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"Who Will Feed Cuba"? Agrarian Transformation, Peasants and Food Production

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Introduction

This paper will investigate the origins and structural reasons for Cuba's food import dependency, which in spite of recent reforms to partly liberalise peasant production and commercialization (Mesa-Lago and Peréz-Lopéz, 2013) and the initiatives towards local food sovereignty, the expansion of urban agriculture (Koont, 2011) and the embracing (by circumstance or by choice) of agro-ecology (Altieri and Funes-Monzote, 2012; Rosset et al. 2011; Rodriguez, 2010), have been growing in recent years. It will look in the first section at the logic of the food import system, which was founded on the predominance (already pre-1959) of an export-led sugarcane-based industrial agricultural system, and trade-based food security paid for by agricultural exports (and later on by the foreign exchange coming in through medical services, remittances and tourism). In the second section, it will investigate the reforms that have been introduced by the government of Raúl Castro since 2008, which have provided possibilities for a large number of new and old farmers to obtain usufruct rights on idle land as well as land that had formally been in the hands of UBPCs (*Unidades Básicas de Producción Cooperativa*, the heirs of the former state farms). The latter had been formed in 1993 during the "Special Period in Peace Time" – Cuba's euphemism for the economic crisis induced by the elimination of Eastern Block assistance with the collapse of the USSR (Nova Gonzalez, 2008, 2012; Rodriguez, 2010; Valdez Paz, 2011; Mesa-Lago, 2014a and 2014b).

As this section will look more in detail at land use, it also shows that overall there was a stagnation of domestic food production, with some notable exceptions and some particular shifts (such as the growing importance of highly intensive urban agriculture, see Altieri, 1999 for an early view on this), the third section will try to disentangle some of the reasons for these developments, in particular by looking at the aspect "perceived tenure insecurity" (Van Gelder 2007, 2010; Ma et al. 2015; Rao et al. 2016), which is still very high in Cuba, causing a major disincentive for long-term investment and local capitalization. In the fourth section we will analyse another reason for stagnation in the (rural) agricultural sector, in particular in food production, which is the continuing state interference in and control over markets, in spite of the opening of small urban agro-markets where producers can sell directly to consumers at market prices, and the emerging whole-sale markets that started since 2013. There is still a situation of 'missing markets' (and partly also of 'missing institutions') that support the commercialization of domestically produced foodstuffs and supply small and medium producers (such as the growing group of *usufructuarios individuales* or individual producers with usufruct rights) with inputs and equipment.

The paper will conclude by indicating some of the main bottlenecks of food production and commercialization, in particular in relation to stimulating (and capitalizing) the large group of individual producers (small farmers, peasants, *usufructuarios*, and urban gardeners), in order to reduce the large import bill for food products, most of which can potentially be produced domestically, thereby sustainably and reliably "feeding Cuba".

1. Export-led growth, food deficits and food import dependency

The origins of food import dependency and trade-based food security are to be explained by the historical predominance of an export-led mono-cropping system built around the sugar cane sector, which has marked Cuban agriculture since the mid-19th century. The Revolution of 1959 – after all an endeavour for national sovereignty – did not significantly question this system. In the 1970s and 1980s there was even a further expansion of the sugar sector, amongst others stimulated by the large captive market that the Council of Mutual Economic Assistance (COMECON) offered for Cuban sugar exports, but also because the Cuban leadership saw the development of a large, modern agro-industrial

('competitive-advantage'-based) sector as the motor of economic growth and agrarian transformation, rather than stimulating peasant-led growth and capitalization.

When looking carefully at the import/export data of agricultural (crops and animal husbandry) products, we can see that there was a substantial surplus in the trade balance for these products in the 1960s, when exports (mainly raw sugar, some refined sugar, and sugarcane-based liquors) had a value of between 0,6 and 0,85 Billion USD, with imports (mainly basic foodstuff such as wheat, wheat flour, lard, edible oil, some meat products), only valuing between 0,1 to 0,25 Billion USD. From the early 1970s (starting with the "*Zafra de los Diez Millones*" in 1970) until the year 1990, raw sugar (centrifugal) exports grew enormously, and came to represent around 95 per cent of total agricultural exports. In that period, the value of agricultural exports increased to previously unknown levels of between 3,5 to 5,2 Billion USD, giving rise to a surplus on the agricultural trade balance which increased to levels of between 2,7 and 4,3 Billion USD and was used to invest in all areas of the economy.

When the crisis in the sugar sector (as well as the rest of the economy) broke out in the early 1990s, caused primarily by the disappearance of financial support and preferential trading with the socialist block, exports dropped drastically (and to a lesser extend agricultural imports as well, reducing also food import dependency [see Altieri and Funes-Monzote, 2012], although this was more a reflection of the drop in purchasing power than a major strategic shift from imports to domestic production).

By 1995, the agricultural trade surplus had decreased to only 0,3 Billion USD, and in 2000 it fell further to 0,1 Billion USD. Since then, there was in a sense a 'replacement' of the previous support received by the USSR, provided by Venezuela under Hugo Chavez, and an increase in foreign exchange income from expanding tourism, service export and growing remittances, which made a renewed growth of the import bill possible.[1] In the 2000s, a huge agricultural trade deficit emerged, as agricultural (mainly food) imports grew rapidly, from average levels of 0,7 to 0,9 Billion USD in the late 1970s and the 1980s, to 1,2 in 2005 and even 1,9 Billion USD in 2013 (see Table 1).[2]

Table 1: Agro-exports versus food imports Cuba 1961-2013 (x 1,000 USD)

	1961	1965	1970	1975	1980	1985	1990	1995	2000	2005	2010	2013
Agro-Exports	583498	628682	848563	3433891	4845199	5208146	4632177	882277	748721	443601	552960	790569
Food Imports	125560	174944	250704	671053	980349	924692	813035	611855	630510	1218068	1482967	1882504
Balance	457938	453738	597859	2762838	3864850	4283454	3819142	270422	118211	-774467	-930007	-1091935

Source: FAOSTAT, http://faostat.fao.org and http://faostat3.fao.org; accessed 9 January 2016.

The figures provided at FAOSTAT, which typically originate in data routinely provided by the national statistical agency ONEI (*Oficina Nacional de Estadísticas e Información*), are not very consistent with the numbers ONEI itself provided in its *Anuarios Estadísticos* (as presented in Nova Gonzalez, 2012). Here, the food import bill is even higher, with 2,5 Billion USD in 2004(!), 1,5 Billion USD in 2005 and 1,6 Billion in 2010. In spite of these data differences, the general trend towards increasing food import dependency remains equally preoccupying.

Sugar dominance and stagnation in food production

Sugar cane was and still is the predominant crop in Cuba, but the acreage of sugar cane has drastically diminished, in particular during the past decade. The reasons have been discussed widely, with most sources agreeing that the primary factor was the immense (and ever growing) external input

[1] Renewed imports were particularly in oil (and oil products) and food. As Patel (2012) wrote in a blog: "As a result, the parts of the country untouched by agro-ecology are starting to spray and sow like it's the 1980s again". In return for the aid, Cuba provided large-scale medical support to Venezuela (thousands of doctors and nurses went there).

