



The Current Restructuring of Cuba's Sugar Agroindustry¹

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Introduction

After remaining a leading world sugar producer for most of the twentieth century, Cuba's sugar agroindustry is currently undergoing a radical transformation. In spite of the interest that the process has generated outside of Cuba, very few details about its scope and impacts are known. The objective of this fact sheet is to partially fill that gap.

The Restructuring Process

The Underlying Reasons

On April 10, 2002, the Cuban government announced that about half of Cuba's 156 sugar mills would be closed permanently as part of a restructuring process. Such a radical decision had to come from the very top of the Cuban leadership. In a 2003 speech, Cuba's Vice-President Lage stated that: "as we advance on this task, we understand better Fidel's vision when he decided to close 70 mills and start this profound and broad transformation" (Varela Pérez, 2003). Reasons for such a drastic measure included depressed prices and a negative outlook for the world sugar market, and Cuba's sugar agroindustry's existing excess capacity, well above current and future needs.

The restructuring (or re-dimensioning, or reconversion, or rationalization as it is also called) has three general objectives:

1. to achieve efficiency and competitiveness in sugarcane and sugar production.
2. to increase food production through agricultural and industrial diversification.
3. to develop a sustainable agriculture, supported by knowledge and human capital.

General Overview

The restructuring program was named the "Alvaro Reynoso Task" in honor of a famous Cuban scientist of the mid-1800s whose sugarcane recommendations are still being followed in many areas of the world. According to the Cuban Minister of Sugar (Rosales del Toro, 2002, pp. 4-5), the implementation would encompass the following tasks:

- From the existing 156 sugar mills, 71 will produce raw sugar; 14 will produce raw sugar and molasses intended for animal feed; and the remaining 71 will be deactivated, whereby 5 will be converted into museums, 5 will remain idle, and 61 will be dismantled (Tables 1 and 2).

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- Sugar production from sugarcane will occupy 700,000 hectares of the best soils, with the goal of achieving crop yields of 54 metric tons per hectare from harvests lasting only 90-100 days.
- Molasses production from sugarcane will occupy 127,344 hectares.
- Sugar production will be geared towards satisfying a domestic need of 700,000 tons, fulfilling trade agreements, and accessing the market when prices are favorable.
- Extensive soil testing will be conducted on lands taken out of sugarcane production (1,378,000 hectares) to determine what areas will be devoted to mixed crops, livestock, fruit trees, and forestry. This program began in 1998 (MINAZ, 1999).

Deactivating the sugar mills displaced 213,000 workers, who have either retired or moved into other productive tasks—23,540 workers (58%) remain in the ministry's enterprises; 42,600 workers (20%) are full-time students; 21,300 workers (10%) have moved into non-sugar agricultural production; 17,040 workers (8%) have retired or gone into some other type of business; and 8,520 workers (4%) are working full-time dismantling the inactive sugar mills (Peters, 2003, p. 9). The surplus workers who opted for full-time study continue to receive their paychecks during the retraining process.

The Cuban Minister of Sugar has stated publicly that the remaining sugar mills will be open to foreign investment (Frank, 2002a). The first mill to benefit from foreign financing, according to the Associated Press (2002), was the "Paraguay" in the oriental province of Guantánamo. Peters (2003, p. 11) reported that 10 joint ventures have been formed with foreign investors (where the foreign investor owns part of the business and shares profits), and 15 cooperative production agreements have been reached (where the foreign partner contracts to assist production and earns a share of revenues, without ownership). The joint ventures include alcohol production (Spain), chemicals (Mexico), and specialty papers (Italy).

Scope and Regional Impact

The numbers mentioned above, however, do not tell the whole story. A few calculations from the official Cuban data shown in Tables 1 and 2 help to better understand the magnitude of the current transformation and its regional impacts. For example, by reducing the number of raw mills from 156 to 85 (a 45.5% decrease), total daily grinding capacity declined from 647,200 to 404,700 metric tons (a 37.5% decrease), whereas average milling capacity went from 4,149 to 4,761 metric tons per mill (a 14.7% increase).

