

ENABLING PRIVATE SECTOR CLIMATE-SMART AGRICULTURE AND FORESTRY INVESTMENT IN SOUTHEAST ASIA

SUSTAINABLE RICE PLATFORM (SRP)

SUSTAINABLE RICE CULTIVATION



KEY BANKABILITY CRITERIA FOR SRP SUSTAINABLE RICE CULTIVATION:

- Market demand for the borrower's products
- Social or and environmental impacts
- Export and/or domestic market contracts
- Management team and capacity

To accelerate sustainable landscape investments in Southeast Asia, the USAID-funded Climate Economic Analysis for Development, Investment and Resilience Activity (CEADIR) profiled examples of potentially catalytic climate-smart production models with a high probability of obtaining financing, including the Sustainable Rice Platform (SRP). Profiling these models addressed key challenges identified by private and public sector stakeholders at a USAID regional workshop on “Convening Private Sector Investment in Climate-Smart Commodity Production in Southeast Asia” (March 2017, Bangkok, Thailand), including the need to develop pipelines of investable projects and businesses.¹

Rice is the daily staple of 3.5 billion people worldwide, accounting for 19 percent of total global dietary energy. The International Rice Research Institute (IRRI) estimates that rice production must increase by at least 25 percent in the next 25 years to meet global demand. Rice cultivation occurs on 160 million hectares (ha) of land, uses approximately 40 percent of the world's irrigated water, and accounts for 10 percent of global methane emissions (SRP 2017a).

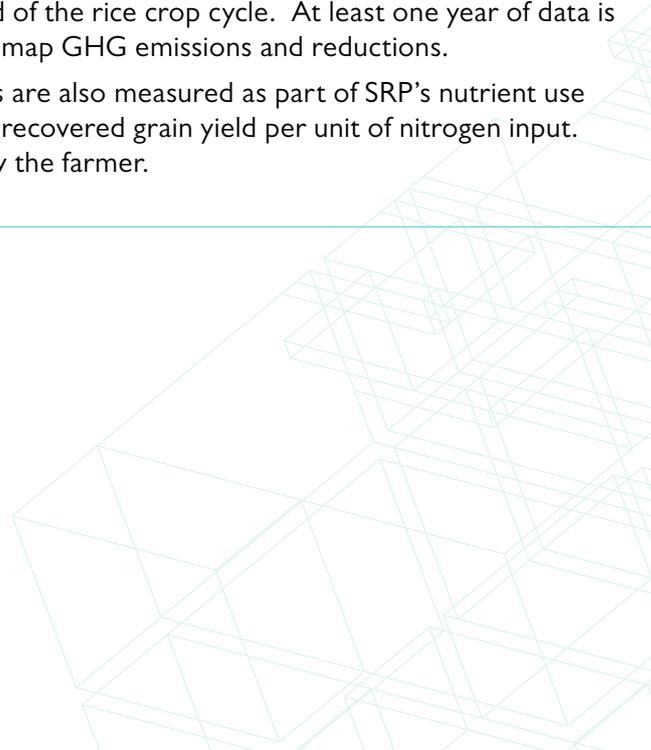
Within Asia, 144 million smallholder rice farmers rely on rice production for food and household income, and

nearly 95 percent of Asian rice is traded and consumed there (SRP 2017a). However, despite the rice industry's critical role in the region's economies, food supply, and local livelihoods, Asia's rice farmers are highly vulnerable to the effects of climate change, including flooding, drought, sea-level rise, and increased temperatures (International Centre for Environmental Management [ICEM] 2013). The SRP is an initiative to improve resource efficiency and sustainability in the global rice sector through a multi-level approach (see Table on page 2), from increased farmer adoption of sustainable best practices in rice production to convening a global alliance of public and private sector stakeholders linking research, policy, production, trade, and consumption. Drivers for SRP adoption across the supply chain include: cost-saving measures—such as fewer fertilizers and efficient water drainage—price premiums to producers and retailers for SRP-certified rice, and increased global awareness of the need to mitigate GHG emissions from rice cultivation. These drivers are increasingly making SRP-certified rice production an attractive, bankable investment for businesses and investors.

¹ CEADIR's analysis built upon a recent USAID assessment of business models for sustainable landscapes in Asia (Makhijani et al. 2017). A [CEADIR Series webinar in October 2016](#) (CEADIR 2016) shared findings from the assessment with a global audience.

