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# UPDATE ON CUBA'S NON-SUGAR AGRICULTURAL SECTOR

Mario A. González Corzo

In its recent efforts to transform (or “update”) its economic model, Cuba has understandably focused on its agricultural sector. Even though it only accounts for approximately 5% of gross domestic product (GDP), agriculture represents a relatively large share of the Cuban economy (some 20%) due to its direct linkages with other sectors and multiplier effect (Nova González, 2006). Despite the expansion of tourism and services, Cuba still remains an agricultural country, and agriculture touches every aspect of the country’s economic and social life.

Since Raúl Castro’s official ascent to power on February 24, 2008, a series of policy measures have been implemented to prioritize and reactivate this vital sector of the Cuban economy. The most significant include: the approval of Decree-Law No. 259 of 2008, which facilitates the transfers of idle State-owned lands to private producers and agricultural cooperatives; the transfer of some of the functions performed by the Ministry of Agriculture (MINAGRI) to the Ministry of Interior Trade (MINCIN); the creation of a limited number of State-operated establishments to sell basic agricultural inputs (e.g., seeds, fertilizer, work gloves, machetes, axes, etc.) to small agricultural producers; experiments with “suburban agriculture” to connect local producers and consumers and reduce fuel, transportation and storage costs; and increases in the prices paid by *Acopio*, the State-run agricultural procurement agency, to private farmers and cooperatives producing milk, beans, rice, and other products.

This paper explores the principal transformations that have occurred in Cuba’s non-sugar agricultural sector in recent years. The first section examines the

sector’s evolution during the “pre-reform period” of 2005–2008, focusing on total output and yields. This is followed by an overview of recent policy measures (or “reforms”) implemented by Cuba to reactivate its agricultural sector and reduce its external dependency on imported food and food products. The last section analyzes the recent performance (2008 to the present) of Cuba’s non-agricultural sector and the impact of the transformations that have taken place so far.

## PERFORMANCE DURING THE “PRE-REFORM” PERIOD (2005 -2008)

In recent years, Cuba’s non-sugar agricultural sector has been characterized by declining output levels, falling yields and growing dependency on food imports (particularly from the United States). As Table 1 shows, between 2005 and 2008, physical output declined in nine out of eleven categories. For instance, the production of roots and tubers, tobacco, citrus fruits, and cocoa suffered double digit declines during this period. This was the combined result of natural disasters (e.g., hurricanes and severe drought), low factor productivity, difficulties with the acquisition of essential inputs (e.g., fertilizers), insufficient equipment and machinery, the lack of price incentives (to stimulate production), etc.

As Table 2 illustrates, yields (or output per cultivated area) also declined significantly during the 2005–2008 period. The crops with the most notable declines were: cocoa, tobacco, citrus fruits, beans, legumes, and greens. While natural disasters were a major contributor, lower yields were also the result of

**Table 1. Cuba: Non-Sugar Agricultural Output (In Tons)**

	2005	2006	2007	2008	Change 2005 -2008	% Change
Viandas	2,575,300	2,202,000	2,369,500	2,150,700	-424,600	-16.5%
Roots and tubers	1,801,800	1,330,200	1,378,600	1,392,500	-409,300	-22.7%
Plantains	773,500	871,800	990,900	758,200	-15,300	-2.0%
Greens	3,203,500	2,672,100	2,603,000	2,439,300	-764,200	-23.9%
Cereals	730,100	739,600	808,400	761,700	31,600	4.3%
Rice	367,600	434,200	439,600	436,000	68,400	18.6%
Corn	362,500	305,400	368,800	325,700	-36,800	-10.2%
Legumes	106,200	70,600	97,200	97,200	-9,000	-8.5%
Beans	106,200	70,600	97,200	97,200	-9,000	-8.5%
Tobacco	26,000	29,700	25,600	21,500	-4,500	-17.3%
Citrus Fruits	554,600	373,000	469,000	391,800	-162,800	-29.4%
Other Fruits	819,000	746,500	783,800	738,500	-80,500	-9.8%
Cocoa	2,067	2,120	1,379	1,100	-967	-46.8%

Source: *Anuario Estadístico de Cuba* (AEC) 2010, and author's calculations.

