

RiceAdvice digital support

Your Digital Guide to Better Harvests

RiceAdvice helps rice farmers optimize their crops! This app takes 10 minutes to answer questions about your farm, then recommends the best fertilizer types, amounts, and timing. It even helps set yield goals and fight weeds efficiently.

Using RiceAdvice



This technology is **TAAT1 validated**.

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

Gender assessment **4**

Climate impact **2**

Problem

- Inefficient Fertilizer Use:** Wrong amounts and types hurt yields and waste money.
- Weeds Steal Profits:** Without effective control, weeds can significantly reduce harvest.
- Guessing Game Yields:** Unclear targets and calendars lead to inefficient farming.
- Climate Woes:** Adapting to droughts and floods is a constant struggle.
- Offline Knowledge Gap:** Limited internet access cuts farmers off from vital resources.

Solution

- Fertilizer Fix:** Get the right amount and type for bigger yields and less waste.
- Weed Warrior:** Fight weeds with "RiceAdvice-WeedManager" for a cleaner harvest.
- Yield & Calendar Coach:** Set smart goals and plan your season based on your farm's needs.
- Climate Champion:** Adapt and thrive despite weather challenges.
- Offline Access:** Use it even with limited internet (occasional connection needed).

Key points to design your project

RiceAdvice app offers free, field-specific advice for rice farmers.

To integrate in a project:

- Download it and train extension agents to help farmers access the app's features. This includes guidance on nutrients, weeds, yield targets, and climate risks.
- Monitor results and consider collaborating with agricultural groups to promote wider adoption.

While the app is free, consider costs for devices, data, and extension agent support.

Cost: **\$\$\$ 0 USD** for download

ROI: **\$\$\$ 100–200 USD** Income increased per hectare

0.6–1.8 ton per hectare Average grain yield

IP Open source / open access

Africa Rice Center
Kazuki Saito

Technology originally documented by
ProPAS

Commodities
Rice

Sustainable Development Goals

Categories
Production, Prevention & storage, Market, Digital applications, Advisory and information service

Tested/adopted in

Tested & adopted
 Adopted
 Tested

Where it can be used

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

Target groups
Farmers



RiceAdvice digital support
<https://e-catalogs.taatafrica.org/gov/technologies/riceadvice-digital-support>
Last updated on 22 May 2024, printed on 22 May 2024

Enquiries techs@taatafrica.org

Cut and Bury Motorized weeders for rice production

Effortless Weed Control for Bountiful Harvests



The Motorized Weeders for rice production (cut and bury) technology eliminate weeds in rice crops. The rotating blades of the weeders ensure effective weeding while minimizing damage to rice crops and soil. These machines can be used from the germination of rice plants until the canopy closes.

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

Gender assessment **8 4**

Climate impact **8 7**

Problem

- Labor-intensive manual clearing of paddy fields
- Inefficient weed control methods leading to reduced rice yields
- Limited access to affordable and effective mechanized weeders for smallholder rice farmers

Solution

- Introduction of motorized weeders for efficient clearing of paddy fields
- Adoption of mechanized weed control methods to increase rice yields
- Provision of affordable and effective mechanized weeders for smallholder rice farmers

Key points to design your project

The adoption of Motorized Weeders for rice production offers a solution to enhance agricultural efficiency and reduce labor-intensive tasks. Key steps to integrate this technology include:

- Informing farmers, importing or locally fabricating equipment.
- Organizing collective purchases or rentals, and facilitating access to small loans.
- Training and support for technology usage and maintenance are essential.

Cost: \$\$\$ 550—750 USD **ROI: \$\$\$ 80 %**

Cut & bury with a 2-stroke petrol engine Labour-saving for weeding.

IP
Open source / open access

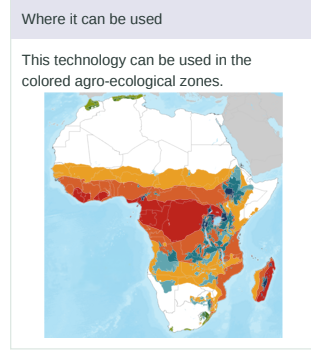
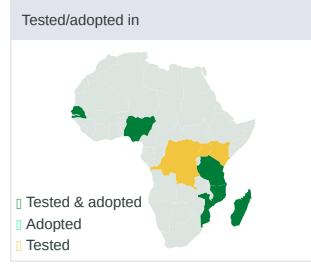
Africa Rice Center
Kalimuthu Senthilkumar

Technology originally documented by
ProPAS

Commodities
Rice

Sustainable Development Goals

Categories
Production, Equipment,
Mechanized farming, Weed control



Target groups
Farmers



Engineered irrigation surfaces and water lifting

Optimize rice farming with precision-engineered surfaces and efficient water lifting for increased yields and resource conservation.



