THE ROAD MAP

1. A blueprint of the focused and unified industry plans and directions.
2. A comprehensive assessment of the magnitude and opportunities of the industry.
3. Basis of implementing programs and projects to address issues and concerns of the industry.
4. The yardstick of achieving plans at a given timeline and investment.
COCONUT SAP SUGAR
An Alternative Sweetener
“The juice of the coconut tree can be transformed into a sugar as soft as honey... Nature created this product such that it could not be processed in factories. Palm sugar can only be produced in palm tree habitats.

“Local populations can easily turn the nectar into coconut blossom sugar. It is a way to solve the world's poverty. It is also an antidote against misery.”
Mohan das K. Gandhi 3.5.1939

Mahatma Gandhi largely experimented with food; it was important to him. His personal diet was vegetarian and consisted of 1 litre of goat's milk; 150g wheat and rice; 75g leaf vegetables; 125g other vegetables; 25g lettuce; 40g ghee and 40-50g coconut blossom sugar.
PRODUCT BRANDS GLOBALLY AVAILABLE

Indonesia

Thailand
Growing interests of the exporters and trading sectors due to increasing demand in the local and export market.
THE PHILIPPINE BRANDS
A surging trend in production and market demand as healthy and natural product from 2007 to present.

**EXPORT VOLUME**

Current Export Price: US$ 4.50 - 6.50 per pound

*Partial Data / Source: PCA-MDD, 2011*
INDUSTRY MILESTONES

1995
Coco Sugar Project of PCA
Funded by FAO in ZRC - Dr. Magat

1997–2001
SCTNP Technology was developed - Dr. Magat

2002–05
Coco Sugar Technology Development thru COGENT in Balingasag, Misamis Oriental
RM Cruz, Luisa Molo and Joy Gamolo and Erlene Manohar

2006
Introduced the Coco Sugar in the Coco Week Trade Fair - RM Cruz and Ms. Erlene Manohar
Coco Sugar Processing Project supported by former Admin. Garin

2007
PCA funded GI Analysis of Coco Sugar thru FNRI-DOST
Dr. Trinidad Trinidad
March 7: Press Release about the GI Introduction in Korean Market
Promotion in the Export Market

2007
Intensive promotion as PCA’s promising product pushed by Admin Forbes

2008–2010
Commercialization Coco Natura Branding & Packaging
Establishment of Aroman Women’s Natural Food Producer
Ms. Erlene Manohar; Mr. Tammy Jalos; Ms. Elvira Silva; and Engr.. Evelyn Caro

2011–present
Intensive promotion as PCA’s promising product pushed by Admin Forbes
INDUSTRY MILESTONES

1. Established the health benefits of coconut sap sugar classified as low GI (35) alternative sweetener for diabetics
2. Developed an industry with vast economic prospects in the local and global market
3. Product quality improvement of commercially viable and low investment farm level technology
4. Set forward an industry with competitive advantage in local and export market.
5. Generated jobs for rural communities and provided immediate source of income
6. Developed a marketing scheme for sustainability of the industry
Comparative GI’s of Sugars

Glycemic Index (GI) below 55 is considered low.

Source: FNRI GI Results (Trinidad, 2011)
SUPPLY-VALUE CHAIN OF COCONUT SAP SUGAR ENTERPRISE

Cooperative/Agripreneurs/Producers

Tapping → Boiling → Granulation → Drying → Packaging

Coco Sap → Coco syrup → Coco Sugar

Consolidator (Foreign-based)

US$ 4.50 – 6.50 /pound

Consolidator

Exporter

Distributor

Retailer

Consumer

P7.50/L

P175/Kg

P200/Kg

P250/Kg

P200/KG

P200/Kg

P250/Kg – P300/Kg

P200/Kg

P250/Kg
Improved Product Utilization

- Raw Sugar
- Bottled Sugar
- Other Uses
AS FARM LEVEL AGRI-BUSINESS

Source of income of local people in coconut growing communities in North and South Cotabato, Davao, Misamis Oriental, Alabat, Quezon and in the Bicol Region

The history and romance of the Manobo’s tribal past made Aroman ethnically significant. In the early times, the estrangement of neighboring Muslim tribes led to the marriage of the Manobos and the Maguindanaon royal heirs for a peaceful solution. Thus, the place of Aroman located in vast land of North Cotabato is popularly known as the place of tribal weddings. The word “Aroman” was derived from the local dialect “Pigkarumaan” which means a place of weddings.

At present, Aroman is popular here and abroad to be the finest producer of newest coconut sap-based product tapped from the unopened inflorescence of coconut, the “Coconut Sap Sugar”. Because of the uniqueness of the product, it became popular and reported not to cause the increase in blood sugar.

