution for water scarcity in dryland farming.



Semi-circular bunds reinforced with stones

 This technology is **TAAT1 validated**.

 8.7

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

Inclusion assessment

 4

Climate impact

 7

## Problem

- Water Scarcity:** Dryland farming often faces water shortages, making crop growth challenging.
- Soil Erosion:** In dry areas, soil erosion and gully formation degrade soil health and productivity.

## Solution

- Water Management:** CBT uses walls to capture and store rainwater, increasing crop yields.
- Soil Conservation:** CBT slows water movement, reduces soil erosion, and improves soil fertility.

## Key points to design your project

The Contour Bunding Technique (CBT) promotes inclusivity and mitigates climate change impacts, contributing to several Sustainable Development Goals (SDGs). It's a valuable tool for sustainable agriculture and climate resilience projects.

To integrate CBT into a project:

- Raise Awareness:** Educate the community about CBT's benefits.
- Train Stakeholders:** Train agents and farmers on cost-effective bund construction techniques.
- Consult Farmers:** Discuss with farmers to understand water movement and determine optimal bund placement.
- Provide Resources:** Ensure access to necessary resources for building and reinforcing bunds.
- Monitor and Evaluate:** Track the effects of CBT on crop yields and soil health for continuous improvement.
- Engage Community:** Involve the community to ensure project sustainability and foster ownership.

**40 %**

Runoff reduction

**20 %**

Sediment loss decrease

 IP

Open source / open access



INTERNATIONAL CROPS RESEARCH INSTITUTE FOR THE SEMI-ARID TROPICS

International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)  
Dougbedji Fatondji

Technology from

ProPAS

Commodities

Sorghum/Millet

Sustainable Development Goals



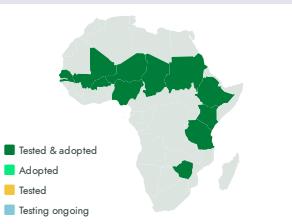
Categories

Pre-production, Practices, Water management

Best used with

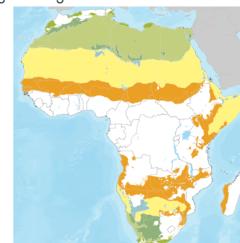
Millet and Sorghum Varieties for Better Nutrition and Stress Resistance, Precision Fertilizer Micro-Dosing for Millet and Sorghum Yield Enhancement, Dual-purpos...  
See all 3 technologies online

Tested/adopted in



Where it can be used

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



Contour Bunding Technique (CBT)

<https://taat.africa/jyu>

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

# Processing and Application of Composted Manures

Turning Waste into Wealth for Greener Fields

Composted goat and sheep manure is readily compressed into organic fertilizer pellets. These fertilizer pellets are convenient for application, transportation, and storage. After composting, production involves crushing, screening, granulating, drying and further screening for pellet uniformity.



This technology is **TAAT1 validated**.



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

Inclusion assessment



Climate impact



## Problem

- Goat and sheep manure may contain human pathogens and weed seeds, posing hazards to crops and the environment.
- Nutrients in goat and sheep urine are often wasted, and improper manure handling can lead to environmental pollution.

## Solution

- Composting rapidly deactivates human pathogens and weed seeds in manure, making it safe for use as compost on vegetable crops.
- Commercial technologies permit to produce organic fertilizers from goat and sheep manure, increasing its economic value and reducing waste.

## Key points to design your project

The Processing and Application of Composted Manures technology offers a solution for reducing poultry feed costs. To integrate this technology into your project, follow these steps:

- Invest in compost turning and pellet making machinery.
- Analyze feed ingredient composition and identify any constraints.
- Evaluate ingredient cost and availability.
- Engage a team of trainers for installation support and develop communication materials to highlight benefits.
- Collaborate with breeders and local stakeholders.