PROFILE OF SUSTAINABLE RICE PLATFORM CERTIFIED RICE PRODUCTION

<p>What is the Sustainable Rice Platform?</p>	<p>SRP is a multi-stakeholder platform of the United Nations Environment Programme (UNEP) and IRRI to promote sustainable rice cultivation. It was established in 2011 to promote resource efficiency and sustainability in the global rice sector's trade flows, production and consumption operations, and supply chains.</p>
<p>How does the SRP encourage climate-smart agricultural production?</p>	<p>SRP offers the global rice supply chain a set of instruments to support wide-spread adoption of best practices in climate-smart rice cultivation. SRP's guidelines for sustainable rice cultivation provide a framework for best practices incorporating more than 160 recommended practices developed and approved through an intensive consultative process with SRP members. SRP's Standard for Sustainable Rice Cultivation is the world's first voluntary sustainability standard for rice production. It is complemented by SRP's Performance Indicators, a set of 12 quantitative indicators used to monitor impacts of adoption of climate-smart best practices and other field interventions.</p>
<p>What is the SRP product coverage?</p>	<p>The SRP Standard applies to rice production, including post-harvest processes that remain under the control of individual farmers, smallholder groups, and large farms. A chain of custody is needed to support traceability of commercial rice trade back to the source of production.</p>
<p>How does the SRP address GHGs?</p>	<p>One of SRP's 12 Performance Indicators is greenhouse gas (GHG) emissions reduction, measured as the amount of methane emitted per unit of land area. This indicator reflects SRP's priority to reduce methane emissions from rice fields during crop growth in order to decrease the contribution of rice cultivation to climate change. Measurement of GHG emissions is based upon methods approved by the Intergovernmental Panel on Climate Change (IPCC), and SRP members collect data on a sample of farmers at the end of the rice crop cycle. At least one year of data is needed to establish a baseline to map GHG emissions and reductions.</p> <p>GHG emissions from paddy fields are also measured as part of SRP's nutrient use efficiency indicator, defined as the recovered grain yield per unit of nitrogen input. Data on fertilizer are recorded by the farmer.</p>



PROFILE OF SUSTAINABLE RICE PLATFORM CERTIFIED RICE PRODUCTION

What businesses have adopted SRP?

- Mars Food is using the SRP Standard to benchmark its global rice supply chains and seeks to produce 100 percent of rice from SRP farmers by 2020. Following its launch of SRP in Pakistan, which resulted in a 75 percent increase in farmer income and a 17 percent increase in yield, Mars Food plans to extend SRP to Cambodia, Thailand, and Vietnam in 2017 to 2019 (Mars 2017).
- Olam plans to expand the company's SRP program to reach 35,000 Better Rice Initiative Asia farmers in Thailand by 2023, with the assistance of the German Agency for International Cooperation (GIZ) (Olam 2017; Better Rice Initiative Asia [BRIA] 2015).
- Loc Troi Group, an agricultural enterprise in Vietnam, has cooperated with 150 farmers in Vietnam to adopt SRP. Loc Troi Group has raised \$5 million from the IFC to expand its SRP program to include an additional 4,000 farmers in Vietnam in 2017 (SRP 2017b).
- AMRU Rice, a rice export company in Cambodia, has partnered with the IFC to implement the SRP Standards in AMRU Rice's supply chain. Over a three-year period, it will train more than 2,000 contracted farmers to implement SRP Standards and practices (The FINANCIAL 2017).

What are the advantages and opportunities?

- SRP directly addresses GHG emissions reductions in rice fields, which can contribute to meeting the Nationally Determined Contribution (NDC) targets of countries in Southeast Asia.
- Smallholder farmers can achieve social and economic benefits when applying SRP practices due to the reduced consumption of fertilizers, efficient water drainage, and other cost-saving measures. These benefits may allow SRP models to more quickly commercialize without requiring significant financial support during incubation stages.
- There is consumer demand for SRP-produced and SRP-certified rice. Initial findings from a focus group in Vietnam demonstrate a willingness of buyers within domestic and international markets to pay a premium of 18 percent for SRP-certified rice.
- Multinational corporations have committed to buy SRP-certified rice and have set target percentages for the share of rice that is SRP-certified in their supply chains.

What are the challenges?