**Table 2. Cuba: Non-Sugar Agricultural, Yields, Selected Crops (Tons per Hectare)**

	2005	2006	2007	2008	Change 2005 - 2008	% Change
Viandas	7.42	7.78	7.73	7.69	0.27	3.6%
Roots and tubers	7.16	7.27	6.76	7.10	-0.06	-0.8%
Plantains	8.11	8.71	9.67	9.07	0.96	11.8%
Greens	10.28	11.53	11.28	9.42	-0.86	-8.4%
Cereals	2.58	2.79	2.91	2.68	0.09	3.6%
Rice	2.89	3.04	3.23	2.80	-0.09	-3.0%
Corn	2.33	2.50	2.61	2.52	0.19	8.2%
Legumes	1.12	0.92	1.16	1.02	-0.10	-8.9%
Beans	1.12	0.92	1.16	1.02	-0.10	-8.9%
Tobacco	1.28	1.10	1.12	0.93	-0.35	-27.1%
Citrus fruits	9.86	6.73	9.60	8.59	-1.27	-12.9%
Other Fruits	10.11	9.71	7.84	8.89	-1.22	-12.1%
Cocoa	0.51	0.53	0.50	0.29	-0.22	-43.2%

Source: *Anuario Estadístico de Cuba* (AEC) 2010, and author's calculations.

insufficient capital and labor inputs and reduced factor productivity.

In addition to declining output levels and falling yields in non-sugar agriculture, the Cuban economy has experienced an increased dependency on food imports. Since the approval of the *Trade Sanctions Reform and Export Enhancement Act* (TSRA) in 2000, the United States has emerged as Cuba's principal supplier of imported food and agricultural products. In 2001, the total value of U.S food and agricultural exports to Cuba reached a meager \$4.3 million (U.S.-Cuba Trade and Economic Council [USCTEC], 2010); this figure increased to approximately \$528.5 million by the end of 2009 (USCTEC, 2010), and the cumulative value of TSRA-authorized

U.S. exports to Cuba from 2001 to July 2010 reached an estimated \$3.4 billion (USCTEC, 2010).

Despite these impressive figures, U.S. food and agricultural exports to Cuba have declined substantially since 2008. Between January 2010 and July 2010, for instance, U.S. food and agricultural exports to Cuba were \$182.3 million, compared to \$278.2 million during a like period in 2009, representing a decrease of 35% (USCTEC, 2010). The decline of U.S. food and agricultural exports to Cuba can be attributed to three factors. First, Cuba has experienced a liquidity and macroeconomic crisis since 2008, which has limited its access to foreign exchange and international sources of (credit) financing, thereby reducing its ability to purchase food and agricultural products from the U.S., which must be paid in cash.

Second, Cuba's growing ties (and interdependence) with its two principal trading partners, Venezuela and China, have reduced its need to purchase products from the U.S. Third, growing importance of direct bilateral, and in many cases barter-based, trade agreements between Cuba and countries that offer the island favorable terms and conditions, often motivated by strategic and political considerations (e.g., China, Iran and Spain) have provided Cuba with alternative sources of imports.

### RECENT POLICY MEASURES

Falling agricultural output and yields, low labor productivity, high levels of waste and inefficiency, the rising costs of food imports, and the deterioration of the trade balance, have placed food production at the forefront of the economic challenges confronting Cuba at the present time (Hagelberg, 2010). According to official statistics, Cuba spent \$1.494 billion on imported food and agricultural products in 2009, representing 17% of the country's total merchandise imports for that year (*Anuario Estadístico de Cuba* [AEC], 2009).

As it experienced the worst economic crisis since the collapse of the Eastern European Socialist Bloc and the disintegration of the Soviet Union in the early 1990s, and confronted with a more favorable international environment, mainly as the result of its close economic ties with Venezuela, China, and Canada, and its extended diplomatic relations with virtually every country in the Western Hemisphere and other regions of the world, Cuba has implemented a series of policy measures to transform its agricultural sector.