[2] Food production also suffered from the impact of hurricanes in the second half of the 2000, in particular in 2008 (Rosset et al., 2011: 179).

dependency of the industrial production model (requiring high levels of energy, fertilizers, pesticides etc.), which made the system untenable when the generous support of the COMECON (Council for Mutual Economic Assistance) countries stopped after 1990 and prices received for Cuban sugar started to drop afterwards. While sugar cane area peaked at 1,497,600 ha in the "*Zafra de los Diez Milliones*" year of 1970 (and 1,420,300 ha in 1990, the last year before the "Special Period" started), it was down to only a third or quarter of this figure, respectively, with 507,200 ha in 2005, 431,400 ha in 2010, and 405,300 ha in 2014 (see Table 2).

If we add together the acreage of sweet potatoes, potatoes, plantains, rice, maize and beans[3], these food staple crops were cultivated on between only about 300-400,000 ha throughout 1960-1990. Their acreage was the first to increase in the 1990s, reaching 579,806 ha in 2000 and even 695,448 ha in 2010, before contracting somewhat afterwards and settling at 586,959 ha in 2014. This means an average addition of 200-300,000 ha of food staple crops (many of them grown on previous sugar cane fields). Output figures, which also show yield increases for some staples, show that there has been substantial growth in the output of sweet potatoes, plantains, paddy rice, maize, beans, but also in milk and eggs, while the cattle stock has yet to recuperate the levels reached in the 1960s and 1970s (see Table 3). The three food staples that have substantially expanded their acreage are plantains, maize and beans, while rice has only recently recovered the peak values of the early and mid-1970s. However, even with this additional cultivation, the data presented by ONEI (2014) on vegetables, legumes, fruits, cacao and tobacco, which covered around 500,000 ha in the period 2008-2013, show that they are far from taking over significant acreages from sugar cane – at least 80% of the former sugar cane plots are now extensive pastures or idle land. Nonetheless, due to feed import dependency the cattle stock fell in the 2000s to about 2/3 of the level of the 1960s, whereby the initial increase in the mid-1960s was much more a recovery from pre-revolutionary levels.[4]

One might have expected that the reduction of more than 1.0 million hectares of sugar cane acreage would have led to a rapid complementary movement of an expansion of particularly food crops, but this is only partly the case. It seems that most of this area has been left idle, or only minimally used. If one follows the total crop acreage of sugar cane and some key food crops, a fall from 1,912,254 ha in the 1970s (with another peak of 1,804,518 ha in 1990) to only 992,259 ha in 2014 can be observed (Table 2, using FAOSTAT data). This is in spite of the country-wide policy of giving out idle land to individual farmers under usufruct contracts, sparked by Decree 259 of 2008.

The rising export value of sugar between the early-mid 1970s and 1990 is also partly to be explained by the sugar prices received by Cuba, which increased substantially during this period. They were between 100-120 USD/tonne for raw (centrifugal) sugar in the 1960s (with no particular difference between the prices received by Cuba or by Jamaica, a smaller but still important sugar cane producer in the direct neighbourhood). In the 1970s, world market sugar prices spiked (in particular in 1974) to levels between 500-600 USD/tonne. The COMECON countries bought sugar at preferential prices, while the remainder of Cuba's sugar exports benefited from the rising world market prices. The USSR, in particular, continued to buy sugar from Cuba at prices between 800 and 1,000 USD/tonne during the 1980s (even somewhat more in 1990, the last year before its collapse), while world market prices had already dropped to around half of that level.

After the demise of the USSR and the COMECON by late 1991, the situation completely turned around. While, according to FAOSTAT data, the received raw (centrifugal) sugar price was still 660 USD/tonne in 1991 (being 566 USD/tonne for Jamaica), in 1995 Cuba sold its sugar for only 271 USD/tonne (while world market prices rose, as shown by the fact that Jamaica received 662 USD/tonne for its raw sugar exports that same year). Various factors explain this complication of sugar sales, with the tightening boycott by the USA (which increasingly used diplomatic means to

[3] Hence we are not including vegetables here, which we will later is an important category, but is not reported by FAOSTAT in the same way as ONEI (compare with Table 4, which is based on data provided by ONEI).

[4] Due to institutional disorder as well as a broad rise in meat purchasing power by the lower classes, the first three years of the Revolution (1959-61) led to a disastrous reduction of the cattle stock due to massive slaughtering. Cuba's system of long jail sentences to punish illegal slaughtering date from this period (see Boorstein, 1968).

informally extend its embargo beyond its own jurisdiction) on the one hand, and the vanishing of the previously massive demand for Cuban sugar by the former Eastern Block on the other, resulting in immense difficulties to establish marketing channels in a world sugar market increasingly based on bilateral agreements and quotas. This negative price difference continued into the next decade, with Cuban sugar selling for only 131 USD/tonne in 2000 (with Jamaica receiving 453 USD/tonne), 219 USD/tonne in 2005 (with Jamaica receiving 680 USD/tonne), while in 2010 this difference was still large (442 versus 864 USD/tonne). Only in 2013, when trade relations had already become more open and new contracts with China took effect, the gap was nearly closed (459 versus 478 USD/tonne).[5]

Why have agricultural (and as its largest part food) imports increased so much, while exports decreased (with a slightly positive trend in the data from 2013), letting the agricultural trade deficit explode? There are at least three reasons to be mentioned:

Firstly, Cuban agricultural policies, from their colonial bedrock upwards, have rallied around the sugar industry, leading to an entrenched mono-crop dominated system where food production was destined to remain in the realm of subsistence production of a peasantry delegated to the side-lines, with the majority of agrarian labour, land and resources concentrated in large-scale plantation complexes and cattle *haciendas*. During the first decades of the Revolution, the sugar sector was seen as the motor to modernize the countryside and the economy as a whole, which meant that agricultural investments were largely restricted to this sector, which in turn was developed as an agro-industrial complex that even expanded the centralization of the existing sugar mills (*centrales azucareras*). Although there was some tobacco production, run by small producers and cooperatives but overseen by the state, in terms of exports it only became influential until the crisis of the early 1990s (and the founding of the Spanish-Cuban luxury cigar monopolist *Habanos* in 1985), when tobacco was discovered as a substitute export product for sugar. In summary, Cuban agriculture was based on an export-led model of development, which – given sufficient turnover – was able to provide trade-based *food security*, but never supported a conclusive move towards *food sovereignty*. The immediate crisis result of this policy was a collapse of food-import provision during the "Special Period", alleviated only by local subsistence and peasant production propelled by sheer desperation.

Secondly, the combination of the trade boycott by the USA, which worsened after the Helms-Burton Act of 1996 and was even further sharpened under Bill Clinton's presidency, with the exclusive support of the USSR and some of the other COMECON countries, strengthened the existence of the export-led agricultural (and actually development) model during the 1970s and 1980s. During the "Special Period" in Cuba, its deep economic crisis and the collapse of the Eastern Bloc, there were abundant signs of a move away from this model and towards food sovereignty, stimulating peasants and more individualized farming, in particular staple food, vegetable and fruit production. In the last decade, however, it seems that a recovering balance of payments due to the generous support by Hugo Chavez's Venezuela, which in part complemented for the earlier suffered shortages in food imports (and partly agricultural export markets), combined with (or even giving rise to) the renewed ideological radicalization in the "Battle of Ideas" period in the early 2000s (Mesa-Lago, 2013), have countered this movement of transition, as manifested by stagnation in the sector until the shift in economic policies initiated by Raúl Castro in 2008.

