

Photo: ACR

ESTABLISHMENT OF A MID-SOUTH ENVIRONMENTAL STEWARDSHIP MARKETING COOPERATIVE

Project Summary

In 2015, White River Irrigation District and its partners, Winrock International (through its American Carbon Registry, ACR), the Environmental Defense Fund (EDF) and Climate Smart Group (Carbon Credit Solutions, CCSI), were awarded an NRCS Conservation Innovation Grant (CIG). The purpose of which was to create additional value for U.S. rice producers by monetizing the benefits of sustainable production practices through carbon credit sales and product sustainability certification and labelling.

Three distinct market mechanisms were pursued under the CIG. Of the three, the development of a credible, rigorous sustainability standard for U.S. rice shows the most promise for achieving the goals of the CIG.

The [Sustainable Rice Platform \(SRP\)](#), an internationally recognized sustainability standard for the global rice industry, was adapted for the [U.S. production system \(US-SRP\)](#). Once approved by the

SRP Secretariat (expected late 2019), U.S. producers may use SRP claims and logos if they complete the US-SRP Standard questionnaire instrument and meet the required thresholds.

U.S. rice producers are global leaders in sustainable production methods, already adhering to strict environmental, health, safety and labor regulations, and innovating additional, voluntary, sustainable practices. The US-SRP allows U.S. farmers to be recognized as the most sustainable producers in the world, through an objective comparison with other rice producing regions. By producing a claim that the

WHAT IS THE SRP?



- CO-CONVENED BY UNEP AND IRRI IN 2012
- ESTABLISHES ESSENTIAL PRINCIPLES FOR DEFINING SUSTAINABILITY
- SELF-REPORTED, QUESTIONNAIRE FORMAT
- ESTABLISHES ACTION AREAS AND PERFORMANCE INDICATORS
- ASSURANCE PROGRAM AND ALLOWABLE CLAIMS
- INITIALLY DESIGNED FOR SMALL HOLDER FARMS IN SOUTH EAST ASIA

farmer owns, the SRP program also serves as a deterrent to the practice of collecting environmental data from farms without compensation to enable corporate sustainability claims for farmer conservation actions.

Companies have thus far shown limited willingness to pay producers for the environmental benefits of sustainable rice production. The US-SRP offers a chance to change that dynamic by clearly defining the transaction through a rigorous, credible, objective standard that is supported by an assurance program. Use of the SRP claims and logos may also incentivize more farmers to implement sustainable practices and enhance global competitiveness for U.S. rice producers that choose to participate.

With support of this CIG, the needed tools for the US-SRP program have been developed. The program, as an arm of the global SRP, now needs to be operationalized. Several annual cycles of participation in the program by producers, mills, buyers and other stakeholders will undoubtedly result in significant simplification of the program and hopefully stimulate the market response.

Support and collaboration from: Entergy Foundation, Dr. Merle Anders, University of Arkansas, Arkansas State University-Jonesboro, Mississippi State University and USDA-ARS.

Why Rice?

Accounting for 20% of the global population's caloric intake, rice is one of the world's most strategic and politically sensitive commodities. U.S. producers are responsible for approximately 1% of global rice production and 6 % of global exports¹. U.S. rice is some of the most sustainably produced in the world, with producers implementing practices, both voluntary and compulsory, that save water, limit chemical application, create and protect habitat, ensure safety and well-being of workers, enhance soil and reduce

greenhouse gas (GHG) emissions. Were the way that U.S. rice is produced and the resulting environmental benefits well documented and marketed, revenue and market access for U.S. rice producers could be increased. By telling the story of sustainably produced rice in the U.S., producers can demonstrate leadership on the international stage and share innovation, furthering the impact of their sustainable production practices. In addition, rice is the first commodity crop with a developed and approved carbon accounting protocol for generating carbon credits that can be traded in both the California compliance and the voluntary carbon markets (approved in 2015). And, rice is one of the few U.S. commodity crops that has an internationally recognized sustainability certification in the SRP.

Methods

The team developed and implemented three separate market mechanisms by which U.S. producers could recoup the value of the environmental benefits that result from sustainable production.

Market Approach 1: Establish a marketing co-op

Market Approach 2: Streamline and improve carbon market infrastructure

Market Approach 3: Develop a sustainability standard for U.S. rice



Photo: ACR

¹ <https://www.ers.usda.gov/topics/crops/rice/rice-sector-at-a-glance/>

A brief description of each follows. Of the three, the third approach, to develop a sustainability certification standard, was the most successful, generating considerable stakeholder support and interest from producers, mills, buyers, NGOs, USDA and international organizations.

