



*SRI rice variety test in Thomazeau, Haiti, where under the auspices of the USAID's WINNER project, SRI methods have been introduced since 2010, with average yield increases of over 50% on farmers' fields.*

## Viewpoints

"This emerging technology [SRI] not only addresses food security, but also the water scarcity challenge that climate change is making all the more dangerous. These are all lessons for our world."

— *World Bank President Robert Zoellick, Hindustan Times, December 2, 2009.*

"The System of Rice Intensification (SRI) is perhaps the best current example of options available to farmers and nations to promote community-led agricultural growth, while managing soil and water resources more sustainably and even enhancing their future productive capacity."

— *Darius Mans, President, Africare; Raymond C. Offenheiser, President, Oxfam America; and James P. Leape, Director General, WWF International, in the foreword to their joint report SRI More Rice for People, More Water for the Planet.*

"As our investment in SRI is less than before, and our net profit is higher, we bought one buffalo and a cow and settled our debt to moneylenders. By selling milk we can add further to our income."

— *Duddeda Sugunavva, Farmer, Katkur village, Andhra Pradesh, India.*

## For More Information

### SRI International Network and Resources Center (SRI-Rice)

SRI-Rice, based at Cornell University under the auspices of the Cornell International Institute for Food, Agriculture and Development (CIIFAD), was established in 2010 with a generous gift from Jim Carrey's Better U Foundation.

SRI-Rice's mission is to advance and share knowledge about the System of Rice Intensification and its derived practices and principles, and to support networking among interested organizations and individuals around the globe.

SRI-Rice has three objectives:

- i) Make knowledge about SRI more widely available;
- ii) Advance knowledge about SRI methodology and practices;
- iii) Strengthen the international SRI network.

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**SRI Website: <http://sririce.org>**

## Additional Resources

World Bank Institute, Multimedia SRI Toolkit  
[www.info.worldbank.org/etools/docs/library/245848/index.html](http://www.info.worldbank.org/etools/docs/library/245848/index.html)

Africare, Oxfam America, WWF-ICRISAT Project (2010).  
*More Rice for People, More Water for the Planet*  
[www.oxfamamerica.org/publications/more-rice-for-people-more-water-for-the-planet](http://www.oxfamamerica.org/publications/more-rice-for-people-more-water-for-the-planet)

Challenging Traditions, Transforming Lives  
[www.youtube.com/watch?v=GvibR3hiNac](http://www.youtube.com/watch?v=GvibR3hiNac)

*Cover photo: Mahamadou Mamadoun, Timbuktu region, Mali, surveys his SRI field at harvest. Photo by Erika Styger.*



## SYSTEM OF RICE INTENSIFICATION

*Enhancing ...*

- Productivity • Water Conservation
- Livelihoods • Biodiversity
- Environmental Quality

The SRI methodology, originated in Madagascar to raise rice productivity and reduce poverty, has been demonstrated to be effective in over 40 countries.





*Rice plants of the same variety (VN2084) and age (52 days). SRI plant on right (42 tillers) was transplanted at 9 days; conventional plant (5 tillers) is about to be transplanted according to the usual practice in Cuba.*

## SRI Advantages

### Higher Factor Productivity

- Increased grain yields of 50-100% or more, and higher straw production.
- More panicles per unit area, larger panicles, and more grains per panicle.
- Better grain filling (higher 1000-grain weight), and better grain quality (less breakage).
- Better resistance to drought, storm damage, and cold spells.
- Improved pest and disease resistance —less pesticide use.
- Lower seed requirements by 80-90% (6-8kg/ha vs 40-60kg/ha).

### Water Conservation

- Irrigation water requirements can be reduced by 25-50%.

### Improved Livelihoods

- Costs of production are usually reduced by 10-20%, further raising the profitability from higher yields.
- Reduced costs make SRI accessible to the poorest farmers.

### Biodiversity Conservation

- Increased interest in growing traditional varieties of rice as their productivity is increased.
- Crop diversification is favored as land area under rice can be reduced.

### Enhanced Environmental and Human Health

- Pesticides are less necessary as stronger SRI plants have greater natural resistance.
- Farmers, consumers and the environment all benefit from reduced use of agrochemicals.
- Increased application of organic matter to soils improves soil health and water holding capacity, which helps farmers adapt to climate change.

## What Is SRI?

The System of Rice Intensification (SRI) is a methodology that was developed for increasing the productivity of irrigated rice cultivation by changing the management of plants, soil, water and nutrients while reducing inputs such as the amount of seeds, water, synthetic fertilizers, and pesticides.

In recent years innovation development around the SRI methodology has further evolved and SRI practices are adapted to new crops and cropping systems with comparable benefits as under irrigated rice. The most important crops include wheat, sugarcane, finger millet, sorghum, and teff.

## Why Is SRI Important?

Rice is the world's most important food crop, and the demand for it is increasing. In many countries, "to eat" literally means "to eat rice." Yet rice cultivation in the developing world is becoming financially and environmentally unsustainable. The global rice crop uses up to one-third of the planet's annual supply of freshwater and contributes to global warming through methane emissions. Rising costs of seed, fertilizer, fuel and pesticides reduce farmers' already narrow profit margins and often result in crushing debt. How we produce rice in the future has major implications for social justice and a livable planet.

SRI offers farmers in Asia, Africa and Latin America an alternative that enables them to produce more rice using less water, agrochemical inputs, and seeds, and often less labor. The benefits are improved household incomes and food security, conservation of water and soils, and increased resilience towards climate hazards.



*Nguyen Thi Bay, from Vietnam's Phu Tho province, holds up a SRI rice plant (left) and a conventionally grown plant (right). Typhoon winds and rains severely lodged the conventional crop on right, but the same variety using SRI practices was not blown over as seen on left.*



*Women hand-tilling their SRI plot in Findoukaina, Mali. Farmers are encouraged to experiment with the methods and to evaluate the results for themselves, not just to "adopt" SRI.*

## Basic SRI Practices

**Early Transplanting:** Young seedlings (8-15 days old) are transplanted quickly and carefully, when they have just two leaves.

**Wide Spacing:** Plants are set out singly, one per hill, and in a square pattern—with 25cmx25cm spacing between plants initially.

**Reduced Water Use:** A minimum of water is applied during the vegetative growth period, keeping soils moist but well-drained and aerated, which improves conditions for root growth and beneficial soil organisms. This is in contrast to permanent flooding under conventional methods.

### Weeding and Soil Aeration:

The use of a rotary weeder incorporates weeds at the same time as aerating the soil. This should ideally be done 2-4 times during the cropping season.

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

