Developments on global sugar cane markets
-- challenges for Thailand producers--

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A committee for Agricultural and Biological Researcher group
National Research Council of Thailand

Honorary President
Thai Bioplastics Industry Association

AGRITECHNICA in Hannover-Messe
And Braunschweig, Germany
Outlines of Presentation

• Overview of sugar production
• The world sugar markets
• Overview of the Thai sugar industry
• Sugarcane production system
• Conclusion
Agricultural products in global

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Production (MT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugar cane</td>
<td>1,832,541,194</td>
</tr>
<tr>
<td>Maize</td>
<td>872,066,770</td>
</tr>
<tr>
<td>Rice, paddy</td>
<td>719,738,273</td>
</tr>
<tr>
<td>Wheat</td>
<td>670,875,110</td>
</tr>
<tr>
<td>Potatoes</td>
<td>364,808,768</td>
</tr>
<tr>
<td>Cassava</td>
<td>262,585,741</td>
</tr>
<tr>
<td>Soybeans</td>
<td>241,841,416</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>161,793,834</td>
</tr>
<tr>
<td>Cotton lint</td>
<td>25,955,096</td>
</tr>
</tbody>
</table>

http://faostat.fao.org/

by Dr. Pipat WEERATHAWORN AGRITECHNICA 2015
The zones of sugar beet and cane production

World Cane and Beet Growing Countries

Source: C. Czarnikow

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Hi-light

- Total sugar is 180 MT
- ~80% of sugar produced from cane
- Cane sugar has been increased >40%
- Beet sugar remains the same quantity
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Changes in Producer Ratio

2012/13: Top 6 sugar producers' share of world total
- CS Brazil; 20.11%
- India; 14.82%
- EU 27; 9.34%
- Thailand; 5.70%
- USA; 4.47%
- Others; 37.75%

2015/16*: Top 6 sugar producers' share of world total
- CS Brazil; 18.32%
- India; 16.44%
- EU 27; 9.07%
- USA; 4.48%
- Thailand; 6.60%
- Others; 38.94%
The Top Global Exporters

Exports of top global exporters, 2008/09 to 2015/16

- Thailand
- Brazil
- Australia

Note: Top exporters have accounted for between 65 and 75 percent of global exports.
Source: Foreign Agricultural Service, USDA.

by Dr. Pipat WEERATHAWORN CCC July. 2015
The Major Importers

Source: United States Department of Agriculture

Dr. Pipat WEERATHAWORN CCC July. 2015
Opportunity of Thai Sugar Industry for Asia

Asia 86.3% (ASEAN 42%) of the total exports >7 ml.tons

<table>
<thead>
<tr>
<th></th>
<th>ASEAN</th>
<th>Thailand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>598 mln.</td>
<td>67 mln.</td>
</tr>
<tr>
<td>Sugar production</td>
<td>17 mln.tons</td>
<td>10 mln.tons</td>
</tr>
<tr>
<td>Sugar imports</td>
<td>5-6 mln.tons</td>
<td>0.0 mln.tons</td>
</tr>
<tr>
<td>Sugar balance</td>
<td>Net importers</td>
<td>Net exporter</td>
</tr>
</tbody>
</table>

by Dr. Pipat WEERATHAWORN AGRITECHNICA 2015
The Thai sugar production and export updates in 2015/16

Thai Sugar Markets in 2014
(% share in total export)

- Indonesia: 25%
- Japan: 24%
- China: 10%
- Malaysia: 10%
- Cambodia: 7%
- South Korea: 5%
- Taiwan: 9%
- Sudan: 5%
- Other countries: 10%

21st Asia International Sugar Conference: 2015

K. Sriroth
Figure 6.11. Sugar imports remain more diversified and lead by Indonesia, the US and China

Source: OECD and FAO Secretariats.

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by Dr. Pipat WEERATHAWORN Oct. 2015
Thailand, the areas of sugarcane and cassava

- 50 Sugar Mills with Highly Cane Competition and its plantation 9.5 mln Rai
- Nearly 50 Cassava Mills and 100 Cassava Broker Yards with Plantation 8.6 mln Rai
- Forest Area mostly locate on high land slope which is not suitable for Sugarcane and Cassava plantation

Total area in Thailand 320.7 million rai *

```
<table>
<thead>
<tr>
<th>Year</th>
<th>Undefined</th>
<th>Agricultural area</th>
<th>Forest area</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>28%</td>
<td>41%</td>
<td>31%</td>
</tr>
<tr>
<td>2009</td>
<td>26%</td>
<td>41%</td>
<td>33%</td>
</tr>
<tr>
<td>2010</td>
<td>19%</td>
<td>47%</td>
<td>33%</td>
</tr>
</tbody>
</table>
```

6.25 Rai=1 Ha

* Source: Office of Agricultural Economics (OAE)

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Sugar mill locations and area in Thailand

50 Sugar mills
Capacity
10,000-50,000 TCD
Thai cane production, planted area & yield

- Thai sugar production is increased

**MT/Area/Yield (T/rai)**

![Graph showing MT/Area/Yield (T/rai)](image)