Open source / open access

# ILRI

INTERNATIONAL  
LIVESTOCK  
RESEARCH  
INSTITUTE

International Livestock  
Research Institute (ILRI)  
Adeniyi Adediran

Technology from

ProPAS

Commodities

Small livestock

Sustainable Development Goals



Categories

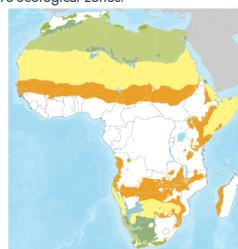
Production, Pre-production, Practices,  
Input processing

Tested/adopted in



Where it can be used

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



Target groups

Farmers



Processing and Application of Composted Manures

<https://taat.africa/gme>

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

# Maize-legume rotation and intercropping

Maize-legume: Savings in Soil, Growth in Profit



This practice utilizes legumes' biological nitrogen fixation to boost maize productivity. It enhances soil fertility, reduces weed infestation, and mitigates soil erosion. Certain legumes also combat parasitic weeds in maize, while tall maize crops regulate soil temperature and improve water efficiency.



This technology is **TAAT1 validated**.



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

Inclusion assessment



4

Climate impact



7

## Problem

- Subsistence farming faces soil nutrient deficiencies, such as nitrogen, hampering crop growth and yields.
- Commercial farmers grapple with high costs associated with nitrogen-based fertilizers, impacting profitability.
- Weed infestation competes with crops for resources, reducing overall yields.
- Pest and disease outbreaks can cause significant damage to crops, affecting both quality and quantity, leading to financial losses.
- Crop failures due to factors like drought or pest attacks can result in food scarcity, impacting household nutrition and well-being.

## Solution

- Utilizes biological nitrogen fixation in legumes to enrich soil and promote healthier plant growth.
- Reduces dependency on expensive synthetic fertilizers through maize-legume rotation and intercropping.
- Effectively manages weed growth, minimizing infestation and enhancing overall crop productivity.
- Reduces harmful Striga weed infestations in maize crops through intercropping with specific legumes.
- Cultivating two complementary crops on the same land ensures a more reliable food supply and enhances food security for subsistence farmers.

## Key points to design your project

This technology improves crop productivity, ensures food security, and promotes economic sustainability by optimizing nitrogen management, reducing reliance on synthetic fertilizers, and fostering healthier plant growth.

It also contributes to ecosystem preservation by effectively managing weeds and combating Striga weed infestations, all while promoting sustainable agricultural practices.

To integrate this technology, educate farmers, provide guidance on cultivation methods and seed selection, allocate funds for training and support, develop communication materials, and establish partnerships.

For enhanced optimization, consider associating with other complementary agricultural practices.

**30—70 kilograms**

of nitrogen carried over from soybean to maize crops



IP

Unknown



**African Agricultural  
Technology Foundation  
(AATF)**  
Jonga Munyaradzi

Technology from

ProPAS

Commodities

Maize

Sustainable Development Goals



Categories

Production, Practices, Soil fertility

Best used with

Drought Tolerant Maize Varieties and Water Efficient Maize Varieties, Fall Armyworm Integrated Pest Management, Pre-plant blended fertilizers and nitrogen topdressing...  
See all 3 technologies online

Tested/adopted in



Where it can be used

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



Maize-legume rotation and intercropping

<https://taat.africa/smj>

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

# Conservation agriculture: Minimal Tillage and Surface Mulching of Soils

## Conservation Agriculture for Sustainable Farming

Conservation agriculture (CA) includes minimal soil disturbance, surface residue retention, and crop rotation, proven effective in dryland wheat farming. It improves soil quality, water use efficiency, and yield stability, while reducing costs and energy. Additionally, CA enhances soil biodiversity, mitigates emissions, and sequesters carbon, benefiting both farmers and the environment.



Later ripening and better grain filling of wheat due to water conservation in no-till system (middle)



**ICARDA**  
Zewdie Bishaw

Technology from

[ProPAS](#)

Commodities

Wheat

Sustainable Development Goals



Categories

Production, Practices,  
Pest control (excluding weeds),  
Water management

Best used with

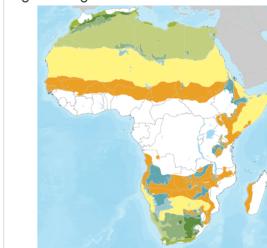
Yellow Rust and Stem Rust Resistant wheat,  
Hessian Fly Resistant Wheat Varieties  
See all 2 technologies online

Tested/adopted in



Where it can be used

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



### Problem

- Excessive tillage and limited organic matter degrade soil quality.
- Droughts, intense rains, and overuse limit water availability.
- Dryland farming yields are low and vulnerable to water scarcity.
- Agriculture contributes to emissions and affects carbon storage.
- Traditional tillage leads to weed competition and yield reduction.

