ROK varieties: High Yielding Climate Resilient Rice Varieties for Africa

Climate resilient ROK varieties for enhanced rice productivity and nutrition

This technology is a group of improved rice varieties, ROK 42 and ROK 43, combining higher yield potential, early maturity, tolerance to environmental stresses and good grain quality. These traits can help smallholders manage production risks, improve household rice availability and generate marketable surplus, supporting more resilient livelihoods.



AfricaRice

Africa Rice Center
Zenna Negussie

This technology is pre-validated.

9·9 Scaling readiness: idea maturity 9/9; level of use9/9

Inclusion assessment 12 12 12

Climate impact 6

Problem

- **Low smallholder productivity:** Limited harvests leave less rice for household consumption and income generation.
- **Food and income insecurity:** Unpredictable production threatens household food stocks and earnings.
- **Environmental vulnerability:** Drought, flooding and iron toxicity expose farmers to recurring production losses.
- **Limited coping capacity:** Resource-constrained households struggle to absorb crop losses and finance the next season.

Solution

- **Improved food availability:** Reported yield gains of approximately 20% for ROK 42 and 15% for ROK 43 over their respective local checks can increase household rice supplies.
- **Livelihood opportunities:** Additional marketable surplus and good grain quality can support farm income and rice value-chain activities.
- **Greater resilience:** Flood and iron-toxicity tolerance in ROK 42 and drought tolerance in ROK 43 help smallholders manage environmental stresses.
- **Earlier harvests:** Maturity in about 105 days and 90–96 days, respectively, can bring forward rice availability for consumption or sale.

Key points to design your program

For **Development Partners**, prioritise vulnerable rice farmers and lasting livelihood benefits.

- **Beneficiaries:** Target smallholders facing flooding, iron toxicity or drought.
- **Impact:** Measure food availability, marketable surplus and net income.
- **Inclusion:** Ensure women and resource-constrained farmers access seed and training.
- **Investment:** Fund seed supply, local validation, training and monitoring.
- **Sustainability:** Strengthen affordable local seed supply beyond donor support.

1076 USD	1320 USD	244 USD	23 %
Cost per hectare	Revenue per hectare	Net income per hectare	ROI per hectare

IP

Open source / open access

Commodities

Rice

Sustainable Development Goals



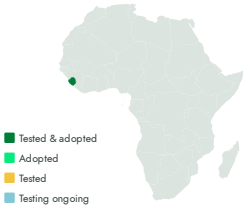
Categories

Production, Improved varieties, Disease resistance, Insect resistance
+ 2 more

Best used with

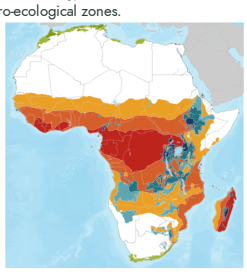
Axial flow thresher and improved quality polishing, Integrating rice and fish farming systems
See all 2 technologies online

Tested/adopted in



Where it can be used

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



Target groups

Farmers, Processors, Seed companies, Researcher center, Advisory and Extension Services, Seed Regulators, Cooperatives and Agribusinesses
+ 1 more