Market Approach 1: Establish a Marketing Co-op

GOAL

Establish a legal entity for marketing and branding sustainably produced rice and develop associated marketing materials including brochure and video. Use the brand and the logo to market the 2016 rice crop for brand co-op producers.

PRODUCTS



Nature's Stewards LLC was created as a legal entity in Arkansas in 2016. Marketing materials and a promotional video, produced in 2016, were used by members to market 2016 rice.

Co-op producers were those that had successfully sold ACR-issued voluntary carbon offset credits in 2016, completing a rigorous third-party audit of the practices conducted in individual fields and the resulting avoided GHG emissions. Despite evidence of the validity of the effectiveness of the practices and the GHG savings from the practices (via the carbon market process) and despite the high-quality production value of the marketing materials, Nature's Stewards producers found no interest from major buyers to distinguish this rice from their other purchases and were not able to achieve a "sustainability premium" for their rice in 2017.

LESSONS LEARNED

Major rice buyers are not yet willing to pay for conservation, as a premium on the commodity or as a separate product from the commodity, based on marketing.

Marketing is a powerful tool that can and increasingly will be used to distinguish the farm(er), creating brand recognition for a single operation as opposed to brand recognition for the companies that interface with rice consumers.

Consumers are increasingly demanding knowledge of the origins of food products and the way they are produced. Farm branding, while not enough to ensure sustainable practices have been implemented and benefits achieved, does partially satisfy these consumer demands.

Consumers are demanding substance in sustainability claims, thus marketing needs to be accompanied by robust certifications and assurance in today's market.

WHAT'S NEXT

The brand and marketing materials are available for use by co-op members. Some Nature's Stewards members may choose to use the brand in conjunction with the SRP claim and brand (See Market Mechanism 3: Develop a sustainability standard for U.S. rice).

Market Approach 2: Streamline and Improve Carbon Market Infrastructure

GOAL

Reduce the level of time, effort and expense for farmers to access the carbon market using existing ACR carbon offset protocols (methodologies).

Carbon offset protocols for the rice sector were adopted for both the voluntary carbon market (American Carbon Registry, 2013) and California compliance market (California Air Resources Board, 2015) and in 2017, ACR issued U.S. rice producers the first verified carbon offset credits in the world for changes in rice production practice, [which were sold to Microsoft](#). While groundbreaking, the primary lesson learned from the first carbon credit issuance was that producers were not likely to participate in

the carbon market in the future because the cost and level of effort to quantify the avoided emissions and have them verified was not commensurate with the financial return on a per acre basis. The team sought to address this issue by reducing the cost of offset project development and verification by streamlining monitoring, reporting and verification (MRV) and implementing IT solutions.

PRODUCTS

First, Winrock together with Hub Culture, MIT and Barclays Rise hosted a Hack-a-thon (New York, September 2016) for student programmers and designers to identify novel uses of existing agricultural datasets and remote sensing products in carbon offset protocols. The goal being to reduce the amount of data being asked of the rice producer during verification and allowing for much of the verification to be conducted remotely.

Second, the team created a comprehensive list of the individual pieces of data needed for each field to quantify and verify avoided GHG emissions according to existing carbon offset protocols. These were then compared to data already being provided by producers for other reporting (e.g. USDA, Crop Insurance, IRS, mills, crop consultant etc.)



Photo: Dennis Carman

Finally, the team completed a bulk modeling exercise with the DNDC model to create a lookup table of methane emission factors for thousands of combinations of soil characteristics, climate, water management, rotation and residue practices. Standardized emission factors would remove the need to run the DNDC model for every field and consequently, to verify all model inputs at the field level. Project developers, verifiers and market practitioners would no longer need to interact with the DNDC model directly.

LESSONS LEARNED

In terms of MRV of agricultural practices and status at the farm and field level, a tremendous amount of data and technology already exist, including USDA data products (NASS, NLCD), equipment software (tractors/combines, water pumps, moisture sensors), farm management software, and public and private satellite products (Landsat, Google Earth, Sentinel-2). All of these can be leveraged for carbon market or another program MRV.