### Solution

- Minimal soil disturbance, surface residue retention, and crop rotation.
- Enhanced soil quality, water efficiency, and yield stability.
- Mitigates drought and heat stress on crops.
- Saves water and reduces herbicide usage.
- Manages soil nutrients and pests effectively.
- Suitable for various soil types and water conditions.
- Increases resilience to environmental stresses.

### Key points to design your project

The Minimal Tillage and Surface Mulching of Soils technology boosts crop productivity and ensures food security by maintaining consistent yields while conserving water and soil health. This method reduces agriculture's environmental impact, aiding in poverty alleviation and promoting sustainable livelihoods for farmers. To integrate this technology, it is essential to raise awareness of its benefits, ensure equipment accessibility, implement incentives for agroecosystem services, establish connections with food industries for market access, allocate resources for training and ongoing support, collaborate with agricultural institutions, and explore integration with complementary technologies.

**15 - 22 %**

Increase in yield

**18 - 21 %**

water use efficiency

**20 %**

increase in income

**923 USD/ha**

Increase in profit  
from wheat  
production

**IP**

Open source / open  
access



Conservation agriculture

<https://taat.africa/bok>

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

# NoduMax: Inoculant for Soybeans

Advanced Soybean Inoculation Solution for Sustainable Agriculture

This technology is a solid inoculant, which contains the industry-standard strain USDA 110 and includes a gum Arabic adhesive and user instructions. It is packed in 100 g packets sufficient for 10 to 15 kg soybean seed.



This technology is [TAAT1 validated](#).



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

Inclusion assessment 4

Climate impact 7

## Problem

- Poor Root Nodulation and Low Biological Nitrogen Fixation (BNF) in Soybeans
- Lack of Quality Inoculant in the Market
- Limited Access to Affordable Inoculants in African Countries
- Complex Application Procedures
- Lack of Protein Sufficiency and Soil Fertility in Soybean Production
- Clumping in Alternative Inoculation Methods

## Solution

- Promotes biological nitrogen fixation, reducing the need for expensive nitrogen fertilizers.
- Ensures the presence of symbiotic rhizobium bacteria, optimizing root nodulation for improved nutrient absorption.
- Enhances BNF, thereby boosting soil fertility and reducing reliance on synthetic fertilizers.
- Promotes natural nutrient cycling in the soil, contributing to sustainable agricultural practices.

## Key points to design your project

- Implementation steps for the technology include assessing product quantities, considering delivery costs, and engaging trainers for installation support.
- Communication support, such as flyers, videos, and radio broadcasts, should be developed to promote the technology.
- For improved maize variety optimization, companion planting with resistant soybean varieties and proper nutrient fertilization is recommended.
- Collaboration with agricultural development institutes and agro-dealers facilitates successful technology implementation.

**150,000 USD**

To build the NoduMax factory

**120,000 USD**

To equip the NoduMax factory

IP

Unknown



International Institute of Tropical Agriculture (IITA)  
David Ojo

Technology from

ProPAS

Commodities

Soybean

Sustainable Development Goals



Categories

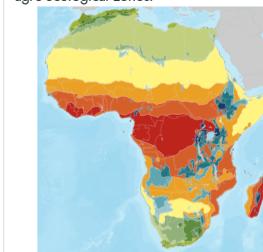
Inputs, Inoculant

Tested/adopted in



Where it can be used

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



Target groups

Farmers



NoduMax

<https://taat.africa/vod>

Last updated on 31 October 2025, printed on 31 October 2025

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

# Zaï Pits: Water Harvesting and Soil Improvement

Zaï pits are a traditional Sahelian technique for restoring degraded land by capturing rainwater and nutrients. Farmers dig small basins (20–40 cm wide, 10–20 cm deep) during the dry season, creating 12,000–25,000 pits per hectare to enhance water retention. Organic matter and 5–6 g of NPK or DAP per pit improve soil fertility, supporting millet and sorghum growth. This method boosts water infiltration, soil structure, and crop resilience in arid areas. Zaï pits can be combined with other dryland techniques like stone bunds and tied ridges for greater land restoration and productivity.


 This technology is **TAAT1 validated**.