With minor exceptions (due perhaps to the location of mills within important sugarcane production areas), the goal of eliminating small, inefficient factories appears to have been fulfilled. Of the 66 mills that are being dismantled or converted into museums, the majority had less than 3,000 metric tons grinding capacity.

Although all the provinces have been impacted to some degree, a few have seen their sugar industries shrink considerably. Examples include Matanzas, La Habana, Villa Clara, and Cienfuegos, which have seen their number of mills decreasing to 38%, 40%, 46%, and 58%, respectively, of what they were before the restructuring process.

While Cuba lists 400,000 workers in its sugar agroindustry, the methodology used to develop that figure has never been explained. Regardless of the exact number of people working in Cuba's largest industry, the impact is by no means small. Shortly after the announcement was officially made, Cuba's President Castro himself had to address the nation to calm the worries of those who were about to lose their jobs (Frank, 2002b). However, the nation's fear was well founded since Cuba's raw sugar mills are located in 100 of its 169 municipalities. This means that almost 100,000 displaced workers need to be retrained. While displaced workers receiving retraining will probably not be impacted too much, workers engaged in indirect activities will feel the repercussions of this process for a long time.

Final Thoughts

The current restructuring process has just begun. It is obvious that an effort of this magnitude will require periodic adjustments, which has created a debate over other alternatives. For example, Almazán del Olmo (2002, p. 98) states that Cuba's sugar agroindustry should embody:

- a close relationship among production, marketing, distribution, education, and scientific research.
- the application of scientific knowledge and technological innovations.
- a production oriented to the different market segments.
- a diversified production, with the objective of increasing the value added of products and byproducts.
- wider labor profiles and more effective incentive mechanisms.
- flexibility to meet changing market conditions.

Some world sugar specialists have reacted with some degree of skepticism concerning a successful outcome (Licht, 2002). Nobody, however, questions the need for restructuring Cuba's sugar agroindustry (Alvarez and Peña Castellanos, 2001, pp. 91-106). While the current plan being implemented appears to be appropriate, questions remain unanswered or have not been adequately addressed. For example,

- the methodology used in selecting the best lands and most efficient mills to remain in production has not been explained (Was it based on economic criteria?).
- the procedure followed for the clustering of lands and mills once the previous selection was completed also has not been explained.
- no rationale has been advanced for how agricultural yields are going to almost double in just 2 years to reach 54 metric tons per hectare when they have been depressed for so many years with no apparent solution in sight.

- although 4 million tons have been mentioned a few times, a definite sugar production goal has not been provided (How much sugar is going to be produced? What types of current trade commitments were chosen to target output?). This means that external demand may have been underestimated.
- diversification efforts have not been adequately addressed. Most of the emphasis seems to be concentrated on food production on former sugarcane lands. Little has been said about new developments in by-products, derivatives, and energy that would increase Cuba's sugar agroindustry's efficiency and competitiveness.
- no concrete plans on how Cuba's sugar sector is going to regain its profitability have been announced. A recent report analyzing the performance of the Basic Units of Cooperative Production in their first 10 years of operation (1993-2003) shows that more than half of these units are still unprofitable (MINAZ, 2003, p. 7).
- Cuban Minister Rosales del Toro has stated that having more than 1 million hectares available for *organopónicos* and intensive gardens, mixed crops, beef and milk livestock development, and fruits is an enviable goal in today's world (Varela Pérez, 2003). This goal will require a tremendous effort that could very well divert resources and attention from the restructuring tasks.

The final concern involves the potential neglect of the restructuring process after the big push of the first years of implementation. It has happened with other gigantic plans and projects undertaken by the Cuban government (Alvarez, 2004). Even if the process is completed, it is doubtful that the Cuban sugar agroindustry will be able to switch back to higher levels of sugar output (as is done in Brazil) when world prices call for such a move.

The current restructuring has ended decades of internal debate concerning the role of sugar in the Cuban economy. However, despite depressed cyclical world sugar prices (which are not a new phenomenon anyway), the law of comparative advantage dictates

that Cuba should remain a top world sugar producer. Lack of incentives has been identified as a key factor hindering the achievement of higher levels of productivity and economic efficiency. Perhaps that should be a priority area if Cuba's sugar agroindustry is to regain its former competitiveness.