One of the first steps taken in this direction consisted of paying higher prices to producers of certain agricultural products. This process was initiated in 2007, when the State procurement agency, *Acopio*, increased the prices it paid milk producers as well as the percentage paid in convertible pesos (CUC) per liter produced and delivered. The resulting increase in producers' incomes resulting from this measure increased producers' capacity to obtain essential inputs to further increase production (Nova, 2010). These price increases allowed *Acopio* to recover a part of this production, which previously had other destinations,

and producers have been encouraged to sell their product to *Acopio*. This measure constitutes a direct stimulus to producers, and incentivizes them to indirectly contribute to certain savings in fuel and loss reductions because of timely deliveries made to *Acopio*. This procedure has been implemented in 89 municipalities, of which 66 are fully self-sufficient. However, it has resulted in certain unintended consequences, which have contributed to reductions in deliveries to industry, resulting in the under-utilization of the country's industrial capacity (Nova, 2010). *Acopio* also increased the prices it pays to meat and poultry producers. Payments in convertible pesos (CUC) to meat and poultry producers have increased their purchasing power, allowing many of them to obtain essential agricultural inputs in recently-created hard currency stores for this purpose (there are stores in 70 of the 168 existing municipalities). Unfortunately, these stores tend to offer a limited variety of inputs of about 64 products, supply has been unpredictable and unreliable, and prices tend to be relatively high.

The second significant policy measure implemented to transform Cuba's non-sugar agricultural sector was the transfer of idle State-owned land to cooperatives and individual producers pursuant to Decree-Law No. 259 of July 2008. The implementation of this measure is somewhat paradoxical since there is a significant amount of idle lands (1,758, 962 hectares), valuable human capital, a significant number of research centers and experimental stations, with proven results, and available technology, but since the collapse of the Soviet Union and the disintegration of the Socialist Camp in the early 1990s, the Cuban economy has been forced to import significant volumes of food, many of which can be produced domestically under more favorable conditions.

Decree-Law No. 259 clarifies important aspects of Cuba's most recent "agrarian reform," the conditions of *usufruct* under which idle State-owned lands will be transferred to cooperatives and individual producers, the terms of economic ownership related to this property form, and its relation to legal ownership (Nova, 2010). It also helps to clarify important aspects, which until recently remained unclear or undefined, such as the period of time for which the *usu-*

*fruct* is established, which helps define its economic ownership and legal ownership, and the collection of taxes and rents by the State.

In addition, Decree-Law No. 259 incorporates some elements that were not taken into consideration in previous agricultural reform measures, such as the duration of transfers to natural persons (10 years, renewable leases, regardless of the type of crop harvested), and the transfers of land to legal entities such as cooperatives (Nova, 2010). One interesting feature that distinguishes Decree-Law No. 259 from previous legislation is that the terms of the *usufruct*, or lease agreements, are standardized for specific periods regardless of the types of crops produced, the modes of production used to generate this output, and whether or not the crops are considered short-cycle or long-cycle, and the type of livestock raised by producers (Nova, 2010).

The degree of investment intensity related to agricultural production varies according to the type of crop produced, or the type of livestock raised. Some products and forms of livestock are more labor and capital intensive than others, and due to their seasonal nature require different quantities of labor and physical and financial capital. Pursuant to Article 15 (of Decree-Law No. 259), once finalized, the terms of the *usufruct* allow producers to receive payment or compensation from the State for *bienhechurtas*, or infrastructure or physical improvements to the land and facilities used for production, with the exception of housing built by individual producers or cooperatives. This constraint or limit provides a distorted incentive to make the minimum investment required, prevents the agricultural producers permanently settling in their newly acquired lands (leased from the State), and explains why most of them despite the positive advances made by Decree-Law No. 259, consider themselves as transient (non-permanent) producers. In reality, as Nova (2009, 2010) indicates, the successful transformation of Cuba's agricultural sector requires the *recampesinización*, or the re-population of the countryside; without significant and long-lasting increases in the quantity of farmers, technicians, and administrative and managerial per-

sonnel dedicated to agriculture, there is no guarantee and stability of a sustainable agricultural production.

Cuba's newly decentralized agricultural model must recognize that agricultural producers require certain facilities to store and preserve the essential inputs, animals, seeds, supplies, and equipment, among others. To stimulate the migration of labor from other areas of the economy into agriculture, policies that provide economic incentives for investment in physical infrastructure and promote long-term commitments to agriculture are being contemplated. To ensure the success of this decentralized model of agricultural production, where regional and local producers are expected to develop strong linkages with the land in which they work, and consumers and suppliers in their respective "markets," producers and administrative and managerial personnel need to live near or on the locations where production takes, a sense of permanence and consistency must be encouraged and developed, and the linkages between producers and the lands in which production takes place must be strengthened over time (Nova, 2010).