AfricaRice

Africa Rice Center
Sali Atanga Ndindeng

The technology of engineered irrigation surfaces and water lifting involves creating flat surfaces in rice fields and using pumps to evenly distribute water. This helps farmers save water, energy, and nutrients, improving rice growth and increasing yields.

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

Gender assessment 👍 4

Climate impact 👍 7

Problem

- The variation in ground level significantly impacts rice yield, with a notable decrease.
- Leveling the land requires substantial effort from farmers.
- The irrigation methods employed by farmers can be costly and, at times, stress the plants.

Solution

- Engineered irrigation surfaces ensures a uniform distribution of water across the crop, optimizing growing conditions.
- Laser-guided systems and mechanized tools reduce the manual effort required, making the process more accessible for farmers.
- Water lifting technologies provide efficient water delivery also contributes to healthier plant growth, alleviating stress on the crops.

Key points to design your project

Engineered irrigation surfaces and water lifting technologies address challenges in traditional rice improving productivity. To integrate them,

- Raise awareness, identify suitable methods, provide small loans, assess equipment needs,
- Consider delivery costs, engage trainers, develop communication materials,
- Collaborate with institutes, and associate with Motorized weeders for a comprehensive and sustainable approach.

Cost: \$\$\$ **4 700—5 500 USD**

Add-on equipment

30—80 USD	1 000 USD	800 USD	IP
Hand-operated pumps	Solar-powered pump	High-pressure pumps	Unknown

Technology originally documented by
ProPAS

Commodities
Rice

Sustainable Development Goals

Categories
Production, Practices, Water management

Tested/adopted in

■ Tested & adopted
■ Adopted
■ Tested

Where it can be used

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

Target groups
Farmers



ORYLUX varieties Aromatic Rice for Africa

Local African aromatic rice



AfricaRice

Africa Rice Center
Sali Atanga Ndindeng

This technology is all about growing special types of delicious-smelling rice in Africa. These rice varieties are designed to grow well in African conditions. They taste really good and are in high demand. Right now, not enough of this rice is grown in Africa, so a lot of it has to be imported.

This technology is **TAAT1 validated**.

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

Gender assessment **4**

Climate impact **7**

Problem

- Low production of aromatic rice in Sub-Saharan Africa (SSA)
- High dependence on imports from Asia
- Limited access of farmers to seeds suited to prevalent growing conditions
- Lack of aromatic rice varieties adapted to SSA's conditions
- Need to improve yields, quality, and resistance of rice crops
- Insufficient connections between stakeholders for commercialization

Solution

- Development of aromatic rice varieties tailored to SSA's agroecosystems
- Crossbreeding with elite lines to maintain high yields and beneficial traits
- Utilization of genetic mapping and molecular tools for faster breeding
- Dissemination of ORYLUX seeds in local markets to increase availability
- Establishment of connections between farmers, processors, and consumers for value maximization

Technology originally documented by

ProPAS

Commodities

Rice

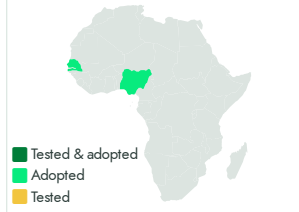
Sustainable Development Goals



Categories

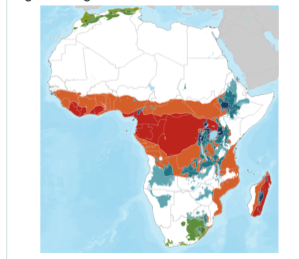
Production, Improved varieties, Quality improvement

Tested/adopted in



Where it can be used

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



Target groups

Farmers, Seed companies, Sellers

Key points to design your project

1. Identify suitable ORYLUX varieties.
2. Raise awareness about its benefits.
3. Ensure access to seeds and support.
4. Estimate seed quantity and costs.
5. Provide training and communication support.
6. Collaborate with institutes and companies for implementation.

Cost: \$\$\$ **1,3 USD**

A Seed cost per kg

10—12 Kg
per Ha
Planting densities

51 USD per Ha
Labour costs for planting

105 USD per Ha
Fertilizer inputs

200 USD per Ha
Harvesting and winnowing of grain

IP
Unknown



ORYLUX varieties

<https://e-catalogs.taatafrica.org/gov/technologies/orylux-varieties-aromatic-rice-for-africa>

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Enquiries techs@taatafrica.org

NERICA New rice for Africa varieties

NERICA: Higher Yields, Resilience, and Profitability for African Farmers.



