

The Economic and Strategic Importance of the Sugar Agro-Industry in the Cuban Economy



Author: Dr Armando Nova González

Centro de Estudio de la Economía Cubana Universidad de La Habana

There is almost no other plant with similar potential

- **Sugarcane** is a vegetable plant with an excellent ability to capture and store solar energy, and to generate important foodstuffs for human consumption (e.g., sugar), for animal consumption, and a source of multiple forms of energy such as: electricity, alcohol, biogas, and various sub-products such as: honey, *bagasse*, etc., as well as multiple high value added derivatives.
- **Sugarcane plantations** absorb carbon dioxide (CO₂) from the air and release it in the form of oxygen, contributing to the “Forest Effect,” making a positive environmental contribution.

The sugar agro-industry, given current and future conditions, can be part of the solution to three (3) major problems confronted by Humanity and by Cuba:

- Food Production**
- The Energy Deficit**
- Environmental Preservation**

Sugar cane represents the best and largest source of biomass with relation to other crops

Crop	Dry matter unit of measure	Ton of dry matter (hectares/year)
Sugar cane (57 MT/hectare)	Whole cane	20.4
Sugar cane (68 MT/hectare)	Whole cane	24.4
Corn (harvested once a year)	Whole plant	9.5
Wheat	Whole plant	5.5
Rice	Whole plant	9.5
Sugar Beets	Whole plant	12.0
Tropical pastures	Pangola	20.0

The current and future international scenario offers new projections and opportunities for

The sugar agro-industry due to several reasons:

- Evolutionary tendency in favor of higher prices for alcohol and sugar**
- Environmental preservation/conservation**
- Food requirements**
- Tendency towards higher prices for fossil fuels**
- Greater priority on renewable energy**

Fundamental problems confronting Cuba's sugar agro-industry

The lack of incentives for agricultural producers (cane represents 70% of the production costs for sugar) is considered the most immediate (or pressing) issue to resolve:

	Unit of Measure.	Quantity
Sugar output/MT cane	Pound	243*
Internal price paid to producers per metric ton (MT)	Ps	95.00**
International market income (or earnings) (\$0.19 USD/lb. Sugar)	USD	46.17
International market income or earnings (46.17 USD x 25.00 Ps)***	Ps	1154.25
Ratio of producer price/international market income****	%	9.5
Producer income per pound (lb.) of sugar produced	USD/lb	0.0185

*Assumes a yield of 11.2%

** If the international price of sugar is <0.20 USD/lb., we assume 0.19 USD/lb.

If the international price of sugar is > 20.0 USD/lb., the price received by producers would be 104.0 Cuban pesos (CUP) per MT.

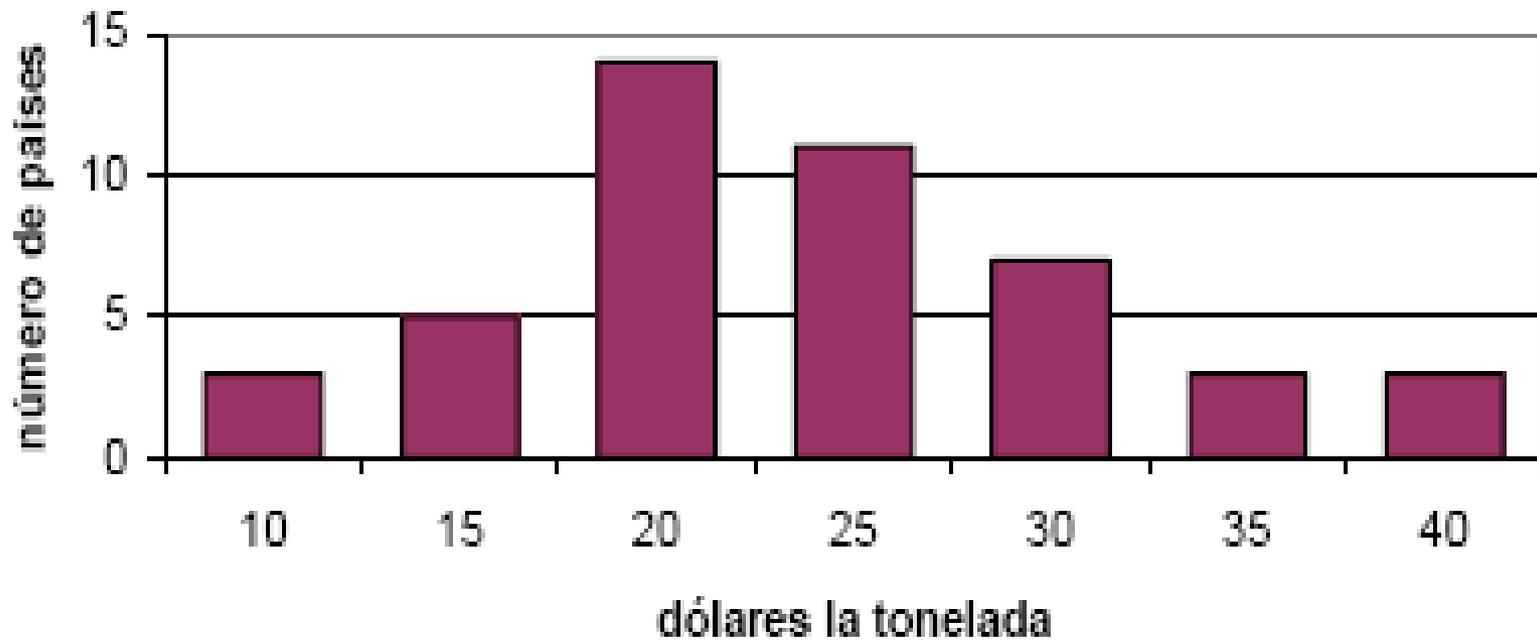
*** 1USD = 1CUC x 25.00 CUP = 1154.25 CUP

