Working Paper Series No. 143

HOUSEHOLD INCOMES IN CUBAN AGRICULTURE: A COMPARISON OF THE STATE, COOPERATIVE, AND PEASANT SECTORS

Carmen Diana Deere, Ernel Gonzales, Niurka Pérez
and Gustavo Rodriguez

February 1993

Contents

HOUSEHOLD INCOMES IN CUBAN AGRICULTURE: A COMPARISON OF THE STATE, COOPERATIVE, AND PEASANT SECTORS

Carmen Diana Deere, Ernel Gonzalez, Niurka Pérez,
and Gustavo Rodriguez*

There is general agreement in the literature that prior to the 1959 revolution rural households were among the poorest in Cuba. Whether part of the large agricultural proletariat or semi-proletariat, or of the relatively small number of peasant landowners, rural standards of living were abysmally low for a country that ranked relatively high in terms of Latin American GDP per capita.

Unfortunately, the main household income survey to be carried out in the pre-revolutionary period — the Agrupacion Catolica Universitaria's 1956-57 survey of 1,000 agricultural wage workers — provides a relatively weak basis for measuring changes in rural incomes or standards of living in the post-revolutionary period (Pollitt 1967; 1977).[1] Although this survey pretended to be nationally representative of conditions in rural Cuba, it focused on only one group of agricultural households, those belonging to wage workers, who, in addition, resided in communities of 150 inhabitants or less. As Pollitt (1967:49-50) has painstakingly shown, it also suffered from geographical bias, favoring the western and more prosperous region of Cuba. Moreover, in the few publications to result from this survey, household income by region is not broken down, shedding little light on regional inequalities and differences (ACU 1972; Echevarria 1971).

The main contribution of the 1956-57 survey is to demonstrate that even among the regionally-privileged agricultural wage workers, income levels and living standards were abysmally low, with household incomes averaging $ 548.75 annually for a family of six, or $ 92 per capita (in current pesos).[2] At that time, Cuba's per capita national income was on the order of $ 368 (Chonchol 1963:88).

This paper focuses on current household income levels among the three main groups of Cuban agricultural households: wage workers on state farms, members of production

cooperatives, and property-owning, peasant producers.[3] Our primary objective is two-fold: to ascertain how these three groups have fared over the course of the revolution as measured by current income levels; and to examine the degree of regional household income inequality in the agricultural sector.

There is general agreement that rural living conditions have improved significantly since 1959, with Cuba attaining enviable health and education standards in comparison to the capitalist Third World.[4] Most scholars also agree that revolutionary policies have tended to ameliorate regional differences in living standards, particularly through regionally equitable access to social services and employment opportunities. However, primary research has yet to be brought to bear on the issue of whether there has been growing income equality among agricultural households, not only regionally, but also, according to their primary form of employment in the agricultural sector.

The early literature on the Cuban agrarian reform tended to stress how all rural groups benefitted from the reform: tenants and squatters through the "land to the tiller" component of the reform which eliminated rents and vested private property of these holdings to those who farmed them up to the ceiling of 67.1 hectares; these new property-owning peasants as well as those who already owned land also benefitted through expanded access to credit and stable markets; and the agricultural proletariat and semi-proletariat gained through the rapid expansion of year-round employment opportunities on state farms. Since then relatively little primary research has been carried out on how these different groups have fared over the course of the revolution.[5]

The only real controversy which has emerged in the literature centers on whether the Cuban peasantry has been exploited too much, or not exploited enough. David Lehmann (1985) has argued that the Cuban peasantry has been under- rather than over-exploited, reasoning as follows: 1) Cuban peasants have gained or maintained access to land in far larger units than they might have expected to prior to the revolution; 2) they have had tremendous opportunity for generational social mobility; 3) they have the same claim on rationed foodstuffs as non-food producers; and 4) pressures upon the peasantry to sell their products to the State have been minimal, while they are guaranteed a stable market.

Other writers, in contrast, have focused on various forms of coercion which they see to have been imposed upon the peasantry which have limited their options under the revolution. For example, they highlight pressures on the peasantry to sell or rent their land to state farms in the late 1960s and early 1970s, or to join production cooperatives in the late 1970s and 1980s, or stress the low prices paid by the state for peasant farm production (usually in comparison to the black market) (Dumont 1973; Mesa-Lago 1978:chpt. 3).

This paper does not pretend to clarify all of the points of contention in this debate. Rather, our analysis demonstrates that peasant households enjoy among the highest income levels of all agricultural households. Moreover, we show that regional variations in household income levels are most marked among the private sector of Cuban agriculture (officially defined as individual peasant producers and members of production cooperatives). Regional income disparities are shown to be minimal for the vast majority of Cuban agricultural households — those pertaining to wage workers on state farms.

