

The insertion of the Cuban economy in the international economy: Challenges for Cuba's sugar agro- industry.

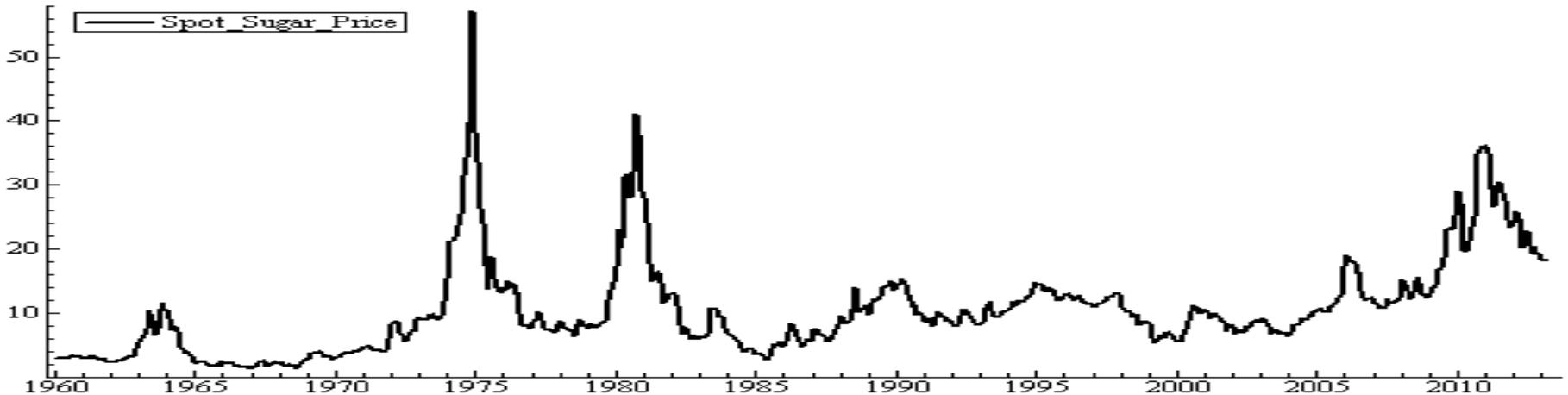
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INTRODUCTION

- The prospect for the international reinsertion of key economic sectors has been one of the principal topics addressed in recent debates regarding “perfecting” the economic and political strategies of the Cuban economy. This is, clearly, a broad and complex topic that covers various areas. The present work (or study) explores one of them:
- The issues confronting the sugar agro-industry.
- This work (or study) is structured as follows:
- 1) A detailed overview of the fundamental aspects of the international sugar market and medium-term forecasts or projections.
- 2) The competitiveness of Cuba’s sugar agro-industry and its prospects for international reinsertion.

I. The international sugar market: Medium-term forecasts and projections.

Precio (spot) del azúcar en el mercado mundial, c/l



Fuente: USDA Statistics, 2013

Price volatility (or fluctuations) has been one of the inherent characteristics of the international sugar market.

Relevant changes in the international sugar market in the last 20 years

Prior to the 1990s, Cuba had been the largest sugar exporter in the world, and one of the principal global producers.

During the second half of the 1990s, Cuba's role as a leading sugar producer and exporter began to decline, and by the beginning of the current century, it was no longer a relevant competitor.

On the other hand, Brazil, whose sugar exports in 1990 represented just 2% of the world market, currently accounts for more than 50%, with (sugar) output levels surpassing 25 million tons.