By the end of 2009, some 920,000 hectares of idle State-owned lands had been transferred to more than 100,000 applicants, representing 52% of the total (Nova, 2010). Until January 2010, there had been 121,711 applications, of which 98% are natural persons, of which approximately 79% were previously landless (Nova, 2010). At present, it is estimated that 35% of the land delivered has been planted or cultivated (Nova, 2010). Considering the original conditions of the majority of this land, and the wide range of challenges, constraints, and difficulties that non-State agricultural producers still face, this is indeed a remarkable accomplishment.

Yet, despite the notable increases in the number of applications from both cooperatives and individual producers, the transfer of idle State-owned lands to non-State producers has been characterized by a series of bureaucratic hurdles and impediments, which still present serious difficulties. According to the provisions of Decree-Law 282, nine documents are required for processing of application for the transfer of land in *usufruct* (Nova, 2010). To file a complaint or appeal, applicants are required to complete and

submit thirteen documents, and from the time the applicant files the application for the transfer of land with the municipal director of the *Centro Nacional del Control de la Tierra* (National Center for Land Control), the office has thirty days to review the application, and draft or prepare the required documentation, and up to sixty days to conduct the necessary surveys and medical examinations of the livestock to be transferred from State ownership to the non-State sector (Nova, 2010). Once the necessary documents are drawn, the municipal director of the National Center for Land Control presents them to the municipal delegate of agriculture in the term of three days, and the latter has thirty days to review and approve the requested transfer in *usufruct* (Nova, 2010).

Theoretically, it can take at least sixty-three days, from the beginning of the application to lease idle lands or livestock from the State for a predetermined period of time, under the conditions previously described, until the formal documents are approved and issued, assuming that process transpires normally and does not require additional field surveys or measurements, and other bureaucratic steps or procedures. In such cases, the time needed to clear existing bureaucratic hurdles and effectively transfer the land or livestock from the State to the cooperative or private sectors can theoretically taken ninety-three (93) days or even longer.

Another important measure in Cuba's road towards a more flexible and decentralized agricultural model was the transfer of the collection activities, assigned to the State-owned procurement agency, *Acopio*, to the Ministry of Domestic Trade (*Ministerio del Comercio Interior*, MINCIN). For many experts in Cuban agriculture, this is considered as a road already traveled. In 1976, procurement was transferred from the Ministry of Agriculture (*Ministerio de la Agricultura*, MINAGRI), but then returned to it after the "Rectification Process" (RP) in 1986. Nova (2010) and others consider that transferring *Acopio's* functions to the MINAGRI would be a more logical and appropriate step to improve the operational and administrative efficiency of Cuba's cumbersome system of agricultural procurement.

At present, Cuba's agricultural procurement and marketing system is hindered by a highly regulated market, the distortions related to monetary dualism, and insufficient output, particularly by the cooperative sector (which includes the *Unidades Básicas de Producción Cooperativa*, UBPCs, and the *Cooperativas de Producción Agropecuaria*, CPAs). Despite recent efforts, the marketing function, which includes the distribution and exchange of agricultural products, is characterized by delayed payments, insufficient collection capacity on the part of *Acopio*, and the lack of material incentives and credit financing to stimulate and incentivize production (Nova, 2010).

Another key measure in the transformation of Cuba's non-sugar agricultural sector has been the decentralization and restructuring of the functions of the ministries responsible for the administration, implementation, and oversight of the country's agricultural policies. The municipality as an increasingly autonomous economic unit is as the center of this new strategy. The newly-considered model of decentralized decision making identifies the municipality as the principal actor responsible for making rational economic decisions and implementing the required strategies within its territorial boundaries. At present, each municipality has established a Municipal Delegation of Agriculture (169 in total), which is primarily responsible for managing the transfers of idle State-owned lands and State-owned livestock to the non-State sector, to promote and stimulate the development of three "core" modalities of production: (1) urban agriculture, (2) suburban agriculture, which covers a span of about 10 km from the periphery of cities and urban centers, and (3) and productive or conventional poles (Nova, 2010).