The data we present is drawn from the 1991 Agricultural Household Survey of the University of Havana, a survey of 475 households which we carried out in three municipalities of Cuba. We chose the three municipalities for their 1) geographical dispersion (representing provinces located in the western, central and eastern region of the island); 2) representative mix of Cuba's main farm production: sugar cane, mixed cropping (grains, vegetables and viandas, a Cuban term for root crops and plantains), and livestock production; and 3) differing level of development in the pre-revolutionary period. The latter variable roughly corresponds to the period in which sugar cane production for export was developed.

The two poles of pre-revolutionary "modernity" are represented by the municipality of Guines in the western province of La Havana and the municipality of Majibacoa in the eastern province of Las Tunas.[6] The third municipality, Santo Domingo in the province of Villa Clara, is located near the center of the country and represents a mid-point in terms of the level of development attained by 1959.

The province of La Havana is among the best endowed in the country in terms of natural resources (fertile land, average rainfall) and infrastructure. It was the site of the initial development of the sugar industry in the seventeenth and eighteenth century and of

attempts to develop a modern sugar industry in the nineteenth century. The first sugar mill in Guines, the Central Providencia, dates from 1796 and Cuba's first railroad, completed in 1838, connected the sugar cane plantations of Guines to Havana city (Thomas 1971:122). Along with the neighboring province of Matanzas, Havana province was the site of the most important agricultural infrastructure investments, particularly in irrigation, well into the twentieth century.

Both before and after the revolution, the non-cane agricultural sector of Guines, just as that of the rest of Havana province, has been oriented toward the largest urban market in the country, that of Havana city. The district capital of Guines is located some 49 kilometers from Havana city.

The central province of Las Villas, as the province of Villa Clara and surrounding areas was called until the territorial reorganization of 1976, was the site of the second wave of modernization and expansion of the Cuban sugar industry in the late nineteenth century. The first major sugar mill in the municipality of Santo Domingo, the Maria Antonia mill, was built in 1867 by Cuban capital, and linked by rail to the port city of Cardenas in 1871. In 1899 a second mill, the George Washington mill, went into production. By the turn of the century the conversion of this former cattle-producing region to cane production was almost complete, and its natural forests decimated. Santo Domingo is located 260 kilometers southeast of Havana city.

The province of Las Tunas was a marginal, cattle-producing region until the twentieth century. At the northern edge of former Oriente province, and particularly subject to draught, it was not developed for sugar cane export production until the early decades of this century when United States' corporations expanded their investments on the island (Thomas 1971:536). Between 1900-1915 U.S. capital built six sugar mills in the province. Although none of these was located in the area of Majibacoa, by the early 1920s its lands were also largely deforested and the best lands turned over to sugar cane production. The development of Las Tunas as a sugar export producer, however, did not bring prosperity to its inhabitants; in 1959 it was considered to be one of the most backward regions of the island (Cuba 1990: Vol. I:14-16).

Since 1959 the Cuban state has invested considerable resources in the social and economic infrastructure of this region. The municipality of Majibacoa, in particular, is very much a product of the revolution, becoming an independent municipality in the 1976 political-administrative reorganization of the country and growing steadily in population and urban centers. Its first sugar mill, built with Cuban capital goods and technology, went into production in 1986. Majibacoa is located some 715 kilometers southeast of Havana city.

In the subsequent section, we provide some basic data on the Cuban agrarian structure and the national composition of the agricultural economically active population, and examine the available secondary data on regional differences in average wages. In the following sections, we present our estimates of agricultural household income levels by sector, region and crop. We subsequently analyse the sources of household income, and examine how the composition of household income varies by sector. Finally, we offer some tentative conclusions.

THE CONTEXT

The Cuban agrarian reform differs from most socialist agrarian reforms in that the vast majority of land expropriated under the 1959 and 1963 agrarian reform decrees — largely sugar cane plantations and cattle estates — came to constitute a huge sector of state farms. But the Cuban agrarian reform also had an important "land to the tiller" component whereby every tenant, sharecropper and squatter was granted the right to claim the land which they worked (up to maximum of 67.1 hectares) and, as a result, the number of small property owners in rural Cuba more than tripled. At the end of 1963, the state sector accounted for approximately 71% of the nation's farmland and the private sector, 29%. Some 154,000 peasant households held 26%, while another 3% was held by what are officially termed "non-peasant" households (households not engaged primarily in agriculture) (Trinchet 1984:22-23).