Scaling readiness: idea maturity unknown; level of use unknown

Inclusion assessment



Climate impact



## Problem

- **Low rainfall and frequent droughts** in the Sahel reduce crop yields and threaten food security.
- **Soil degradation and crust formation** limit water infiltration and plant growth.
- **Nutrient-poor soils** hinder crop productivity, making farming unsustainable.
- **Runoff and erosion** lead to further soil loss and reduce available moisture for crops.

## Solution

- **Increases crop resilience** by improving moisture availability during dry periods.
- **Boosts yields** by 60–90% for millet and sorghum compared to flat cultivation.
- **Restores degraded lands**, making marginal soils productive again.
- **Optimizes local resources** by incorporating organic and mineral fertilizers.
- **Is cost-effective and easy to adopt**, requiring only manual labor.

## Key points to design your project

The **Zaï Pit Implementation** provides a structured approach for scaling up **Zaï pits as a land restoration and climate-resilient farming solution**. It integrates **financial, institutional, capacity-building, and technical aspects** to ensure sustainability and impact.

### Key Steps:

1. **Define Objectives** – Align Zaï pit adoption with **national priorities** like food security and climate resilience.
2. **Financial Plan** – Secure funding through **government programs, NGOs, and climate funds**.
3. **Capacity Building** – Train **farmers and extension officers** on best practices.
4. **Needs Assessment** – Adapt Zaï designs based on local soil, rainfall, and cropping systems.
5. **Data & Governance** – Monitor **yields, soil health, and water retention** to guide policies.
6. **Impact Evaluation** – Track adoption and adjust strategies for **long-term sustainability**

60 - 90 %

Yield Improvement


 IP

Open source / open access



Zaï Pits

<https://taat.africa/cud>

Last updated on 28 November 2025, printed on 28 November 2025

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


**International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)**  
Dr Dougbedji Fatondji

Commodities

Sorghum/Millet

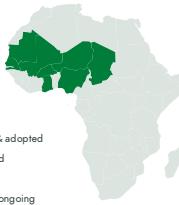
Sustainable Development Goals



Categories

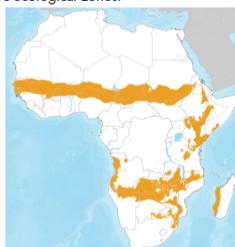
 Pre-production, Practices,  
Water management

Tested/adopted in



Where it can be used

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



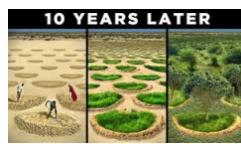
Target groups

Farmers

# Demi-lune technology: Rainwater harvesting method

Catch the Rain, Grow with the Grain!

The Demi-lune (Half-moon) technology is a simple rainwater harvesting method for dry regions. Farmers dig semi-circular pits (2–3 meters wide, 15–30 cm deep) to trap rainwater and enrich the soil with compost. This boosts crop growth, restores degraded land, reduces erosion, and improves soil fertility, making drylands productive again.



This technology is **TAAT1 validated**.



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

Inclusion assessment



Climate impact



## Problem

- Scarce and erratic rainfall limits crop growth and productivity.
- Severe soil degradation and erosion reduce land fertility.
- Low crop yields threaten food security and economic stability.
- Lack of irrigation infrastructure leaves farmers reliant on unpredictable rainfall.
- Nutrient-poor soils hinder healthy plant development.

## Solution

- Captures rainwater to boost water availability during dry spells.
- Prevents soil erosion and restores soil fertility.
- Increases crop yields and farming resilience.
- Low-cost, accessible alternative to irrigation.
- Enhances soil nutrients with organic matter.
- Restores vegetation and supports biodiversity.
- Strengthens food security and farmer livelihoods.
- Promotes sustainable, eco-friendly farming.

## Key points to design your project

The **Half-Moon Implementation Framework** offers a structured approach to scale the use of half-moon pits for land restoration and climate-resilient agriculture. It focuses on integrating financial, technical, and capacity-building strategies to ensure sustainable, community-driven interventions in dryland areas.

### Key Steps:

- Define Objectives:** Align with national priorities such as land restoration and climate adaptation.
- Develop Financial Plan:** Mobilize resources and promote farmer-driven scaling.
- Assess Capacity:** Provide necessary training for efficient implementation.
- Conduct Needs Assessment:** Tailor solutions to local conditions.
- Implement Monitoring:** Track progress on yields, soil health, and water retention.
- Evaluate and Refine:** Regularly assess impacts and adjust based on feedback.