- 11.3 M T of sugar
- 6.25 Rai = 1 ha
- 1 M ha
- 64 T/ha
- 77 T/ha
- 1.4 M ha

**Domestic 22%**

**Export 78%**

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<table>
<thead>
<tr>
<th>Region</th>
<th>2011/12</th>
<th>2012/13</th>
<th>2013/14</th>
<th>2014/15</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>24,974,949</td>
<td>24,598,170</td>
<td>24,209,733</td>
<td>26,631,793</td>
</tr>
<tr>
<td>Central</td>
<td>31,855,391</td>
<td>30,498,575</td>
<td>30,078,587</td>
<td>26,751,518</td>
</tr>
<tr>
<td>East</td>
<td>4,094,455</td>
<td>4,685,973</td>
<td>4,472,247</td>
<td>5,209,641</td>
</tr>
<tr>
<td>North-East</td>
<td>37,054,895</td>
<td>40,219,797</td>
<td>44,905,184</td>
<td>47,366,106</td>
</tr>
<tr>
<td>Whole country</td>
<td>97,979,690</td>
<td>100,002,515</td>
<td>103,665,750</td>
<td>105,959,058</td>
</tr>
</tbody>
</table>

![Graph showing percentage distribution by region for 2011/12 to 2014/15.](image-url)

2014/15:
- North: 47,366,106
- Central: 26,631,793
- East: 26,751,518
- North-East: 5,209,641

by Dr. Pipat WEERATHAWORN AGRITECHNICA 2015
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<tr>
<th>Region</th>
<th>Planting</th>
<th>Harvesting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northeast</td>
<td>Oct-Dec</td>
<td>Nov-Apr</td>
</tr>
<tr>
<td>Cycle = planting cane - Ratoon 1 - R2 (no) - fallow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central/North</td>
<td>Feb-Apr</td>
<td>Dec-Apr</td>
</tr>
<tr>
<td>Cane Cycle = planting – R1 – R2 – R3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12-14 months
Higher sugar yield/ha

10-12 months

by Dr. Pipat WEERATHAWORN Aug. CCC 2014
Technology and Mechanization

by Dr. Pipat WEERATHAWORN CCC Aug. 2014
Why was cane area still increased?

- Cane price was still stable than the other crops during the last few years
  - The price was $\sim$1,000 Baht/T cane (35 US$)
  - Sugar factories would get every ton of cane
  - Cane can be diversified and added value to other products

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Cane area will be increased compared to other crops.
Cane Price and Return

Thailand to reach 110 million ton of cane in 2014

by Dr. Pipat WEERATHAWORN AGRITECHNICA 2015
Net profit at farm of crops

- Oil Palm: 1087 US$/Ha
- Sugarcane: 1080 US$/Ha
- Rubber Tree: 960 US$/Ha
- Corn: 370 US$/Ha
- Cassava: 200 US$/Ha
- Paddy rice: 50-100 US$/Ha

Source: OAE, Thailand 2014
Key success returns

Early planting

Increased yield 21 T/ha
Net profit 500 US$/ha

Supplementary irrigation

Increased yield 21 T/ha
Net profit 900 US$/ha

Trash incorp.

Increased yield 16 T/ha
Net profit 700 US$/ha

High density

Increased yield 24 T/ha
Net profit 500 US$/ha
Manual to Mechanization
Sugar Diversification & Bio-refinery Concept

- Sucrose
- Glucose
- Fructose
- Xylose
- Arabinose
- Lactose

**Industrial**
Corrosion inhibitors, dust control, boiler water treatment

**Textiles**
Carpets, fibers, fabrics,

**Communication**
Molded plastics, computer casings

**Health and Hygiene**
Cosmetics, detergents, pharmaceuticals, medical-dental products, disinfectants, aspirin

**Housing**
Paints, resins, siding, insulation, cements, coatings, varnishes, flame retardants, adhesives, carpeting

**Bioplastics**
Food packaging, agricultural film

by Dr. Pipat WEERATHAWORN AGRITECHNICA 2015
Ethanol Supply and Demand

Ethanol Consumption and Production by Feedstock (2014-Apr15)

Source: TEMA, DEDE
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Conclusion

• Sugarcane in Thailand has been increased during the last decade due to the stable cane price compared with the other crops.
• Thai policy will support sugar industry by transferring some rice area to cane area
• Sugarcane is used not only for food but also for feed and fuel including bio-products in the future.
• The productivity improvement for reducing cost has to be focused and implemented from now onwards due to the low sugar price
The XXIX International Society of Sugar Cane Technologists Congress

XXIX ISSCT CONGRESS 2016
Chiang Mai International Exhibition and Convention Centre (CMECC)

5-8 December 2016

WWW.29ISSCTTHAILAND.COM
What is ISSCT?
The International Society of Sugar Cane Technologists, an exclusive, member-only Congress & Trade Exhibition event.

Established in 1924, ISSCT has organized 28 Congress at 3-year intervals committed to the economic and sustainable advancement of the sugar cane industries of the world and associated communities through:

- Development and the adoption of technology
- Promoting innovative research
- Knowledge sharing among members
Why Thailand?

- The second ISSCT in Thailand since XXI Congress 1992 in Bangkok
- World’s second biggest exporter of sugar cane
- More than 106 million tons of cane are cultivated and processed in 2014-15
- Supplied mostly by small growers, unique cooperation between growers & millers
- The Congress plenary and technical sessions are tailored for Thai sugar cane industry
- Promote sustainability in environmental conservation and community development
Why Chiang Mai?

- North of the hub of sugar cane growing and production of Thailand
Thank you for your attention!

Questions & Answers

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