AfricaRice

Africa Rice Center
Sali Atanga Ndindeng

Technology originally documented by

ProPAS

Commodities

Rice

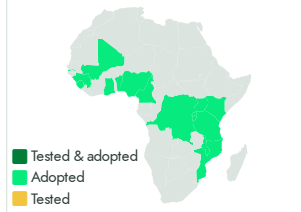
Sustainable Development Goals



Categories

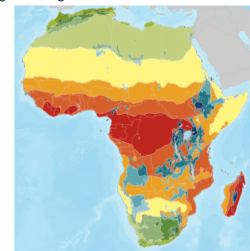
Production, Improved varieties,
Yield improvement, Drought tolerance

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 **TAAT1 validated**.

8·8



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

Gender assessment **4**

Climate impact **7**

Problem

- Traditional rice varieties often yield less, impacting food security and farmers' income.
- Conventional varieties are more susceptible to pests and diseases, leading to yield losses.
- Many varieties struggle in nutrient-poor soils and under erratic rainfall.
- Insufficient local production leads to heavy reliance on imported rice, affecting economic stability.

Solution

- NERICA varieties yield more, ensuring food security and higher income.
- They resist pests and diseases, reducing chemical use.
- Thrives in poor soils and limited water, suitable for diverse environments.
- Boosts local production, enhancing economic stability.
- Accessible to small-scale growers, improving practices and income.

Key points to design your project

To integrate NERICA technology into your project, consider the following steps:

- Develop NERICA varieties tailored to local growing conditions.
- Conduct awareness campaigns to highlight the benefits of planting improved rice varieties.
- Ensure equitable access and financial support for local suppliers and farmers.
- Estimate seed quantity needed, including technology costs and delivery expenses.
- Engage a team of trainers for installation support and develop communication materials.
- Consider optimizing NERICA with other agricultural practices like nitrogen management and weed control.
- Collaborate with agricultural institutes and seed companies for implementation.

Cost: \$\$\$ **0.8—1.2 USD**

Per kg of seeds

ROI: \$\$\$ **25—39 %**

1.7—0.7 ton per ha

with and without fertilizer



Open source / open access



NERICA

<https://e-catalogs.taatafrica.org/gov/technologies/nerica-new-rice-for-africa-varieties>

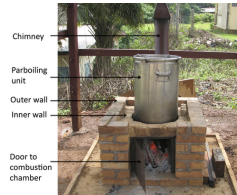
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GEM parboiling system Parboiling and flour production equipment for rice

Reduce milling losses, enhance nutritional and organoleptic quality

The technology improves rice parboiling with a new design, replacing traditional methods prone to emissions. Tailored for small to medium-scale processors, it enhances efficiency and product quality, reducing steaming time and improving grain quality significantly.



AfricaRice

Africa Rice Center
Ernest Asiedu

Technology originally documented by

ProPAS

Commodities

Rice

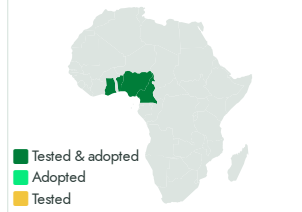
Sustainable Development Goals



Categories

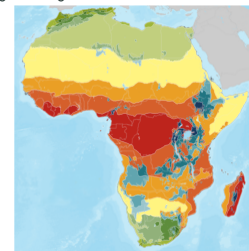
Transformation, Equipment,
Agrifood processing

Tested/adopted in



Where it can be used

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



Target groups

Farmers, Processors

This technology is **TAAT1 validated**.

7·7

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

Gender assessment 4

Climate impact 7

Problem

- High milling losses.
- Decreased nutritional quality of the rice.
- Undesirable texture, aroma, and appearance of the rice.
- Significant time and effort required for the process.

Solution

- Reduces steaming time to 20-25 minutes, minimizing emissions exposure.
- Improves grain translucency, reduces chalkiness, and boosts nutritional value.
- Provides low glycemic index, increased fiber, and higher vitamin B availability.
- Allows longer storage as rice flour, aiding food security.
- Made from simple, locally available materials.

Key points to design your project

To integrate it into your project, follow these steps:

- Raise awareness among processors and consumers about GEM parboiling systems.
- Assist in selecting the right system size and configuration.
- Ensure a steady supply of high-quality rice.
- Develop marketing strategies for rice flour and derived products.