Two significant challenges were identified by hack-a-thon participants to incorporating data and technology into carbon offset protocols:

1. Farmer privacy and ensuring farmer ownership of data collected remotely from farms
2. API or other side-door access to government databases and data products or proprietary software such as MyJohnDeere

Privacy and ownership of data are concerns of the utmost importance to farmers. The team chose not to pursue carbon offset protocol changes that would enable the farmer to be by-passed in environmental claims or credit issuance or sharing of data of any kind in the absence of farmer granting permission.

To truly streamline the user experience, data collected from third parties would need to be combined, cleaned, analyzed, verified and uncertainty applied in a single platform with which the user, verifier and

registry interact. Building such a platform for a single carbon offset project type was beyond the scope and level of support of a CIG. Even if privacy issues could be overcome, the team considers this a commercial initiative.

Currently adopted carbon offset protocols require the use of DNDC, a process based biogeochemical model. We found that it is not possible to distill the model down and produce accurate emission factors, at least at the level of streamlining tried here. The bulk modeled emission factors were not in good agreement with measured values for the same conditions. DNDC experts think that there is too much variability in too many of the important parameters in the model to be able to “turn off” or make static any of them. Thus, the DNDC model needs to be run at the field level to produce a methane-emissions estimate that is accurate enough for the carbon market.

Because carbon offsets are assets that are transacted, sometimes for compliance obligations, each carbon offset must be real, additional, permanent, quantifiable and verifiable; hallmarks of the carbon market that distinguish carbon offsets from other claims. Simplification of MRV must always be weighed against any increases in emissions reductions uncertainty or decrements to these criteria. Consequently, there is a minimum administrative cost to produce this high integrity asset. Even if MRV could be massively streamlined, the low per-acre emission reduction volumes, combined with current carbon market prices (\$5-\$10/tonne CO₂), would likely still render this carbon offset project type not viable.

WHAT'S NEXT

For the reasons cited above, interest in carbon offset projects using existing protocols is extremely low. From Applied Geosolutions (AGS), our collaborator on the DNDC modeling exercise, we understand that improvements are underway on the underlying model code and user interface. Further, AGS is developing and piloting a data mining approach, built on millions of DNDC runs and remote

sensing and other data to estimate methane emissions across Vietnam. These advances can potentially be incorporated into existing carbon offset protocols in the future, were the price of carbon to substantially increase and make this project type more economically interesting.

Market Approach 3: Develop a Sustainability Standard for U.S. Rice

GOAL

To create an inclusive, voluntary process for U.S. rice producers to demonstrate environmental stewardship and global leadership through a standardized, rigorous, credible, transparent and independent standard/certification process.

U.S. producers, are global leaders in sustainable production methods, already adhering to strict environmental, health, safety and labor regulations, and pioneering additional, voluntary, sustainable practices. Acutely aware of this, U.S. producers now sought recognition for their environmental stewardship.

WHAT MAKES A GOOD STANDARD?



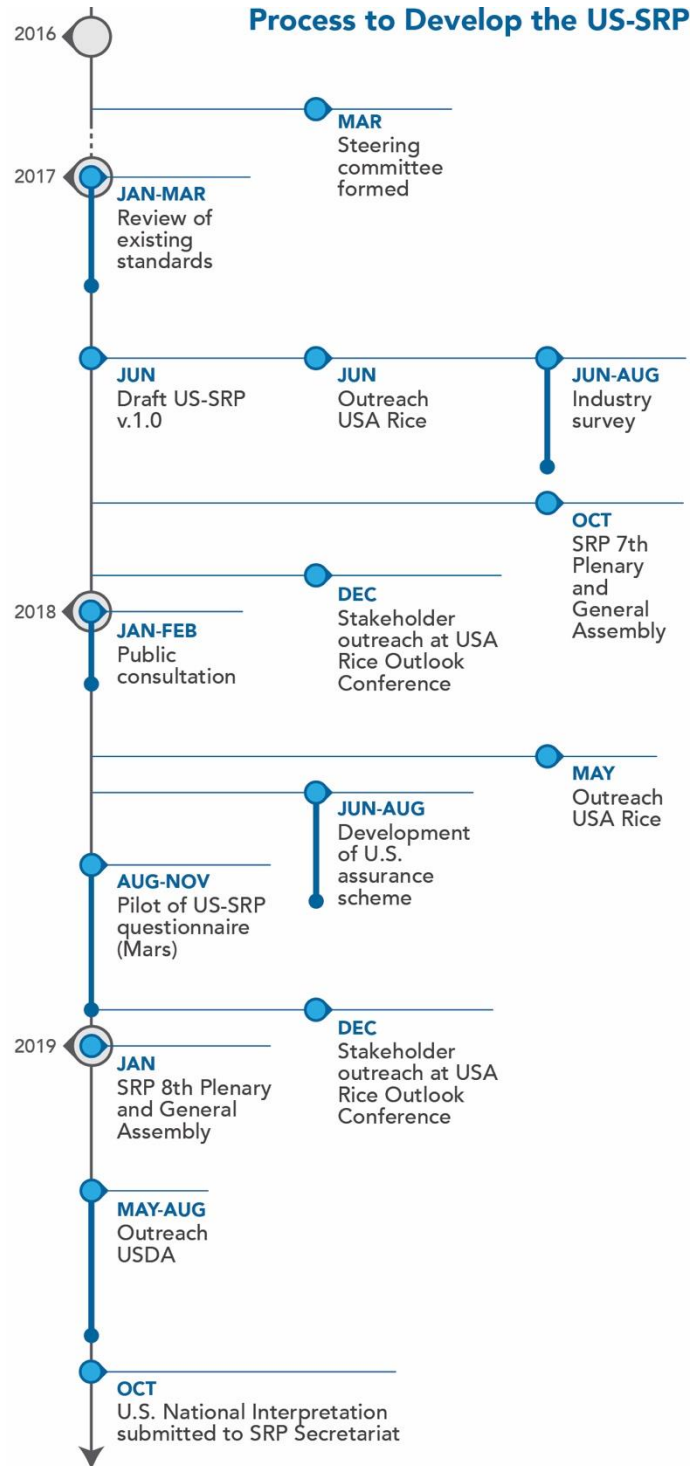
[ISEAL STANDARD-SETTING
CODE OF GOOD PRACTICE](#)