Although the number of small private landowners initially mushroomed, between 1967 and 1971 at least 24,500 peasant farms were integrated into the state sector, while additional

private land was purchased by the state as a result of the death of the owner or old age and a lack of heirs willing to work the land. While figures differ on the number of households which ceded their land to the state over this period, it appears that by 1974 the peasant sector occupied only 20% of Cuba's land surface (CEE 1988:11), compared with the 26% noted above. Estimates of the distribution of land between the state and private sector reported in the literature often differ, depending on whether they refer to Cuba's land surface, agricultural land, or cultivated land. The data on private holdings also differ depending upon whether non-peasants (wage workers who own parcels and others who are not members of the peasant organization, ANAP, Asociacion Nacional de Agricultores Pequenos) are included in the estimate.

Not until 1987 was the first census of private sector land tenancy carried out, revealing that the amount of land held by the non-peasant sector was not insignificant and that it had been previously underestimated in official data (CEE 1989:5 and 1988:11, 13). The more precise figures on the distribution of landholdings were not incorporated into the Cuban statistical yearbook until 1989, and are presented in the Appendix as Table A1. The 1987 census confirmed that the private sector accounts for a somewhat larger share of the agricultural land than either the cultivated area or land surface.[7]

Although in the initial years of the revolution, some agrarian reform beneficiaries pooled their land to form production cooperatives (known as Sociedades Agropecuarias), not until the late 1970s did the Cuban state actively encourage the formation of agricultural production cooperatives (CPAs) as a second, "socialist" form of production. In response to generous material incentives, the cooperative movement grew rapidly through the early 1980s, reaching a peak in 1983 of 1,472 CPAs with 82,611 members, and accounting for over half of the land owned by ANAP members (Deere, Meurs, and Pérez 1992: Table 1).

Given the predominant role of state farms in Cuban agriculture, and of the state in the Cuban economy, it is not surprising that the majority of Cuba's economically active population is made up of state employees and wage workers, 94% in 1989, the last year for which a statistical yearbook was published (CEE/AEC 1989: Tables IV.1 and IV.2). The agricultural sector accounted for 19.6% of the EAP in that year; of the agricultural EAP of

690,300, state workers made up 75.5%, production cooperative members, 8.2%, and individual peasant producers, 16.3%.

In 1989 the average annual national wage income earned by state workers was 2,260 pesos (CEE/AEC 1989: Table IV.7).[8] State agricultural workers earned almost the national average, 2,229 pesos, in that year.[9] Official data suggest that over time agricultural incomes have increased steadily relative to other sectors. In 1975, for example, state agricultural workers earned only 80% of the average annual national wage income, and as a group, were the lowest paid among all sectors. After the 1981 wage reform this situation changed dramatically, with state agricultural workers now earning 94.5% of the national average; as seen above, by 1989 the gap had been reduced even further, to 98.6%.[10]

Unfortunately, the Cuban statistical yearbooks do not publish data disaggregated by province for state agricultural workers. The data that is available by province refers to all state workers. It is, nonetheless, useful in establishing the broad parameters of regional differences. In 1989 the highest average annual income was earned by workers in the city of Havana, 2,372 pesos; they were followed by those in Havana province at 2,305 pesos, with both Havana provinces above the national mean of 2,260 pesos. The provinces of Villa Clara and Las Tunas ranked ninth and tenth, respectively, out of Cuba's fourteen provinces, with an average annual income (2,223 and 2,216 pesos) slightly below the national mean. State workers in Las Tunas thus earned 98.1% of the average annual national state income, and 96.1% of that of workers in Havana province. The official data thus suggest that one of the main trends of the last thirty years has been a high degree of compression in regional disparities in wage incomes.

HOUSEHOLD INCOME LEVELS IN AGRICULTURE

Table 1 presents our estimates of mean gross and net household income levels in the municipalities of Guines, Santo Domingo and Majibacoa, by sector. Most striking, is the much higher mean income of private sector households (members of production cooperatives and individual peasant producers) as compared with those of state wage workers, and the

relatively high income level of the peasantry in all three regions. The latter stands out particularly with respect to gross household income, with peasant households earning, on average, well over twice the level of state agricultural worker, and much more than cooperative member households. However, gross household income does not provide a very adequate measure for comparing income levels across sectors, since peasants incur significant production costs in carrying out agricultural and livestock production, their main source of livelihood.

Nonetheless, when considering net household income, peasant households in the pooled sample still earn the highest average household income level: mean peasant household income of 8,250 pesos is almost twice as great as the average income of state wage worker households, 4,902 pesos, and approximately 15% higher than the average household income of members of production cooperatives, 7,209 pesos. Although we cannot reject the null hypothesis that there is no difference in the income levels within the private sector (peasant households and those of cooperative members), the difference between private sector households and those of state wage workers is statistically significant (see Table A3).