****95.0/1154.25= 9.5% ó 0.0185 USD per lb. (of sugar) sold in the international market.

International prices paid to producers

Prices fluctuate between \$20 to \$30 USD per ton of cane.

Fig A: Frecuencia de distribución de los precios de la caña 2000/01-2002/03



An important portion of the earnings (or income) generated should be part of the price paid to (sugar cane) producers.

- Sugar cane represents the fundamental component of the costs of production; without cane, the final product (i.e. sugar), intermediate products, and derivatives cannot be produced.

País	Sistema de pago por la caña	Ingresos de la industria a repartir	Cuota de ingresos del cultivador
Australia	Parte de los ingresos (variable)	Azúcar crudo (los ingenios retienen las melazas)	62-67%
Brasil	Parte de los ingresos (variable)	Azúcar y etanol	56-61%
Fiji	Parte de los ingresos (fija)	Azúcar, melazas y otros productos derivados	70%+
India	Precio fijo	Varía por estados.	Precio fijo
México	Parte de los ingresos (fija)	Azúcar estándar, los ingenios retienen las melazas.	57%
Sudáfrica	Parte de los ingresos (fija*)	Azúcar crudo/refinado y melazas	62-63%
Tailandia	Parte de los ingresos (fija)	Azúcar crudo/blanco/refinado y melazas	70%

*La fórmula de división de los ingresos es dinámica y cambia de vez en cuando según el entorno en el que opera la industria

- In some countries payment quotas (to producers) range from 56% to 70%.

Annual economic potential of Cuba's sugar agro-industry

Products	Units	Cane	Sugar	Alcohol (thousand MM de liters)	Electricity Gwh	Total Income
Caña	MMtm	50.0				
50 % alcohol (70 liters /t caña +second generation alcohol) ⁽¹⁾	MMtm	25.0		1,978.0		
50 % sugar (11.2 % industrial yield)	MMtm	25,0	2,8			
Cane (100 kw/ton ground cane)	MMtm	50.0			5,000.0 ⁽²⁾	
Gross Income	MMUSD		900,0 ⁽³⁾	1,523.3	1,750.0	4,173.3

Nota: Precio azúcar 0.20 USD la libra, 0.77 USD litro de etanol (Banco Central de Cuba Información Económica febrero 2013), Una tonelada de petróleo crudo 33API contiene 7.3 barriles.

1(t de caña x 0.29 x 90 litros x 0.35= 228 375,000 litros de alcohol segunda generación

2 (350 Gr consumo de petróleo por K/h, los 5000 GWh, representan 1,750 mil ton petróleo al año)

3 (Deduciendo 700,0 mil t consumo interno, se exportarían 2,1 Millones de toneladas x 430,0 usd/t)

The Sugar Industry: In a Process of Recovery

- At the end of 2012, the area (of land) destined to sugar cane was approximately 750,000 hectares (ha.) and continues to expand, with the goal of reaching 1,000,000 ha.
- Yields are in a process of recovery. At the end of the 2011/2012 harvest, yields had reached 42.0 tons/ha. The projected estimates for the 2012/2013 harvest are around 111% of the 2011/2012 levels.
- The Cuban economy has the industrial capacity to produce the equivalent of 4,000,000 tons of cane.
- The availability of cane for the 2012-13 harvest was over 18,000,000 tons (with the potential of producing 2,000,000 tons of raw sugar, 96 base).
- Cuba is making important investments in the sugar agro-industry such as: the purchase of new tractors and machinery, as well as harvesting equipment from Brazil.
- The modernization of the (sugar cane) processing industry has already begun; several idle sugar mills have been rehabilitated.
- The sector has started to attract foreign investment after the approval of a joint agreement in the CAI Cinco de Septiembre in Cienfuegos Province with the Brazilian firm Odebrecht.
- Cuba has entered agreements with British firms to operate 5 biomass (energy-generating) plants and to build 2 bio-electric plants through a joint venture/contract with several British firms.

SUGAR CANE: THERE IS ALMOST NO OTHER PLANT WITH THE SAME POTENTIAL



THANK YOU VERY MUCH.