The Coconut Sap Sugar is a sweet bounty reaped from the harvest of cooperation, hard work and never ending labor of love of the Manobo women in Aroman. A healthy and natural gift from the Tree of Life, nurtured and patiently explored to restore health and allow the diabetics to savour the sweetness of life. This product of Aroman narrates the romantic tribal history of the place and the fast rising progress for the local people.

Romancing the success of the coconut sap sugar business of the Aroman Women Natural Food Producers marked a better future for the descendants of the Manobos and conserving the indigenous nature of the people behind its bounty.

Aroman’s Bounty
The Manobo’s Sweet Scent of Success
and Labor of Love
INCOME GENERATION

Based on Aroman Coco Sap Sugar Production and Marketing

80L Coconut Sap

- Manangguete’s Share P420
- PCA-CSPC’s Share P180

Women Processor’s Share P500 @ P50/Kg

10Kg Coco Sap Sugar

- Traders/Consolidators

10 Kg Repackaged Coco Sap Sugar

- Retailer

10 Kg Repackaged Coco Sap Sugar

- End Consumer

**PROD’N COST**
- Coco Sap – P7.50/L
- Firewood – P10/Kg
- Water & Utilities – P5/Kg
- Transpo of Sap – P4/Kg
- Marketing P12/Kg
- Packaging Materials – P0.8/Kg

**INPUT COST**
- Transportation Cost – P7/Kg
- Coco Sap Sugar – P175/Kg
- Packaging Materials – P2/Kg
### COMPARISON OF INCOME IN ONE HECTARE FARM

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Copra</td>
<td>1000</td>
<td>17,880</td>
<td>35</td>
<td>35,000</td>
<td>17,120</td>
<td>96,000</td>
<td>16,841</td>
</tr>
<tr>
<td>Coconut Sugar</td>
<td>9000</td>
<td>943,050</td>
<td>175</td>
<td>1,575,000</td>
<td>631,950</td>
<td>96,000</td>
<td>16,841</td>
</tr>
</tbody>
</table>

**Assumptions:**
1) 1kg of Coco Sugar = 4 Coconut Trees (dwarf var.);
2) Average Annual Coco Sugar Production is 9000 kg/ha
3) Annual Productive Copra Production is equal to 1000 kg/ha
4) 750 kilos per month/ha
Fig.1. Present Structure of Coco Sugar Marketing
Fig. 2. Proposed Marketing Structure with Accreditation
PROJECTED SUPPLY REQUIREMENT FOR ALTERNATIVE SWEETENER AND OPPORTUNITIES
PROSPECTS

1. Increasing number of diabetic people 346 M in the world, in USA 23.6 M and 8 M in the Philippines (WHO, 2011) as possible users of the product;
2. Growing interests of consumers on natural and healthy products in the local and global market;
   
   3. Shift of consumers’ interest on organic and natural products
   4. Development of quality and competitive product; and
   5. Increasing demand and growing interest of the business sectors in the export and domestic scenario.
DIABETES STATISTICS

**Estimated percentage of people ages 20 years or older with diagnosed and undiagnosed diabetes, by age group, United States, 2005–2008**

- **20–44**: 3.7%
- **45–64**: 13.7%
- **≥65**: 26.9%

**Source**: 2005–2008 National Health and Nutrition Examination Survey

**Estimated number of new cases of diagnosed diabetes among people ages 20 years or older, by age group, United States, 2010**

- **20–44**: 465,000
- **45–64**: 1,052,000
- **≥65**: 390,000

**Source**: 2007–2009 National Health Interview Survey estimates projected to the year 2010

About 1.9 million people ages 20 years or older were newly diagnosed with diabetes in 2010.
Assumptions
1. 346 M people are diabetics worldwide, (WHO, 2011);
2. Computation of daily sugar intake is based on the Recommended Daily Intake (RDI) for diabetic which is 5g daily;
3. Computation of annual requirement of alternative sweetener is based on the percentage of diabetics multiplied by RDI of sugar and number of days 
\[\frac{((346M \times 0.01) \times (5 \times 365))}{(1000\text{g/Kg})} \times \frac{(1000\text{Kg/MT})}{(1000\text{Kg/MT})} \]
4. Percentage of target diabetics: 2012-1%; 2013-2%; 2014-3%; 2015-4%; and 2016-5%

Basic Source of Data: WHO
INDUSTRY GOAL

“DEVELOPMENT OF THE COCONUT SAP SUGAR INDUSTRY FOR HEALTH AND EMANCIPATION OF THE COCONUT FARMERS FROM POVERTY”

