



# **OPERATIONALIZING THE RICE PROTOCOL**

*Project Developers Perspective*

*CSU NRCS C-AGG Workshop*

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*Shahira Esmail*

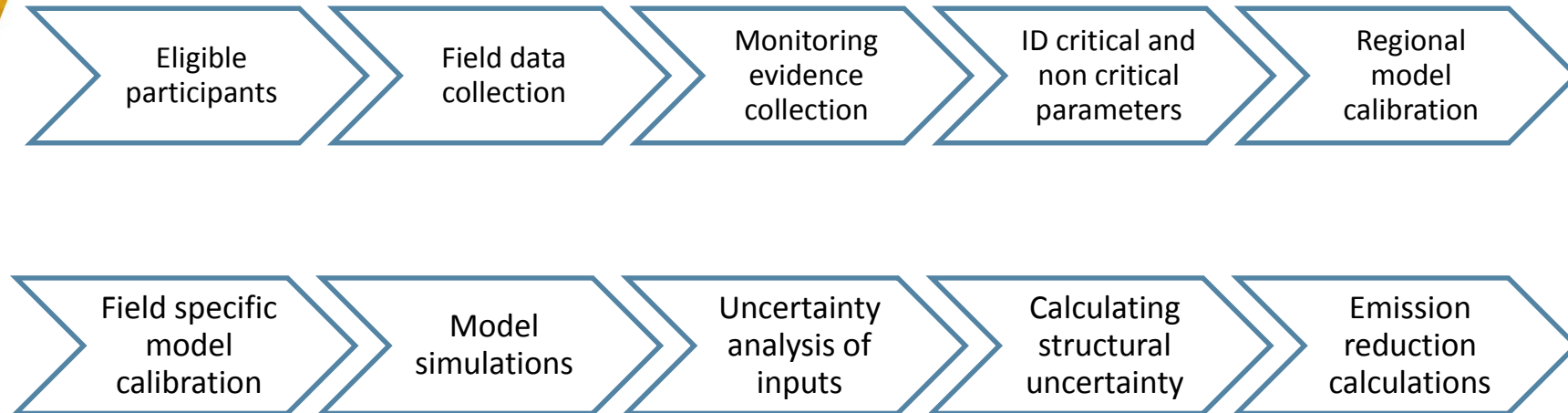
# ACR Rice Protocol Overview

## Voluntary Emission Reductions in Rice Management Systems

- Applies to rice production in
  - Sacramento and San Joaquin Valleys in California,
  - Mississippi River Delta mainly in Arkansas, but extending into Mississippi and Missouri,
  - Gulf Coast area in Texas, and
  - Gulf Coast area in Louisiana
- Includes the following project activities:
  - Straw baling and removal
  - Early drain in preparation for harvest
  - Dry seeding
  - Intermittent flooding
  - Increased water and energy use efficiency
- Emission reduction quantification completed using the DNDC model on each field and for the baseline and project scenario

# Rice Program Overview

## Steps to Develop Projects



## Historical and Project Year Field Data Requirements

- Field location/boundary
- Acres
- Soil parameters
- Daily weather data
- Crop planted
- Plant date
- Harvest date
- Yield
- Spring/pre-plant tillage - date, depth, method
- Fertilizer application - date, type, amount, depth
- End result of crop residue
- Percent of residue left on the field
- Fall/residue management tillage
- Flooding - date of flood initiation and date that field has no standing water
- Project activities adopted on field
- Project activity specific questions

## Monitoring Data Requirements

- Climate data
- Plant time
- Harvest time
- Yield
- Tilling date/period and method
- Fertilizer date, amount and composition
- CRH – amount of crop residue harvested (if applicable)
- Flooding and draining dates
- End use of baled straw
- Date of straw burning event