Thirdly, the import of food is clearly changing in composition, apart from a move from gradually increases (1994-1999) to exponential growth in the 2000s. While in the former period food imports consisted of fairly basic products such as wheat, wheat flour, lard, edible oil, maize and some meat products, in recent years imports have included large volumes of durables, chicken meat, pork sausages, cheese, malt, wine, and soy products, the latter mostly used for the recently expanding livestock industry and as an additive in popular meat products. Imports have become more and more focused on serving the food demand of the parallel tourist economy and a small emerging middle class, with detrimental effects on the domestic agricultural sector that feeds the majority population.

Why is this continuing? In part because the tourist industry is dominated by a combination of foreign hotel chains and state companies, with a strict licencing system, and often de-linked from domestic

[5] The price data of the previous two paragraphs is taken from the FAOSTAT Database. Data until 2010 can be found at http://faostat.fao.org; for 2013 the data is taken from http://faostat3.fao.org; accessed 8 January 2016.

supply chains, with exceptions for some fresh products (fruits, salad greens). However, the logic derives also from the state-controlled system of imports allows the strict application of a 300% value-added tax for imported goods, while only scarce and insignificant tax payments are made in domestic production and distribution.

Table 2: Acreage Selected Crop Production (1961-2014)

Year		1961	1965	1970	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014
Sugar Cane	Hectares	1260782	1054680	1497600	1181399	1391900	1349500	1420300	1177400	1040900	507200	431400	402800	405300
Sweet Potatoes	Hectares	32000	60000	63000	65000	50300	41600	54000	67922	53075	74255	79792	48273	40683
Potatoes	Hectares	10000	7500	11100	9450	13917	14900	16852	13226	13404	12316	8671	4941	2568
Plantains	Hectares	8600	9200	5254	7781	8900	21600	34000	68068	81182	76781	92055	55181	56302
Rice (Paddy)	Hectares	150000	38000	195300	178200	147354	159200	154896	154700	200110	127197	176429	197824	171573
Maize	Hectares	105000	94000	105000	82303	77000	77000	74604	98547	126313	155579	225680	178172	185922
Beans	Hectares	68000	60000	35000	15000	39100	41400	49866	94130	105722	94821	112821	119775	129911

Source: FAOSTAT 2015, Accessed 26 Febrruary 2015, 20 December 2015.

Table 3: Gross Output Selected Crop Production (1961-2014)

Year		1961	1965	1970	1975	1980	1985	1990	1995	2000	2005	2010	2013	2014
Sugar Cane	Tonnes	55885920	50695296	82900000	52389008	63977408	67400000	81800000	33600000	36400000	11600000	11500000	16100000	17800000
Sweet Potatoes	Tonnes	142000	250000	230000	248000	228077	178086	195000	211300	302448	449987	384743	396300	512825
Potatoes	Tonnes	113000	83487	77476	120921	239380	307268	202680	281642	367853	313100	191500	106700	53308
Plaintains	Tonnes	60000	67742	30804	81394	88914	143482	129000	285000	579313	484487	485800	508164	632967
Rice (Paddy)	Tonnes	206908	54970	374523	446710	477834	524320	473673	396100	552800	367600	454400	672600	576400
Maize	Tonnes	97000	87000	85000	93536	95000	95000	65045	103800	273200	362500	324463	426200	427295
Beans	Tonnes	34019	25000	11000	4000	9383	10996	14000	24542	106300	106200	90439	129800	131845
Cattle Stock	Number	5025000	6575300	6282400	5484100	5212500	5115200	4802600	4632000	4110200	3703700	3992500	4092200	4134300
Cattle Meat	Tonnes	138232	168583	201214	119328	146537	142373	135920	67352	75774	59791	63499	66905	
Milk	Tonnes	350000	440000	690000	800000	1000000	1112100	1034400	638522	614089	353200	629500	589100	588100
Eggs (Number)	x1000	580000	946200	1455600	1851100	2326600	2435000	2726500	1542500	1721600	2066300	2430000	2655500	

Source: FAOSTAT 2015, Accessed 26 Febrruary 2015; 20 December 2015.

It is the political and military elite, which benefits from monopoly rents and is unlikely to prioritize supply from the domestic agricultural sector (such as with pork and chicken meat, milk, cheese, beans, etc.). As a result, the state's main retail system (the big 'supermarket' chains – TRD, Panamericana, Habaguanex and Caracol, all controlled by the military's holding company CIMEX) has not shown any interest in developing capacities to buy products within the country. Almost all food that is sold through those chains is imported – with the exception of a handful of products acquired from large state processing companies (the wheat milling company, a fruit pulp factory etc.), though the latter usually import most of the raw materials. This new distribution system for processed foodstuffs – which has almost completely replaced the *libreta* (=distribution card) social subsidy system – thus works by receiving large quantities of standardized products at three container terminals and shipping it to thousands of stores in U.S.-sized cargo trucks. Their management systems are organized around this setup, and if, for example, there is a good harvest of beans in the country (which would suffice to cover the demands of the whole population), they are unable to acquire, distribute and sell this crop, and instead continue to import the same beans, at five times the price, from Italy. Concurrently, their corporate image is based on the sale of foreign goods wrapped in shiny packaging.[6]

As mentioned above, powerful parts of the Cuban elite profit much more from the controlled sales of imported goods with a high VAT as from domestic production, which is not covered by any effective form of taxation. The state certainly directs much more effort and investment into the former system of food provision, while divesting from the latter, a policy which clearly contributes to keeping down national food production and contradicts the above-mentioned reforms to stimulate it through giving out land to individual *usufructuarios*. The import markets are being renovated or re-built, they receive most investments in storage and transport capacities, their technologies are updated and upgraded, their corporate salaries are hiked, and so forth. That way, whatever national production there is is taking place with very reduced support or even interest. We will see in the fourth section that the remaining domestic markets are still plagued by many deficiencies, not only in terms of policies, interventions, rules and regulations, but also in terms of lacking infrastructure and investments in storage facilities, physical market places etc. At the same time, these are being rapidly modernized in the import-based distribution sector, which is strengthening the segregation of the two markets and making the development of marketing channels for domestic food crops (and thence their competition with imported products) increasingly difficult.

