

# Rice-fish culture: Integrating rice and fish farming systems

Rice-Fish System Boosts Profits, Enhances Lowland Land Use for Food Security and Prosperity

Rice-fish co-culture integrates rice and fish farming, boosting food security and farmers' income while ensuring environmental safety by eliminating agrochemicals. It's an innovative approach for food security, economic stability, and environmental sustainability.



AfricaRice

**Africa Rice Center**  
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Commodities

Rice, Fish

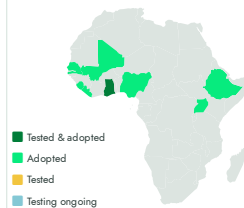
Sustainable Development Goals



Categories

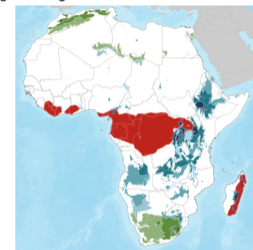
Production, Practices, Water management,  
Production system

Tested/adopted in



Where it can be used

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



Target groups

Farmers, Fish Farmers



This technology is **pre-validated**.



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

Cost: \$\$\$ **5,428 USD**

Initial Cost per Ha

ROI: \$\$\$ **115 %**

Benefit

**3,016 USD**

Operating Cost

**18,188 USD/ha**

Benefit



Open source / open access

## Problem

- **Food insecurity:** Limited access to nutritious food, resulting in nutritional deficiencies.
- **Market vulnerability:** Dependence on rice exposes farmers to market fluctuations, contributing to economic instability.
- **Environmental pollution:** Overuse of agrochemicals leads to soil and water pollution, harming biodiversity and ecosystem health.

## Solution

- **Enhanced profitability:** Rice-fish co-culture improves economic viability with a higher benefit-to-cost ratio (2.2), addressing food insecurity.
- **Market resilience:** Rice-fish farmers demonstrate greater resilience to market shocks due to diversified income sources, ensuring economic stability.
- **Nutrition security:** Fish consumption directly tackles nutritional deficiencies, enhancing food security with a diverse and nutritious diet.

## Key points to design your business plan

- Rice-fish co-culture technology offers increased profitability, diversified income, improved food security, and enhanced climate resilience.
- Integration of fish farming with rice cultivation leads to higher economic returns and a more diverse diet.
- Initial cost: US\$ 5,428 per hectare; Operating cost: US\$ 3,016 per hectare.
- Training is crucial and should be planned for; a team of trainers can provide support during business installation.
- Key partners include fish farmers (fry sellers) and veterinarians.
- The technology has the potential to generate a profit of USD 18,188 per hectare, with a return on investment of 115%.

Inclusion assessment



4

Climate impact



6



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Rice-fish culture

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