During the testing phase of this model in 2010, the MINAGRI selected 16 municipalities plus the special municipality of *Isla de la Juventud*, a total of 17, to carry across the combination of these three scenarios. Participation was extended to all the entities that produce food in the municipality, whether or not under the responsibility of the Ministry of Agriculture (UBPCs, CCS, CPAs, State-owned farms, etc.) (Nova, 2010). In addition, the Ministry of the Economy and Planning (MEP) has also selected five municipal-

ities that are supporting financially and decentralized forms of economic management, for investigation on solutions on the substitution of imports, export generated funds, on the food and employment problem (Nova, 2010) The MEP is also implementing a series of internal reforms to simplify the State apparatus and structures that deal or are in some ways related with the production, distribution, and consumption of agricultural products. The first step in this direction was the unification of the Ministry of the Food Industry (*Ministerio de la Industria Alimenticia*, MINAL) with the former Ministry of Fisheries. There have also been discussions about the possible combination or fusion of the Ministry of Agriculture and the Ministry of Sugar (*Ministerio de la Industria Azucarera*, MINAZ), to create a single Ministry of Food, which is likely to include diverse areas such as agriculture (sugar and non-sugar, food processing and industrial production, and fisheries) (Nova, 2010).

The approval of Agreement 6823 on June 24, 2010 represented another important step in the transformation of Cuba's non-sugar agriculture sector. This policy measure authorizes the commercialization (or trade) of agricultural products in roadside kiosks (or "points of sale") operated by agricultural cooperatives or state enterprises. Producers or their representatives are authorized to sell their excess output, after their quotas to the state have been delivered (or met) ("Acuerdo 6853," 2010). Agricultural producers or their representatives are required to pay taxes and/or fees for the use of these kiosks (or "points of sale") as stipulated by Resolution 206 issued by the Ministry of Prices and Finance. According to Resolution 206, sellers in the kiosks (or "points of sale") established by Agreement 6853 are required to pay a sales tax of 5%, based on their daily gross sales, plus a fee of 2% of the value of their reported gross sales for the use of the kiosks and related facilities, and self-employed workers (who work on these kiosks) are required to make social security contributions.

The approval of Agreement 6853 (2010) represents a step in the right direction. However, certain provisions limit its potential. First, the entities or administrative units that administer the kiosks (or "points of

sale") are a State-owned entity, which implies that the State will continue to play a significant role in the administration of the important sales venues. Second, producers that use these venues to commercialize their agricultural products must first fulfill their delivery quotas to the State at prices and amounts established by the latter. These conditions limit the autonomy of participants in the kiosks (or "points of sale") in terms of determining output prices and quantity, and are likely to contribute to imbalances between supply and demand.

Finally, in June 2011 Cuba announced the expansion of bank credit to small-scale agricultural producers and cooperatives. According to an article published in *Juventud Rebelde*, the *Banco de Crédito y Comercio* (BANDEC) had approved credit financing for an estimated 13,000 farmers (Tamayo, 2011). Most of these loans are to be used to finance working capital, facilitate the cultivation of short-term crops and long-term crops (like sugar), purchase livestock, and finance the acquisition of physical assets (excluding those related to the removal of "marabú") (Tamayo, 2011). Borrowers can use expected sales (or revenues), income generated through the commercialization of agricultural products, and any other source of income (remittances?) as collateral for these loans (Tamayo, 2011).

The extension of bank credit (microloans) to agricultural producers also represents a step in the right direction. However, it is too early to quantify the impact of these loans on output and yields.

### RECENT PERFORMANCE (2008–2010)

As Table 3 shows, Cuba's non-sugar agricultural sector experienced mixed results during the 2008–2010 period. The production of *viandas*, a food staple of vital importance in the traditional Cuban diet, grew 4.6%; roots and tubers increased 8.8%; cereals rose 2.2%; other fruits increased 3.2%, and cocoa production grew 55.4%. By contrast, greens fell 12.2%; legumes and beans declined 17.3%; tobacco production fell 4.7%; and citrus fruits decreased 12%. While a portion of these declines can be attributed to structural problems and deficiencies, such as the lack of economic (or price) incentives, insufficient inputs, and excessive bureaucratic constraints, Cuba's agri-

