The world's most wanted sweetener.

Coconut Sugar
Major producer of coconut sugar

Growing demand as a preferred sweetener from lower glycemic index than cane sugar/honey.

Tea/Coffee/Beverage/Cosmetic Industry
herbal skin and haircare in Korea, China, India
body scrubs, shaving gels, face, and body creams
high in mineral rich source: iron, magnesium, potassium, and magnesium various vitamins: B6, B2, B1, and B3.
30 times phosphorous
18 times potassium than brown sugar.

Friendly for
Diabetics/Heart Disease
Obesity
Senior age growing population
Bio-based cosmetic

https://www.grandviewresearch.com/industry-analysis/coconut-sugar-market
The prices for the product are likely to increase over the forecast period owing to the surging demand in the international market.
Coconut Sugar Market Size, Share & Trends Analysis Report By Application, Regional Outlook, Competitive Strategies, And Segment Forecasts, 2019 To 2025

Key Players
Coconut as Tree of Life ...long before our time.
Sugarcane is the world’s third most valuable crop after cereals and rice, and occupies 26,942,686 hectares of land across the globe.

Evidence from plant remnants and DNA: South East Asia. in Papua New Guinea at 8,000 BC.

The crop spread around the Eastern Pacific and Indian Oceans around 3,500 years ago, carried by Austronesian and Polynesian seafarers.
Coconut Sugar
a long tradition
In SEA culture as ancient wisdom.

High skill needed.
Labor intensive.

Coconut sugar has become the world replacer for sugar cane. High demand is raised throughout the world.

The discovery is in South East Asia over a few hundred years and now starts to spread around the world.
The first chemically refined sugar appeared on the scene in India about 2,500 years ago.

The first place to cultivate sugarcane explicitly for large-scale refinement and trade was the Atlantic island of Madeira, during the late 15th century.

Then, it was the Portuguese who realised that new and favourable conditions for sugar plantations existed in Brazil.

When Brazilian sugarcane was introduced in the Caribbean, shortly before 1647, it led to the growth of the industry which came to feed the sugar craze of Western Europe.
Key facts
• Noncommunicable diseases (NCDs) kill 41 million people each year, equivalent to 71% of all deaths globally.

• Each year, 15 million people die from a NCD between the ages of 30 and 69 years; over 85% of these "premature" deaths occur in low- and middle-income countries.

• Cardiovascular diseases account for most NCD deaths, or 17.9 million people annually, followed by cancers (9.0 million), respiratory diseases (3.9 million), and diabetes (1.6 million).

• These 4 groups of diseases account for over 80% of all premature NCD deaths.

– nobody needed, but everyone craved –
## Top Sugar Producers

<table>
<thead>
<tr>
<th>Year</th>
<th>Brazil</th>
<th>India</th>
<th>EU</th>
<th>Thailand</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014-15</td>
<td>35,950</td>
<td>30,460</td>
<td>18,449</td>
<td>10,793</td>
</tr>
<tr>
<td>2015-16</td>
<td>34,650</td>
<td>27,385</td>
<td>14,283</td>
<td>9,743</td>
</tr>
<tr>
<td>2016-17</td>
<td>39,150</td>
<td>22,200</td>
<td>18,314</td>
<td>10,033</td>
</tr>
<tr>
<td>2017-18</td>
<td>38,870</td>
<td>34,309</td>
<td>20,823</td>
<td>14,710</td>
</tr>
<tr>
<td>2018-19</td>
<td>29,500</td>
<td>34,300</td>
<td>17,731</td>
<td>14,581</td>
</tr>
<tr>
<td>2019-20f</td>
<td>29,350</td>
<td>29,350</td>
<td>17,850</td>
<td>12,000</td>
</tr>
</tbody>
</table>

Sources: US Department of Agriculture (USDA), Office of the Cane and Sugar Board (OCSB)
THAILAND’S SUGAR INDUSTRY 2013-19

Sugar output
- 10,024,147
- 11,332,906
- 11,301,998
- 9,785,649
- 10,030,098
- 14,711,436

Domestic demand
- 2,756,263
- 2,804,556
- 2,805,731
- 2,916,818
- 2,928,218
- 1,901,378

