



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



Agencia de
**Sustentabilidad y
Cambio Climático**



TEC



United Nations
Framework Convention on
Climate Change





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

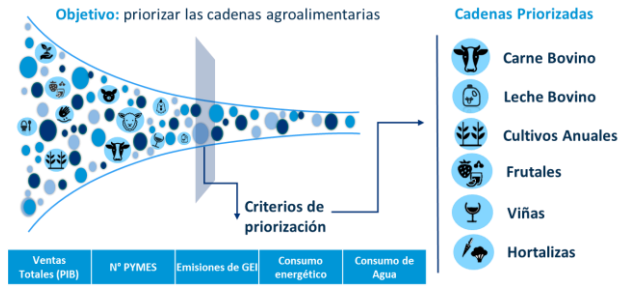
Evaluating the main obstacles for investing in climate technologies faced by SMEs in the agri-food sector in Chile and possible interventions to overcome them

2017-2018



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

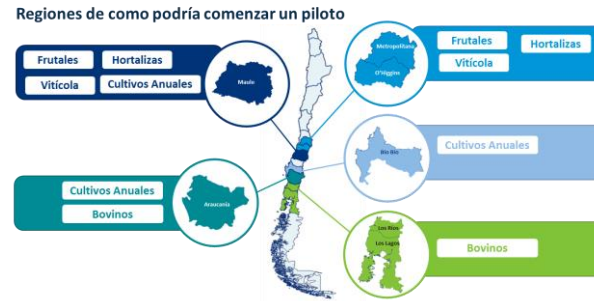
Value chain selection



Technology & supply chain evaluation



Programme Design & Recommendations



Funding Options & Best Practices



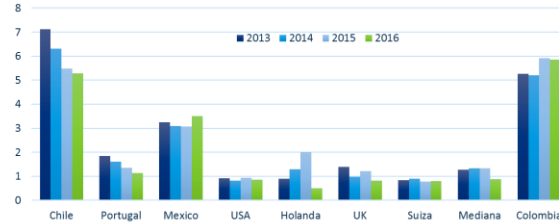
Identification of Barriers

Hay 4 categorías de barreras



Financial assessment

Diferencia de la tasas de interés entre los préstamos a las PYME y las grandes empresas



Fondo	1 - BUENO	2 - REGULAR	3 - MALO	Elegibilidad de Chile
	Mecanismos Innovadores de Financiamiento	Rapidez para obtener fondos	Específico para PYMES y agricultura	
Cropital	1	2	1	3
AgFunder	1	2	1	1,5
Symbid	1	2	2	3
Harvest Returns	1	2	1	3