2 Cuba's Land Reforms

Cuba has seen two major land reforms in the early stages of its revolution, a pro-peasant reform in 1959 and a statist reform in 1963, while a third one – much less known – took place in 1993. The latter organized the dissembling of the large state farms in the midst of the profound economic crisis that hit the island in the early 1990s as a consequence of the disappearance of generous economic support from the USSR. Its main instrument was the formation of UBPCs (Basic Units of Cooperative Production) by sub-dividing the large state farms (from several thousand hectares to 400-800) and giving limited liberties to their managers. With respect to its stated objectives and the economic exigencies that produced them, the 1993 reform can at best be described as a partial, unfinished land reform, comparable to the early post-Soviet reforms in Russia or several states in former Soviet Central Asia, as the land remained owned by the state, the UBPCs received "their" land in usufruct only, and – most importantly - most decisions on what to produce and to whom to sell it (in large part at fixed prices to the *acopio* state procurement system) remained state-controlled (Mesa-Lago, 2011, 2014a, 2014b; Nova Gonzalez, 2008, 2012; Valdez Paz, 2011). In addition, the members of the UBPCs were joined together on the basis of territory, and not because they wished voluntary to form a

[6] One outcome of this setup is that the Cuban state has come to work with the most unusual suspects, entering exclusive contracts with huge transnational corporations. SPAR has the biggest contract for foodstuffs at the moment, Nestlé for sweets and ice cream, ABInbev and Pernot-Ricard for beverages, and the big Spanish companies such as Alteza for durables. If there are products from smaller producing companies, they have been bought in Spain by a bigger intermediary such as SPAR. No movement is discernible to buy retail products from other ALBA members, for example, or from smaller, alternative Latin American companies or cooperatives.

cooperative, while remaining members of the state syndicate of agricultural and forestry workers (ACTAF), rather than becoming part of the national association of small farmers (ANAP).

While this 3rd land reform began to transform the agricultural sector in some aspects during the "special period" of 1993-2000, its importance was dwarfed by another 1993 decree that allowed independent small farmers (unorganized or organized in CCS and CPA) to market their surplus production in supply-and-demand-based marketplaces and fairs (Deere, 1997). The latter induced a boost of initiative on this smallest level of production, which countervailed the worst effects of the crisis for nutrition. After seven years of growth primarily of such peasant activity, a peak in food production indices was reached in 2000. Beginning in the same year, however, market-oriented reforms were revisited and partially withdrawn, while state controls were tightened (as part of the "Battle of Ideas" period launched by Fidel Castro; and coinciding with the new strength acquired due to the alliance with Venezuela under Hugo Chavez). One can observe a severe stagnation in the agricultural sector during that period, in particular in the output of the UBPCs, whose room of manoeuvre was still severely limited (Martin Gonzalez, 2013b; Carrobello and Jesus, 2012), while the share of peasant production was still growing (Rosset et al., 2011).

The opening of some tourism, personal service, construction and distribution sectors to private business, as well as state facilitation for remittances, in the last decades has allowed for a (albeit highly irregular) growth of food purchasing power that was not met by increases in domestic production. As already stated in section one, since 2010, Cuba has been importing 1.5–1.9 billion USD of food annually in order to compensate for this increasing food demand and growing food deficit. In response to the on-going agricultural crisis, during which the previously omnipotent sugar complex continued to implode (facing its sharpest drop *after* the 'Special Period', from 3,6 million tonnes in 2000 to 1,1 million in 2005), the government under Raúl Castro moved to complete the unfinished 3rd land reform (after 15 years of virtual standstill). Decree 259 of 2008 created instruments for local governments to give idle land to able individuals under usufruct contracts, although they are forced to organize in production cooperatives (CPA) or credit and services cooperatives (CCS). This policy framework was confirmed by the *Lineamientos* (guidelines) produced at the VI Communist Party Congress in 2011 and further implemented by Decree 300 (Gaceta Oficial, 2012; Nova González, 2012; Mesa-Lago and Pérez-López, 2013; Ritter, 2014), which included additional measures to return idle land to productive (private) use, to provide more individual incentives to producers, to open more marketing channels (such as farmers markets, which had first emerged in 1994; see Deere, 1997), and to stimulate people not only to (re)enter the agrarian sector, but also to build houses on their newly acquired land (which was not yet possible under the terms of Decree 259), thereby re-occupying the countryside in small-scale social fabric. How far this is working (or really implemented), however, warrants some critical analysis.

Announced as an "update" of the economic system under Raúl Castro (Mesa-Lago 2011, 2014a; Mesa-Lago and Pérez-López, 2013), the post-2008 period can be understood as a profound revisiting and reshaping of the 3rd land reform, in particular with regard to the (dis)functions of the UBPCs and the slow development of input and output markets (which function besides and in competition with the withering public distribution and procurement channels). In September of 2012, the government published "17 measures" to improve the independent management of the UBPCs, acknowledging that they had for nearly 20 years been under the tutelage of state enterprises, severely limiting their supposed autonomy and capitalization (Martín González, 2012; Suárez Rivas, 2014). There are still major challenges for the agricultural sector in Cuba, which has to overcome its severe problems of under-production, lack of incentives and technological means, as well as sustainability problems such as erosion, salinization, degradation of pastures and expansion of invasive species. The agricultural sector, although only representing a relatively small share of Cuba's GDP, is clearly a key to the future of Cuban economic and social development, and therefore policy interventions and the building of proper institutions and (private) markets are of great importance to overcome the current crisis. In those transition economies Cuban politicians most often refer to as role models for the coming decades, such as China and Vietnam, a profound process of peasant liberalization, capitalization and the development of small agricultural input, manufacturing, transport and processing businesses

preceded the much-desired phase of broader economic growth since 1990 (Spoor, 2012; Scott, 2009; see also Enriquez, 2010).

We argue that making choices in favour of small- and medium scale farms, their urgent needs to capitalize, promoting real autonomy for cooperatives, the widespread use of agro-ecological production methods (which –by the way- did not take place in China or Vietnam), and reducing the role of the state, in particular where it consequently limits the development of private markets, grassroots' initiatives, and small-scale entrepreneurship, will have to be integral part of those policies.

Table 4: Total Harvested Areas (2008-2014)

	2008		2009		2010		2011		2012		2013		2014	
Hectares	State	Private	State	Private	State	Private	State	Private	State	Private	State	Private	State	Private
Viandas	38,4	241,4	34,6	317,9	31,1	331,9	26,8	269,0	22,6	249,3	19,1	278,3	16,5	269,4
Vegetables	34,4	224,6	32,2	246,4	27,2	209,4	23,5	188,1	23,1	179,8	25,0	189,0	21,4	180,7
Grains	30,0	254,7	35,9	383,8	37,5	374,6	51,6	300,0	25,5	330,8	39,5	336,5	21,9	335,6
Legumes	4,9	90,5	5,6	144,9	6,4	106,3	7,1	116,8	5,8	117,7	6,5	113,3	6,5	123,3
Tobacco	0,3	22,7	0,6	24,3	0,3	20,0	0,5	13,1	0,5	15,6	0,4	12,6	0,3	8,5
Citrus Fruit	21,0	24,6	18,1	30,0	15,9	27,2	15,2	18,2	13,2	13,0	11,8	8,5	10,2	8,9
Other Fruit	11,9	71,1	10,9	80,7	11,4	85,5	9,6	71,1	7,6	71,8	8,9	74,6	7,9	76,2
Cocao	0,3	3,5	0,3	4,7	0,3	4,8	0,3	4,8	0,2	4,0	0,3	4,0	0,2	3,9