This framework helps promote sustainable, scalable solutions to improve soil fertility, food security, and climate resilience in vulnerable regions.



International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)  
Dougbedji Fatondji

### Commodities

Sorghum/Millet, Maize, Cowpea, Common bean

### Sustainable Development Goals



### Categories

Production, Practices, Water management, Soil fertility

### Best used with

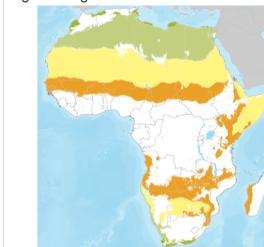
Water Harvesting and Soil Improvement, Contour Bunds for Water Harvesting  
See all 2 technologies online

### Tested/adopted in



### Where it can be used

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



Open source / open access



Demi-lune technology

<https://taat.africa/bsa>

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

# SIS Framework: Roadmap for building a soil information system

Empower the soil data community with best practice tools and lessons learned for a sustainable SIS!

The SIS Framework by CABI and ISRIC offers practical, phased guidelines for developing soil information systems, addressing financial, institutional, and technological aspects with tools and resources.

 This technology is **validated**.

 9.8

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

Inclusion assessment

 3

Climate impact

 7

## Problem

- SISs often fail after project funding ends due to the absence of sustainable transition plans.
- Limited technical capacities hinder the development of data-driven products and system maintenance, leaving user needs unmet.
- Poor understanding of target users and use cases leads to unclear objectives and weak SIS planning.
- Inconsistent data formats and poor governance complicate data analysis and sharing.

## Solution

- Co-develop financial sustainability plans to ensure long-term viability.
- Build technical capacity and identify roles for SIS design, development, and maintenance.
- Conduct needs assessments for users, beneficiaries, and data producers.
- Track the impact of the SIS and adapt to evolving user needs.

## Key points to design your project

The SIS Framework, provides a structured approach to designing and developing sustainable Soil Information Systems (SIS). It ensures long-term viability by integrating financial, institutional, capacity, and technological aspects.

Key steps include:

- Defining clear objectives aligned with national priorities.
- Developing a financial sustainability plan beyond project funding.
- Building technical capacity for SIS maintenance and growth.
- Conducting user needs assessments for practical impact.
- Implementing FAIR data governance for accessibility and reliability.
- Monitoring impact to ensure continuous improvement.

**100,000–200,000 USD**

SIS roadmap development workshops, depending on needs.



Open source / open access



**CABI and ISRIC- World Soil Information**  
Thaïsa Van Der Woude

Commodities

All Crops

Sustainable Development Goals



Categories

Production, Policies

Best used with

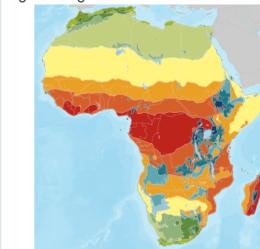
8 steps to develop a Soil Information System (SIS)  
See all 1 technologies online

Tested/adopted in



Where it can be used

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



Target groups

Development institutions, Governments,



**SIS Framework**

<https://taat.africa/onf>

Last updated on 3 July 2025, printed on 3 July 2025

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

# Soil Information Workflow: 8 steps to develop a Soil Information System (SIS)

Soil Information Workflow turns data into insights, helping professionals make smarter, sustainable decisions.

ISRIC-World Soil Information provides a structured approach to collect, organize, and serve soil data, helping users establish efficient soil information systems. It supports better soil management and informed decision-making through a series of eight essential steps, from needs assessment to data serving.



**ISRIC - World Soil Information**  
Thaïsa van der Woude

Commodities

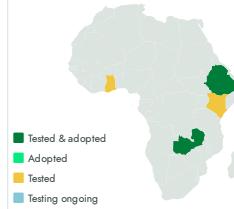
Sustainable Development Goals



Categories

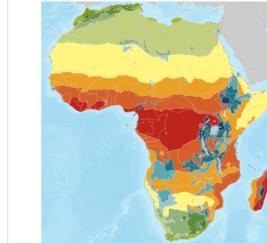
Policies

Tested/adopted in



Where it can be used

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



Target groups

Development institutions, Governments, Researcher center, Soil scientists

 This technology is **validated**.