Coconut blossom sugar provides a way to solve world’s poverty, as antidote against misery
Gandhi: 3. 5. 1939, Source: htp://www.
PLANS

PROGRAMS

TARGETS
DRIVERS OF INDUSTRY DEVELOPMENT

Production
- Supply of Sap
- Labor input

R&D
- Process Technology
- Medical Research

Market
- Promotion
- Product Standards
## INDUSTRY DEVELOPMENT PLAN

### FOR DOMESTIC MARKET
1. Promote utilization to produce healthy and natural high-end products
2. Conduct further research on the health benefits of the product
3. Develop low input product processing and affordable equipment
4. Provision of capital for commercial scale production

### FOR THE EXPORT MARKET
1. Increase the volume of production to address the increasing demand
2. Standardize processing for product quality compliance
3. Strict compliance to the GMP-HACCP and other regulatory requirements
4. Establish international trading system and market linkages
1. Dwarf varieties such as EGD, MRD, Catigan are high sap producers that can be planted for expansion of supply source

2. Low GI classification of coconut sugar and the high element contents are product advantage for market promotion;

3. Emerging natural and healthy sap-based products such as coconut sap syrup and spread will enhance product utilization and diversification; and

4. Existing local brands are already available in the global market and increasing market destinations
OBJECTIVES

1. To increase the production trend of the coconut sap sugar to address the increasing market demand;
2. To capture at least 1% of the projected average world requirement of diabetics for alternative sweetener from 2012-2016 which is estimated at an average of 36 MMT after 5 years
3. To conduct in-depth medical researches to support product promotion;
   4. To introduce innovations to lower the cost of production, processing and packaging thru R and D;
5. To safeguard product quality to maintain the competitive advantage of the product in the global market.
EXPECTED OUTPUTS

1. Increased production to meet the average projected market demand of 36 MMT by the end of 2016;
2. Increased foreign market demand and addressed the requirements of prospective users (the diabetics);
3. Conducted medical health researches in support of market promotion
4. Carried out R & D to improve processing and packaging technologies;
5. Established accreditation system of coconut sap sugar processing plants and certified quality sap-products.
PROJECTED PRODUCTION

Assumptions:
1) Target production is based on the current production capacity which is 70MT and increases threefold every year;
2) Computation of daily sugar intake is based on the Recommended Daily Intake for diabetic which is 5g daily;
3) Computation of annual requirement of alternative sweetener is based on the percentage of diabetics multiplied by RDI of sugar and number of days $\left(\frac{(346 \times 0.01) \times (5 \times 365)}{1000 \text{g/Kg}}\right) \times \left(\frac{1000 \text{Kg/MT}}{1000 \text{Kg}}\right)$
4) Percentage of target diabetics: 2012 - 1%; 2013 - 2%; 2014 - 3%; 2015 - 4%; and 2016 - 5%
**PROJECTED PRODUCTION**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Target Production Capacity (MT)</th>
<th>Projected Demand Based on the Diabetic Incidence (MT)</th>
<th>Production Gap (MT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>210</td>
<td>3,789</td>
<td>3,579</td>
</tr>
<tr>
<td>2013</td>
<td>630</td>
<td>12,629</td>
<td>11,999</td>
</tr>
<tr>
<td>2014</td>
<td>1,890</td>
<td>18,944</td>
<td>17,054</td>
</tr>
<tr>
<td>2015</td>
<td>5,670</td>
<td>25,258</td>
<td>19,588</td>
</tr>
<tr>
<td>2016</td>
<td>17,010</td>
<td>31,573</td>
<td>14,563</td>
</tr>
</tbody>
</table>

**Assumptions:**
1) Target production is based on the current production capacity which is 70MT and increase threefold every year;
2) Computation of daily sugar intake is based on the Recommended Daily Sugar Intake for diabetic which is 5g daily;
3) Computation of annual requirement of alternative sweetener is based on the percentage of diabetics multiplied by RDI of sugar and number of days 
   \[ \frac{([346M \times 0.01] \times (5 \times 365))}{(1000g/Kg)} \] / (1000Kg/MT)
4) Percentage of target diabetics: 2012-1%; 2013-2%; 2014-3%; 2015-4%; and 2016-5%
## EQUIVALENT NUMBER OF COCONUT TREES

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Projected Target Production Capacity (KG)</th>
<th>Required Number of Trees</th>
<th>Share in Bearing Trees</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>210,000</td>
<td>2,301</td>
<td>0.00068%</td>
</tr>
<tr>
<td>2013</td>
<td>630,000</td>
<td>6,904</td>
<td>0.00203%</td>
</tr>
<tr>
<td>2014</td>
<td>1,890,000</td>
<td>20,712</td>
<td>0.00609%</td>
</tr>
<tr>
<td>2015</td>
<td>5,670,000</td>
<td>62,137</td>
<td>0.01828%</td>
</tr>
<tr>
<td>2016</td>
<td>17,010,000</td>
<td>186,410</td>
<td>0.05483%</td>
</tr>
</tbody>
</table>