Total Area Harvested	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	Average
Viandas	279,8	352,5	363,0	295,8	271,9	297,4	285,8	306,6
Vegetables	259,0	278,6	236,6	211,6	202,9	214,0	202,1	229,3
Grains	284,7	419,7	412,1	351,6	356,3	376,0	357,5	365,4
Legumes	95,4	150,5	112,7	123,9	123,5	119,8	129,9	122,2
Tobacco	23,0	24,9	20,3	13,6	16,1	13,0	8,8	17,1
Citrus Fruit	45,6	48,1	43,1	33,4	26,2	20,3	19,2	33,7
Other Fruit	83,0	91,6	96,9	80,7	79,4	83,5	84,1	85,6
Cocao	3,8	5,0	5,1	5,1	4,2	4,3	4,2	4,5
Total Crop	1074,3	1370,9	1289,8	1115,7	1080,5	1128,3	1091,6	1164,4
Sugar Cane	383,3	434,7	431,4	506,1	361,3	402,8	405,3	417,8
Overall Total	1457,6	1805,6	1721,2	1621,8	1441,8	1531,1	1496,9	1582,3

Source: Anuario Estadistico 2014, Oficina Nacional de Estadisticas e Informacion de Cuba, accessed 15 February, 20 December 201
Note: *Viandas* include tuber, roots, plantains; bananas are part of 'other fruit'.

If we look at land use during the period 2008-2014 (Table 4), the reforms implemented by the Raúl Castro administration would be expected to induce a noticeable expansion of the area under cultivation, especially in food crops. However, such an expansion has not been the case. In 2008, total harvested area of the main crops in Cuba (sugar cane, *viandas*, vegetables[7], grains, legumes, tobacco, citrus fruit, other fruit, cacao and henequen (also including the acreage of permanent crops in development that was not included in the "harvested" acreage, as it is only "under production"[8]) was 1,544,500 ha. It increased to 1,830,200 ha the next year, after which there was a gradual decline to 1,501,200 ha in 2012 and 1,564,800 ha in 2014. These figures are, however, 40-45% lower than the total "cultivated area" in 2007 (2,988,500 ha) or 2,668,700 ha in 2014 (as reported in various annual statistical reports by ONEI). The difference would indicate a substantial, systemic, overestimation of the cultivated area and an underestimation of the quantity of idle land. It could mean that "cultivated" is often "cultivable", or "arable". Most likely, however, it is the legal environment and tenure insecurity farmers face that leads them to overestimate or report larger areas under cultivation to avoid possible expropriation.

[7] The category 'viandas' (tubers, roots and plantains, on average around 300,000 ha) is larger as reported by ONEI than what is available from FAOSTAT, while the category 'vegetables' did not appear in tables 2 and 3, as they are not reported by FAOSTAT grouped together in the same way as ONEI does. Hence, there are (pretty) large differences between the two data sets.

[8] This is done by carefully screening the areas of permanent crops that are under cultivation but not yet harvested (*Anuario Estadístico* 2014, ONEI).

In section three we will see the effects of low levels of "perceived land tenure security" for the incentives to invest in the land (or related assets). Local authorities (primarily the local delegates of the Ministry of Agriculture, MINAG) are entitled to judge whether usufruct land is 'efficiently used' (or used as reported at the local level for many other reasons as well). Therefore, when no crop is planted on the land, farmers tend to maintain some goats or cattle on it to limit overgrowth , or to plant some fruit trees, both to avoid any infringement in their use rights, and increase tenure security (see section three). This way, they seek to hold onto the land until (in the near or distant future) they are able to acquire the necessary capital and family labour to use it more intensively.

Further indications of the overestimate that is indicated here are: a) in the ONEI data, 870,000 ha of sugarcane are included in the 2,668,700 ha of cultivated acreage (see *Panorama del Uso de la Tierra*, 2014), while the same agency reported in another source that only 400,300 ha of sugar cane was harvested in the season 2012/13[9], which corresponds to the FAOSTAT-based data in Table 2; b) ONEI reports an unspecified acreage of 883,600 ha of *cultivos varios*, which seems to be much larger than the aggregate of all reported *cultivos temporales* (apart from paddy rice and tobacco, which are separately mentioned, and – by the way - also reported with much higher areas than in the production data); and c) however, coffee is missing in our data, while ONEI in its Panorama reports an acreage of 112,900 ha, which makes the gap slightly smaller. This latter figure seems very high, also because for the same years FAOSTAT only reports 28,000 ha of coffee. Again, the enormous differences between the two data sets remain unexplained.

Idle land and its role in the possible expansion of food crops

Idle land, an important issue in the reform agenda of 2008 and more recently in 2013, was reported in 2007 to be 1,238,800 ha (ONEI, 2010). ONEI, however, reported in a separate 2009 publication that it was 1,758,962 ha (Nova Gonzalez, 2012: 104, using ONEI, 2009 *Resultados y Perspectivas*), a number that seems more likely given the large difference between reported crops and the area they cover (whether planted or harvested) and the reported cultivated area. The Communist Party newspaper *Granma*, reported that 1,8 million hectares had been idle in 2008, while in 2015 it stated that 1,3 million hectares had been given out to 146,816 *usufructuarios*.

Table 5: Land Use State and Non-State Sector (1997-2007)

	State Sector			Non-state Sector			Total		
(Millions of Hectares)	1989	1997	2007	1989	1997	2007	1989	1997	2007
Total Land Surface	--	5.890,1	6.088,9	--	5.082,1	4.899,7	--	10.972,2	10.988,6
Agricultural Land	5.032,5	2.234,5	2.371,2	1.749,5	4.452,2	4.238,3	6.782,0	6.686,7	6.609,5
Cultivated Land	3.441,4	902,6	694,2	969,0	2.798,8	2.294,3	4.410,4	3.701,4	2.988,5
Non-cultivated Land	1.591,1	1.331,9	1.677,0	770,5	1.653,4	1.954,0	2.361,6	2.985,3	3.631,0
Idle land	350,7	417,2	627,2	121,8	345,3	605,6	472,5	762,5	1.232,8

Source: Oficina Nacional de Estadisticas e Informacion de Cuba

Various sources come to the conclusion that about 70-80 per cent of this land was put into production, but this seems very unlikely as the total acreage under production has not increased, rather it shrank. Additional data presented by Mesa-Lago (2014a) concludes that by 2012 there were 300,801 *usufructuarios*, with 142,862 who received their authorization during the crisis years of the 1990s, and 157,948 within the framework of the 2008 law. However, Mesa-Lago also suggests, based on a

[9] A part of this difference can be explained by the sugar cane rotation system. Plantations have to be renewed, depending on the soil, after several years, and new stumps take around 15 months to be harvested for the first time. Another possible difference between production/harvest data is that in some years there are either technical difficulties in harvesting and processing or (a more common reason) contracts aren't closed in time or could only be closed at prices that would not recompense for the effort of harvesting, processing and shipping, so that large swaths of sugar cane are left in the fields. That does not, however, explain the huge difference between the two numbers.

comparison of official data between 2007 and 2012 (provided by ONEI), that the cultivated area had dramatically increased, from 2,988,000 to 5,040,000 ha, something which is contradicted by ONEI itself, and furthermore seems highly unlikely given the stagnation in the total acreage under crops (see Table 6 below), and of course the stagnation of the crop acreage over these same years. Further investigation is warranted on how much of the idle (but in principle "arable") land can actually be taken into production when considering the widespread infestation of the invasive shrub *marabú*, which can only be defeated by incurring substantial efforts and costs beyond the reach of most *usufructuarios*. A total 1,3 million hectares is typically reported to be infested by the plant, and efforts to pay for the laborious process of cutting and then controlling it today hinge on alternative economic uses of the plant in carbon markets, US and European markets for organic barbecue fuel and early-stage projects to utilize *marabú* cuttings as industrial biomass and biofuel.