Brazil's growing role in the international sugar market has resulted in:

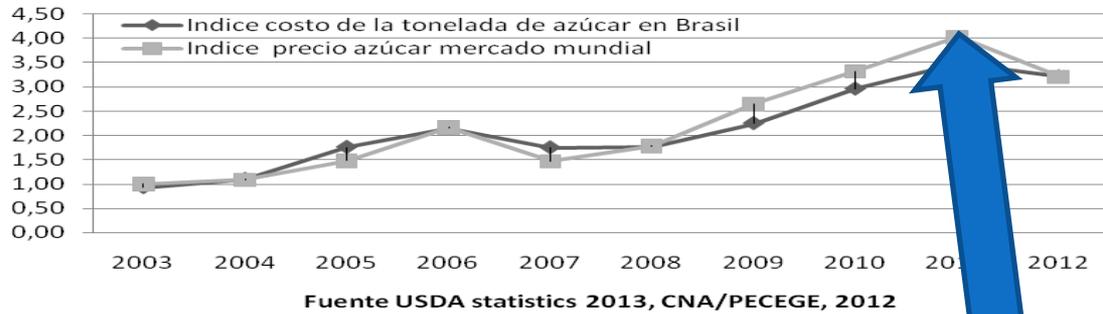
- A changed focus/emphasis on the competitiveness of the sector.
- An additional source of uncertainty in the determination of international prices: the correlation between world oil prices and the price of ethanol in Brazil, which has been heavily influenced by government policies.



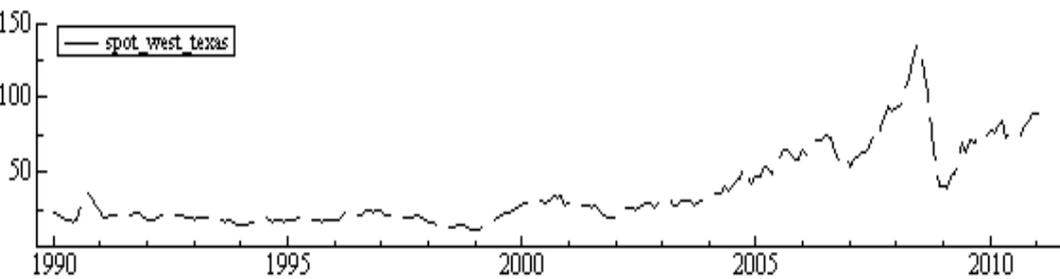
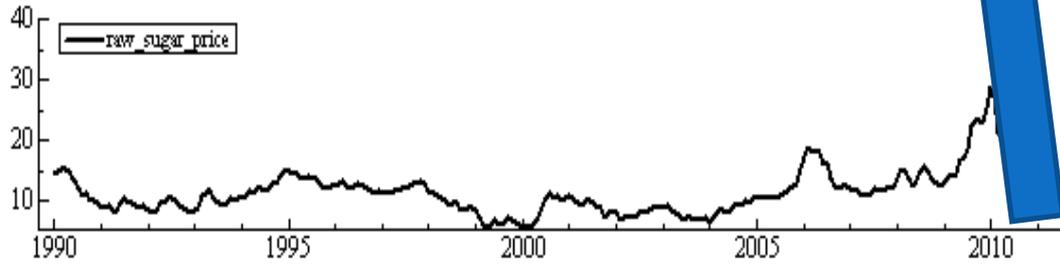
Given Brazil's significant influence on the international sugar market, its internal production costs have a direct impact on international (sugar) prices.

- Brazil allocates 55% of the sugar cane harvest to the production of ethanol, a partial or total gasoline substitute.
- This results in the correlation between oil prices and the prices of distillates and the supply of sugar, which can also be modeled (econometrically).
- The Brazilian government incentivizes and/or disincentivizes ethanol production, depending on world oil prices.
- This affects internal sugar prices, which, in turn, have an impact on the international price of sugar.