**Table 3. Cuba: Non-Sugar Agricultural Output, Selected Crops, 2008–2010 Tons**

	2008	2009	2010	Change 2008 - 2010	% Change
Viandas	2,150,700	2,236,000	2,250,000	99,300	4.62%
Roots and tubers	1,392,500	1,565,600	1,515,000	122,500	8.80%
Plantains	758,200	670,400	735,000	-23,200	-3.06%
Greens	2,439,300	2,548,800	2,141,000	-298,300	-12.23%
Cereals	761,700	868,400	778,900	17,200	2.26%
Rice	436,000	563,600	454,400	18,400	4.22%
Corn	325,700	304,800	324,500	-1,200	-0.37%
Legumes	97,200	110,800	80,400	-16,800	-17.28%
Beans	97,200	110,800	80,400	-16,800	-17.28%
Tobacco	21,500	25,200	20,500	-1,000	-4.65%
Citrus Fruits	391,800	418,000	345,000	-46,800	-11.94%
Other Fruits	738,500	748,000	762,000	23,500	3.18%
Cocoa	1,100	1,387	1,709	609	55.36%

**Source:** *Anuario Estadístico de Cuba* (AEC) 2010, and author's calculations.

cultural output has been severely affected by unfavorable climatic conditions such as severe droughts in and powerful tropical storms and hurricanes. In 2008, the island was impacted by three hurricanes, which affected its principal agricultural provinces, Villa Clara, Matanzas and Camagüey, and caused an estimated \$10 billion in damages (equivalent to 20% of GDP). In response to impact of these hurricanes on non-sugar agricultural production, in October 2008 the Cuban government implemented a number of measures to restrict the supply of agricultural products and prevent speculators and price gougers from taking advantage of the severe agricultural losses caused by a series of natural disasters. The mechanisms employed were price controls, output restrictions, and strict government supervision of transactions in the “free farmers’ markets,” State-controlled agricultural markets, and the retail outlets incorporated into the rationing system.

Despite its good intentions, these measures resulted in negative externalities and contributed to short-lived price pressures in the black market for scarce agricultural products. In some parts of the island, agricultural markets suffered from insufficient supplies, particularly those in which prices and output were primarily determined by the forces of supply and demand, and the price controls placed affected producers in the difficult predicament of not being able to cover their losses, which eventually were transferred to the State via *Acopio's* supply chain and distribution network.

To counter speculative forces, the State imposed a series of requirements that restricted output and prevented some producers from reaching the multiple distribution channels through which they could offer their agricultural goods, resulting in a notable decrease in supply by the end of 2008. Ironically, the government's swift response to the devastation suffered by Cuba's agricultural sector in the aftermath of the 2008 hurricane season, in some instances, resulted in the opposite effect: prices rose as output declined, disproportionately hurting the economically vulnerable segments of the population that the government was trying to protect.

The resulting supply shock had far reaching consequences. By the end of 2008 and the earlier part of 2009, a large number of neighborhood agricultural stalls, which were typically scattered through Cuba's 169 municipalities and served as the main outlet to purchase domestic agricultural products for the majority of the country's population, closed down due to insufficient supply and agricultural fairs were discontinued (Nova, 2010). In the case of the neighborhood agricultural stalls, it is worth noting that these low-scale outlets are mainly supplied by the cooperative sector, offer a greater consistency in supply, better product selection and quality, and competitive prices when compared with their State-run counterparts and the agricultural products offered through Cuba's vast network of “hard currency stores” (Nova, 2010). These establishments offer an additional convenience: they are the are conveniently located close



**Table 4. Cuba: Non- Sugar Agricultural, Yields, Selected Crops (tons per hectare)**

	2008	2009	2010	Change 2008 - 2010	% Change
Viandas	7.69	6.34	6.20	-1.49	-19.4%
Roots and tubers	7.10	6.36	6.21	-0.89	-12.5%
Plantains	9.07	6.30	6.17	-2.90	-32.0%
Greens	9.42	9.15	9.05	-0.37	-3.9%
Cereals	2.68	2.07	1.94	-0.73	-27.5%
Rice	2.80	2.61	2.58	-0.23	-8.1%
Corn	2.52	1.49	1.44	-1.08	-42.8%
Legumes	1.02	0.74	0.71	-0.31	-30.1%
Beans	1.02	0.74	0.71	-0.31	-30.1%
Tobacco	0.93	1.01	1.01	0.08	8.5%
Citrus Fruits	8.59	8.72	8.00	-0.59	-6.9%
Other Fruits	8.89	8.16	7.86	-1.03	-11.5%
Cocoa	0.29	0.27	0.32	0.03	11.1%

