



## Lotus Foods' Experience Developing Value Chains for SRI Rice

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### Abstract

Since 2008, Lotus Foods, a US-based importer of heirloom and pigmented rice produced on family farms, has been sourcing marketable surpluses of rice grown by farmers using System of Rice Intensification (SRI) practices. It presently sources SRI-grown rice in Cambodia, India, Indonesia, and Thailand. Lotus Foods' commitment is based on the recognition that SRI is a more efficient, environmentally responsible, and equitable way to grow rice, especially for smallholder producers. In the countries where it sources rice, it works with long-term business partners who aggregate the rice and process it for shipment, handling also certifications and quality control. In the US, Lotus Foods has the job of ensuring final quality, packaging, marketing, sales and distribution. While the company has increased the amount of SRI rice it imports over the past 10 years, it had expected to be importing a lot more. This is due to challenges on both the supply and demand side. This includes supply chain partners' initial lack of experience in processing, business skills, and export, as well as access to credit and modern equipment. The price of Lotus Foods' SRI rice in the marketplace is thus at the upper range due to premiums paid for organic and fair-trade certifications and supply chain inefficiencies. Nonetheless, pro-active outreach to educate American consumers and the food industry about the benefits of SRI has resonated with both and generated growing support for the company's pioneering efforts to help "change how rice is grown around the world."

**Key words:** Lotus Foods, SRI, Rice, Value Chains, Marketing

### Introduction

In 2008, Lotus Foods, a small US-based rice importer specializing in heirloom and pigmented rice grown on family farms, committed to sourcing rice from SRI farmers. We began with one container apiece (about 18 metric tons) in 2009, from Cambodia, Indonesia and Madagascar, having identified, with assistance from the Cornell International Institute for Food, Agriculture and Development (CIIFAD), organizations representing SRI farmers producing marketable surpluses. The company's goals were to: 1) raise awareness of the benefits of SRI practices for people and planet and thus drive change in how rice is grown to be more socially and environmentally responsible; 2) create market incentives and rewards for farmers to adopt SRI; and 3) educate consumers so they could use their purchases to "be part of the solution" to make rice production more sustainable and equitable.

### Methods

#### About Lotus Foods

Established in 1995, Lotus Foods pioneered varieties of heirloom pigmented rice to the US. It is best known for

its black rice from China, trademarked Forbidden Rice®. The company's founding mission was to preserve rice biodiversity, ensure fair prices for family farmers, and promote sustainable agriculture. Headquartered in California, the company has 17 full-time employees, is a certified B Corporation, and co-founder owned and led. It is present in all channels: natural, grocery, e-commerce, foodservice and club. This includes retail stores across North America such as Albertsons and Whole Foods Market. And in club and e-commerce Costco and Amazon, respectively. Lotus Foods is among a core group of brands in the natural foods space respected for innovation, ethics, and championing of small-scale farmers and sustainability.

In the past eight years the company has moved increasingly into value-added products like rice-based noodles due to consumers seeking more nutrient dense, convenience foods. The company maintains close association with SRI-Rice at Cornell University to connect with SRI-related research and the global SRI community. It achieves this through direct communication and by retaining on its team a part-time SRI Liaison. It has also on occasion paid for the

attendance of SRI scholars at international conferences and for production of videos highlighting the role of women in rice production.

## Strategy

To create and expand markets for SRI rice required: 1) importing a supply of high-quality rice from in-country partners sourcing the SRI rice from farmers; and 2) sales and marketing in the US. In-country supply partners handle all the on-site responsibilities including processing, quality control, and bulk packing. Lotus Foods receives the containers in Oakland, California, and has the job of ensuring final quality, packaging, marketing, sales and distribution.