Costo de la tonelada de azúcar brasileira y precios mundiales del azúcar



El impacto de los precios del petróleo en los precios del azúcar

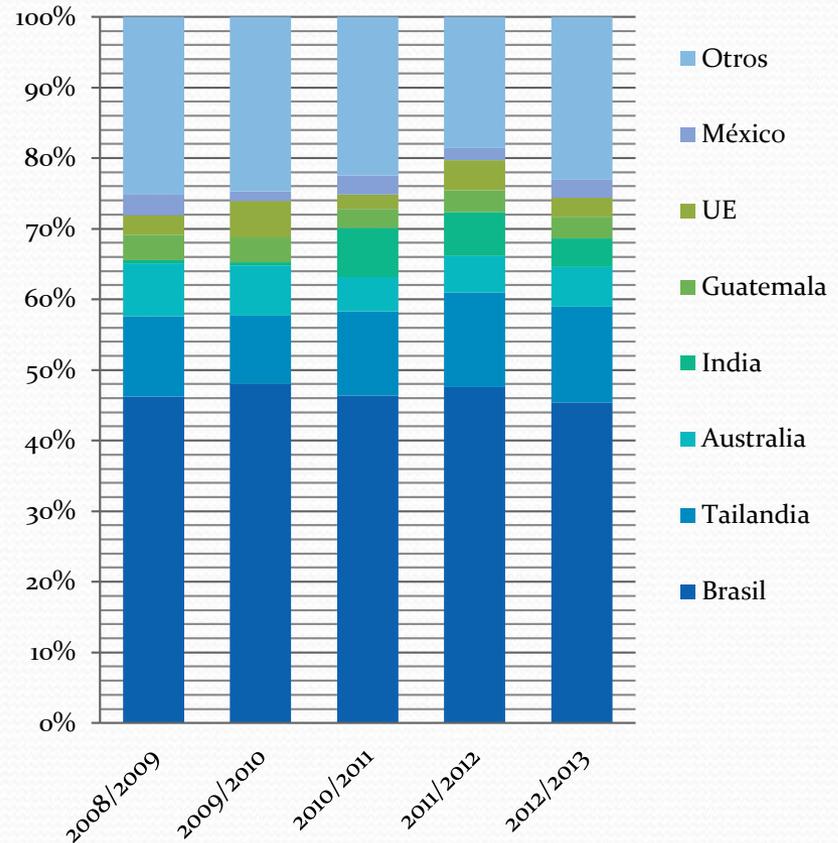


Fuente: USDA Statistics, 2011, www.indexmundi.com

Relevant changes in the international sugar market in the last 20 years

- Another relevant issue, that took place during the last decade of the 20th Century in the sugar economy, has been the tendency to concentrate (sugar) exports in the hands of a few (selected) producers.

6 countries account for 80% of world sugar exports



Principal sugar exporting countries in%
Source:USDA, Statistics, 2013

Relevant changes in the international sugar market in the last 20 years

- The concentration of sugar exports in a few countries led to the expansion of global capital and investment flows into the sugar sectors of the principal producers and exporters.
- During the 2010-11 harvest, Brazil's principal sugar cane processors were:

Principal sugar cane processors in Brazil

2010/11 Harvest (April/March)

	Million Tons
1 Raizen (Shell and COSAN)	54,5
2 LDC SEV (Louis Dreyfus-Santelisa Vale)	36,3
3 GUARANI (Tereos-Petrobras)	19,7
4 USAÇUCAR	15,9
5 ALTO ALEGRE	15,5
6 CARLOS LYRA	15,2
7 BUNGE	13,5
8 SÃO MARTINHO	13
9 ZILOR	10,8
10 NOBLE	10,7
11 RENUKA	10,3
12 T.WANDERLEY	10,3
13 GVO	10
14 COLORADO	9,5
15 PEDRA	9,3
TOTAL 25 productores principales	328
TOTAL BRAZIL	620