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

Inclusion assessment

 4

Climate impact

 6

## Problem

- Soil Degradation Crisis:** 65% of Africa's productive land is degraded due to desertification, affecting 45% of the continent.
- Africa's soils are deteriorating:** Due to factors like organic matter loss, declining fertility, nutrient imbalance, pollution, soil biodiversity loss, increasing acidity, and erosion.
- Key drivers:** include overgrazing, deforestation, and unsustainable farming practices, leading to soil degradation that threatens biodiversity, ecosystems, and productivity.

## Solution

- Building a Soil Information System (SIS):** Develop an integrated system to store, analyse, manage, and disseminate soil data to improve soil health and monitor deterioration.
- SIS Profile Development:** Create a SIS profile that aligns with use cases and includes a viable business model for long-term sustainability.
- Step-by-Step Design Process:** Follow a structured workflow for designing and building the system to ensure effective implementation and functionality.

## Key points to design your project

This technology provides a comprehensive approach to building or enhancing a Soil Information System (SIS), enabling effective soil data collection, analysis, and dissemination. To develop or improve a SIS in your country, you will need:

- Define the vision and objectives of the SIS.
- Collaborate with ISRIC and CABI to create a SIS roadmap.
- Collect, store, and organize soil data efficiently.

By adopting this approach, you can address soil challenges, enhance agricultural practices, and promote sustainable land management.



Open source / open access



## Soil Information Workflow

<https://taat.africa/pvk>

Last updated on 21 December 2025, printed on 21 December 2025

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

# BSFF: Organic fertilizer for soil improvement

Low cost fertilizer for healthy and profitable agriculture for African farmers.

Frass is a nutrient-rich compost produced from black soldier fly larvae (BSFL) treatment of biodegradable waste. Commercially, it consists of BSFL faeces, substrate residues, exoskeletons, and a microbial population aiding fermentation.



 This technology is **validated**.

 8.7

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

Inclusion assessment  4

Climate impact  7

## Problem

- Africa faces a lack of organic waste management solutions, leading to severe environmental threats.
- Soil fertility in smallholder farms is declining due to nutrient imbalances, where more nutrients are extracted than replenished, worsening food security.

## Solution

- BSFF technology converts organic waste into nutrient-rich compost, reducing environmental contamination and improving soil fertility.
- It promotes sustainable agricultural practices by enhancing soil health.

## Key points to design your project

To integrate the BSFF technology into your project:

- Educate Farmers:** Raise awareness among farmers about the benefits of using BSFF fertilizer for improving crop yields and soil health.
- Promote Accessibility:** Ensure equitable access to BSFF products and financial support for local suppliers and smallholder farmers.
- Calculate Fertilizer Needs:** Determine the required quantities of BSFF fertilizer, considering a recommended application rate of 10 tons per hectare for poor soils.



National phase application



International Institute of Tropical Agriculture (IITA)  
Dr Rousseau DJOUAKA

Commodities

Vegetable crop

Sustainable Development Goals



Categories

Production, Inputs, Fertilizer

Best used with

Black Soldier Fly Larvae (BSFL) proteins for low cost feeds

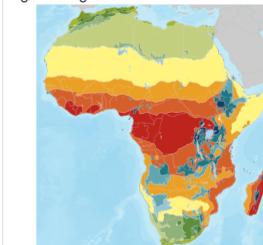
See all 1 technologies online

Tested/adopted in



Where it can be used

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



Target groups

Farmers



BSFF

<https://taat.africa/wma>

Last updated on 28 November 2025, printed on 28 November 2025

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

# Biochar: Biomass Charcoal for Soil improvement

Biochar, a powerfully circular way to fight climate change



Biochar technology is a form of charcoal. It is made through a process called pyrolysis which involves burning of biomass in an oven with little or no oxygen. What you get out of it is solid material which then is added into soil.



This technology is **validated**.



**8·7**



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

Inclusion assessment



**3**

Climate impact



**7**

## Problem

- Over 40% of Africa's soils are degraded**, leading to low productivity and high vulnerability to climate shocks.
- Farmers burn crop residues for quick field clearing**, but this practice emits greenhouse gases and destroys soil health.
- Low fertiliser efficiency and high input costs** result in poor returns and widespread food insecurity.
- Agricultural practices are not aligned with climate goals**, limiting national progress on sustainability and mitigation targets.