- The SRP Standard for Sustainable Rice Cultivation has 46 requirements that require technical knowledge and skills to understand, making it difficult for smallholder farmers to adopt the Standard without technical support.
- The SRP has not yet published tools for companies, smallholder farmers, or cooperatives seeking to pursue third-party assurance (certification), limiting rapid adoption until tools are available.
- The SRP has yet to develop a widely recognized brand value in the commercial rice industry or within rice growing communities, limiting interest in adopting the SRP methods.
- Farmers have limited direct access to large-scale, high-quality rice markets, including those for SRP-produced rice, and depend on the distribution networks of large rice companies (BRIA 2017).
- Rice millers have difficulty segregating volumes of SRP-certified rice from non SRP-certified rice, due in part to the low volume of certified rice (BRIA 2017).



CASE STUDY

COMPANIES SCALE UP INVESTMENT
IN SUSTAINABLE RICE PLATFORM (SRP) RICE

LOC TROI GROUP (VIETNAM)

The Loc Troi Group is a leading agricultural enterprise in Vietnam with 671 billion VND in revenues as of 2016. Loc Troi produces and distributes inputs such as pesticides, seeds, and fertilizers in the Southern region of Vietnam, and outputs namely rice for domestic consumption and export.

Responding to increased competition from other key rice exporting countries, Loc Troi is applying the SRP Standard for Sustainable Rice Cultivation to improve rice production, expand global market share, increase profitability, and enhance farmer livelihoods. Loc Troi piloted the SRP rice cultivation model with 150 farmers in 2016 and is expanding the program to include 4,000 more farmers in Vietnam in 2017. It is also exploring expansion of the SRP model to an additional 100,000 ha in 2018. Financing for Loc Troi's scale-up of the SRP model includes \$5 million raised from the International Finance Corporation (IFC) in partnership with the International Rice Research Institute (IRRI).

Loc Troi is increasing investment in the SRP rice cultivation model due to the stable market for SRP rice globally and the economic case for following the model. The total expenses for cultivating SRP rice are \$582 per ha, compared to \$642 per ha under previous cultivation techniques. Farmers adopting the SRP model saw a \$60 per ha higher return for their output through application of alternate wetting and drying (AWD) techniques, which enabled reductions in water consumption and fertilizer use. Loc Troi has identified a small price premium for SRP-produced rice (\$1,010 per ha for SRP-rice also compared to \$1,004 per ha for non-SRP rice). The price premium combined with cost reductions achieves an 18 percent increase in profit per ha.

Sources: Duong Van Chin, Director of Dinh Thanh Research and Development Center, Loc Troi Group (personal communication); Choup Sonivorth, Coordinator for SRP/IFC, AMRU Rice (personal communication).

AMRU RICE (CAMBODIA)

AMRU Rice is Cambodia's leading rice exporter. It is a brand of the family company Amret Rungroeng Group Limited, which owns 100 ha of agricultural land and a rice milling factory in Battambang province, provides financing to Cambodian rice farmers, and has established production and exporting processes to facilitate rice distribution globally.

In 2013, AMRU Rice exported 50,000 metric tons of rice primarily to Europe and emerging markets in China and Malaysia, and has since expanded export volumes. Driven by the company's corporate social responsibility goals, increasing consumer demand, price premiums for sustainable rice, and the opportunity to improve livelihoods for farmers in its supply chain, AMRU Rice began implementing the SRP Standard for Sustainable Rice Cultivation. The company appointed an internal SRP coordinator who works closely with the SRP and the IFC to, which provide farmers in AMRU Rice's supply chain with the necessary skills to adopt the SRP rice cultivation model, and access to, markets and services to improve their livelihoods.

AMRU Rice recently announced a partnership with IFC to scale implementation of the SRP model in their supply chain. Over a three-year period, IFC will support the training of more than 2,000 contracted farmers in AMRU Rice's supply chain to implement the SRP rice cultivation model, with plans for further expansion.





ALIGNMENT OF SRP SUSTAINABLE RICE CULTIVATION WITH COUNTRY NDC TARGETS

Rice production emits large quantities of methane and nitrous oxide, both potent GHGs, during cultivation and the burning of crop residues (Balachandran 2015). Most of the world's rice production occurs in the flooded soils of rice paddies, which provide an ideal environment for methane-producing bacteria. To mitigate emissions from rice cultivation, farmers can take a more integrated approach to irrigation, fertilizer, and agricultural residue management. One approach to mitigating methane emissions from rice cultivation is to reduce the duration and extent to which rice paddies are flooded during cultivation. Single drawdown of water during the mid-season and AWD are two techniques for reduced or interrupted inundation. Effective water drainage and irrigation can decrease methane emissions from rice cultivation by 90 percent compared to full flooding techniques (Adhya et al. 2014).