Source: *Anuario Estadístico de Cuba* (AEC) 2010, and author's calculations.

to consumers' homes, which represents a tremendous advantage for the majority of households in a country where the majority of the population (close to 78%) lives in urban centers, and convenient means of transportation are relative scarce and terribly expensive.

During the 2008–2010 period agricultural yields exhibited mostly negative tendencies, with the exception of tobacco (8.5%), and cocoa (11.1%). This was mainly attributed to the scarcity of agricultural inputs (e.g., pesticides, fertilizer, and fuel), the impact of adverse climatic conditions, and shortages of labor inputs (Table 4).

One contradictory aspect of Cuban agriculture is that despite recent policy measures to increase the role of the Non-State sector, the State continues to play a key role in this vital area of the Cuban economy. Output by the Non-State sector is greater than 80% in eight out of the nine agricultural product categories reported by the National Statistical Office (ONE) in 2010. This apparent contradiction stems from the fact that Cuban agricultural figures consider output and land held by the UBPCs (Units of Basic Cooperative Production) as part of the Non-State sector despite the limitations (administrative, managerial, and operational) confronted by these entities.

### TOWARDS MARKET SOCIALISM?

The experiences of the countries that have transitioned from the classical socialist model to market socialism suggest that this process is driven in large part by the need to increase labor productivity and improve economic efficiency. As the transition from the classical (socialist) model to the reformed (or market based) socialist model takes place, salaries and compensation are transformed to improve the productivity of labor, and increase economic efficiency and the profitability of state-owned enterprises (SOEs) undergoing “enterprise perfectioning.” Despite the emphasis given to profitability, efficiency, and productivity, the desired results or outcomes are hardly ever achieved in the majority of SOEs, because in practice profitability (or the lack thereof), efficiency, and productivity are rarely considered determining factors of the future viability of these enterprises, given the continuity of some of the practices inherited from the classical system, which “soften” their budget constraint.<sup>1</sup>

The private sector plays greater role in the economy, and part of the economically active population employed by the State sector at the onset of the reform process is allowed (and sometimes left with no alternative but) to “migrate” to the emerging private sector. Output in the Non-State sector, as a share of to-

1. According to Kornai (1992), some of the commonly-used practices that “soften” the budget constraint of SOEs undergoing “enterprise perfectioning” under market socialism include: (1) indirect subsidies, (2) tax reductions, (3) State-provided credit and financing, and (4) favorable price policies.

tal output, increases during the period of transition, as it absorbs some of the (excess) inputs (i.e., labor and capital) released by the State sector. Higher earnings and increased managerial autonomy function as “pull factors” in the Non-State sector, providing the necessary economic incentives for part of the economically active population to exit the State sector. The State sector’s share of total output and employment declines, as more workers “migrate” to the emerging private sector in search of higher wages and compensation.

Despite the Non-State sector’s growing role in the economy, based on its share of total output and land under cultivation reported by the National Statistics Office (ONE), it remains under the “shadow” of the State, resulting in one of the major contradictions of Cuba’s form of market socialism. While the prices of some agricultural products have been partially liberalized, which as conventional economic theory suggests has incentivized production and within the constraints under which the Cuban economy currently operates contributed to an improved (i.e., more efficient) allocation of scarce resources in some areas of the economy, price controls, subsidies, and other forms of non-market allocation in other areas still contribute to shortages, the production of goods and services of inferior quality, inefficient resource allocation, waste, mismanagement, and other distortions commonly associated with centralized planning.

Notwithstanding the partial recovery of some segments of Cuba’s non-sugar agricultural sector, output and yields are still significantly depressed when compared to the performance levels reported in 1989 (the year that marked the beginning of the economic crisis in the nineties and the “Special Period”). Figures pertaining to agricultural yields (i.e., output per hectare) demonstrate a decreasing tendency, as a result of endogenous and exogenous factors related to agricultural production.