Cost: \$\$\$ **400 USD**

equipment

ROI: \$\$\$ **70 %**

Internal rate of return for a GEM parboiling system

0.64 USD

firewood per 100kg of rice



Open source / open access



GEM parboiling system

<https://e-catalogs.taatafrica.org/gov/technologies/gem-parboiling-system-parboiling-and-flour-production-equipment-for-rice>

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Foliar micronutrient addition for healthier rice

Enhancing Yield and Nutrition with Micronutrient Sprays



AfricaRice

Africa Rice Center
Sali Atanga Ndindeng

The technology "Foliar Micronutrient Addition for Healthier Rice" is developed to address micronutrient deficiencies in rice crops. The application of micronutrients onto the rice canopy aims to enhance the harvest yield and nutritional quality of the grain without requiring extensive investment or infrastructure.

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

Gender assessment **3**

Climate impact **6**

Problem

- Crucial deficient of soil in rice-growing areas in crucial micronutrients like magnesium, calcium, copper, zinc, manganese, and boron.
- Low rice yield and micronutrient content

Solution

- The technology supplements essential elements directly to plant leaves,
- Enhances both grain yield and nutritional value. It can be used in various soil conditions.
- The nutrients are quickly absorbed through the leaves, providing immediate benefits to the plant.

Key points to design your project

This technology on rice addresses low micronutrient content in Sub-Saharan Africa. It promotes sustainable agriculture, aligning with goals for food security and poverty reduction. To integrate this technology,

- Inform farmers, assess micronutrient deficiencies, formulate application plans, and provide resources.
- Estimate fertilizer and sprayer quantities, considering delivery costs.
- Training, communication support, and collaboration with agricultural institutes are crucial for successful implementation.

Technology originally documented by
ProPAS

Commodities
Rice

Sustainable Development Goals

Categories
Production, Practices, Yield improvement

Tested/adopted in

■ Tested & adopted
■ Adopted
■ Tested

Where it can be used

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

Target groups
Farmers

Cost: \$\$	41.1 USD	ROI: \$\$\$	7—30 %
	Fertilizers		Yield increased
40 USD	30—45 USD	IP	
Protective kits per person	Knapsack sprayers with a tank of 20 liter	Open source / open access	



Foliar micronutrient addition for healthier rice

<https://e-catalogs.taatafrica.org/gov/technologies/foliar-micronutrient-addition-for-healthier-rice>

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Enquiries techs@taatafrica.org

Urea deep placement Nitrogen management for Efficient Rice Fertilization



Africa Rice Center
Sali Atanga Ndindeng

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.

This technology is **TAAT1 validated**.

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

Gender 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.

Technology originally documented by **ProPAS**

Commodities
Rice

Sustainable Development Goals

Categories
Production, Practices, Soil fertility, Yield improvement

Tested/adopted in

Legend:
■ Tested & adopted
■ Adopted
■ Tested

Where it can be used

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

Target groups
Farmers

Cost: \$\$\$ **0.4—0.8 USD** per Kg ROI: \$\$\$ **30 %** increase in yield

0.25 ton Recommended rate per Ha **100—200 USD** Equivalence cost for the recommended rate per Ha **10 USD** plunger-type applicator **IP** Open source / open access



Urea deep placement

<http://taatdb-web.gov/technologies/urea-deep-placement-nitrogen-management-for-efficient-rice-fertilization>

Enquiries techs@taat-africa.org

Adapted rice varieties for Africa Advanced rice varieties for Africa



AfricaRice

Africa Rice Center
Sali Atanga Ndindeng

Technology originally documented by

ProPAS

Commodities

Rice

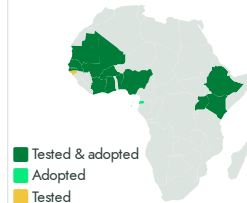
Sustainable Development Goals



Categories

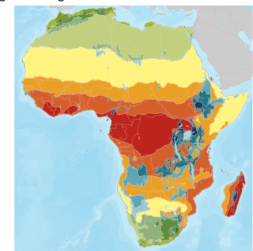
Production, Improved varieties,
Yield improvement, Quality improvement

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

Arica rice, the high yield, disease and stress tolerant rice

Hybrid ARICA lines are advanced rice varieties with high yield potential and resistance to diseases and environmental stresses. They are developed using a three-line or a two-line breeding system, involving backcrossing, test-crossing, and microsatellite screening. To be classified as ARICA, a breeding line must outperform benchmarks in seed yield and grain quality over three seasons. Fiel...

This technology is **TAAT1 validated**.

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

Gender assessment 4

Climate impact 7

Problem

- **Low Productivity:** Traditional rice varieties in Africa yield inadequately.
- **Susceptibility to Pests and Diseases:** Common rice diseases and pests diminish yields and threaten food security.
- **Abiotic Stresses:** Environmental variability poses significant challenges, affecting crop growth and productivity.
- **Limited Adaptation:** Traditional rice varieties struggle to adapt to diverse agroecosystems, resulting in suboptimal performance.