- **RELEVANCE** IN ADDRESSING REAL CHALLENGES IN THE SECTOR
- **RIGOR** IN THAT PRACTICES REFLECT THE LATEST SCIENCE
- **OBJECTIVITY** BECAUSE THEY ARE BASED IN MEASURABLE CRITERIA AND METRICS
- **ENGAGEMENT** BECAUSE THEY ENGAGE STAKEHOLDERS IN THEIR DEVELOPMENT
- **TRANSPARENCY** BECAUSE THE DEVELOPMENT OCCURS IN AN OPEN PROCESS
- **ACCESSIBLE** BECAUSE IT APPLIES TO A RANGE OF PARTICIPANTS IN THE SECTOR
- **IMPROVEMENT** IN THAT A REGULAR PROCESS FOR UPDATES AND REVISION IS ALLOWED
- **OVERSIGHT** FROM A KNOWLEDGEABLE AND DIVERSE STEERING COMMITTEE OR ADVISORY BOARD

PRODUCTS

A marketing research firm based in the mid-South rice growing region was hired to survey rice producers and major rice buyers regarding the need for and utility of a single, credible and independent sustainability certification for U.S. rice.

The team adapted the SRP Standard and Assurance Scheme for the U.S. production system. Originally developed for small-holder rice farms in SE Asia, significant revision was required to make the SRP appropriate for U.S. rice production systems and harmonized with U.S. law and USDA programs.



THE SRP WAS IDENTIFIED AS A GOOD FOUNDATION FOR A U.S. SUSTAINABLE RICE CERTIFICATION BECAUSE:

- IT IS SCIENCE-BASED,
- IS FOCUSED SPECIFICALLY ON RICE,
- IS SUPPORTED BY A RANGE OF INTERNATIONAL RICE BUYERS AND NGOS,
- WAS DEVELOPED ACCORDING TO ISEAL BEST PRACTICE,
- INCLUDED AN ASSURANCE SYSTEM,
- PRODUCED CLAIMS AT THE FARM LEVEL, AND
- ALLOWS FOR THE OBJECTIVE COMPARISON OF THE ENVIRONMENTAL PERFORMANCE OF U.S. RICE GROWERS WITH RICE GROWERS FROM OTHER REGIONS GLOBALLY.



Photo: Dennis Carman

Winrock participated on SRP Working Group 3, providing substantial comment to the Assurance Scheme, Performance Indicators, Training Modules and Protocol for Developing National Interpretations. As one of the first countries to undertake a National Interpretation of the SRP, we shared our experience and lessons learned, thereby taking a leadership role in the development of the program itself. The U.S. National Interpretation for SRP was submitted to the SRP Secretariat for approval on October 4, 2019.

