GBEP Working Group on Capacity Building for Sustainable Bioenergy (WGCB)

Activity Group 2

(co-chaired by Indonesia and Germany)

“Raising awareness and sharing of data and experiences from the implementation of the GBEP indicators”

IRENA Offices in Bonn, Germany, July 3-4, 2014

BIOFUELS/BIOENERGY IN ARGENTINA
PRESENTATION CONTENTS

- Energy sector in Argentina
- Reasons for the development of biofuels in Argentina
- Recent developments in the Argentine biofuels sector
- “Indicators of Sustainable Production and Use of Bioenergy – Argentina”
- Conclusions
ARGENTINE ENERGY CONSUMPTION BY SOURCE

- Natural Gas: 51.4%
- Coal: 1.1%
- Wood: 0.8%
- Nuclear: 3.3%
- Hydro: 4.0%
- Bagasse: 1.1%
- Biofuels: 3.0%
- Others: 0.5%
- Oil: 34.9%

Renewable Energy: 9.4%
Fossil Energy: 87.3%
Nuclear Energy: 3.3%

Bioenergy promotion
Law № 26.093
Law № 26.190
REASONS FOR THE DEVELOPMENT OF BIOFUELS IN ARGENTINA

✓ Comparative advantages of Argentina in the production of raw materials: large and fertile extensions of land available for oilseed production.

✓ An abundance of varied ecosystems fueling the growth of diverse crops.
Production and implanted area of soybean in Argentina
- in million tons and in million hectares -

Average production of soybean (2009-2013)
50 million tons

Soybean yield increased 35% from 1990

Ministry of Agriculture, Livestock and Fisheries
ARGENTINE BIODIESEL MARKETS
- in thousand tons -

**BIOFUELS DEVELOPMENT IN ARGENTINA - BIODIESEL**

**32 Biodiesel Plants**

- **Production Capacity (Tn/year):**
  - >100,000
  - 2,000 – 100,000
  - < 2,000

**Total production capacity: 4.0 million tons**
**Total Investments: US$ 1.2 billion**

**Argentine Biodiesel Markets**

*Value Added*

- **Domestic**
- **Export**

**40% Domestic market, 60% Export market in 2013**

Department of Energy and CARBIO
BIOFUELS DEVELOPMENT IN ARGENTINA - BIOETHANOL

Production of Bioethanol (real and projected) - in thousand of m$^3$ -

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real</td>
<td>30%</td>
<td>70%</td>
<td>98%</td>
<td>122%</td>
<td>135%</td>
</tr>
<tr>
<td>Projected</td>
<td>5 times</td>
<td></td>
<td></td>
<td></td>
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</table>

Sugar cane
Cereals

Department of Energy
INDICATORS OF SUSTAINABLE PRODUCTION AND USE OF BIOENERGY IN ARGENTINA
Argentina has participated GBEP meetings since 2009, and particularly in the Sustainability Working Group, in which a total of 24 indicators (8 Environmental, 8 Economic and 8 Social) were agreed.
INDICATORS OF SUSTAINABLE PRODUCTION AND USE OF BIOENERGY IN ARGENTINA

Participant Organizations

Ministry of Agriculture, Livestock and Fisheries

Secretary of Agriculture, Livestock and Fisheries

Bioenergy Sector

Component 1 - 4

UCAR

Inter-American Development Bank

Agency of Financial Support

Executing Agency - Technical Manager -
The main objective of the project is to assess the 24 indicators of sustainability (environmental, economic, and social) agreed in GBEP, evaluating the proposed methodologies, as tools to promote and evaluate the design of policies and programs for bioenergy.