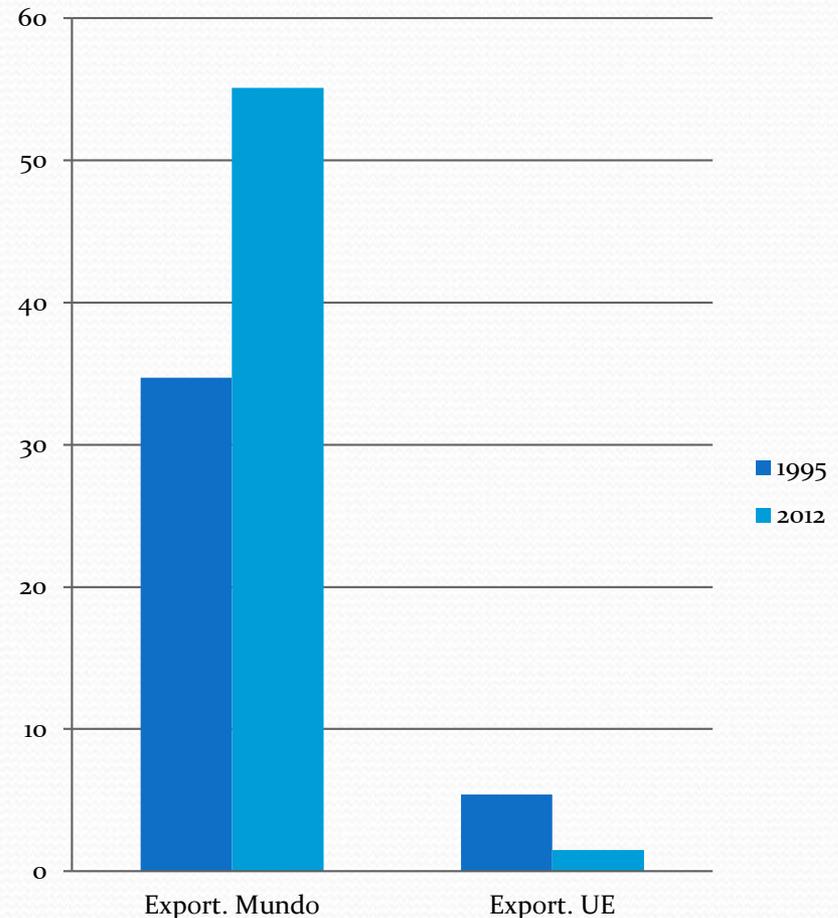
Participation of 25 principal producers 52.9%

Source: ISO, Meca(12)05, and Dataagro, 2012

Relevant changes in the international sugar market in the last 20 years

- Government subsidies and other types of support to producers have influenced the international sugar market in the last two decades.
- One of the most notable developments has been the reduction of exports from the European Union (EU), which has been accompanied by higher imports, and lower production