The adapted SRP questionnaire instrument was piloted by Mars within their U.S. producer networks in 2018 and 2019. In coordination with Mars and their producers, our team reviewed and tabulated results to inform development of the US-SRP questionnaire and assurance scheme.

LESSONS LEARNED

Many rice producers (68% of those surveyed) and major U.S. rice buyers (80% of those surveyed accounting for 75% of U.S. rice purchases) said that a single, credible U.S. sustainability certification for rice would be helpful in marketing their product (producers) or meet their sustainable sourcing needs (buyers).

U.S. laws and regulations addressed more than half of the content of the SRP Standard, confirming an alignment in priorities of the SRP program with U.S. environmental, agriculture, labor and food safety agencies. For areas of the SRP Standard not covered by regulation, the USDA and State University Extension offices provided recommendations and support to U.S. producers, again confirming alignment on global sustainability priorities

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**“THIS WORK WILL SERVE AS A
ROADMAP TO THE SRP FOR
ACHIEVING NATIONAL ADAPTATIONS
ACROSS THE GLOBE, WHICH WILL BE
PARAMOUNT TO THEIR VISION OF ONE
MILLION GROWERS IMPLEMENTING
SUSTAINABLE BEST PRACTICES IN
RICE PRODUCTION.”**

**- DR. BOB ZEIGLER,
DIRECTOR EMERITUS IRRI**

and demonstrating the high level of technical assistance available to U.S. producers.

Inherent in a standard that covers so many aspects of rice production (e.g. fertilizer application, pest management, water use, greenhouse gas emissions, labor, soil quality, grain safety, habitat) are conflicting actions and associated environmental tradeoffs. National Interpretations of the SRP, and sustainability standards in general, are recommended to: 1) weight these counter actions equally 2) ensure the assessment tools provide flexibility to farmers, and 3) acknowledge local sustainability priorities.

U.S. rice producers perform extremely well on the SRP relative to producers in other parts of the world. The highest tier of SRP performance to claim “sustainably produced rice” requires a score of >90%, and the average U.S. score among pilot producers was 87%, with several already above 90%. Average scores from pilots in Italy, Thailand and India were 86%, 60% and 70%, respectively². Further U.S. farmers should be able to easily complete assurance, further distinguishing their claims from those in other countries where verification of the responses will be more difficult.



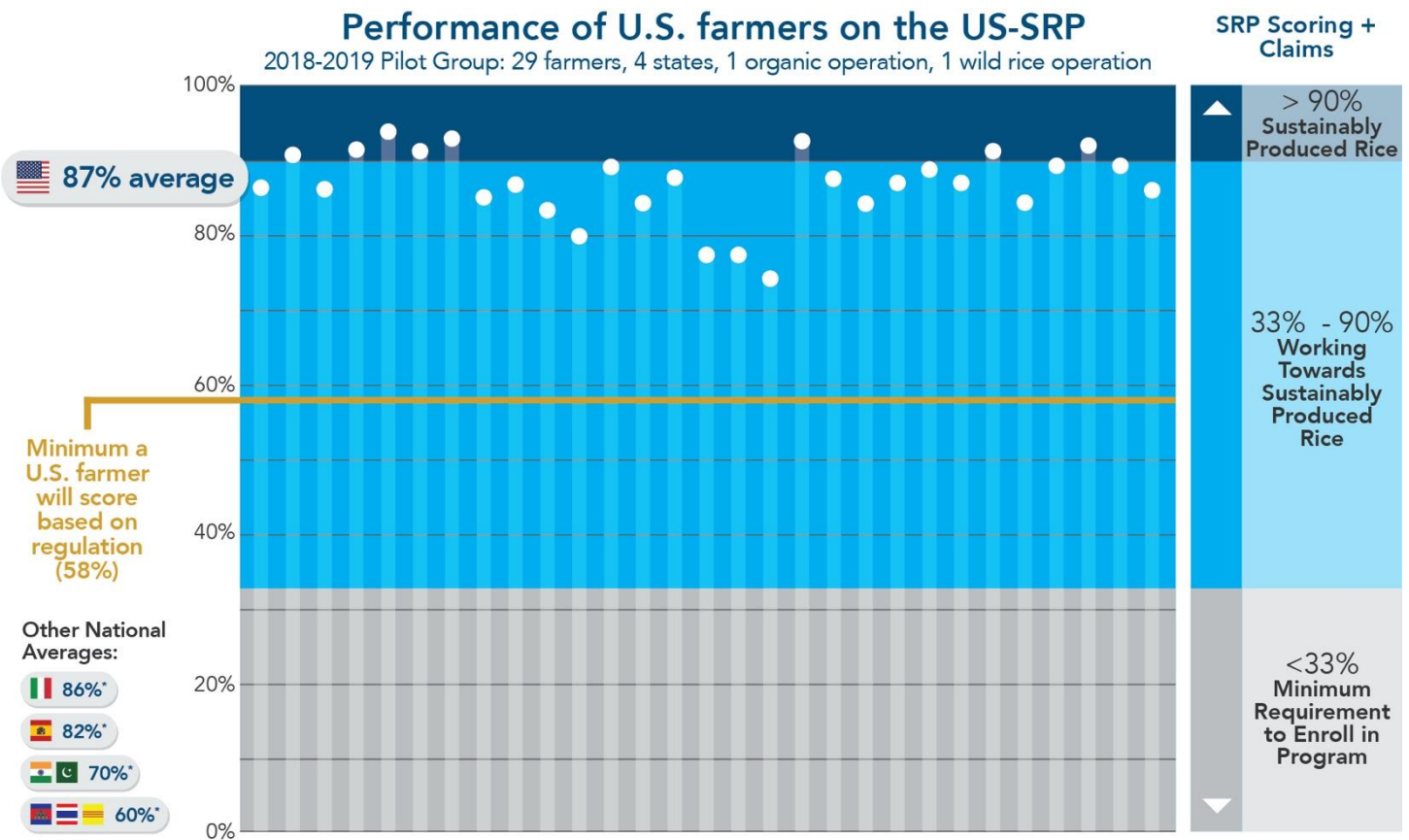
² E-mail communication, Louke Koopmans (Mars) to Winrock May 29, 2019