## Solution

- Boosts staple crop yields by 15–35% while restoring degraded soils.
- Reduces dependence on costly fertilisers and enhances food security.
- Helps meet climate goals by sequestering carbon and reducing emissions.
- Strengthens resilience to droughts and supports sustainable land use.

## Key points to design your project

The biochar technology can significantly enhance the livelihoods of smallholder farmers, especially women, by boosting farm productivity, and supporting climate resilience.

To integrate this technology:

- Integrate biochar into national regenerative farming and climate-resilience strategies.
- Use carbon-credit schemes to attract private investment and incentivize adoption.
- Support farmer training hubs to promote production and connect with carbon markets.
- Facilitate access to pyrolysis equipment—available locally in Nigeria—for national rollout.

**5—10 Tones**

Recommended Biochar quantity for 1 hectare

 IP

Open source / open access



Tested & adopted

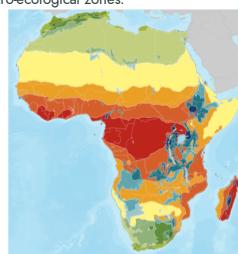
Adopted

Tested

Testing ongoing

Where it can be used

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



Target groups

Farmers



**Biochar**

<https://taat.africa/vwm>

Last updated on 22 December 2025, printed on 22 December 2025

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

# Soybean inoculant: Rhizobium inoculant range, various strains

N-fixing bacteria to reduce chemical fertilizer use

Stimulant is a specialized range of inoculants designed for various legume crops. It capitalizes on a unique symbiotic relationship between the legume plants and a beneficial bacterium known as Rhizobia. This natural partnership results in the addition of significant nitrogen levels to the soil, ranging from 40 to 150 kg per hectare.



This technology is **validated**.



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

Inclusion assessment



Climate impact



## Problem

- Nitrogen limitation hampers plant growth, particularly affecting legume crops.
- Soil degradation arises from excessive reliance on chemical fertilizers.
- These factors culminate in economic hardships and food insecurity among farmers.

## Solution

- UPL Powder Carrier Technology shields bacteria from harsh environmental conditions like high temperatures and pH fluctuations.
- It holds the CERES organic certification, meeting stringent organic standards.
- Tailored packaging suits the needs of smallholder farmers, enhancing accessibility.
- The powder formulation extends shelf life to 9 months, reducing wastage and improving efficiency.

## Key points to design your project

To integrate this technology into your project, follow these steps:

- Estimate the quantity of products needed based on a cost range of USD 15-25 per hectare.
- Consider the accessibility of the technology in South Africa and calculate delivery costs, including potential import clearance and duties.
- Arrange training and support from a team of trainers during installation, factoring in the associated costs.
- Develop communication materials such as flyers, videos, and radio broadcasts to raise awareness about the technology.
- Enhance the effectiveness of the improved maize variety by companion planting with soybean varieties resistant to pests and diseases, and focus on nutrient fertilization.
- Collaborate with agricultural development institutes and agro-dealers to facilitate technology implementation in your country.



Open source / open access



Soybean inoculant

<https://taat.africa/pad>

Last updated on 9 January 2026, printed on 9 January 2026



**UPL**  
Florent Clair

Commodities

Soybean, Groundnut, Cowpea, Common bean

Sustainable Development Goals



Categories

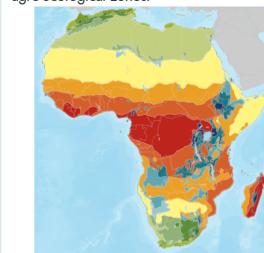
Production, Inputs, Inoculant

Tested/adopted in



Where it can be used

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



Target groups

Farmers

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

# ABC Grower: Biominerization of weeds for soil improvement

Solar-Powered, Cost-Effective, and Ecologically Smart

BioFertilizer for Thriving Crops and Sustainable Agriculture

ABC Grower is a biotechnology that extracts nutrients from weeds using positive microorganisms (EM). These nutrients are formulated to enhance crop growth, tailored for tropical soils. Powered by solar energy, it reduces fertilizer production time from 60 to 14 days, lowers costs by 10 to 20 times, and adds economic value to weeds for farmers.



