The Importance of Sugar Cane Agroecological Zoning (Zaecana)
What was the situation before of the Sugarcane Agroecological Zoning?

1. A growing world debate (Biofuels x Food);

2. International criticisms;

3. Possible non-tariff barriers;
What is the Sugarcane Agroecological Zoning?

1. Pioneering zoning coordinated in national level (MAPA, Embrapa, MMA);

2. Preventive action for a strategic sector;

3. It gives the government (Federal, State and Municipal) technical subsidies for drawing public policies for the sustainable and balanced expansion of this sector.
Complex project that included the participation of several stakeholders both from public and private sectors

Meeting in Palmas (TO)

Meeting in Rio Branco (AC)
Goals of the Agroecological Zoning for Sugarcane:

1. Identify areas with climate and soil potential for sugar cane production with mechanical harvesting (<12% slope);

2. Identify areas with potential for sugar cane production previously used for livestock production;

3. Identify areas without environmental restrictions and with potential for sugar cane production;
Policies derived from Zaecana to guide sugar cane sector expansion:

1. Guidance of public and private funding;

2. Guidance for installation of new ethanol plants (not applicable for installed plants);

3. Guidance for environmental license procedures;

Zaecana – main environmental restrictions:

1. Exclusion of the Amazon and the Pantanal and Upper Paraguay River Basin;

2. Exclusion of the national parks, indigenous areas and other protected areas;

3. Prohibition of deforestation for planting sugar cane;

4. Ending the use of fires by 2017 (only areas suitable for mechanical harvesting).
Sugarcane Zoning - Spatial Criteria

**Etapas ZAE-Cana**
- Integra os dados
- São selecionadas as regiões

**Risco Climático**
- Restrições Legais
- Aptidão Edáfica
- Usos do Solo

**Restrições Ambientais**
- Declividade

**Classe de solo**
- Município

**Classe de Aptidão**
- Tipo de uso da terra

**Gerar-se e Disponibiliza-se**
- Áreas
  - Calcula-se as
  - Agrupando por
  - Onde
  - Tendo ou não restrição

**Mapas Temáticos**
- Relatórios
- Arquivos para os estados

**Com uso em pastagem**

**Com uso em agricultura**

**Com uso em agropecuária**

**Declividade < 12%**
- Sem uso atual em Cana

**Ambiental**
- Legal
- Climática
- Pedológica
92.5% of Brazilian territory were set aside as potential areas for sugar cane production after Zaecana was concluded!
### Sugarcane Zoning results

#### Potential areas in Brazil by level of aptitude and land use (ha)

<table>
<thead>
<tr>
<th>Potential</th>
<th>Ap</th>
<th>Ag</th>
<th>Ac</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>High (H)</td>
<td>10.251.027</td>
<td>585.989</td>
<td>7.191.388</td>
<td>18.028.403</td>
</tr>
<tr>
<td>Medium (M)</td>
<td>22.818.770</td>
<td>2.015.247</td>
<td>16.340.890</td>
<td>41.174.906</td>
</tr>
<tr>
<td>Low (L)</td>
<td>3.062.029</td>
<td>490.027</td>
<td>733.152</td>
<td>4.285.208</td>
</tr>
<tr>
<td>H+M</td>
<td>33.069.796</td>
<td>2.601.235</td>
<td>23.532.277</td>
<td>59.203.309</td>
</tr>
<tr>
<td>Total</td>
<td>36.131.825</td>
<td>3.091.263</td>
<td>24.265.429</td>
<td>63.488.517</td>
</tr>
</tbody>
</table>

Ap = areas with pastures; Ag = areas with agriculture; Ac = areas with agriculture and livestock.

Only 7.5% of Brazil were identified as areas suitable for expansion of sugarcane and only 10% of this potential area is expected to be occupied in the next 10 years.
Sugarcane production in areas suitable for mechanical harvesting from 2003/04 to 2012/13

Ap = areas with pastures;
Ag = areas with agriculture;
Ac = areas with agriculture and livestock.
Concluding remarks

• Tools like Zaecana should be conducted with a focus on technical point of view;

• Tools like Zaecana are essential to guarantee harmonized, sustainable production of biofuels;

• Brazil is open and willing to share its experience in developing a tool such as the Agroecological Zoning;
Thank you!

Sandro Marschhausen
Embrapa
sandro.pereira@embrapa.br

Phone: 55 19 3311 2724
Fax: 55 19 3311 2640