Table 6: Land Use State and Non-State Sector (2007-2014) According to Ownership

	State Sector			Non-State Sector		
(Million of Hectares)	Total	State	Total	UBPC	CPA	CCS+Private
December 2007						
Total Land Surface	10.988,6	6.088,9	4.899,7	2.804,8	692,8	1.402,1
Agricultural Land	6.619,5	2.371,2	4.248,3	244,2	585,8	1.214,3
Cultivated Land	2.988,5	694,2	2.294,3	1.189,9	305,3	799,1
Non-cultivated Land	3.631,0	1.677,0	1.954,0	1.258,3	280,5	415,2
Idle land	1.253,8	627,2	605,6	465,4	73,4	66,8
June 2013						
Total Land Surface	10.988,6	5.932,1	5.056,3	1.952,0	614,3	2.490,0
Agricultural Land	6.342,4	1.851,7	4.490,7	1.677,5	521,5	2.291,7
Cultivated Land	2.645,8	471,8	2.174,0	851,3	264,9	1.057,8
Non-cultivated Land	3.696,6	1.379,9	2.316,7	826,2	256,6	1.233,9
Idle land	na	na	na	na	na	na
June 2014						
Total Land Surface	10.988,6	6.152,8	4.835,6	1.849,1	601,2	2.385,3
Agricultural Land	6.278,9	1.942,6	4.336,3	1.598,8	509,6	2.227,9
Cultivated Land	2.668,7	496,5	2.172,2	823,0	269,6	1.079,6
Non-cultivated Land	3.610,2	1.446,1	2.164,1	775,8	240,0	1.148,3
Idle land	na	na	na	na	na	na

Source: Oficina Nacional de Estadisticas e Informacion de Cuba, various publications.

If we look at the land use changes, following the official data provided by ONEI, we can distinguish (Table 6) three major shifts in the cultivated land category during the unravelling of the 3rd land reform (2007-2014). Firstly, the acreage under crops managed directly by state enterprises was reduced further, from 694,200 to 496,500 ha. Secondly, land in the hands of the UBPCs (not de jure state land, but very much controlled by the state, went down from 1,189,900 to 823,000 ha, underlining the, after all, temporary nature of the UBPC system of management. Thirdly, as can be expected, the cultivated land under CCS and private farmers (including *usufructuarios*) went up from 799,100 to 1,079,000 ha (representing only a quarter of the total land given to *usufructuarios* – the rest being pastures). As was mentioned above, the total cultivated area was reduced, from 2,988,500 to 2,668,700ha. About three quarters of the "idle" land that was distributed was split into parcels of between 25-45 ha for cattle rearing in the provinces, as indicated by the large increase in 'non-cultivated land' in CCS and private farmers' hands', while possibly also including areas that are only cultivated in name and not in reality.

Finally, there is a very interesting movement towards military farms. The armed forces and interior ministries gave up much less land than other state bodies during the restructuring, and they haul a lot of produce by exploiting the 2-year military service for (very) cheap agricultural labour. Besides feeding barracks and army institutions, this produce is also sold at highly competitive prices at EJT

(*Ejercito Juvenil de Trabajo*) markets that have been set up in every municipality and have specialized in labour-intensive vegetables, tubers and beans.

3. Perceived Tenure Security and small farm capitalization

In a recent publication by Cuba's statistical office, *Panorama del Uso de la Tierra 2014* (ONEI, 2015) some additional data is provided. A separation is made between the property type (state, cooperative, private) and the organizational form of production (state farm, UBPC-CPA-CCS farms, individual small farm). In other statistics, the quasi-statal UBPCs were categorized under non-state property, but in this publication this is contradicted. Idle land is said to represent a total of 962,100 ha, 885,400 of which is under state farms and UBPCs (most likely 547,200 ha state farms, 241,500 ha UBPC, although this is not explicitly stated), 43,700 ha in CPAs and CCSs, and 33,000 ha in the hands of individual farm owners. As it is also reported that 129,700 ha of land is idle in individual farms (across ownership categories), this would mean that around 100,000 ha is idle in the hands of *usufructuarios*, although again, this is not explicitly stated (Table 7). Finally, unorganized *usufructuarios* (who did not join a CCS, which is highly recommended and seen as 'good conduct' by the land authorities) are also more likely to have left land idle, while in addition to the 100,000 ha they left idle, a significant part of the 285,000 ha left idle by UBPC, CPA and CCS (specifically CCS) members will belong to *usufructuarios*.

One problem of the data is that 'land in production' is very loosely defined in practice. If land is defined as idle by an inspector, the *usufructuario* or cooperative using it has a problem – theoretically, they would have to give it up to the state. The immediate, local social relations around this definition are thus geared towards avoiding such a judgment – alibi plantings, bribes to municipal officials, maintenance of networks of contacts and favours etc. From this dynamic – which is enshrined in the social relations created by the regulatory framework around land – emerges a lot of land that is mischaracterized as 'in production'. Officials and farmers involved often refer to such 'solutions', e.g.: "The state won't bother you as long as you put a few goats on the land, or ask someone with cows to move them there for a couple of days twice a year so it looks tidy". These (very widespread) forms of semi-utilization or under-utilization also direct us to a second point: 'In production' says nothing about the effectiveness of that production – yields, quality, fortification against invasive species such as the ever-present *marabú*, and erosion control. Beyond the question of idle land (i.e. land nobody wants to work) thus stands the need for farm capitalization – land that cannot be worked for lack of resources. Some small farms are able to capitalize – buying equipment, developing marketing channels and organizing their production more professionally. For most, however, small-scale farm capital formation is much harder in Cuba than other countries of similar GDP or wealth, principally because wages are so low that the off-farm work of family member never suffices to develop the family farm. The difference between an average working class or professional wage (15-25 dollars) and the savings required to buy intermediate technologies (perhaps 500 dollars for a small hoop house, a water pump or a cultivator) is so vast that most farms cannot initiate a growth loop. Those who can - maybe because they carried on an old tractor from the 1970s or have some connections or simply excellent skills - can typically maintain 5-10 hectares in solid production (in the case of grains, tubers or fruit), 150-400 hogs or 20-40 cattle fed, or 1-3 ha in diverse vegetable rotations, which is an average productive farm size Cuba could aim for in the next years (see van der Ploeg, 2013 on Chayanov's theory of 'optimum (family) farm sizes' under given macroeconomic conditions).

Another telling data set was provided in the *Panorama del use de la Tierra 2014*, detailing how land is, in terms of tenancy, distributed between state and non-state actors (again including UBPC, CPA, CCS, individual land owners, and *usufructurios*)[10]. From 2013 to 2014 the only significant change was the spectacular growth of the CPA sector (from 30,200 ha to 269,600 ha of cultivated land, and (more or less by the same amount, from 703,000 ha to 470,900 ha) the shrinking of land under individual ownership.