In marketing SRI rice, pro-active education and outreach have been critical and a linchpin of our approach. SRI and the rice varieties first launched in 2009 were unknown in the US. This required a brand refresh to explain SRI on retail packaging and the Lotus Foods website, and educating all levels in the industry from brokers, distributors, and stores to consumers. This has been done with banners, sales materials and promotions, and handouts at four major annual trade shows, in-store product demonstrations, presentations at various conferences, interviews, panel discussions, videos, magazine articles, and award nominations. Since SRI represents such a complex set of issues, to make the concept more accessible to consumers, Lotus Foods has marketed it as More Crop Per Drop®. In 2010, when the company was conducting its brand refresh, the state of California was suffering from a multi-year drought, so concern about water featured highest in consumer surveys.

## Making the Case for SRI

Telling the SRI story has not been easy, as it requires that an audience know some fundamentals about rice cultivation before it can appreciate the benefits. Key elements of making the case for SRI have included:

- Rice is the major recipient of irrigation water, and current practices contribute to global warming, soil degradation, and biodiversity loss. There are many places where paddy can no longer be grown due to water scarcity.
- Less than 10% of rice is internationally traded. Most of the world's rice is produced on small family farms. Roughly one fifth of the world's population depends on rice farming. The majority struggle to

make a living. Many are already becoming climate refugees. We urgently need inclusive solutions.

- Rice is quite literally grown on the backs of women. They work perpetually in bent positions in stagnant water exposed to diseases. Hotter temperatures will increase the stress on their bodies. Their health has a direct impact on farm productivity.

We then provide a visual comparison of conventional and SRI practices, pointing out why we're so committed to SRI:

- SRI is a climate-smart, agroecological methodology for increasing the productivity of rice and other crops by changing the management of plants, soil, water and nutrients.
- SRI is a lot more efficient in use of seeds (80-90% fewer seedlings to plant), water (25-50% less), and women's labor. A simple weeder allows women to weed in an upright position, and they no longer have to work in flooded conditions. One of the many benefits of SRI is the larger root systems that enable plants to withstand storms. Lodging can wipe out an entire season of food. With less cost, inputs and time compared to conventional practices, farmers can increase their yields and incomes.

## Results

The company presently imports about 1100 metric tons of SRI-sourced rice from Cambodia, India, Indonesia and Thailand. The rice is certified organic and fair trade. In 2020 our basmati rice from India achieved the highest industry standard, Regenerative Organic Certification. This represents an opportunity for SRI to gain validation as a regenerative practice. Based on over 10 years of buying and selling SRI rice we have the following observations.

**What Is Working:** At the **farm level**, SRI is an effective methodology for mitigating climate change and promoting farmer resilience. Smallholder farmers can afford it. They can produce surpluses with most varieties, qualify for organic, biodynamic, fair trade and even regenerative standards, and scale quickly if needed and with the necessary training. At the **company level**, Lotus Foods and its supply partners are committed. We have sustained long-term relationships and continue to explore how to improve efficiencies and overcome challenges with our in-country supply partners. There is evident interest from socially responsible lending institutions in getting



more involved. **Consumers and retailers** are extremely enthusiastic and supportive of SRI benefits for people and planet, greater rice biodiversity and connection to farmers.

**Challenges and Obstacles:** There are two major constraints to scaling SRI in North American markets. The first is related to high pricing. This is due to numerous constraints. These include the time and resources required to overcome supply chain partners' lack of experience in processing, business skills, and export. This affects quality control, which must be present in every aspect from seed purification to post-harvest and processing, including milling, cleaning, colour sorting, metal detection, lab analysis, packaging for organic standards, storage, transport and shipping. Related to this is outdated or poor-quality equipment, inadequate knowledge about equipment and maintenance thereof as well as, inadequate funds or credit to maintain or purchase better equipment. Access to capital for partners to secure inventory to scale and to cover the cost of certifications is also a limitation. The cost of certifications themselves add further to the ultimate price that consumers are charged.

The second problem is demand. Rice is not part of traditional food culture in North America. Rice can take time to cook, and many Americans aren't comfortable cooking rice. There is a strong desire for convenience products like noodles. Rice is still perceived as a cheap carbohydrate. Once all the costs of bringing SRI rice to market are tallied, the price for a bag of Lotus Foods rice in the supermarket (currently about \$6.50 for .4 kg retail bag and \$9 for .85 kg retail bag) exceeds what most consumers can afford, and the company's margin is minimal. American consumers have yet to embrace other pigmented rice besides the company's most popular black Forbidden Rice®.