Solution

- **High Yield Potential:** ARICA varieties offer increased productivity and profitability.
- **Disease and Pest Resistance:** ARICA lines resist common rice diseases and pests, ensuring stable yields.
- **Abiotic Stress Tolerance:** ARICA hybrids withstand environmental stresses, ensuring consistent yields.
- **Adaptability:** ARICA varieties thrive in diverse agroecosystems, providing flexibility to farmers.
- **Specialty Traits:** Some ARICA lines possess traits like drought resistance and iron toxicity tolerance, addressing specific challenges.

Key points to design your project

- Steps to integrate ARICA technology:
 - Develop and certify tailored ARICA varieties.
 - Raise farmer awareness about benefits.
 - Facilitate financial support for seed purchases.
 - Provide training on cultivation and management.
- Accompanying solutions:
 - Deep urea placement for nitrogen management.
 - Foliar micronutrient addition for crop nutrition.
 - Engineered irrigation surfacing and water lifting.
 - Motorized weeders for effective weed control.
 - RiceAdvice digital support for comprehensive guidance.

Cost: \$\$\$ **0,8 - 1,2 \$/Kg of seed**

Initial cost of the seed

356 USD

Planting, maintenance, harvesting and winnowing

ROI: \$\$\$ **40 %**

Increase in yield (income)

50 - 111 %

Potential yield



Open source / open access



<https://e-catalogs.taatafrica.org/gov/technologies/adapted-rice-varieties-for-africa-advanced-rice-varieties-for-africa>

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

Rice Threshing and Polishing Machines Axial flow thresher and improved quality polishing

Efficient rice threshing and polishing for premium quality grains, boosting income and market access in african communities.

Axial flow threshers utilize a rotating drum to separate rice grain from the surrounding husk, while abrasive polishers remove outer bran layers. Key parts are made of stainless steel for durability and hygiene. These equipment can be powered by diesel/petrol generators or solar installations for easy use in rural areas.



AfricaRice

Africa Rice Center
Sali Atanga Ndindeng

Technology originally documented by

ProPAS

Commodities

Rice

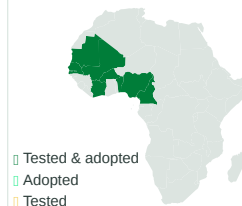
Sustainable Development Goals



Categories

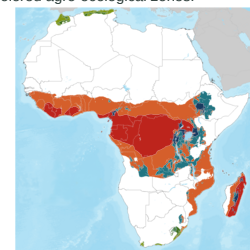
Harvest, Equipment,
Post-harvest handling

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

Gender assessment

3

1

Climate impact

5

Problem

- High grain losses due to manual threshing methods.
- Inefficiencies in the traditional polishing process, particularly manual rubbing.
- Time-consuming and labour-intensive artisanal practices.
- Difficulty in processing large volumes of rice in communities.

Solution

- The motorized axial flow threshers reduces grain breakage and loss compared to traditional manual methods.
- The mechanized equipment drastically reduces the time and labour required for threshing and polishing.
- The mobile units are designed to be highly mobile and can be easily transported to even remote rural areas.

Key points to design your project

The adoption of Axial flow thresher and improved quality polishing offers a solution to enhance agricultural efficiency and reduce labor-intensive tasks. Key steps to integrate this technology include:

- Inform rice farmers, cooperatives and millers about the benefits of motorized threshers and polishers for increasing value addition and market access, and reducing post-harvest costs and losses.
- Identify suitable setup and size of mobile rice processing equipment
- Establish reliable supply of rice by drawing up contracts and delivery schedules for farmers.
- Provide loans to community-based and commercial processors for acquiring mobile units.

Cost: \$ \$ 4500 USD

Local thresher

20 %

Losses reduced

15000—20000 USD

Advanced polishers and whiteners

3000 USD

Small bench-top polishers

IP

Patent granted



Rice Threshing and Polishing Machines

<http://taatdb-web.gov/technologies/rice-threshing-and-polishing-machines-axial-flow-thresher-and-improved-quality-polishing>

Last updated on 31 May 2024, printed on 31 May 2024

Enquiries techs@taat-africa.org

RiceAdvice Lite Digital Advisory for Rice

Empowering Rice Farmers with RiceAdvice Lite



Android or web-based decision support tool - RiceAdvice Lite provides field-specific recommendations on optimal sowing window and fertilizer management, and other good agricultural practices for irrigated and rainfed lowland rice.