**Conversion:**
1) 1Kg of Coco Sugar = 4 trees (dwarf varieties)
2) 340,000,000 Bearing Trees in 2011 (PCA-BAS, 2011)
<table>
<thead>
<tr>
<th>OBJECTIVES</th>
<th>CONSTRAINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>To increase production of alternative coconut sap sweetener by three folds from the present production capacity</td>
<td>Limited supply of raw material (sap)</td>
</tr>
<tr>
<td>To enhance current market status and establish stable markets</td>
<td>Unstable market demand and supply volume for export market; and Wide range of product pricing due to varying production cost.</td>
</tr>
<tr>
<td>To conduct medical research to support product promotion and generate innovations to lower the cost of production thru R&amp;D</td>
<td>No in-depth medical research on the health benefits of the product and lack of comparative study with existing synthetic sugar-free sweeteners</td>
</tr>
<tr>
<td>OBJECTIVES</td>
<td>CONSTRAINTS</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>To safeguard product quality and competitive advantage in the global market</td>
<td>• Growing numbers of processing plants with no standard processing technologies;</td>
</tr>
<tr>
<td></td>
<td>• Delayed issuance of PNS for product quality protection;</td>
</tr>
<tr>
<td></td>
<td>• Unregulated processing and product quality compliance which is prone to product adulteration; and</td>
</tr>
<tr>
<td></td>
<td>• Unaffordable organic certification to SMEs</td>
</tr>
</tbody>
</table>
STRATEGIES

1. Planting of selected varieties and mapping of areas suitable for high yield and quality sap production;
2. Comprehensive promotion of the health benefits of coconut sap sugar as a natural product;
3. Intensive medical research to support the health claims about the coconut sap sugar and other sap-based products;
4. Exhaustive R and D on coconut sap-based products and market development; and
5. Enhanced utilization of the coconut sap and sugar thru development of coconut-sap based high-end products.
Strategic Approach for Promotion and Development of the Coco Sap Sugar Industry (SAPDCI) Program

Project Components:

1. Mapping of production areas and establishment of community-based processing plants;
2. Identification of coconut varieties ideal for sap sugar production;
3. Development of economically feasible processing technologies and equipment/facilities;
4. Market promotion and development based on demand projections;
5. Formulation of accreditation and regulatory systems for quality certified coconut sap sweeteners and other sap-based products.
Established reliable supply of quality cocosugar to comply with the market demand in 2014

Increased by 50% the community-based processing plants in 2015

Established reliable supply of quality cocosugar to comply with the market demand in 2014

Implemented programs to increase supply and market promotion 2013

Increased production by 17,010 MT and gained the rank of top exporter in 2016
ACTION PLANS

1. Identification of best varieties for coconut sap production and mapping of existing stands of dwarf varieties;
2. Establishment of certification system for assured product quality standards;
3. Strict implementation of PNS in conformity with the international standards;
4. Development of an “organic certification system” affordable to local producers but acceptable to international requirements;
5. Strategic R and D on medical, health benefits, product quality and packaging.
### WORK AND FINANCIAL PLAN

<table>
<thead>
<tr>
<th>THRUST</th>
<th>TARGETS</th>
<th>BUDGET</th>
</tr>
</thead>
</table>
| **1. Increase Production**  | • Varietal selection and mapping of areas with high sap-yielding trees  
                                • Establishment of more sap sugar processing plants                                                                                   | 50 M   |
| **2. Increase Market Demand**| • Intensive market promotion and positioning  
                                • Establishment of competitive advantage thru product quality development                                                            | 25 M   |
| **3. Increase Product Utilization** | • develop sap sugar-based high-end products  
                                • Information dissemination of the health benefits of the sap sugar (i.e. congress, conferences and seminars)    | 15 M   |
| **4. Quality Control**      | • Strict implementation of regulatory policies  
                                • GMP-HACCP and PNS compliance                                                                                                           | 5 M    |
| **5. Medical Research**     | • Continuous R and D on nutritional facts and health benefits  
                                • Study on the effects of the coconut sap sugar to diabetics and dieters                                                                  | 20 M   |
SAPDCI PROGRAM
Total Budget : 125 M
ISANG MATUWID NA LANDAS PARA SA MAUNLAD NA INDUSTRIYA

SALAMAT PO. . . . .