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Table 1. Cuban mills after the 2002 restructuring process.

No.	Current Name	Former Name	Municipality	Grinding Capacity (mt/day) ^a	Fate
<i>Pinar del Río</i>					
102	Harlem	Bahía Honda	Bahía Honda	2,300	Sugar
106	Manuel Sanguily	Niágara	La Palma	2,000	Sugar/Molasses
107	Pablo de la Torriente Brau	Orozco	Bahía Honda	3,000	Dismantled
108	José Martí	San Cristóbal	San Cristóbal	3,000	Dismantled ^b
110	Treinta de Noviembre	New (1980)	San Cristóbal	6,000	Sugar
<i>La Habana</i>					
101	Abraham Lincoln	Andorra	Artemisa	4,000	Sugar
103	Eduardo García Lavandero	El Pilar	Artemisa	4,000	Dismantled
105	Angusto César Sandino	Mercedita	Mariel	2,000	Dismantled
109	Orlando Nodarse	San Ramon	Mariel	3,000	Dismantled
201	Amistad con los Pueblos	Amistad	Güines	3,000	Dismantled
202	Cdte. Manuel Fajardo	Fajardo	Quivicán	3,000	Sugar/Molasses
203	Héctor Molina Riaño	Gómez Mena	San Nicolás	7,000	Sugar
204	Habana Libre	Habana	Caimito	2,000	Sugar
205	Camilo Cienfuegos	Hershey	Santa Cruz del Norte	6,000	Dismantled
206	Manuel Isla	Josefita	Nueva Paz	2,000	Dismantled
207	Gregorio Arleé Mañalich	Mercedita	Melena del Sur	4,000	Sugar
208	Pablo Noriega	Occidente	Quivicán	1,200	Dismantled
210	Osvaldo Sánchez	Prividencia	Güines	3,000	Dismantled
211	Rubén Martínez Villena	Rosario	Madruga	3,000	Dismantled
212	Boris Luis de Santa Coloma	San Antonio	Madruga	3,000	Sugar
<i>Ciudad de la Habana</i>					
213	Manuel Martínez Prieto	Toledo	Marianao	5,000	Refinery/Museum
<i>Matanzas</i>					
301	México	Alava	Colón	6,000	Sugar
302	Reynold García	Araujo	Calimete	3,000	Dismantled
303	Australia	Australia	Jagüey Grande	3,000	Dismantled
304	Granma	Carolina	Jovellanos	3,000	Dismantled
305	Puerto Rico Libre	Conchita	Unión de Reyes	5,000	Dismantled
306	Cuba Libre	Cuba	Pedro Betancourt	6,000	Sugar/Molasses
307	Jaime López	Dolores	Jovellanos	2,000	Dismantled
308	Humberto Alvarez	Dos Rosas	Cárdenas	2,000	Dismantled
310	España Republicana	España	Perico	8,000	Sugar
311	Esteban Hernández	Guipúzcoa	Martí	3,000	Sugar/Molasses