This technology is **pre-validated**. **8·7** Scaling readiness: idea maturity 8/9; level of use 7/9

Gender assessment **3**

Climate impact **1**

Problem

- Fertilizer misuse
- Suboptimal rice management
- Impact on productivity and sustainability
- Risk to millions of people's food security

Solution

- Site-specific fertilizer recommendations
- Optimal planting times

Key points to design your project

"RiceAdvice Lite" is a digital tool offering personalized guidance for rice cultivation, addressing key challenges and optimizing farming practices. To integrate it into your project,

- Download the app,
- Identify business models,
- Invest in recommended technologies,
- Monitor progress, and promote adoption through partnerships.

IP
Unknown



Excellence in Agronomy
Ali Ibrahim

Commodities
Rice

Sustainable Development Goals

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

Tested/adopted in

■ Tested & adopted
■ Adopted
■ Tested

Where it can be used

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

Target groups
Development institutions, Farmers, Governments



AKILIMO Digital Decision Support Tool

We know cassava

AKILIMO is a digital application that provides personalized cassava farming advice using advanced algorithms. It offers guidance on planting, fertilizing, and harvesting based on user inputs, aiming to maximize yield and profit. It's accessible through various platforms, catering to all literacy levels.



Excellence in Agronomy
Barbra Sehlule Muzata

This technology is **pre-validated**.

8*7



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

Gender assessment **8 5**

Climate impact **8 7**

Problem

- **Lack of Guidance:** Farmers lack personalized advice for optimal crop management and input usage.
- **Poor Strategies & Productivity:** Limited guidance leads to suboptimal farming strategies and lower productivity.
- **Inefficiency & Unsustainability:** Without proper advice, resource usage is inefficient and farming practices may be unsustainable.

Solution

- **Personalized Advice:** AKILIMO offers tailored, data-driven crop management recommendations.
- **Analytics & Optimization:** It uses advanced analytics for resource optimization, improving yields and reducing costs.
- **Sustainable Practices:** AKILIMO promotes environmentally friendly and responsible farming.

Technology originally documented by

[CASH from EIA](#)

Commodities

Cassava, Maize, Rice

Sustainable Development Goals



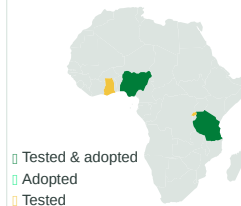
Categories

Production, Digital applications

Best used with

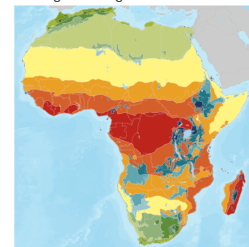
- ["Six Steps" cassava weed management](#)

Tested/adopted in



Where it can be used

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



Target groups

Farmers

Key points to design your project

AKILIMO offers tailored advice for cassava farming, addressing key challenges like nutrient management, weed control, yield goals, climate risks, and resource access. It optimizes production, boosts profits, and minimizes waste.

Integrating AKILIMO:

- **Partnership:** Partner with EIA for advanced analytics and agronomic expertise, and with Extension Agents for effective farmer outreach and optimal use of AKILIMO.
- **Awareness & Training:** Host events and training to educate farmers and agents on AKILIMO's benefits and usage.
- **On-field Support:** Employ agents to assist farmers with AKILIMO navigation and advice application.
- **Accessible Interfaces:** Provide AKILIMO via printable guides, apps, IVR, and chatbots.
- **Demo Plots:** Showcase AKILIMO's effectiveness in demo plots to build trust.
- **Feedback Mechanism:** Establish feedback channels to enhance AKILIMO based on user input.
- **Expansion:** Scale AKILIMO to new regions and crops for broader impact.

Continuous efforts and farmer-centric focus are essential to making AKILIMO a valuable farming tool.

ROI: \$\$\$ **2567 %**



AKILIMO

<http://taatdb-web.gov/technologies/akilimo-digital-decision-support-tool>

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Trace FairFood Traceability Solutions

Easy-to-use solution for food traceability

Trace technology is an advanced tracking solution for agricultural and food-related companies, offering transparency and sustainability. It enhances consumer trust by providing clear and verifiable data about a product's journey and ethical production practices.



FAIRFOOD

Fairfood
Marten van Gils

This technology is **pre-validated**.

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

Gender assessment **3**

Climate impact **6**

Problem

- Agri-food companies struggle with risk mitigation in their operations.
- Transparent traceability of agri-food products is challenging to ensure.
- The food industry lacks sufficient tools for storing and managing essential data.

Solution

- Traceability solutions enable showcasing the precise origin of products.
- Transparent sharing of evidence supporting brand values with the public.
- FairFood's traceability solutions contribute to increased income for farmers.
- Foster transparency and trust, helping create fairer compensation mechanisms within the agri-food supply chain.