Case Study

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



UNIVERSIDAD TÉCNICA
FEDERICO SANTA MARÍA



PONTIFICIA
UNIVERSIDAD
CATÓLICA DE
VALPARAÍSO



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

1

**Diagnostic:
sector,
territory and
companies**

2

**Technology
Evaluation and
business model**

3

**Technical, legal and
financial feasibility**

4

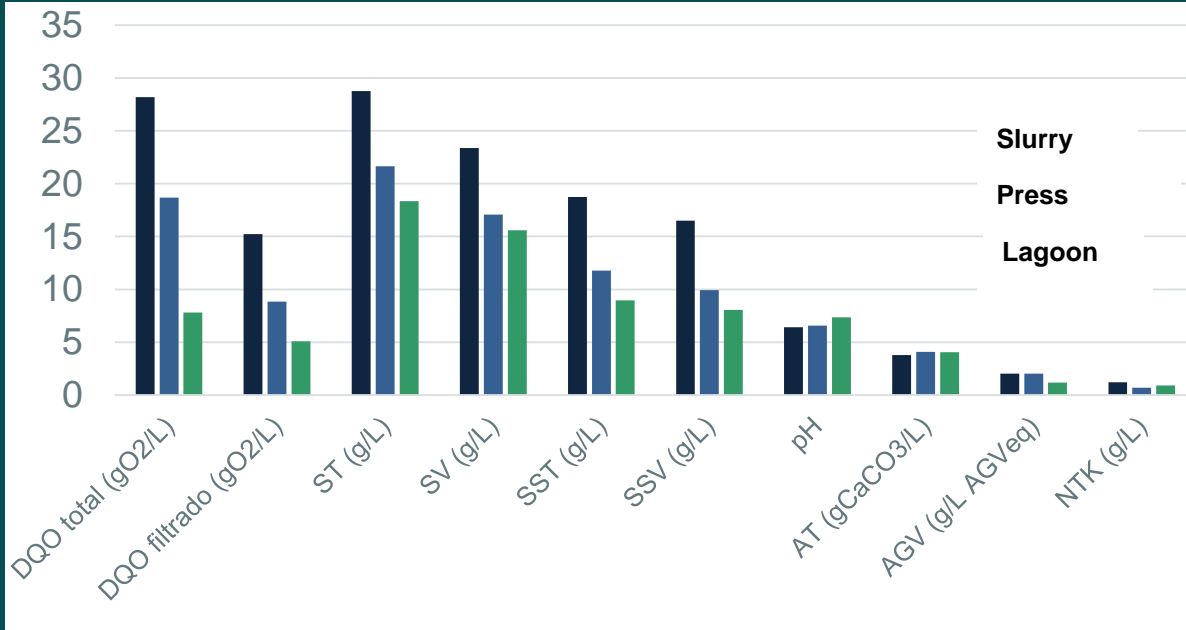
**Diffusion and
training**



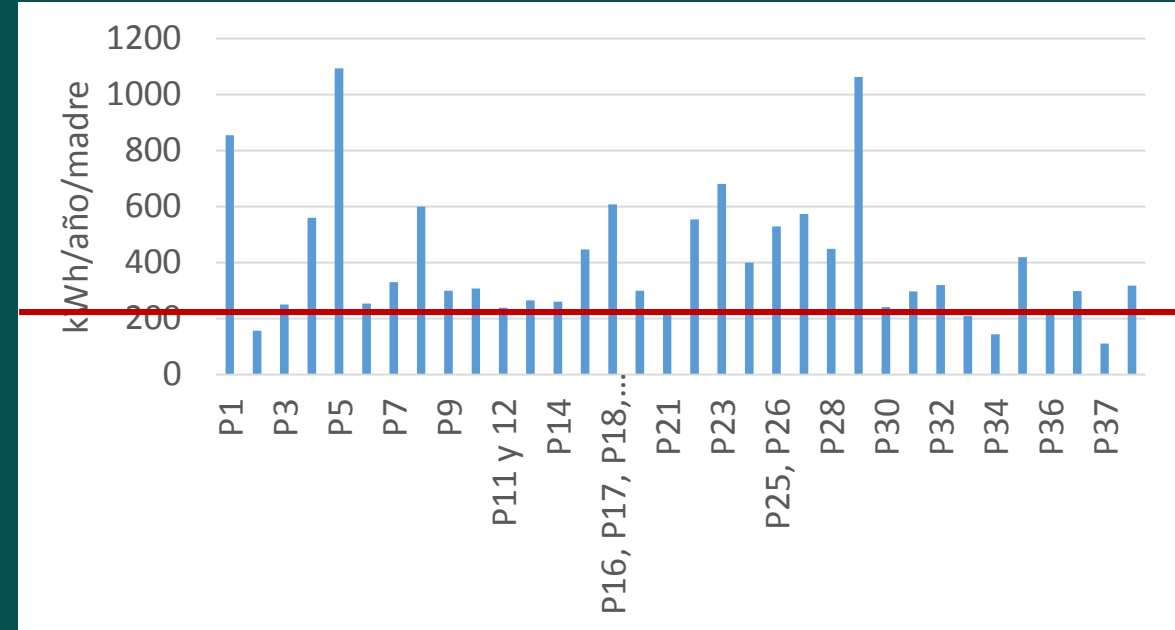
Program Results



Program Results

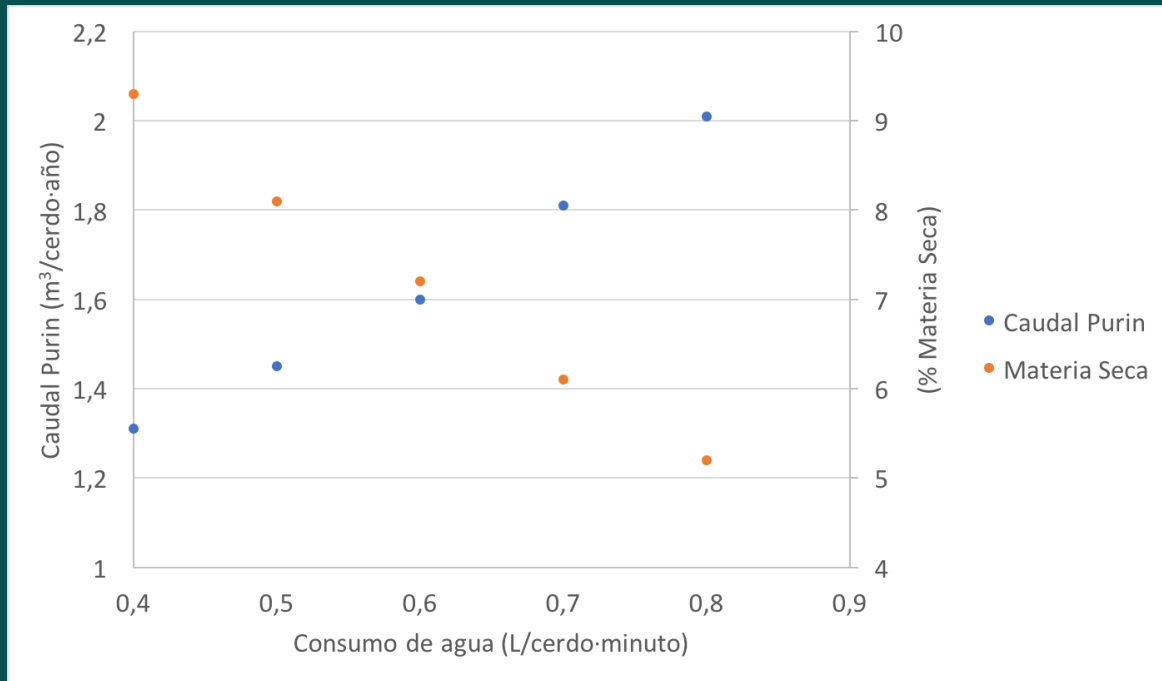


Characterization and quantification
of critical parameters



Mother pig energy
consumption per/year in farms

Program Results



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

**Odor emissions,
GHG y NH₃**

Total*: 219 Ton NH₃/year
Total*: 70.000 Ton CO₂eq/year

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-environmental 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\$



Sustainability and Climate Change Agency, Chile

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www.ascc.cl