Sugar exports, Millions USD

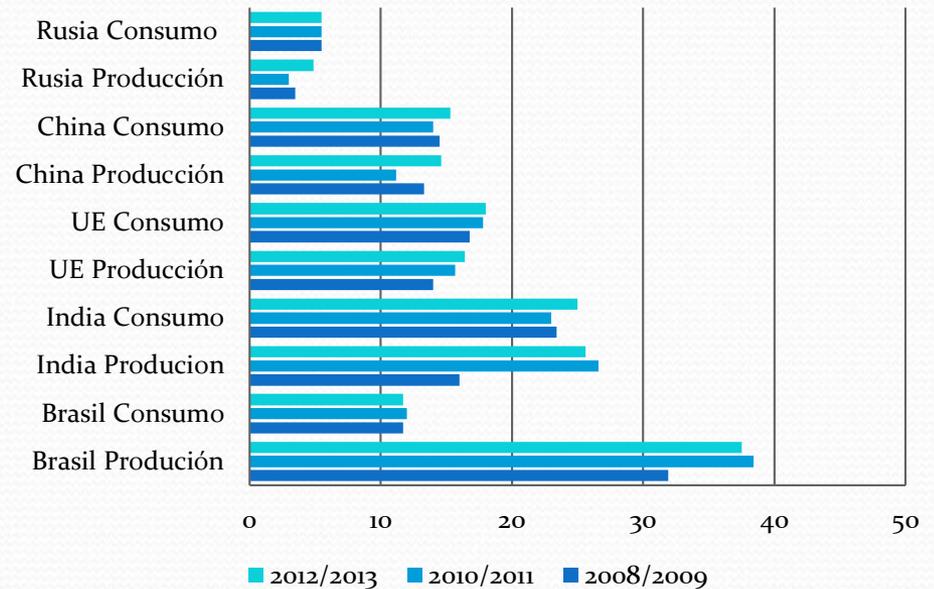


Fuente: USDA Statistics, 2012

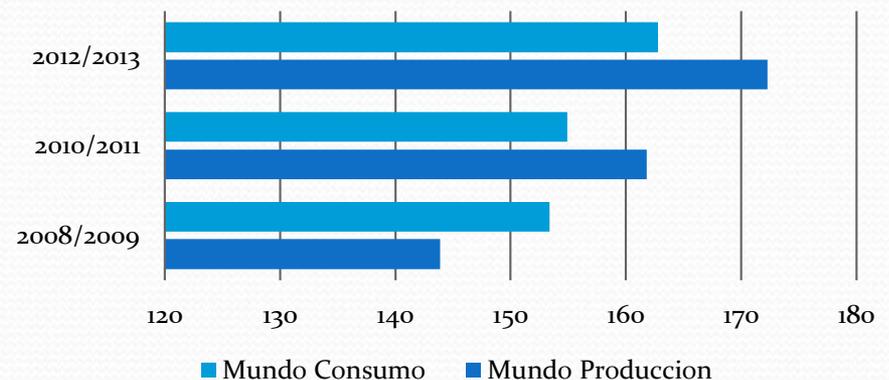
Relevant changes in the international sugar market in the last 20 years

- Sugar consumption has increased its pace in the last 10 years. By the late 1990s, the average annual growth rate was 2.2%; at the present time, this rate is around 2.6%.
- China's increased sugar consumption has contributed to the profitability of the industry and to the expansion of global sugar output.

Principal sugar consumers and producers



Global sugar production and consumption



Medium-term Forecasts & Projections

The international competitiveness and reinsertion of Cuba's sugar agro-industry should be examined within this context.

Fuente: OECD-FAO Agricultural Outlook 2011-2020

- a) Sugar prices are likely to fluctuate between 18 and 24 cents USD per pound.
- b) Sugar exports are expected to grow at moderate rates; in 10 years, they are expected to grow between 6% and 10%.
- c) Price volatility is likely to remain, as the result of a wide range of factors.
- d) The tendency towards the continued concentration of sugar exports in a small group of producers will be accentuated; particularly Australia, Brazil, and Thailand.
- e) The price margins between sugar and oil are likely to narrow.
- f) Brazil will set the standards for global competitiveness taking into account its relative high share of global output and exports, its costs advantages, the quality of its product, and its influence on the correlation between sugar prices, the price of oil, and the price of biofuels.
- g) Foreign direct investment (FDI) will continue to expand its influence on the sugar sector, and will be the determining factor in terms of the global competitiveness of the sugar sector.

II. The global competitiveness of Cuba's sugar agro-industry and its prospects for international reinsertion.

- The principal indicators of the Cuban sugar agro-industry have shown substantial declines in the last 20 years.
- The loss of preferential prices and inputs from the Socialist Bloc and the former Soviet Union had an adverse impact on Cuba's sugar agro-industry.
- In addition, the implementation of the "Alvaro Reynoso Plan," a hostile financial environment, and lower world sugar prices have also affected Cuba's sugar agro-industry.

Indicators of the Cuban sugar agro-industry

Year	Agricultural Yield (MT/ha.)	Ground Cane MMT	Industrial Yield 96	Sugar Output (Mt)
1965	47,8	50,4	12,15	6156
1969	44,2	40,5	12,02	4459
1970	55,8	79,8	10,71	8538
1975	54,1	50,5	12,44	6314
1980	46	61,6	10,82	6665
1985	50	66,8	11,99	8004
1988	56,8	68,4	10,85	7415
1990	57,6	65,6	10,65	8040
1992	45,6	57,6	10,57	7010
1995	28,5	33,6	9,90	3328
1998	31,3	32,8	9,90	3229
2000	35,6	36,4	11,70	4057
2004	36	23,8	10,60	2568
2006	28	11,1	10,60	1239
2008	41,3	15,7	11,10	1446
2010	28,8	11,5	10,87	1250

• The global competitiveness of Cuba's sugar agro-industry

- The Pragmatic Document regarding the restructuring of the sugar sector prepared by the Ministry of Sugar (MINAZ) in 2002 states:
- “World sugar prices have been declining in the last few years until they reached the current situation below 6 cents (USD) per pound. Sugar production costs in our country have not declined for several reasons such the excess capacity that this sector faces today; in fact, during the current harvest, production costs are expected to grow by 3% compared to the previous season.”
- Further along, the same document states that: “ On the other hand, the role of substitutes such as corn syrup, and new artificial sweeteners, are gaining market share, and represent somewhere between 20% to 25% of the market.” (MINAZ, 2002)