Commodities

Common bean, Cassava, Cowpea, Leguminous, Maize, Sorghum/Millet, + 9 more

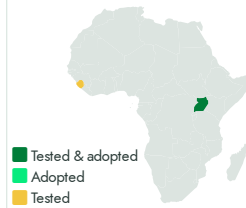
Sustainable Development Goals



Categories

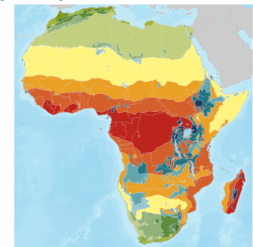
Production, Prevention & storage, Transformation, Market, Pre-production, Digital applications, + 3 more

Tested/adopted in



Where it can be used

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



Target groups

Breeders, Farmers, Processors, Fish Farmers, Sellers

Key points to design your project

"FairFood Traceability Solutions" offers a digital platform to enhance transparency and trust in the agri-food supply chain. To integrate this technology into your project,

- Accessing the platform and installing the necessary software, considering associated costs.
- Configure the platform with relevant supply chain information and provide training and ongoing support to personnel.
- Utilize the platform to track product movement and share transparent information.

10,000 €

Initial investment

100 €

Social Return on Investment per farmer per YEAR

20 €

subscription/user/year

3000 €

Operating Investment /YEAR



Open source / open access



Trace

<https://e-catalogs.taatafrica.org/gov/technologies/trace-fairfood-traceability-solutions>

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Rice Swarna 2

Unleashing Prosperity with Resilient Rice - Medium Cycle, Maximum Yield, Unmatched Quality

Rice Swarna 2 is an advanced rice variety designed for high yields (up to 10 MT/ha), superior milling quality (over 70%), and strong resistance to diseases like BLB and blast. It offers double the yield of traditional OPVs, leading to increased profitability for farmers. This technology represents a significant shift towards sustainable, high-yield agriculture.



Advanta Seeds
Ibrahim Shindu

Commodities

Rice

Sustainable Development Goals



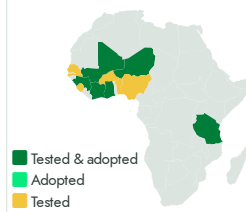
Categories

Production, Improved varieties,
Yield improvement, Quality improvement

Best used with

- [Nitrogen management for Efficient Rice Fertilization >](#)
- [Foliar micronutrient addition for healthier rice >](#)
- [Motorized weeders for rice production >](#)
- [RiceAdvice digital support >](#)
- [Axial flow thresher and improved quality polishing >](#)
- [Parboiling and flour production equipment for rice >](#)

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

Gender assessment 4

Climate impact 6

Problem

Low Yields: Poor farming and weather affect rice yields.

Insufficient Milling: Bad milling leads to money loss.

Reduced Tolerance to Bacterial Disease: Vulnerability to a bacterial disease causes yield losses.

Blast Disease Susceptibility: Lack of resistance to a fungal disease results in crop losses.

Solution

Low Yields: Rice Swarna 2 yields up to 10 MT/ha, enhancing food security.

Insufficient Milling: With a milling percentage over 70%, it improves market value.

Reduced Tolerance to Bacterial Disease: It's engineered to resist bacterial diseases.

Blast Disease Susceptibility: It also has strong resistance to fungal diseases.

Key points to design your project

Rice Swarna 2, a high-yielding and disease-resistant rice variety, tackles gender inequality (SDG 5) and climate change (SDG 13). Increased yields can empower women farmers by improving food security and livelihoods. Reduced disease might lead to less pesticide use, benefiting the environment.

Successful implementation requires a plan:

- Secure certified seeds and suitable land with proper drainage and irrigation.
- Train farmers on specific planting methods for Swarna 2.
- Plant Swarna 2 seeds according to recommended spacing.
- Implement proper weed control, fertilization, and irrigation throughout the season.
- Monitor crop health and assess yield to measure success and identify areas for improvement.

Remember: Access to necessary tools and equipment is crucial.

Cost: \$\$\$ **115 USD**

Average cost of seeds for a farmer /ha

2000 USD

Average gross income /ha

475 USD

Total input costs /ha



Rice Swarna 2

https://e-catalogs.taatafrica.org/gov/technologies/rice-swarna-2

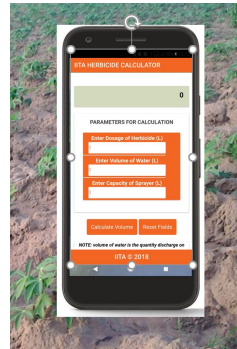
Last updated on 22 May 2024, printed on 22 May 2024

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Herbicides Calculator

Reduce pesticide and herbicide losses with IITA's herbicide calculator

The IITA Herbicide Calculator is a digital tool that helps farmers figure out the right amount for backpack sprayers. This tool was developed using Java language, the Ionic framework, and Android Studio, ensuring its robustness and usability.