Recognizing the sizeable contribution of rice cultivation to agricultural GHG emissions, Indonesia and Vietnam have called for more sustainable and lower-emission rice production in their NDCs. Indonesia prioritizes in its NDC the promotion of low-emission crops, improved land use management, and implementation of water efficient agricultural practices (Gol 2016). Vietnam includes in its unconditional NDC target the increased use of AWD irrigation and systems of rice intensification (SRIs) covering 200,000 ha between 2021 and 2030, contributing to reductions in emissions of 0.94 MtCO₂e per year. In its conditional target, Vietnam includes additional actions to incorporate AWD and SRI for 500,000 ha from 2021

to 2030, contributing to emission reductions of 2.34 MtCO₂e per year (Government of Viet Nam, Ministry of Natural Resources and Environment 2015, 2016).

The USAID-funded Climate Economic Analysis for Development, Investment, and Resilience (CEADIR) Activity calculated potential GHG reductions from SRP-produced rice using the default values for potential GHG reductions provided in the EX-Ante carbon balance tool (EX-ACT) of the Food and Agriculture Organization (FAO) (Grewer et al. 2017).² EX-ACT estimates the impact of agriculture and forestry development projects, programs, and policies on the carbon-balance. Estimates are expressed in CO₂ equivalent emitted or sequestered due to project implementation as compared to a business-as-usual scenario. To highlight the potential contribution of SRP-produced rice in reducing economy-wide emissions by 10 percent relative to the baseline, CEADIR calculated the total area needed under SRP rice cultivation between 2020 and 2030 for Indonesia, the Philippines, and Vietnam (see Table on page 7).³

CEADIR estimated that 48.3 million ha would need to be converted from traditional rice cultivation to SRP rice in the three countries: 39 million ha in Indonesia, 8 million ha in the Philippines, and 1 million ha in Vietnam. This would result in an estimated net emissions reduction of 995.53 MtCO₂e total across the three countries if implemented: 784.6 MtCO₂e in Indonesia, 160.48 MtCO₂e in the Philippines, and 50.46 MtCO₂e in Vietnam.

² CEADIR assumes the quantity of carbon reduced from effective water management in rice cultivation compared with full flooding cultivation methods.

³ Cambodia was not included in these calculations because the country's NDC submitted to the United Nations Framework Convention on Climate Change (UNFCCC) did not include proposed mitigation actions for agriculture. CEADIR selected a 10 percent economy-wide emissions reduction in the absence of national targets for SRP rice cultivation in order to estimate the investment needed in these adaptation strategies, highlight the potential emissions reductions and associated land under cultivation needed, and link to other initiatives such as IRRI. CEADIR chose 10 percent to approximate an investment model and because of the sizeable potential contribution of SRP rice cultivation in reducing land use, land-use change, and forestry (LULUCF) emissions in these countries.

AREA OF SRP RICE CULTIVATION NEEDED TO CONTRIBUTE 10 PERCENT OF NDC ECONOMY-WIDE EMISSION REDUCTION TARGETS FOR INDONESIA, THE PHILIPPINES, AND VIETNAM (2020-2030)

Country	Nationally Determined Contributions for 2020-2030 (MtCO ₂ e)	Ten Percent Reduction for 2020-2030 (MtCO ₂ e)	Per Hectare Potential GHG Reduction (ton CO ₂ e per ha per year) ^a	Area of SRP Rice Needed (ha)
Indonesia	7,845.95 ^b	784.595 ^b	2 ^a	39,229,750
Philippines	1,604.75 ^c	160.475 ^c	2 ^a	8,023,750
Vietnam	504.6 ^d	50.46 ^d	4.8 ^e	1,051,250
Total		995.53	8.8	48,304,750

^a Potential GHG reduction (tCO₂ per hectare-year) calculated using default emissions reduction estimates from the EX-ACT Tool for Indonesia and the Philippines. Estimates for Vietnam from Vietnam's National Determined Contribution Agriculture Action Plan (Government of Viet Nam, Ministry of Agriculture and Rural Development 2016).

^b Source: Gol (2016).

^c Source: Republic of the Philippines (2015).

^d Source: Government of Viet Nam, Ministry of Natural Resources and Environment (2015).

^e Source: Government of Viet Nam, Ministry of Agriculture and Rural Development (2016).



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