How Bioenergy Policy can facilitate increased sustainable energy and food access and the role of BNDES in its domestic and international development

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1. BNDES Highlights

2. BNDES in Africa

3. BNDES and the Biofuels Industry

4. What are the main investment drivers in Brazil?

5. Supporting Bioenergy in Africa

6. Closing remarks
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6. Closing remarks
BNDES Highlights

- **Founded** on June 20th, 1952.
- 100% **state-owned** company under **private law**.
- **Key instrument** for implementation of Federal Government’s **industrial** and **infrastructure policies**.
- Main provider of **long-term financing** in Brazil.
- Emphasis on financing **investment projects**.
- Support to **micro, small and medium-sized** companies.
- Support to **Export and Internationalization of Brazilian companies**.
BNDES´ Headquarters & Offices

Brazilian Offices

- Belém
- Recife
- Brasília
- São Paulo
- Rio de Janeiro

International Offices

- BNDES PLC (2009)
  London / UK
- BNDES Latin America and the Caribbean (2009)
  Montevideo / Uruguay
- BNDES Africa (2013)
  Johannesburg / South Africa

Team of 2,866 employees
(as of May 31st, 2015)
Annual Disbursements (R$ X US$)

In R$ billion X US$ billion

- 2005: 47 R$ billion, 19.6 US$ billion
- 2006: 51 R$ billion, 23.6 US$ billion
- 2007: 65 R$ billion, 34.0 US$ billion
- 2008: 91 R$ billion, 49.0 US$ billion
- 2009: 136 R$ billion, 71.6 US$ billion
- 2010: 168 R$ billion, 96.3 US$ billion
- 2011: 139 R$ billion, 82.3 US$ billion
- 2012: 156 R$ billion, 78.7 US$ billion
- 2013: 190 R$ billion, 88.1 US$ billion
- 2014: 188 R$ billion, 69.7 US$ billion
1. BNDES Highlights

2. BNDES in Africa

3. BNDES and the Biofuels Industry

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Africa has experienced a rapid economic growth;
The trade flow between Africa and Brazil has increased significantly;
The Brazilian government has strengthened its links with Africa.

BNDES reflected internally this scenario (2013):

- Director responsible for dealing with Africa;
- Creation of the Department to support transactions in Africa at the Export Credit Division (AEX/DESAF);
- Creation of the BNDES’ Representative Office for Africa (BNDES Africa), in Johannesburg, South Africa.
1. BNDES Highlights

2. BNDES in Africa

3. BNDES and the Biofuels Industry

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5. Supporting Bioenergy in Africa

6. Closing remarks
BNDES and the biofuels industry

- From 2004 to 2014, BNDES has financed almost 100 new projects (expansion and greenfields) which represent:
  - Contracts of more than US$ 20 Billion
  - 150 million ton of new crushing capacity (almost 50% expansion of Sugar & Ethanol Industry since 2003)
- Portfolio: 131 economic groups
- Financial agents: 91 accredited institutions
- Instruments: credit loan, project finance, equity participation and grants
  - Main driver: flex fuel vehicles
Bibliotheca Sirorum Ethanol

• A Mill that processes annually 4 MM ton of sugarcane, can produce about:

  **284,000 ton of sugar per year** (considering 2 MM tons dedicated to sugar and also producing ethanol)

• This quantity is enough to feed about:

  **7,100,000 people per year**
  (considering an annual individual consumption of 40 kg of sugar)

• **Source:** UNICA - The Brazilian SugarCane Industries Association
A Mill that processes annually 4 MM tons of sugarcane, can produce about:

- **168 million liters of ethanol per year**
  (considering 2 MM tons dedicated to ethanol and producing also sugar)

- This is enough to supply about:
  **130,000 cars per year**
  (considering an annual individual consumption of 40 kg of sugar)

**Source:** UNICA - The Brazilian SugarCane Industries Association
The Bagasse Power Co-Generation opportunity is another important source of resources that can be explored by creating a Sugarcane/Ethanol based industry in the Region.

A mill that processes 4 MM ton of sugarcane per year (50,000 ha) can generate electricity to supply 400,000 houses per year.

Source: UNICA - The Brazilian SugarCane Industries Association
1. BNDES Highlights
2. BNDES in Africa
3. BNDES and the Biofuels Industry
4. What are the main investment drivers in Brazil?
5. Supporting Bioenergy in Africa
6. Closing remarks
By improving the low yield of cattle production, a large amount of land will be available for other purposes. Brazilian federal agricultural zoning considers up to 64 Mha able to produce sugarcane w/o irrigation.

<table>
<thead>
<tr>
<th>Million Hectares</th>
<th>Native Vegetation</th>
<th>Land in Actual Use</th>
<th>Other Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Area</td>
<td>851</td>
<td>554</td>
<td>258</td>
</tr>
<tr>
<td>100%</td>
<td>65%</td>
<td>30%</td>
<td>5%</td>
</tr>
</tbody>
</table>

Source: ICONIE, IBGE (PAM 2010 and Censo Agropecuário), MMA, INPE (TerraClass), Agricultural Land Use and Expansion Model Brazil Ag-LUE-BR (Gerd Sparovek, ESALQ/USP). Elaboration: UNICA and Cosan. Note: ILs = Indigenous Lands. Other Native Vegetation include Legal Reserves (RLs).
Sugarcane biomass can provide all primary energy required in its own industrial process and also generate a surplus that can be added to the power grid.

Lowest carbon footprint

<table>
<thead>
<tr>
<th>Energy efficiency - BOE output/ BOE input</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn USA average</td>
<td>2.3</td>
</tr>
<tr>
<td>Sugar cane Brazil-top</td>
<td>11</td>
</tr>
<tr>
<td>Sugar cane Brazil-average</td>
<td>9.3</td>
</tr>
<tr>
<td>Sugar cane Brazil-bottom</td>
<td>6.7</td>
</tr>
</tbody>
</table>

Source: USDA apud Villela Filho (2011)

BOE = barrel of oil equivalent
1. BNDES Highlights
2. BNDES in Africa
3. BNDES and the Biofuels Industry
4. What are the main investment drivers in Brazil?
5. Supporting Bioenergy in Africa
6. Closing remarks
BNDES Exim

Post-shipment financing

- BNDES Exim post-shipment:
  - Support to the purchase of Brazilian goods and services (supplier’s and buyer’s credit);
  - Over US$ 10 million.

- BNDES Exim Automatic:
  - Support to the purchase of Brazilian equipment, using a network of financial institutions (issuance of L/C);
  - Up to US$ 10 million.

→ Brazilian content: at least 60% (FOB value).
1. BNDES Highlights
2. BNDES in Africa
3. BNDES and the Biofuels Industry
4. What are the main investment drivers in Brazil?
5. Supporting Bioenergy in Africa
6. Closing remarks
Closing remarks

• Most of Brazilian natural advantages, such as sunlight, water and land, are also available in African countries, which represents a great opportunity to foster investments in bio-based industries in the region;

• BNDES has a strong commitment with the development of the biomass industry. In order to do that, BNDES can support either investment in Brazil or in African countries, contributing to the creation of a larger international market for biofuels and bio-based products.
Bioethanol Book

- Co-produced by the BNDES, FAO, ECLAC and CGEE.
- An instrument for international dialogue.
- Scientifically identifies pros and cons of different raw materials used to produce ethanol.
- Provides information for decision-makers (private and public) on the economic and environmental benefits of production and use of sugarcane bioethanol.
Gustavo Gimenez Nonato – Manager at BNDES Africa  
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