[10] The difference between CPA and UBPC is mostly in state control and taxation, as well as size – the CPA are closer to a worker-owned agricultural enterprise, they tend to be smaller, and they tend to be more diversified in production and selling more in private markets.

Table 7: Cultivated Area according to Property and Organization (June 2014)

Property type	State	Cooperative	Small Farmer	Total
Cultivated Area	**1.964,0**	**233,8**	**470,9**	**2.668,7**
Seasonal Crops	786,8	59,2	311,0	1.156,8
Perennial Crops	1.167,9	172,4	159,4	1.499,7
Non-Cultivated Area	**2.984,1**	**214,9**	**411,2**	**3.610,2**
Natural Pastures	2.089,7	171,2	378,2	2.648,1
Idle Land	885,4	43,7	33,0	962,1
Organizational form	State Farms	UBPC,CPA,CCS	Small Farms	Total
Cultivated Area	**504,0**	**1.104,5**	**1.060,2**	**2.668,7**
Seasonal Crops	254,5	195,2	707,1	1.156,8
Perennial Crops	244,5	903,4	351,8	1.499,7
Non-Cultivated Area	**1.456,3**	**1.039,6**	**1.114,4**	**3.610,2**
Natural Pastures	909,0	754,4	984,7	2.648,1
Idle Land	547,2	285,2	129,7	962,1

Source: ONEI (2015), *Panorama uso de la Tierra* 2014, pg.4

Table 8: Cultivated Area (x1,000 hectares)

	2013	**2014**
Total	2.645,8	2.668,7
State	471,7	496,5
No-State	2.174,1	2.172,2
UBPC	851,3	823,0
CPA	30,2	269,6
CCS	15,0	12,1
Owners	703,0	470,9
Usufructuarios	574,6	596,6

Source: ONEI (2015), *Panorama uso de la Tierra* 2014, pg.5

Why this happened is not completely clear, in particular because it is contradictory to the overall tendency towards individualization of agricultural production (Table 8).[11] These data also support our critique on the suggestion that with individualization and the allocation (under usufruct rights) of a substantial volume of land to more than 150,000 *usufructurios* the cultivated land acreage had spectacularly grown, a shift that would have to be visible in expanding crop areas and production (see again Table 2 and 3).

We see important factors beyond the simple access to land through the distribution of usufructs rights that block such an expansion *and* a sustainable growth of average yields, and thus the initiation of a take-off period in the agricultural and particular food sector. These factors exist in spite of observable spread in agroecology-based production and forms of re-peasantization in Cuba (Rosset et al., 2011).

[11] There might well be a problem of (changing) statistical definitions here. The members of CPA and CCS always overlap with 'individual owners', simply because it is individual owners (and the new *usufructuarios*) who are organized in CCS. Technically, thus, there are no CCS- or CPA-'owned' lands. It could well be that the small numbers in these columns indicate land that is directly owned by the cooperatives (perhaps 2 per cent of the total land farmed by them), such as sites housing cooperative buildings and some commonly-owned fields and installations. What really happened in 2014 is that the CPA were beginning to be seen as the practical owners of the land they farm, given that CPA effectively pool their members' lands. If a small farmer joins a CPA (only owners can), his land practically ceases to be his private possession, given that it is increasingly difficult to pull out! ONEI seems to have acknowledged the irreversibility of joining a CPA (which was always the case, but now the discourse is allowing it to be said openly).

It is therefore important to focus on the lack of incentives to invest at the farm level, as well as the existence of a series of disincentives. Neo-classical and neo-institutional economics would tell us that there is a straightforward causal relationship between private property and investment (in this case in the land). However, there has also been a emerging critical literature which shows that even in cases of private property titling, high levels of tenure insecurity can persist (see the Nicaraguan case, discussed by Broegaard, 2005), and that even a process of 'modernizing insecurity' can take place (Jansen and Roquas, 1998; on the case of Honduras).

It is increasingly recognized that there are other forms of "property" arrangement (communal or usufruct rights; see Ho and Spoor, 2006), which might likewise enhance "perceived tenure security" (Van Gelder 2007, 2010; Bromley, 2008) and thereby positively influence investment decisions by farmers or peasants. This framework, in which "perceived" tenure (in)security is distinguished from "legal" and "actual" limitations was most recently used to analyse empirical data from various farm household surveys in Gansu and Xinjiang in China (see Ma et al. 2015; Rao et al. 2016). If one compares the situation of the Cuban *usufructuarios* (and, to a lesser degree, the remaining original individual land owners) with those in China and Vietnam, it is clear that the latter two countries have already gone much further in providing long-term contracts, implemented in various phases and now typically reaching between 49 and 99 years. Important to mention is that the latter countries offer stricter rules to guard peasants against unlawful expropriations, which were (and partly still are) a main source of land and agrarian conflicts and a reason not to invest in the land. In Cuba, even with the reforms of 2008, many formal and informal reasons have remained that allow expropriation, sometimes disguised under the term "inefficient use", and new farmers routinely report that significant investments could make their land more valuable in the eyes of 'interested parties'. Although more fieldwork is needed, anecdotal evidence points clearly in the direction that "perceived tenure security" is very low in rural Cuba, and that this represents a major development obstacle in the small farm sector. In urban areas, where Van Gelder (2007) original based his conceptualization of legal, actual and perceived tenure security upon, it is most likely not higher, as there is much more fear of expropriation for housing projects and urban regeneration. Though still limited in scale given the abundance of idle rural land, the potential for 'land grabbing' (by authorities, elites, powerful local businessmen etc.) under the current weak legal and administrative framework (in terms of tenure security and its enforcement) is substantial.

4. Food Production and the Development of Markets

If we look back at the gross production figures (Table 3), we can note that in the period 2000-2014 the output of sweet potatoes, plantains, maize and beans increased, while potato output plummeted (also because it remained a 'state crop' along with sugar cane). When comparing the figures with the 1970s, sweet potato production has doubled, while for example dry beans production went from a lowest point of only 4,000 tonnes in 1975 to a recent record high of 131,845 tonnes in 2014. Maize (both yellow and edible varieties) increased from just under 100,000 tonnes in the 1960s to the 1980s, reaching 300-400,000 tonnes in the last decade (although imports of feed maize also surged). Finally, paddy rice production has fluctuated heavily as a series of organizational changes and state support programs in the sector unfolded, but it maintained an upward trend. In a number of food products Cuba is already largely self-sufficient (*viandas*, tropical fruits, coffee, some vegetables and eggs. Rice self-sufficiency has grown to around 50 per cent). This shows the potential, in particular by peasant producers, to produce more staple food, in particular when the ample available idle land were effectively used for diversified food production (Table 3). Again the question should be raised what factors are preventing this from happening. We argue that some important answers lie in the domain of the development of markets, an often forgotten but crucial element of rural (and in general economic) development (Hebinck et al., 2015). The post-2008 reform package contains various measures to partially liberalize selected domestic markets, but at the same time the omnipotent *acopio* system[12] has remained, obliging farmers to sell certain products and a specified quota of production to this state

[12] *Acopio* is the name commonly given to the system of obligatory procurement of strategic agricultural produce, which is paid at administratively established, generally very low prices in CUP (see the next footnote 7).

organization, which feeds into a distribution system of basic food necessities that has existed since the 1960s. In addition, many forms of state interference, licencing systems and territorial control in the form of roadblocks make it difficult to trade agricultural products domestically, while buying, transporting and selling coffee, tobacco and cocoa remains the exclusive right of the respective state companies (though each are produced almost exclusively by peasants or private farmers). The import (and export) system is completely state-dominated, which precludes competition and provides many incentives for rent seeking behaviour in their administration, as was argued in the first section.