## Discussion

The company has achieved mixed success due to challenges of working with under-resourced supply partners and the costs of certifications, which make our rice less competitive in mainstream grocery. Nonetheless, the company has gained recognition in the natural products industry for the benefits of SRI, especially around its positive impact on water conservation, mitigating climate change and on women's well-being. From 2009 to 2021, we estimate that on the farms from which we sourced SRI rice, 5 billion gallons less water were used on paddies, and 44,000 tons of CO<sub>2</sub> equivalent were not emitted. Our organic and fair-trade premiums have impacted some 5000 household members and contributed to community

enhancements through fair trade social development premiums. In Cambodia, for example, these have included installing wells, bridges, ponds, building a community centre and investing in a community-owned mill.

In recent years, Lotus Foods has been hampered in its operations and ability to grow due to tariffs on Chinese goods imposed under the Trump administration, the 900-fold increase in freight costs after the COVID pandemic, and now rising inflation. By the end of 2022, we will have paid some \$9 million in tariffs. These are funds that could have been applied to address many of the challenges to scaling SRI we have been encountering.

What this also highlights is that the value chain from farmers' fields to American tables is a long one. Since the goal is to scale SRI to mitigate climate change, address food security, and improve farmer resilience, SRI advocates should focus on developing domestic markets to reduce the distance from producer to consumer--promoting also traditional varieties-- making the rice affordable while ensuring fair prices for producers.

Another important opportunity for farmers is the growing market for convenience and value-added foods like noodles that use rice flour in particular. This will require identification of appropriate varieties, compatibility with manufacturing processing, capacity building and investing in new kinds of training and equipment.

## Conclusions

Since no large company was initially interested in the small volumes of surplus rice SRI farmers were producing or willing to work with partners who had no experience in export, Lotus Foods has filled an important void. By linking SRI farmers to markets it is having a meaningful impact on farm households and climate mitigation. But we would like to see SRI scale in both international and domestic markets. A key challenge is lowering prices at the store shelf while maintaining premium pricing for farmers.

An overarching goal would be more policy support for agroecological farming in general, with incentives and reward systems, including carbon credits and crop insurance, for producers who deliver key climate mitigation and ecosystem services. Other strategies might include: 1) Ensuring affordability and accessibility of organic fertilizers and tools for farmers, especially women-friendly tools; 2) Improving water delivery and water capture and storage to provide safety nets during times of both flood and drought, and provide more stability for farmers and buyers; 3)

Improving efficiency and quality in all steps from farms to when companies like Lotus Foods take delivery is critical, which means in-country partners need to have access to low-interest credit for equipment and capital investments and technical assistance and capacity building in milling, packaging, quality control, staffing and accounting; 4) Funding to spur local innovation to improve farmer ownership of the value chain, and commercialize value-added innovations and technologies, would contribute to more robust rural economies.

Help is also needed to bring consumers closer to farmers and make the case for SRI so that they appreciate the benefits for climate, women, communities. This includes research on the health properties of traditional rice. Affordable technology to measure on-farm GHG emissions and reward farmers with carbon credits is a goal gaining global momentum. In November 2021, at COP26

U.S. President Biden was joined by 100 governments in his Global Methane Pledge to reduce the world's methane emissions 30% from 2020 levels by 2030. This includes facilitating private investment in climate-smart development. Given SRI's impact on diminishing methane emissions, opportunities like this should be investigated and leveraged. With individuals like Bill Gates starting to invest in the decarbonisation of rice, and many countries facing serious food shortages, it would seem that a major public-private sector partnership to scale SRI could deliver on many of the UN's Sustainable Development Goals simultaneously, including reducing hunger, minimizing methane emissions and promoting farmer and rural resilience. All while also conserving our planet's freshwater. Finally, UN organizations and government procurement programs should stand behind their values and procure SRI rice grown by smallholders.