This technology is **validated**.

9.8

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

Inclusion assessment

4

Climate impact

7

## Problem

- Climate change accelerates land degradation, threatening agricultural productivity and food security.
- Farmers using chemical inputs face poverty and environmental risks from heavy metal accumulation.
- Low adoption of compost in organic farming is due to lengthy production time, high water and labor requirements, and logistical challenges, including high costs and quantity demands.

## Solution

- Cost Reduction: Significantly lower fertilization costs alleviate financial burdens for farmers.
- Improved Efficiency: Precise biofertilizer formulation enhances agronomic efficiency, surpassing conventional methods.
- Solar Energy: Solar energy reduces organic fertilizer production time from 60 to 14 days, simplifying production.
- Economic Valorization: Weeds in fields gain economic value, benefiting farmers economically.

## Key points to design your project

To integrate this technology into your project:

- Raise awareness among farmers about its benefits.
- Ensure equitable access and financial support for local suppliers and smallholder farmers.
- Calculate required quantities based on an initial cost of USD 8 per unit.
- Consider delivery costs, import clearance, and duties if applicable.
- Provide training and support for project installation.
- Develop communication materials.
- Collaborate with agricultural development institutes for implementation.

**1,500 USD**

Production Kit purchase

**40 %**

Benefit for the kit purchase

**15 Years**

Lifespan

IP

Patent granted

ABC GROWER

**Société de développement de l'agriculture durable (SDAD SARL)**  
Bienvenu Chabi ADJE

Commodities

All Crops

Sustainable Development Goals



Categories

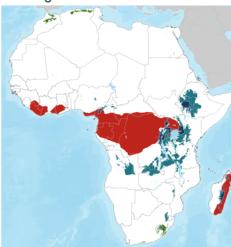
Production, Inputs, Fertilizer

Tested/adopted in



Where it can be used

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



Target groups

Farmers, Sellers



ABC Grower

<https://taat.africa/nbb>

Last updated on 22 December 2025, printed on 22 December 2025

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

# NextGen Advisory: Digital Advisory tool for Farmers

Empowering Farmers with Digital Guidance

The NextGen advisory system utilizes precise location, context, and climate data to offer tailored agricultural advisories. Using machine learning algorithms, the system analyzes diverse data points to provide accurate recommendations for fertilizer use and other farming practices.



**CGIAR Sustainable Farming Program**  
Lulsegel Tamene

 This technology is **pre-validated**.

 8·7

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

Inclusion assessment

Climate impact

## Problem

- Traditional low fertilizer application rates, which are prevalent in many agricultural regions.
- This practice leads to underutilization of resources and limits crop growth, thereby affecting overall agricultural productivity.

## Solution

- The tool provide site-specific organic and inorganic fertilizer recommendations for key crops such as maize, teff, and wheat.
- It integrates hyper-localized data and tailored approaches to address soil fertility management plus (ISFM+) framework.
- This comprehensive tool aims to increase agricultural productivity and sustainability by providing precise, actionable advisories directly to farmers.

## Key points to design your project

The NextGenAgroadvisory tool aims to revolutionize wheat, maize and teff farming, boosting production, increasing profits, and minimizing wastage.

To integrate NextGenAgroadvisory Into Your Project:

- Access the app from Google Play or the web for advice on various devices.
- Farmers get advisories through videos, interactive voice responses, and digital formats for accessibility.
- Promote the tool's benefits and ease of access among farmers.
- Promote investments in fertilizer and weed management technologies.
- Create flyers, videos, and radio broadcasts to encourage adoption.



Unknown

## Sustainable Development Goals



## Categories

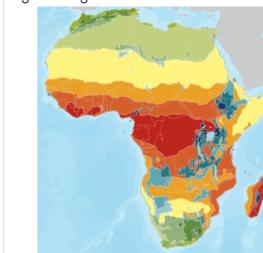
Production, Digital applications, Advisory and information service, Yield improvement

## Tested/adopted in



## Where it can be used

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



## Target groups



NextGen Advisory

<https://taat.africa/zdh>

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# TAAT Soil health technologies

<https://taat.africa/cph>

## 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).

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