U.S. rice producers rightly expect to transact the environmental benefits of sustainable production practices occurring on their farms and to own the data that substantiates and quantifies those benefits. Thus far, major rice buying companies have shown limited willingness to pay for the conservation, even when that conservation has been verified to meet the criteria of an internationally recognized sustainability standard.

Farmers should be paid for the environmental benefits resulting from the sustainable production practices they implement, but the team's original concept of premiums on the rice commodity is too simplistic. A variety of incentive and reward mechanisms should be considered dependent

on regional environmental priorities, producer performance and available actions to increase performance, varieties grown and other considerations.

Rice producers are rapidly enrolling (or being enrolled) in SRP in other countries, suggesting that the amount of rice produced globally that can bear the SRP logo and claim of "Sustainably Produced Rice" is increasing. It's important for U.S. producers to have access to this claim and logo, as U.S. rice is some of the most sustainably produced in the world. Communicating that to consumers via any/all available means is imperative.



WHAT'S NEXT

On October 4, 2019 Winrock submitted the National Interpretation of the SRP for the U.S. to the SRP Secretariat for review per their National Interpretation Guidelines. Once the U.S. National Interpretation of SRP is approved by the SRP Secretariat (late 2019), U.S. producers can voluntarily participate in the program by completing a U.S. specific questionnaire instrument and following program rules for assurance and reporting. GLOBAL G.A.P. is the global assurance provider for SRP. SRP claims and logos may be used per the program rules. A limited number of producers are participating in 2019 under an interim approval from the SRP Secretariat.

With minimal effort the sustainability assessment, document upload, verification, user interface and data reporting with the SRP Secretariat could be automated and further simplified. The program needs to be operationalized to inform those improvements. There is currently no administrative SRP home institution in the U.S. to undertake these improvements nor act as an in-country point of contact for U.S. producers.

FARMER PERSPECTIVE: US-SRP POSITIVES

- FARMER DRIVEN AND FARMER FOCUSED
- SCIENCE BASED
- SPECIFIC TO RICE
- CREATES A CLAIM AT THE FARM LEVEL
- INTERNATIONALLY RECOGNIZED STANDARD; U.S. FARMERS PERFORM WELL
- RELEVANT, CLEAR AND TRANSPARENT
- ADMINISTERED BY A NEUTRAL THIRD PARTY
- REINFORCES PARTICIPATION IN MANY NRCS PROGRAMS
- REASONABLE LEVEL OF REPORTING

"I WANT TO PARTNER WITH SOMEONE WHO IS WILLING TO PAY FOR THE WAY THAT I PRODUCE MY RICE. A LONGER-TERM RELATIONSHIP IS VITAL TO DO THAT."

- WES MC NULTY, RICE PRODUCER (ARKANSAS)



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