# Monitoring Evidence

## Examples of Required Evidence Under the Protocol

- Plant date
  - Geo-tagged picture within 3 weeks after planting OR
  - Date of first green signal assessed using remote sensing
- Harvest date
  - Geo-tagged picture within 3 weeks after harvesting OR
  - Date-stamped receipt from the mill OR
  - Any other receipt or contractual information indicating harvesting date
- Yield
  - Signed affidavit of farmer OR
  - Interview with farmer by VVB OR
  - Date-stamped receipt from the mill indicating yield OR
  - Yield information on any other contract
- Fraction of above-ground crop residue left as stubble
  - Geo-tagged picture of stubble OR
  - Contract with baler or end-user OR
  - Interview with baler or end-user

# Challenges and Lessons Learned

## *Enabling Market Driven Agricultural GHG Projects*

### Current Challenges to Widespread Adoption

- Data requirements
  - Field data and QA/QC
  - Strict monitoring data requirements
- Not yet economically attractive to producers
  - Emission reductions achieved with current quantification and accepted Project Activities are low
- Market Demand and Prices
  - Voluntary demand and price uncertainty
  - Pathways to compliance, further reduced opportunities

### Lessons Learned

- Ensure grower participation in every step of protocol development and project development
- Aggregation/technology could enable lower transaction costs
- Without incremental income, e.g. branding, price premium, conservation payment, the economics of carbon only doesn't make sense

# Opportunities

## *Tools to Support Project Development*

### **PRESTO (Producers Environmental Services Tool)**

#### Automation of GHG quantification

- Currently supports ACR Rice Protocol and ARB Rice Protocol
- Eases some data and evidence collection burden on rice producers
- Enable streamlined verification process


#### Real-time/Streamlined grower data input

- Integrate field sensor and instrumentation data
- Uniform data format and enable integration between sources of data



Terra Rice Emissions | <https://presto.terraglobalcapital.com/field/1/>

PRESTO Terralytics | Shahira Esmail (sesmail) | Log out



We support the development of market mechanisms structured to conserve and sustain ecosystem services.

Projects Farms Fields

Field Data | Map | Activity Start Year | Field Calibration | Baseline Determination | Expert Opinion | Environmental Report | Evidence

Projects: Test - California Pilot Project (real data) [redacted] | Protocols: ACR | Region: California | Start Year: 2012 | Acreage: 89.0 | Project Activities: Straw Baling (2012) [Common Practice] | Early Drainage (2013) [Field Specific Practice]

Year	Crop	Tillage	Fertilizer	Flooding	Harvest & Residue Management	Activities	Test - California Pilot Project (real data) Year Type	Actions
2007	Missing	Missing	Missing	Missing	Missing		Historical	<input type="checkbox"/> <input checked="" type="checkbox"/>
2008	Missing	Missing	Missing	Missing	Missing		Historical	<input type="checkbox"/> <input checked="" type="checkbox"/>
2009	Complete	Complete	Complete	Complete	Complete		Historical	<input type="checkbox"/> <input checked="" type="checkbox"/>
2010	Complete	Complete	Complete	Complete	Complete		Historical	<input type="checkbox"/> <input checked="" type="checkbox"/>
2011	Complete	Complete	Complete	Complete	Complete		Historical	<input type="checkbox"/> <input checked="" type="checkbox"/>
2012	Complete	Complete	Complete	Complete	Complete	Straw Baling	Practice	<input type="checkbox"/> <input checked="" type="checkbox"/>
2013	Complete	Complete	Complete	Complete	Complete	Straw Baling, Early Drain	Practice	<input type="checkbox"/> <input checked="" type="checkbox"/>
2014	Missing	Missing	Missing	Missing	Missing			<input type="checkbox"/> <input checked="" type="checkbox"/>

<https://presto.terraglobalcapital.com/evidence/Field/37/create/>

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Projects Farms Fields

Farmer Brown Field

Field Data | Map | Activity Start Year | Field Calibration | Baseline Determination | Expert Opinion | Environmental Report | Evidence

### Evidence Upload

Title \*

Evidence type \*

Description

Source

Date collected

Collected by

Upload File \*

 No file chosen