Alvaro Reynoso Plan

- Restructure and reorganize the Cuban sugar agro-industry to take into account production costs, global consumption, and world prices in order to increase the net earnings generated by reducing the costs of production.
- Reduce annual output to 4 million metric tons (MT), reduce the number of industrial mills and planted areas; transfer human and material resources to other useful and sustainable activities to increase their value added.
- Reduce the planted area (dedicated to sugar cane) by 62% and allocate available land to non-sugar agricultural production, livestock, and forestry.
- Increase agricultural yields in the planted area dedicated to sugar cane (750,000 hectares) to a minimum of 54 tons/hectare.
- Reorganize the sugar industry to 71 sugar-producing mills, with an industrial yield of 12%; with milling seasons of 90 to 100 days, and production costs (of sugar) between 60 and 240 USD.
- Desingate 14 mills to the production of alcohol and other sugar cane derivatives.
- Establish the following inviolable principles: guaranteed wages for all workers, provide training and development for all employees transferred to other sectors of the economy, and guarantee employment for all displaced workers.

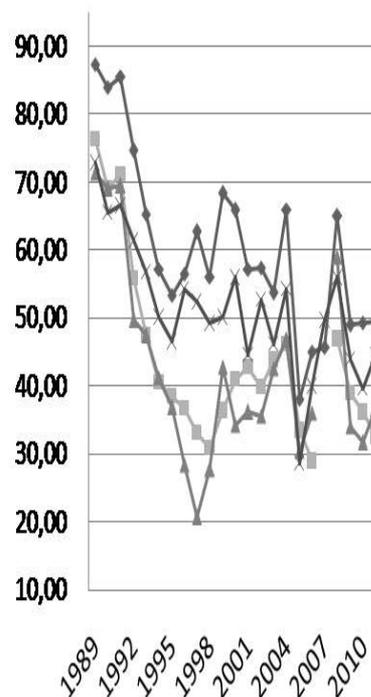
In reality, one of the challenges of the Alvaro Reynoso Plan was the result of insufficient investment in the reorganization of the sector, as had been proposed by several authors in the past (Álvarez, J. and L. Peña, 2001) in order to counter higher production costs and face the limited demand of the market.

The Current Situation of Cuba's Sugar Agro-Industry

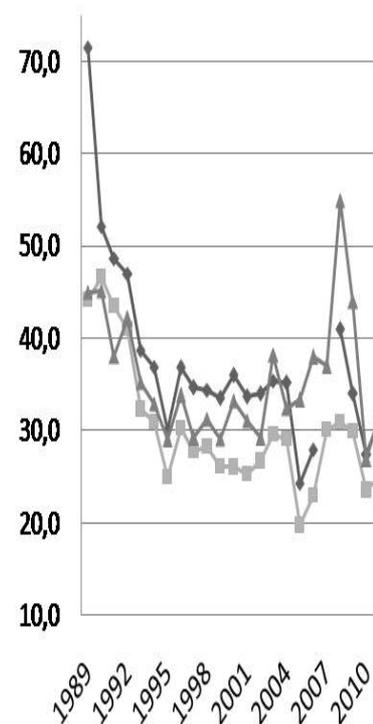
- Cuba's sugar agro-industry faces several challenges:
- Insufficient harvested areas (to meet demand).
- Low agricultural yields; the average has been below 48 t/ha.

Dinámica de los rendimientos por cepas:

Ciclo largo



Ciclo corto



Fuente: Azcuba, 2012

The Current Situation of Cuba's Sugar Agro-Industry

- The sugar industry also faces several challenges:
- For example, the quality of the sugar produced was below competitive ranges in 2008-2010.
- During those years, it was only accepted as raw material for refineries.

