# Sustainability and Climate Change Agency, Chile

Circular economy solutions and innovations in water and energy management for the agri-food chain

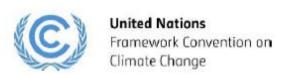
Regional Technical Expert Meeting on Mitigation

August 23, 2019









#### **MISSION**

To Promote sustainable production in chilean enterprises, with an emphasis on SME's, in a public/private dialogue and participation context

### About us

- Voluntary agreements
- Technology transformation
- Promotion and Subsidies
- Relationship with the private sector

### **Technical Assistance CTCN- CHILE**

#### **OBJECTIVE**

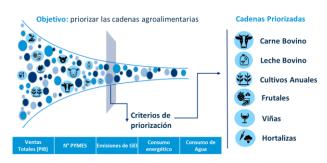
Evaluating the main obstacles for investing in climate technologies faced by SMEs in the agri-food sector in Chile and possible interventions to overcome them

2017-2018



Evaluating the main obstacles for investing in climate technologies faced by SMEs in the agri-food sector in Chile

#### Value chain selection



### **Technology & supply** chain evaluation



### **Programme Design &** Recommendations





### **Funding Options & Best Practices**

Mejores prácticas para el diseño de un programa

Identificación del proyecto	Solicitar Crédito	Evaluación Técnica y financiera	Implementació n	Monitoreo/ Medición
Es Clave: -Involucrar los -Involucrar los proveedores de equipos como fuerza de ventaUtilizar el lenjuaje de los usuarios finales para comunicar beneficios con consultores locales de la región Que vean como - Usur vean como - Comunicar por manera sencilla los aborros o aumento en productividad.	to importante:  Definir bien el canal de comunicación de como pedir un préstamo.  Que haya un proceso rápido y claro para solicitar el crédito.	Es Clave:  - Que analizan los flujos de los ahorros y que se toma en cuenta en la evaluación financiera. Es decir, se debe hacer una evaluación financiera. Es decir, se debe hacer una evaluación del proyecto, no solo una evaluación corporativo.  - Tener validación técnico por un tercero reduce tasa y riesgo Asegurarse que calzan los flujos del préstamo con los flujos del préstamo con los flujos del ingresos de los PYMES.	Es Clave: - Que hay - acompañamiento adecuada para los agricultores para asegurar el uso correcto y mantenimiento del equipo Programas de extensionismo y no solo de transferencia de tecnología.	Es importante: - Recolectar información sistematizad y tener indicadores KPI para monitorera los éxitos del programa Recolectar información crediticia para crear perfil de rieggo financiero de las PYMES.

Fondo	Mecanismos Innovadores de Financiamiento		Específico para PYMES y agricultura	Elegibilidad de Chile
Cropital	1	2	1	3
AgFunder	1	2	1	1.5
Symbid	1	2	2	3
Harvest Returns	1	2	1	3

### Identification of **Barriers**

Hay 4 categorías de barreras















**Financial assessment** 











# **Case Study**

"Energy and Environmental Technology Transformation Program for the SME Segment of the Pork Industry"











#### PORK INDUSTRY PRODUCTION IN CHILE



- Chile, 5th place in the International Ranking of Exports
- Export to 64 country
- 63% of its production is exported to high demand countries (Japan, South Korea, Russia and China)
- 2.43 million pigs.
- But the SME's don't comply with environmental standars
- 33 SME's in Chile

# Objective

Promote, in the SME's, the use of energy and environmental technologies for the treatment of pig slurries that allow sustainable production in the long term, by reducing GHG and NH3, making the activity compatible with nearby communities

Program Cost: US\$ 680.000



### **Program Components**

Diagnostic: sector, territory and companies

2

Technology
Evaluation and
business model

3

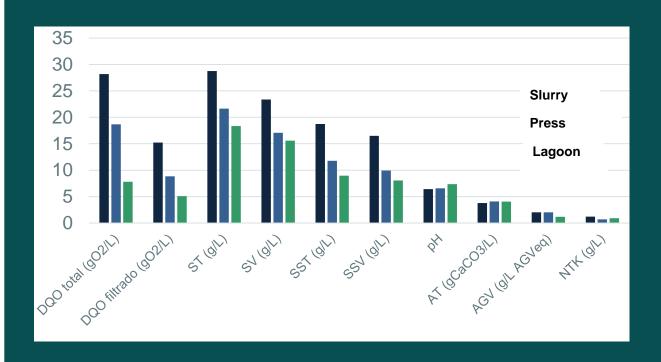
Technical, legal and financial feasibility

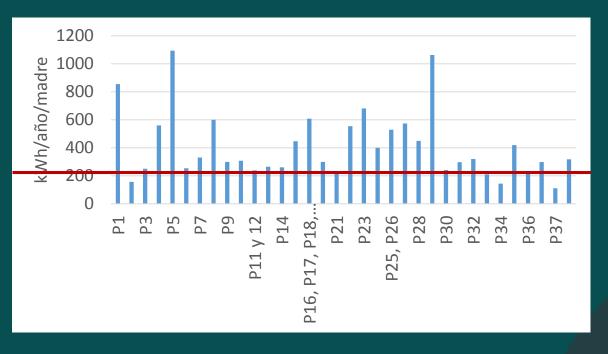


Program Results



# Program Results

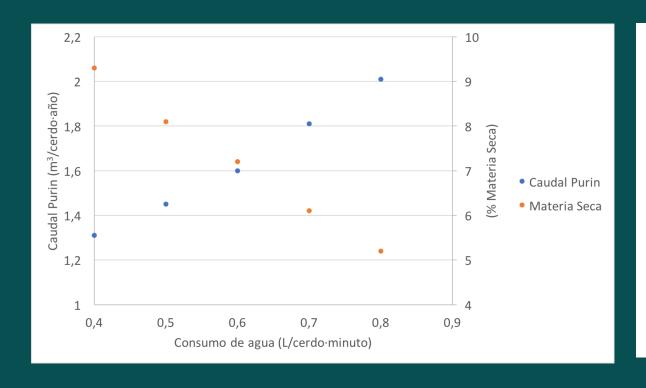




Characterization and quantification of critical parameters

Mother pig energy consumption per/year in farms

# Program Results



Odor emissions, GHG y NH<sub>3</sub>

Total\*: 219 Ton NH3/year

Total\*: 70.000 Ton CO2eq/year

Flow of slurries v/s water consumption and concentration of slurries in farms

**Total number Diagnostic farm** 

# **Additional Benefits**

### Biogas thermal utilization options

Fossil fuel replacement \* GHG reductions

### **Obtaining stabilized digestate**

Latest generation organ-mineral fertilizers

### **Reduction of odor emissions**

Minimization of socio-enviromental conflicts

### **SME Transformation**

**More Sustainable country** 



# Final results

- 23 Anaerobic Digestion projects
  - 2 Nitrogen removal projects

# 25 Projects for SME's

Total Investment (CAPEX) USD M\$ 10,7

Reduction 23.000 Ton CO2 eq/year GHG (only treatment)



### Whats Next?

### **Legal Requirements**

Entrance of projects to the environmental impact assessment system

## **Financing options**

Traditional Banking, Green Credit (State)

## **Sustainability Program**

Strengthen the country's agro-export image in international markets as a provider of safe, healthy and sustainable food **236 M US\$** 





# Ximena Ruz Espejo Technical Deputy Director

www.ascc.cl