Export
- 6,562,649
- 5,734,357
- 7,960,505
- 6,494,262
- 6,940,721
- 7,540,224

Source: Office of Cane and Sugar Board

Average per capita consumption of sugar as of 2016, by country

(in grams)

United States 126.4
Germany 102.9
Netherlands 102.5
Ireland 96.7
Australia 95.6
Belgium 95
United Kingdom 93.2
Mexico 92.5
Finland 91.5
Canada 89.1

*Actual figures from January-August

BANGKOK POST GRAPHICS
THE GLOBAL SUGAR GLUT

Global sugar supply (in the form of sugar and sugar crops, excluding fruit and wine) expressed as calories per person per day, for the year 2007.
The lesson learned from refining cane sugar drives coconut sugar industry towards Organic Direction for taking wholeness from nature.

Smaller players, community developments. Hand made Lower standards. Difficult challenge
CANE SUGAR:
mass consumption from the mid-17th century onwards
that created the health risks.

COCONUT SUGAR
More consumption started on 21st century onwards
That created healthy society.

BALANCE

SWEETNESS

– nobody needed, but everyone craved –
Electrolytes
Coconut sugar contains potassium, magnesium, and sodium, which are all essential for regulating your body’s water content as well as many heart, nerve, and muscle functions. It has nearly 400 times more potassium than regular sugar.

A low-glycemic index
Clinically proven. Diabetic friendly.

Minimum Process
Contain more than 10 amino acids
Amino acid sequence
Amino Acids Work Together to Produce the Taste of Foods!

**Umami, Sour**
- Glutamate
- Aspartate

**Sweet**
- Glycine
- Alanine
- Threonine
- Glutamine
- Proline
- Asparagine
- Serine

**Bitter**
- Tryptophan
- Isoleucine
- Leucine
- Cysteine
- Lysine
- Tyrosine
- Phenylalanine
- Arginine
- Valine
- Methionine
- Histidine

*Uneyama et al., Amino Acids, 43, 2349-2358 (2012)*
Umami

sweet

bitter

TH-CWD amino acids ratio

PH amino acids ratio

GG RG amino acids ratio

Amino Acids Work Together to Produce the Taste of Foods!

*Uneyama et al., Amino Acids, 43, 2349-2358 (2012)*
Market will grow as the demand has been increasing for more application beyond sweetness.
*Clinically tested
- increasing muscular mass
- increase metabolic rate
- reduce carb crave
- promote quality sleep
- promote quality of life

Coconut Flower Vinegar
<table>
<thead>
<tr>
<th></th>
<th>Cane</th>
<th>Coconut small area</th>
<th>Coconut promotion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nam Hom New</td>
<td>Nam Hom New</td>
<td></td>
</tr>
<tr>
<td>Area cultivated M rai</td>
<td>6.84</td>
<td>0.05</td>
<td>0.05</td>
</tr>
<tr>
<td>T Juice/ rai/yr</td>
<td>5</td>
<td>12.96</td>
<td>54</td>
</tr>
<tr>
<td>M Ton Cane Juice/ yr</td>
<td>34.2</td>
<td>0.648</td>
<td>2.7</td>
</tr>
<tr>
<td>Farmer @ B/M</td>
<td>1,588</td>
<td>8,100</td>
<td>16,875</td>
</tr>
<tr>
<td>Farmer @ USD/M</td>
<td>50</td>
<td>257</td>
<td>535</td>
</tr>
</tbody>
</table>

Thailand

Cane

Coconut small area

Coconut promotion

Nam Hom

New

Nam Hom

New

16,875
Business Issues
- Date sugar / Tanot sugar other palm family plants are coming up as alternatives.
- High demand with slow supply for coconut sugar forcing alternatives:
  - Date Sugar
  - Palm Sugar (Tanot)
  - Other palm sugar

Farm Issues
- The best sap productivity coconut seeds not in commercial availability.
  - Can ICC work together to get seeding / tissue culture done?
  - Can ICC dissolve importation barrier?
  - Each development takes a few years, the world is moving faster.
- The dwarf tree that enable business with less risk taking.
- Technology at farm to avoid climbing to harvest.
- No labor available for harvest job.
- Offer special fund and medical services for coconut harvest career.
- Reserve agricultural land for coconut for affordable investment.