Parámetros de calidad del azúcar	Unidad	Nivel	Brasil (VHP)	Cuba promedio (1)
Polarización	°Z	mín.	99,30 - 99,50	98,87
Humedad	%	máx.	0,15	0,22
Color ICUMSA	UI	máx.	500 - 800	2376
Cenizas	%	máx.	0,12	0,24

(1) Resultado promedio embarques, 2008.

The Current Situation of Cuba's Sugar Agro-Industry

- The situation of Cuba's sugar agro-industry and its potential for global reinsertion has been widely discussed as one of the principal economic issues that needs to be addressed. For example, the “Lineamientos de la Política de la Política Económica y Social del Partido y la Revolución” (or “Guidelines”) (2011) indicated the following:
- The sugar agro-industry has as a primary objective the need to increase sugar cane production in a sustainable fashion, prioritizing the reorganization of the areas under cultivation to bring it closer to the sugar mill
- In terms of prices paid to sugarcane producers, these should take into international prices into account in order to stimulate increases in production, higher incomes for producers and workers involved in this sector.
- Diversify sugar production considering the demands of the international and domestic markets. Move forward with the creation, recovery, and efficient use of the installed capacity (or plants) to increase production of derivatives such as alcohol, animal feed, bio-products, etc.

The Current Situation of Cuba's Sugar Agro-Industry

- The goals announced by Cuban authorities for the sugar agro-industry for the next years are:
- Producing 28 million tons of sugar cane.
- Assuming an average industrial yield of 10% to 11%, this is the equivalent of approximately 3,000,000 tons of sugar, which is twice the current output level.
- However,
- *Will Cuba's sugar agro-industry be globally-competitive given the forecasts for the international sugar market?*

UNIT COSTS AND TOTAL COST CALCULATIONS FOR THE IMPORT COMPONENT OF CUBA'S SUGAR AGRO-INDUSTRY

Type of Expenditure (or Cost)	2009	2010	2011	2012	2013
I – Costs of Material Inputs	226,2	247,3	280,1	304,3	329
Energy generators	77,1	87,9	98,3	106,6	114,6
Fertilizer	84,3	83,9	100,1	110,3	119,9
Chemical products	38,5	45,4	47,9	50,5	54,8
Other materials	26,3	30,1	33,9	36,9	39,7
II – Labor Costs (Component in Hard Currency)	7,7	8,8	9,8	10,7	11,5
III – Other Costs (Minimum investment to increase yields)	69,2	78,9	88,2	95,8	102,9
TOTAL COSTS IN USD	303,1	335	378,2	410,7	443,4
UNIT COSTS (IMPORTED COMPONENT)(USD/t) Independent of official exchange rate)	27.5	30.5	34.4	37.4	40.3
TOTAL UNIT COSTS (PESOS/ ton of Cane) (Includes labor costs and other costs, using the official exchange rate of 1 USD = 1 peso)	71.5	79.3	89.44	97.24	104

The competitiveness of Cuba's sugar agro-industry

There is no data to calculate production costs with precision; however, historically, production costs account for 70% to 75% of total costs per ton of sugar.

A minimum cost of \$139 USD per ton can be estimated, assuming parity between the USD and the Cuban Peso (1 USD = 1 Peso), which is the equivalent of \$0.062 USD per pound (lb.), which is double the cost per pound reported by Brazil (\$0.03 USD).

The competitiveness of Cuba's sugar agro-industry

- Considering the relatively high profit margin of sugar production, based on a crude-oil price equivalency of \$0.18 USD per pound, then, it is economically justifiable to implement a modernization strategy to improve the quality of Cuban sugar with the objective of recovering some of the country's traditional (export) markets and increase the hard currency receipts generated by the sugar agro-industry.
- Such industrial modernization strategy should also be based on the sector's potential as a source of alternative energy resulting from diversifying production (to include other products beyond sugar).

In summary, the complete global reinsertion of the Cuban economy is at the present time a key priority that offers the potential of benefiting all sectors of the economy that are globally competitive.

The successful implementation of a reinsertion strategy, based on modernization and diversification, is one of the principal challenges that Cuba's sugar agro-industry must confront.