**PROJECT ACTIVITIES:**

1. Workshop of Indicators of Sustainability Project presentation
2. Consultancy studios to assess the 24 GBEP indicators
3. Workshop – Partial Results of consultancy studies
4. Final Presentation of indicators quantification

**Complementary Activities**

Translate to Spanish
Buenos Aires
May, 30 of 2014

SEMINARIO SOBRE INDICADORES DE SUSTENTABILIDAD DE LA BIOENERGÍA
ARGENTINA

1. Workshop of Indicators of Sustainability Project presentation

- Presentation of Argentinean project
- Interchange of experiences
- Learn lessons of implementation of GBEP indicators
- Sustainability actions

Countries: Paraguay, FAO-Chile, Brazil, Argentina, Uruguay, Colombia, Germany
## Indicators of Sustainable Production and Use of Bioenergy in Argentina

<table>
<thead>
<tr>
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<th>Social</th>
<th>Economic</th>
</tr>
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<tbody>
<tr>
<td>Lifecycle GHG emissions (P)</td>
<td>Price and supply of a national food basket (P)</td>
<td>Productivity (P)</td>
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<tr>
<td>Soil quality (P)</td>
<td>Change in income (P)</td>
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<td>Water use and efficiency (P)</td>
<td>Jobs in the bioenergy sector (P)</td>
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<tr>
<td>Land use and land-use change related to bioenergy feedstock production (NP)</td>
<td>Allocation and tenure of land for new bioenergy production (NP)</td>
<td>Energy diversity (P)</td>
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### Environmental

- **Lifecycle GHG emissions (P)**
- **Soil quality (P)**
- **Water use and efficiency (P)**
- **Land use and land-use change related to bioenergy feedstock production (NP)**

### Social

- **Price and supply of a national food basket (P)**
- **Change in income (P)**
- **Jobs in the bioenergy sector (P)**
- **Allocation and tenure of land for new bioenergy production (NP)**

### Economic

- **Productivity (P)**
- **Net energy balance (P)**
- **Gross value added (NP)**
- **Energy diversity (P)**

**No-till farming**

**Secondary information**

**Estimation by regional statistics**

**SOYBEAN BIODIESEL**  
Methodology of Panichelli et al., 2012 (EU RED 2009/28/EC)

**Landsat images soil covert + production georreference**
**INDICATORS OF SUSTAINABLE PRODUCTION AND USE OF BIOENERGY IN ARGENTINA**

### Environmental
- Lifecycle GHG emissions (P)
- Soil quality (P)
- Water use and efficiency (P)
- Land use and land-use change related to bioenergy feedstock production (NP)

### Social
- Price and supply of a national food basket (P)
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### Economic
- Productivity (P)
- Net energy balance (P)
- Gross value added (NP)
- Energy diversity (P)

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**Survey with national institutions / National and International statistics**

**National statistics + Chamber survey**

**National statistics + interview Chamber**

**National Agriculture Census + research studies**

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2. Consultancy studios to assess the 24 GBEP indicators
### Indicators of Sustainable Production and Use of Bioenergy in Argentina

#### 2. Consultancy studies to assess the 24 GBEP Indicators

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**National statistics + Chamber survey**

**Secondary sources + Statistics + survey**

**Statistics**
INDICATORS OF SUSTAINABLE PRODUCTION AND USE OF BIOENERGY IN ARGENTINA

3. Workshop – Partial Results of consultancy studies
End of 2014

4. Final Presentation of indicators quantification
Start of 2015

Complementary Activities
Translate to Spanish of “THE GLOBAL BIOENERGY PARTNERSHIP SUSTAINABILITY INDICATORS FOR BIOENERGY” – First Edition
Argentina is a large agricultural producer of raw materials and manufactures.
Thank you for your attention

Lic. Agustina Branzini
Bioenergy Sector
- Ministry of Agriculture, Livestock and Fisheries -
Argentina
provides a step towards achieving agreed, reasonable and consistent criteria that allow more assurance to sustainable production and use process of biofuels

consequently

- strong measurements of most important GBEP indicators for Argentina,
- participation in international negotiations, strengthening Mercosur axis as a supporter of common interests against demand of other countries,
- strengthening public - private work due to environmental, social and economic sustainability of the bioenergy sector.