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No.	Current Name	Former Name	Municipality	Grinding Capacity (mt/day) ^a	Fate
312	Fructuoso Rodríguez	Limones	Limonar	3,000	Dismantled
313	Seis de Agosto	Mercedes	Calimete	6,000	Dismantled
314	Jesús Rabí	Porfuerza	Calimete	3,000	Sugar
315	José Smith Comas	Progreso	Cárdenas	3,000	Museum
318	Victoria de Yaguajay	Santa Amalia	Jovellanos	2,600	Dismantled
319	René Fraga	Santa Rita	Colón	2,600	Sugar
320	Juan Avila	Santo Domingo	Unión de Reyes	2,600	Sugar
321	Julio Reyes Cairo	Soledad	Jovellanos	2,600	Dismantled
322	Sergio González	Tinguaro	Colón	4,800	Dismantled
323	Horacio Rodríguez	Triunfo	Limonar	2,000	Dismantled
324	Mario Muñoz Monroy ^c	New (1986)	Los Arabos	5,400	Sugar
<i>Villa Clara</i>					
401	Heriberto Duquesne	Adela	Remedios	2,500	Sugar/Molasses
405	Luis Arcos Bergnes	Carmita	Camajuaní	2,000	Dismantled
407	Abel Santamaría	Constancia "E"	Encrucijada	2,600	Sugar
408	Mariana Grajales	Corazón de Jesús	Cifuentes	2,000	Dismantled
411	José María Pérez	Fe	Camajuaní	4,000	Sugar
412	Juan Pedro Carbó Serviá	Fidencia	Placetas	2,300	Reserve
415	Braulio Coroneaux	Macagua	Cifuentes	2,000	Dismantled
417	Veintiséis de Julio	María Antonia	Santo Domingo	2,000	Dismantled
420	Emilio Córdova	Nazábal	Encrucijada	2,700	Dismantled
423	Oswaldo Herrera	Pastora	Ranchuelo	2,700	Dismantled
426	Perucho Figueredo	Purio	Encrucijada	4,000	Sugar/Molasses
427	Quintín Banderas	Ramona	Corralillo	4,300	Sugar
428	Marcelo Salado	Reforma	Caibarién	2,600	Museum
429	José Ramón Riquelme	Resolución	Quemado de Güines	2,000	Dismantled
430	Antonio Finalet	Resulta	Sagua la Grande	3,200	Dismantled
432	Chiquitico Fabregat	San Agustín "R"	Remedios	2,500	Sugar
434	Panchito Gómez Toro	San Isidro	Quemado de Güines	3,700	Sugar
435	Hermanos Ameijeiras	San José	Placetas	2,800	Dismantled
437	Carlos Caraballo	Santa Catalina	Ranchuelo	2,600	Dismantled
439	El Vaquerito	Santa Lutgarda	Cifuentes	2,300	Sugar
440	Efraín Alfonso	Santa María	Ranchuelo	3,000	Sugar
441	Diez de Octubre	Santa Rosa	Ranchuelo	2,600	Sugar
442	Héctor Rodríguez	Santa Teresa	Sagua la Grande	4,600	Sugar
446	Carlos Baliño	Ulacia	Santo Domingo	2,200	Sugar

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No.	Current Name	Former Name	Municipality	Grinding Capacity (mt/day) ^a	Fate
447	Unidad Proletaria	Unidad	Cifuentes	2,000	Dismantled
449	George Washington	Washington	Santo Domingo	4,000	Sugar
450	Benito Juárez	Zaza	Placetas	2,500	Dismantled
460	Batalla de Santa Clara	New (1986)	Camajuaní	6,000	Reserve
Cienfuegos					
403	Mal Tiempo	Andreíta	Cruces	3,000	Sugar
404	Ciudad Caracas	Caracas	Lajas	4,000	Sugar
406	Guillermo Moncada	Constancia "A"	Abreus	3,700	Sugar
409	Antonio Sánchez	Covadonga	Aguada de Pasajeros	3,600	Sugar
413	Espartaco	Hormiguero	Palmira	3,800	Dismantled
416	Catorce de Julio	Manuelita	Rodas	3,000	Sugar
424	Primero de Mayo	Perseverancia	Aguada de Pasajeros	3,600	Dismantled
425	Elpidio Gómez	Portugalete	Palmira	2,600	Sugar
431	Ramón Balboa	San Agustín "L"	Lajas	3,800	Dismantled
433	Martha Abreu	San Francisco	Cruces	2,000	Reserve
443	Pepito Tey	Soledad	Cienfuegos	2,400	Dismantled
456	Cinco de Septiembre	New (1981)	Rodas	7,000	Sugar
Sancti Spiritus					
414	Remberto Abad Alemán	La Vega	Cabaiguán	2,000	Dismantled
418	Obdulio Morales	Narcisa	Yaguajay	2,200	Sugar/Molasses
419	Siete de Noviembre	Natividad	La Sierpe	2,000	Dismantled
421	Aracelio Iglesias	Nela	Yaguajay	2,000	Dismantled
438	Ramón Ponciano	Santa Isabel	Fomento	2,500	Sugar
444	FNTA	Trinidad	Trinidad	4,000	Sugar/Molasses
445	Melanio Hernández	Tuinicú	Taguasco	4,600	Sugar
448	Simón Bolívar	Victoria	Yaguajay	2,200	Dismantled
512	Uruguay	Jatibonico	Jatibonico	13,800	Sugar
Ciego de Avila					
501	Enrique Varona González	Adelaida	Chambas	5,500	Sugar
503	Orlando González	Algodones	Majagua	5,200	Sugar
504	Ecuador	Baraguá	Baraguá	10,400	Sugar
506	Bolivia	Cunagua	Bolivia	5,000	Dismantled
515	Ciro Redondo	Morón	Ciro Redondo	11,600	Sugar
517	Patria o Muerte	Patria	Morón	2,500	Museum
518	Máximo Gómez	Punta Alegre	Chambas	6,000	Dismantled
522	Venezuela	Stewart	Venezuela	11,600	Sugar
524	Primero de Enero	Violeta	Primero de Enero	8,700	Sugar

