



Pascal Gbenou, demonstrating a cono weeder on his field in Kakintchoué, Benin, April 2013

SRI-Rice Projects

SRI-Rice collaborates with research, knowledge-sharing and development projects in Africa, Latin America and Asia.

Selected projects 2014-2015:

Improving and Scaling up SRI in West Africa:

As part of the World Bank-funded West Africa Agricultural Productivity Program (WAAPP), SRI-Rice is the technical lead for this project to increase rice productivity in 13 countries. Find out more at www.sriwestafrica.org.

Reducing Arsenic Levels in Rice: SRI-Rice, as part of a Cornell University team, is conducting research with partners in 7 countries on water-use practices to lower arsenic levels in rice.

SRI Equipment Initiative: SRI-Rice facilitates the SRI Equipment Innovators Exchange Network through online fora and global workshops.

Cover photo: Youssouf Aboubacrine, Horogoungou Village, Timbuktu, Mali. Photo by Erika Styger.

About SRI-Rice

SRI International Network and Resources Center (SRI-Rice)

SRI-Rice has a cross-cutting mission to:

- Generate and advance knowledge and scientific understanding of the SRI methodology
- Broadly disseminate knowledge about SRI
- Optimize technical field implementation
- Strengthen international SRI networks

SRI-Rice Online

www.srtrice.org

Facebook: SRIRice, SICA (sp), SRI Equipment Innovators

Twitter: @srtrice

YouTube: sricornell, sricornell2 (26 playlists)

LinkedIn: SRI-International-Network-Resources-Center

West Africa project: sriwestafrica.org

Research Resources

Research databases (RefWorks): 1) Global 2) Chinese 3) Indian

SRI-Rice Research Network (Mendeley)

Journal article bibliography: 500+ entries

SRI International Network and Resources Center (SRI-Rice)

International Programs

College of Agriculture and Life Sciences

Cornell University

Ithaca, New York 14853 USA

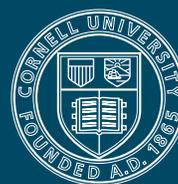
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SRI-RICE



SYSTEM OF RICE INTENSIFICATION

A Climate-Smart Methodology
Enhancing ...

- Productivity • Water Conservation
- Livelihoods • Biodiversity
- Resilience to Climate Stress
- Environmental Quality

The SRI methodology, originated in Madagascar to raise rice productivity and reduce poverty, is benefiting smallholder farmers in over 50 countries.



Two rice plants of the same variety (VN2084) and age (52 days) demonstrate the effects of SRI management. The SRI-grown plant on the right, with 42 tillers, was transplanted at 9 days, while the conventionally grown plant is ready to leave the nursery at 52 days, following traditional Cuban practice.

SRI Advantages

Higher Factor Productivity

- Increased grain yields by 20-50%, and often >100%
- More panicles per unit area, larger panicles, and more grains per panicle
- Better grain filling and grain quality
- Better resistance to drought, storm damage and flooding due to larger/healthier root structure
- Improved pest/disease resistance, less pesticide use
- Reduced seed requirements by 80-90% (6-8 kg/ha vs 40-60 kg/ha)

Water Conservation

- Reduced water requirements by 30-50%

Improved Livelihoods

- Reduced production costs (10-20% less) and higher yields result in higher benefit/cost ratio
- Accessible to the poorest farmers due to reduced inputs and costs

Biodiversity Conservation

- Traditional varieties of rice grown under SRI management show increased productivity

Enhanced Environmental and Human Health

- Organic matter enriched soils have greater nutrient- and water-holding capacity
- Reduced need for pesticides and agrochemicals
- Reductions in methane and arsenic levels achievable through reduced flooding of rice fields

What is SRI?

The System of Rice Intensification (SRI) is a climate-smart, agroecological methodology developed for increasing the productivity of irrigated rice cultivation by changing the management of plants, soil, water and nutrients, while reducing inputs of seed, water and agrochemicals.

In recent years SRI practices have been adapted with comparable benefits to rainfed rice systems and other crops (such as wheat, sugarcane, teff, leguminous and vegetable crops), using the name System of Crop Intensification (SCI).

Why is SRI Important?

Despite the enormous cultural, dietary and economic significance of rice, its cultivation in the developing world is becoming economically and environmentally unsustainable. The global rice crop uses up to one-third of the planet's freshwater supply and emits 10 percent of agriculture's greenhouse gases. Rising costs of seed, fertilizer, fuel and pesticides reduce farmers' already narrow profit margins, resulting in serious debt.

SRI offers farmers an opportunity to produce more rice using less water, reduced agrochemical inputs, and fewer seeds, often with less labor. The benefits include improved household incomes and food security, conservation of water and soils, and increased resilience under drought and other climatic stresses.



Nguyen Thi Bay, from Vietnam's Phu Tho province, shows an SRI grown field and plant (left), and a conventionally grown field and plant (right) after a typhoon; severe wind and rain heavily damaged the conventional field, but not the SRI field.

SRI Principles

SRI is an adaptable methodology that is based on four core principles:

1. Encourage early and healthy plant establishment
2. Minimize plant competition
3. Build fertile soils rich in organic matter and soil biota
4. Manage water to avoid flooding and water stress

These principle stay the same no matter where and how farmers grow rice (or other crops when implementing SCI), but the practices can vary according to local environmental and socio-economic conditions.

Common SRI Practices

Early transplanting: Young seedlings (8-15 days old) are carefully transplanted at the two leaf stage.

Wide spacing: Seedlings are planted singly with wide spacing (often at 25cm x 25cm) in a grid pattern.

Reduced water use: Minimal water is applied during the vegetative growth period, keeping soils moist but well-drained and aerated. This improves conditions for root growth and beneficial soil organisms.

Weeding and soil aeration: The use of a rotary weeder incorporates weeds at the same time as it aerates the surface soil.

Fertilization: Application of biomass (compost, manure, green manure, etc.) is recommended to build healthy, productive soils. Chemical fertilizers can complement or balance organic fertilization if needed.