Very gradual changes can be observed in domestic food markets, such as the 2013 measure to set up wholesale markets on the outskirts of Havana, allowing (permit-holding) farmers, cooperative agents and other intermediaries to sell larger quantities in a legal, secure setting. Furthermore, some of these reforms were already implemented in the 1980s, but soon after abandoned in the ideological surge during the 'rectification' period (Mesa-Lago and Peréz-López, 2013). Again in 1994 (as part of the "Special Period" reforms, agricultural markets were partly liberalized (Enriquez, 2010; Deere, 1997), a development again restrained in the 'battle of ideas' period of the mid-2000s. In the past five years small-scale agro-markets have further spread throughout towns and cities, where relatively larger varieties of fruits, vegetables, staples and meat products are being sold in CUP[13], making it possible for urban and rural producers to sell directly to consumers. These outlets house primarily a new group of market-vendors (many of them as a second job, given that markets take place only on Sundays), while CCS and CPA tend to send agents to sell pooled outputs. These initiatives, however, are at the same time plagued by complicated licencing systems and roadblocks where producers have to pay informal taxes/bribes in order to pass, or where their products are confiscated if they are under the jurisdiction of the *acopio* system. Like many farmers, these intermediaries and emerging food retailers face precarity.

Overall, however, the *acopio* system is in decline. What forms of aggregation and distribution are lining up to take a share of the new markets? One example are the efforts for voluntary, specialized cooperatives supported by well-known academic and producer Fernando Funes-Monzote, as well as the current trend for the state to support the formation of wholesale markets on the cities' outskirts. Many greengrocers have opened, some as extended arms of peri-urban cooperatives and state farms (such as the EJT), others as private efforts. In the current situation, the private vendors are usually 10-50 per cent more expensive, given the disadvantages of access, transport and taxation. As with small farms themselves, their consolidation is key, not an increase in number. One example could be found in some of the new butcheries opening in Havana: with some investment in freezers, a small shop and a Chinese three-wheeled cargo motorcycle, they are cutting intermediaries by buying slaughtered but whole animals directly at the farm-gate, processing them in their shop and maintaining a fair amount and diversity of meat products in their freezers. Most butchers, however, still consist of no more than a table in the sun, with one or another piece of meat arriving on a horse carriage in the morning, flanked by a few sausages, while large quantities of pork are sold on the roadside by families that slaughtered their backyard (or bathtub) pig.

Other experimental markets have also been developed, such as direct sales of domestic producers to hotel chains (which are now mostly importing food, or obtaining it through state companies who buy from the producer), aiming to shorten the supply chain (Martin Gonzáles, 2013a). However, these are small, and yet insufficient measures to break through the still highly interventionist system and the fragmented, often informal markets (and institutions) it produces. While "perceived tenure insecurity" is already a problem for producers, the inability to sell larger amounts of produce, and the insecurity whether it will be lost (through inadequate and poor means of transport, lack of refrigeration or delays of the *acopio*), or confiscated add to the insecurity of producers and their hesitance to invest and capitalize. There are many successful initiatives in agro-ecology (Altieri and Funes, 2012; Rosset et al. 2011; Funes, 2008), and it has become clear that Cuba is a place where agro-ecology has a bright (and logical) future, supported by various decades of experience and scientific knowledge (see also Thiemann, 2015; Altieri and Funes-Monzote, 2012; Rosset et al., 2011; Funes-Monzote, 2008)), but at

[13] Local currency in this case means Peso Cubano (CUP), to be distinguished from the convertible Peso Convertible (CUC), with an internal (and stable) exchange rate of 1 CUC = 24 CUP.

the same time there are also serious constraints in terms of land tenure security and development of markets (and appropriate institutions) that restrict the possibilities for agro-ecological producers to expand and intensify their production.[14]

Although a deeper analysis is beyond the limited scope of this paper, it is clear that the continuation of the double currency system is also contributing to a structural impasse for capitalization, given that the income of food producers (and the sales prices) are at CUP levels, while imported inputs, such as diesel, bio-fertilisers, or equipment are typically quoted in convertible CUC, making them more unaffordable than in other countries of a similar level of technological (under)-development. It also is part and parcel of the current segregation of the export/tourism-food imports and the domestic food production parts of the Cuban economy, as we have delineated in the first section.

5. Concluding remarks

The complex, often improvised Cuban transition has created two food economies. The first, is constituted by powerful public institutions and companies that are geared towards distributing and selling imported goods, while possessing only limited capacities and institutional interests to sell smaller, domestically produced lots. In many ways, this situation resembles the tendencies of early supermarket chains in other developing countries (as studied by Reardon & Minten (2011) in India and Emongor & Kirsten (2009) in Southern Africa). In the Cuban case, however, these chains are public, generalized national distribution chains with far-reaching monopolies. The potential to constitute stable markets for small and medium food producers and processors is there and, if necessary, realized against the interests of those who benefit from the import model. In the second food economy, constituted by small, often precarious producers, intermediaries and vendors and using the CUP, the state has yet to shift from obstructing and limiting private and cooperative initiative to providing effective support in the form building up market institutions.

Small and medium farmers have legal access to land, but we have argued in this paper that large tracts remain idle or under-utilized and investments, even where they are not beyond the reach of established farmers and new *usufructuarios* are avoided due to low levels of perceived tenure security. By prolonging the timeframe of usufruct contracts and instituting more legal measures to counteract potentials for 'land grabbing', the government could lead Cuban agriculture into a growth period reminiscent of the early (1980s) agrarian transition in the Asian transition economies, such as China and Vietnam. Not only does this shake deeply entrenched dogmas and prejudices against markets and private producers, but it also (and perhaps more importantly) would disenfranchise elites within the enterprising state and its companies who gain substantially from large food imports. Peasants, family farms and small-scale entrepreneurs in processing, transport and retail can feed Cuba in the future, but this is not (as portrayed by state media and the national small farmers union (ANAP) since the 1990s) a question of revolutionary conviction and solidarity, but primarily of real economic incentives, legal provisions, stable markets for inputs and food products, and security of access and tenure.

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[14] In an interview by the authors with Prof. Fernando Funes-Monzoto, 8 December 2014, the latter stated that he and others had taken the initiative to set up a voluntary cooperative, which so far has not been allowed by the state. Furthermore, he was optimistic about the number of producers who were innovative and active in the development of agroecological techniques, while he saw as problematic all the barriers that made food production and domestic commercialization so complicated.

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