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No.	Current Name	Former Name	Municipality	Grinding Capacity (mt/day) ^a	Fate
Camagüey					
502	Ignacio Agramonte	Agramonte	Florida	4,600	Sugar
505	Carlos M. de Céspedes	Céspedes	Carlos M. de Céspedes	4,500	Sugar
508	República Dominicana	Estrella	Carlos M. de Céspedes	5,000	Dismantled
509	Argentina	Florida	Florida	3,300	Sugar
511	Brasil	Jaronú	Esmeralda	10,600	Sugar/Molasses
513	Sierra de Cubitas	Lugareño	Minas	6,300	Sugar
514	Haití	Macareño	Sta. Cruz del Sur	5,000	Dismantled
516	Alfredo Alvarez Mola	Najasa	Sibanicú	2,100	Dismantled
519	Cándido González	Santa Marta	Sta. Cruz del Sur	6,000	Sugar
520	Noel Fernández	Senado	Minas	5,000	Reserve
521	Siboney	Siboney	Sibanicú	2,000	Sugar/Molasses
523	Panamá	Vertientes	Vertientes	10,600	Sugar
525	Jesús Suárez Gayol	New (1983)	Sta. Cruz del Sur	7,000	Reserve
530	Batalla de las Guásimas	New (1980)	Vertientes	7,000	Sugar
Las Tunas					
507	Colombia	Elia	Colombia	4,600	Sugar
510	Amancio Rodríguez	Francisco	Amancio	7,400	Sugar/Molasses
610	Jesús Menéndez	Chaparra	Jesús Menéndez	9,200	Sugar
611	Antonio Guiteras	Delicias	Puerto Padre	12,200	Sugar
618	Perú	Jobabo	Jobabo	10,300	Dismantled
622	Argelia Libre	Manatí	Manatí	9,200	Dismantled
642	Majibacoa	New (1987)	Majibacoa	4,800	Sugar
Holguín					
602	Loynaz Hechevarría	Alto Cedro	Cueto	3,800	Sugar
604	López Peña	Báguanos	Báguanos	4,000	Sugar
607	Nicaragua	Boston	Banes	8,000	Sugar/Molasses
608	Cristino Naranjo	Cacocum	Cacocum	6,400	Sugar
621	Antonio Maceo	Maceo	Cacocum	5,200	Sugar
626	Guatemala	Preston	Mayarí	13,000	Dismantled
631	Urbano Noris	San Germán	Urbano Noris	4,000	Sugar
635	Rafael Freyre	Santa Lucía	Rafael Freyre	3,600	Museum
639	Fernando de Dios	Tacajó	Báguanos	3,600	Sugar
640	Frank País	Tánamo	Frank País	3,500	Dismantled