In terms of the policy measures recently implemented to non-cane agricultural production in Cuba, it is worth noting that even though there have been some positive results since 2008, there is still much more to do to stimulate agricultural production in Cuba. The mere delivery of idle State-owned land in usu-

fruct to private producers and agricultural cooperatives is unlikely to result in significant and sustainable increases in production in the long-run. As of the end of 2009, Cuban officials reported that an estimated 920,000 hectares (of idle State-owned land) had been transferred to more than 100,000 recipients (or beneficiaries) (Hagelberg, 2010). While this measure undoubtedly represents a movement from a State-centric model of agricultural production to a more decentralized form of land tenure, similar to the one implemented in Vietnam at the onset of its *Doi Moi* reform process in 1986, the lukewarm response considering the potential number of persons who might have applied for the permits to farm these lands under less uncertain circumstances suggests the need to further expand this measure.

Hagelberg (2010) correctly states that “the authorities were admittedly overwhelmed by the flood of requests for plots triggered by Decree-Law No. 259” and cites Cuban media reports that indicate that the number of applicants increased substantially from 2008 to 2009. While those figures are impressive, given the limitations and constraints of Decree-Law No. 259, it seems reasonable to believe that they are probably far below their true potential. This “true hidden potential”—referring to the number of persons who would probably apply for permits to farm on State-owned lands under different circumstances—is probably discouraged by the difficulties faced by recent applicants such as the lack of necessary tools and inputs, particularly fuel, pesticide, and fertilizers, the inhospitable conditions of the lands to be cultivated, and the lack of adequate infrastructure, including housing, barns, stables, storage facilities, etc.

To encourage the revival of Cuba’s non-cane agriculture, it is fundamental to experiment with new forms of property, including individual or private property with clearly-defined transfer and inheritance rights, and the capacity to earn, payout, and even repatriate after-tax profits. This does not imply the complete abolition of existing forms of collective property such as agricultural cooperatives (e.g., *Cooperativas de Producción Agrícola*—CPAs, *Cooperativas de Créditos y Servicios*—CCS, etc); but rather that complementary

relations that may exist between these forms of properties and private property. In the process of transforming the Cuban economic model alternative property forms property must play a fundamental role to ensure the success of economic policies and strategies designed with this purpose in mind; the experiences of China and Vietnam in agriculture demonstrate that these changes or transformations must be simultaneously incremental and tangible in order to reach their goals.

Recent efforts to advance a decentralized model of suburban agriculture in Cuba represent a gradual, but positive, step towards market socialism. In contrast to the more centralized model of urban agriculture implemented as a response to the “food crisis” of the early 1990s, the principal operational structures in the model of suburban agriculture currently being encouraged by the Cuban government are small-scale, eco-friendly, privately-owned farms or *fincas* located a few kilometers from urban centers (Hagelberg, 2010). Cuba’s suburban agriculture strategy aims to reduce the distance between producers and consumers, curtail fuel consumption, and reduce Cuba’s dependence on imported food and fuel (Hagelberg, 2010). While the emphasis of this alternative mode of production is on energy conservation and sustainability, the development of local and regional market-based coordination mechanisms can play an important role in the success of this strategy.

The relatively low agricultural yields in Cuba’s agricultural sector point out to the need to improve total factor productivity. To achieve this goal structural measures that allow greater integration of technology and foreign capital should be considered, along with labor market reforms that improve the relationship between results and earnings, and policy transformations to allow greater participation by the Non-State sector, especially private farmers, improved access to credit financing and diversified sources of capital, including private investment, and greater availability of essential agricultural inputs and supplies such as fertilizer, fuel, irrigation equipment, machinery, seeds, etc.

Given its long and successful participation in important clusters of non-cane agriculture in Cuba, the private sector should be allowed to play a larger role in the recovery and revival of this important sector of the economy. However, the expansion of the private sector should be conducted in gradual and regulated manner, particularly with regards to labor practices, the accumulation and transfer of assets, and health and safety standards. In this context, a strong but not antagonistic State, with the capacity to adapt and innovate, particularly on the regulatory front, but not completely malleable by the brutal forces of market capitalism, could play a vital role to ensure and promote agricultural self-sufficiency and national food security in Cuba.

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