Experience of research cooperation in Chile and Latin America

Workshop on innovations in food and agriculture system: Policies to foster productive and sustainable solutions

Emilio Ruz
INIA Chile

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www.inia.cl
Content

• The Chilean Strategy for international Cooperation_ AGCID
• Ministry of Agriculture and its organizations
• Agricultural Research Institute _INIA
• PROCISUR (Regional Cooperation Programme)
• FONTAGRO (LAC Research Fund)
The Chilean Agency for International Cooperation for the Development - AGCID

- The Chilean Policy... to 2030 (long term)
- The Chilean Strategy... 2015 – 2018

The Objectives
1. Moving towards an inclusive and sustainable development;
2. Strengthen partnerships for shared development;
3. Strengthen the National System of International Cooperation for Development.

The implementation
- Human capital formation
- Technical transfer for capacity building for public management
- Innovative cooperation funds
- Humanitarian aid
### Institutions of R+D+i, Extension

- **INIA** (agricultural research)
- **INFOR** (forestry research)
- **CIREN** (natural resources and geomatic)
- **INDAP** (extension and development for family farms)
- **CNR** (irrigation investment)

### Institutions responsible for Policy, Control and Regulations

- **ODEPA** (policy)
- **CONAF** (forestry)
- **ACHIPIA** (food quality and safety)
- **FUCOA** (communications)

*Every Institution has a department of international affairs according to their own misión. Coordinate of these activities are at a high level of the Ministry of Agriculture*
International Agreements of INIA Chile
Areas of technical cooperation

Research and Development National Programs

Crops
Horticulture
Fruit Species
Livestock Systems
Genetic Resources
Environment & Sustainability
Food
Technological Transfer
Plant Breeding Programs

**CROPS**
- Rice (Since 1964)
- Oats (Since 1965)
- Grain Leguminous (Since 1964)
- Bitter lupine (Since 2001)
- Potato
- Triticale (Since 1976)
- Wheat (Since 1964)

**FRUIT**
- Evaluation of European Hazelnut for International Market
- Apple Tree
- Murtilla (chilean berry) (Since 1996)
- Grapes (Since 1986)

**VEGETABLES**
- Artichokes
- Garlic
- Onions
- Sweet Corn (Since 2011)
- Pepper
- Pumpkin

**PASTURES**
- Forages (Since 1960)
- Lotus spp. (Since 2006)
Fellowship Award from the OECD’s Co-operative Research Programme -2016

- **Area**: Precision Farming

- **Project**: Developing Prescription Maps from Synthetic Aperture Radar (SAR) Satellite Imagery for Variable Rate Irrigation (VRI) Applications

- **Institutions**: Inia CHILE – Agriculture and Agrifood CANADA

- **Scope**: Bring together expertise in the field of remote sensing in agriculture
Cooperative Program for Technological, Agri-food and Agribusiness Development in the Southern Cone - PROCISUR

Integrate the Agricultural Research Institutes of
Argentina  Chile
Bolivia   Paraguay
Brazil   Uruguay

www.procisur.org.uy
Strategic Pillars (foundations)

2015-2018

- Public Policies & Institutional Development
- Knowledge sharing and management
- Science, technology and innovation
Strategic lines
2015 -2018

- Sustainable Intensification
- Climate Change, GRs and Water resources
- Institutional Management
- Value Added
- Family Farming
PROCISUR background period 2004-2014

- 8 technological platforms (*Irrigation, Genetic resources, Family farms, Natural resources and climate change, Emerging technologies, Institutional innovations, Food quality, Organic production*).

- Over 600 hundred technical events organized with the participation of 4952 professionals (seminars, workshops, courses, etc.)

- 23 projects executed with strategic partners and financed with external resources (EU, Fontagro, World Bank, FonCT, Global Crop Diversity Trust/FAO, Cimmyt/INIA Spain/INIA Uruguay)
Catalogue of lignocellulosic feedstock best candidates for the production of ethanol in Latin America and Europe

BABETHANOL Project Review Meeting
CONCLUSIONS:

• Very important agricultural production in the region, in terms of volume and variety of species.

• Impressive amount of residues is generated, but not all are available (competition with other uses, soil cover / fertility, ...).

• Feedstock selected (after stage 3): 54.8 Million ton

<table>
<thead>
<tr>
<th>Residue</th>
<th>Countries</th>
<th>Available (Million ton)</th>
<th>Cost (Euros/ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugarcane: Bagasse Trash</td>
<td>AR, BR, PY</td>
<td>12,6</td>
<td>7,3 – 19,3</td>
</tr>
<tr>
<td></td>
<td>AR, BR</td>
<td>32,5</td>
<td>21,2 – 36,4</td>
</tr>
<tr>
<td>Eucalyptus Residues: Field Sawmill</td>
<td>AR, UY</td>
<td>1,1</td>
<td>25,7</td>
</tr>
<tr>
<td></td>
<td>AR</td>
<td>0,4</td>
<td>17,6</td>
</tr>
<tr>
<td>Wheat Straw</td>
<td>AR, CH, UY</td>
<td>3,6</td>
<td>31,7 – 67,5</td>
</tr>
<tr>
<td>Corn Stover</td>
<td>AR, CH, UY</td>
<td>3,2</td>
<td>48,0 – 77,1</td>
</tr>
<tr>
<td>Grape Pruning Residues</td>
<td>AR, CH</td>
<td>1,4</td>
<td>93,1 – 124,8</td>
</tr>
</tbody>
</table>

• For each feedstock: volume available, geographical distribution, schedule of availability, chemical composition and costs (in each country: AR, BR, CH, PY, UY).

• Three feedstock were selected for processing trials with CES: Sugar cane bagasse (Br), Eucalyptus field residues (Uy) Vineyard pruning residues (Ch)
FONTAGRO - Regional Fund for Agricultural Technology

- FONTAGRO is an alliance of Latin American and Caribbean countries. The Board of Directors of the Fund, representing the countries of Latin America and the Caribbean, defines priorities and allocates funding for research projects, using a competitive mechanism that supports research and innovation in agriculture.
Sustainable financing for agricultural research and innovation

Board: 15 member countries

Secretariat based at IDB, support from IICA

Finances projects to institutions of at least 2 member countries

Capital: over US$ 100 million

100 projects approved

US$ 88 million approved

Leverages US$ 1 to US$ 5 from others

25 countries benefited
Innovations in Family Agriculture

Outstanding examples: water productivity, native potatoes, sweet potatoes, rice, bananas, maize, others. Example:

- Participants: Chile, Argentina, Bolivia, Uruguay, ICARDA, PROCISUR.
- Investment: $1,846,642.

Other examples:

Video

Video
Operations: annual calls for proposals, agreed upon projects, competitions, seed funding, strategic studies, capacity building

Results of external evaluation (Sain et al 2014)
- FONTAGRO: example of institutional innovation
- 69% project results have reached final beneficiaries
- 77% of results incorporated by national systems
- Substantial impact on capacity building
Final comments

International collaboration is essential to address the complexities of the current and future scenarios of the agriculture and food industry.

Despite the enormous needs in LAC there is still little use of the possibilities of collaboration. Only restricted to few institutions and personal initiatives.

The role of the OECD through its Co-operative research program, seminars and communication networks can significantly improve collaboration among member countries, especially in emerging issues.
Thank You