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No.	Current Name	Former Name	Municipality	Grinding Capacity (mt/day) ^a	Fate
Granma					
609	Luis Enrique Carracedo	Cape Cruz	Pilón	2,000	Dismantled
612	Francisco Castro Ceruto	Dos Amigos	Campechuela	2,100	Dismantled
615	Bartolomé Masó	Estrada Palma	Bartolomé Masó	3,400	Sugar
616	Juan Manuel Márquez	Isabel "B"	Media Luna	6,800	Sugar
620	Arquimides Colina	Mabay	Bayamo	2,400	Sugar
624	Roberto Ramírez Delgado	Niquero	Niquero	3,500	Sugar
627	José Nemesio Figueredo	Río Cauto	Río Cauto	4,700	Dismantled
629	La Demajagua	Salvador	Manzanillo	2,300	Dismantled
636	Enidio Díaz Machado	Santa Regina	Campechuela	2,600	Sugar
637	Ranulfo Leyva	Sofía	Yara	3,000	Dismantled
650	Grito de Yara	New (1982)	Río Cauto	6,600	Sugar
Santiago de Cuba					
601	Salvador Rosales	Algodonal	Songo-La Maya	1,700	Sugar
603	América Libre	América	Contramaestre	2,800	Sugar
605	Los Reynaldos	Baltony	Songo-La Maya	4,600	Sugar/Molasses
606	Paquito Rosales	Borjita	San Luis	2,700	Sugar
623	Julio Antonio Mella	Miranda	Mella	7,000	Sugar
625	Dos Ríos	Palma	Palma Soriano	4,600	Sugar
633	Chile	Santa Ana	San Luis	2,600	Sugar
641	Rafael Reyes	Unión	San Luis	1,800	Dismantled
Guantánamo					
613	Costa Rica	Ermita	El Salvador	2,000	Dismantled
614	Argeo Martínez	Esperanza	Guantánamo	2,400	Sugar
617	Honduras	Isabel "G"	Guantánamo	2,000	Dismantled
619	Paraguay	Las Cañas	Guantánamo	2,000	Dismantled
630	Manuel Tames	San Antonio	Manuel Tames	1,200	Sugar
638	El Salvador	Soledad	El Salvador	2,500	Sugar/Molasses
<p>^a From Alvarez and Peña Castellanos (2001, pp. 123-127).</p> <p>^b The refinery is being annexed to the Treinta de Noviembre Mill.</p> <p>^c A mill with same name (formerly, Zorrilla) was dismantled in 1962 in same municipality and province.</p> <p>Source: MINAZ (Cuba's Sugar Ministry).</p>					

Table 2. Active and deactivated sugar mills, 2003.

Province	Active Mills				Deactivated Mills						Total Mills	
	Sugar		Sugar/ Molasses		Dismantled		Museum		Reserve		Active and Deactivated	
	#	Capacity ^a	#	Cap.	#	Cap.	#	Cap.	#	Cap.	#	Capacity
Pinar del Río	2	8,300	1	2,000	2	6,000	0	N/A ^b	0	N/A	5	16,300
La Habana	5	20,000	1	3,000	9	27,200	0	N/A	0	N/A	15	50,200
C. Habana	0	N/A	0	N/A	0	N/A	1 ^c	5,000	0	N/A	1	5,000
Matanzas	6	27,600	2	9,000	12	39,000	1	3,000	0	N/A	21	78,600
Villa Clara	11	35,800	2	6,500	12	28,500	1	2,600	2	8,300	28	81,700
Cienfuegos	7	26,900	0	N/A	4	13,600	0	N/A	1	2,000	12	42,500
S. Spíritus	3	20,900	2	6,200	4	8,200	0	N/A	0	N/A	9	35,300
C. de Avila	6	53,000	0	N/A	2	11,000	1	2,500	0	N/A	9	66,500
Camagüey	7	42,300	2	12,600	3	12,100	0	N/A	2	12,000	14	79,000
Las Tunas	4	30,800	1	7,400	2	19,500	0	N/A	0	N/A	7	57,700
Holguín	6	27,000	1	8,000	2	16,500	1	3,600	0	N/A	10	55,100
Granma	6	25,300	0	N/A	5	14,100	0	N/A	0	N/A	11	39,400
S. de Cuba	6	21,400	1	4,600	1	1,800	0	N/A	0	N/A	8	27,800
Guantánamo	2	3,600	1	2,500	3	6,000	0	N/A	0	N/A	6	12,100
Total	71	342,900	14	61,800	61	203,500	5	16,700	5	22,300	156	647,200

^a Daily grinding capacity in metric tons per day.

^b N/A = Not Applicable.

^c Refinery was incorporated to the 30 de Noviembre Mill.

Source: Calculated from Table 1.