✓ This technology is **TAAT1 validated**.

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

Gender assessment **4**

Climate impact **6**

Problem

- The widespread misuse of pesticides (including herbicides) due to poor calibration of spray tanks.
- Loss of inputs (pesticides or herbicides) during applications.
- Residue of chemical products in crops due to overdosing of pesticides or herbicides.

Solution

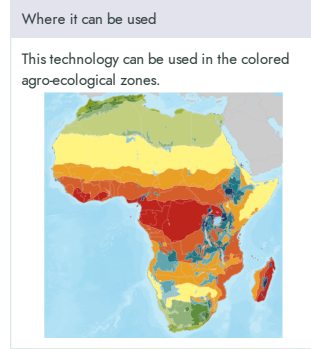
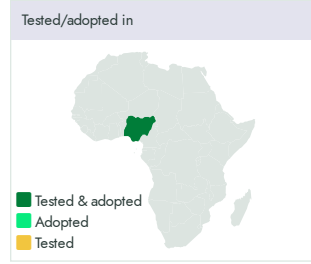
- The "IITA Herbicides Calculator" technology ensures the precise application of pesticides, mitigating issues related to over or under-dosing.
- Its promotes the effectiveness of herbicides, facilitating their optimal application.

Technology originally documented by **ProPAS**

Commodities
Maize, Rice, Sorghum/Millet, Cowpea, Soybean, Cassava, + 1 more

Sustainable Development Goals

Categories
Production, Digital applications, Pest control



Target groups
Farmers

Key points to design your project

- To integrate this technology,
- Establish training programs and connect producers to financial support and markets.
 - Estimate costs for the subscription to the IITA Herbicide calculator, android phones, data, training, and communication support.
 - Collaborate with agricultural development institutes and seed multiplication companies.

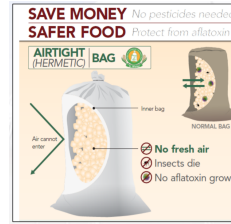
30,000 USD
Cover training, android phones, data
 Open source / open access



PICS Hermetic Bags for Safe Storage of grain

Low cost storage technologies for grain

Hermetic bags are like super-sealed containers that stop air and moisture from reaching the grains inside. This way, farmers can store their grains for up to two years without them getting bad. This is good for farmers because it means they always have enough food and can sell their grains for better prices.



Alliance



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

This technology is [TAAT1 validated](#).

9-9



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

Gender assessment **8 4**

Climate impact **8 7**

Problem

- Food insecurity and poor livelihoods for small-scale farmers
- High post-harvest grain losses due to inadequate storage techniques and pest infestations
- Sale of grains at low prices after the harvest

Solution

- Kills insects and microbial organisms by stopping renewal of oxygen that is consumed by pests and by the grain and accumulating carbon dioxide
- Preserves grain quality and allows storage for up to two years
- No need to use fumigants and insecticides for conservation

Technology originally documented by

ProPAS

Commodities

Common bean, Rice, Wheat, Maize, Sorghum/Millet, Soybean

Sustainable Development Goals



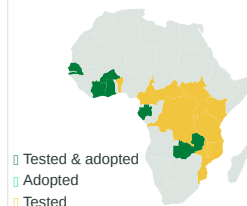
Categories

Prevention & storage, Equipment, Post-harvest handling

Best used with

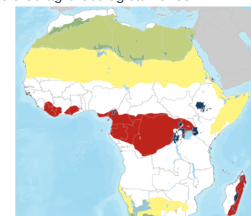
- [Mechanized Threshing Operations >](#)

Tested/adopted in



Where it can be used

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



Key points to design your project

This technology is a eco-friendly solution supporting Sustainable Development Goals by addressing hunger and improving health. To integrate it, plan activities like estimating product quantity and costs, considering logistics, and accounting for training. Communication materials should be developed. Ensure grains are adequately dry before using hermetic bags.

Cost: \$\$\$ **2—3 USD**

Bag cost for users

ROI: \$\$\$ **90 %**

Reduction of loss

50 or 100 Kg

Bag capacity

2 year

Life span

IP

Trademark



PICS

<http://taatdb-web.gov/technologies/pics-hermetic-bags-for-safe-storage-of-grain>

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