It should also be taken into account that peasant household income has been deliberately underestimated in that the value of peasant subsistence production has been valued at official prices. Moreover, peasants are often reluctant to fully report all that they produce for self-provisioning (what is termed autoconsumo), and a certain portion of this production ends up being sold at very high prices on the black market, particularly in Havana province. Given the difficulty of estimating the value of black market sales, we have preferred to underestimate the real value of peasant farm production and hence, peasant household income levels. Underestimating peasant farm production has the advantage of reinforcing our conclusion that peasant households constitute among the better off households in Cuba, and that they have fared extremely well under the revolution.

Net Household Income by Region

Pooling the three sectors by municipality, as expected, net household incomes are higher in the more developed region of Guines, than in more poorly-endowed Santo Domingo or Majibacoa.

Net agricultural household income of 7433 pesos in Guines is 26% higher than in Santo Domingo and 31% higher than in Majibacoa, statistically significant differences.

Nonetheless, for the largest group of agricultural households, those of state wage workers, net household income levels are not statistically different across the three municipalities.[11] That is, our estimates support the proposition that over the course of the revolution there has been a growing convergence of household income levels across regions among the largest group of agricultural households.

The greatest heterogeneity in regional income levels is to be found in the private sector of Cuban agriculture, largely reflecting differential rents accruing from location and soil fertility, as well as differences in infrastructure, technical expertise, and what crops are the most profitable to plant. The net household incomes of both peasants and production cooperative members in Guines considerably exceed those of their counterparts in Santo Domingo and Majibacoa, with the most striking difference between the three regions pertaining to production cooperative members. While there is no statistically significant difference in the mean net household income of cooperative members in Santo Domingo and Majibacoa, the analysis of 95% confidence intervals (Table A3) leads us to reject the null hypothesis that there is no difference in incomes among cooperative member households in the three regions. That cooperative member households are in fact wealthier in Guines than in the other two regions is largely explained by the fact that some of the most successful production cooperatives (CPAs) in the country are located in this municipality. At the same time, as the high standard deviation for the estimate of cooperative member incomes in Guines indicates, there are considerable differences in net household incomes among Guines production cooperatives and within given CPAs.[12]

In terms of peasant household income levels, although peasants in Guines appear to be much better off than in the other two regions, we could not reject the null hypothesis that

there was no difference in average household income levels by region. The estimates of peasant household income seem to be the most affected by small sample size.[13]

With respect to the differences among sectors by region, these were most marked in Guines, where 95% confidence intervals suggest that households of state wage workers are definitely poorer than those of the private sector, but that there is little difference in net household income levels within the private sector. In the case of Majibacoa, there is no statistical difference in the income levels of state and cooperative households, or between cooperative and peasant households; the only thing that can be concluded with confidence, is that households of state wage workers are definitely poorer than those of peasants. Santo Domingo appears the most egalitarian municipality, with 95% confidence levels indicating that there is no statistical difference in net household incomes among the three sectors.

Another conclusion that we can derive from these findings is that Cuba's process of collectivization of individual peasant producers — which only began in the late 1970s with peasants pooling their land to form production cooperatives — has not negatively effected their potential income levels. However, since peasant farm production has been valued at official prices, we may not be capturing the real potential income differences within the private sector, a potential difference certainly to be exacerbated in the current period, with the growth of the black market in foodstuffs.

Net Income Per Capita

Turning to the analysis of income per capita, in 1989 (the last year for which data is available) Cuba's gross domestic product (GDP) per capita was estimated at 1,821 pesos.[14] As Table 1 shows, our estimate of income per capita for the sample of 475 agricultural households is 1,689 pesos. While the per capita income of agricultural households is lower than the national mean, it is only 7% lower; in the 1956-57 ACU survey, the per capita income of agricultural wage worker households was 75% lower than the national income per capita. This comparison suggests that one of the main accomplishments of the revolution has been to equalize incomes among sectors of Cuba's population.

Table 1 also shows, however, that net income per capita among agricultural households in Guines of 2,097 pesos significantly exceeds the national average, as well as income per capita in the two other regions. Moreover, household size is significantly larger in Guines, 4.32, than in the other two municipalities (3.84 in Santo Domingo and 3.94 members in Majibacoa). But the difference in household size among the three regions only slightly ameliorates regional differences in terms of net income per capita as compared to total mean net household income.

Also, the slightly larger household size among Guines CPAs as compared with those of peasants results in the mean per capita income of the latter exceeding that of the former, reversing the ranking reported for net household income. However, the analysis of 95% confidence intervals for net income per capita by sector and region revealed the same trends as reported earlier for mean net household income levels.[15]

NET HOUSEHOLD INCOME BY CROP

Cuban state farms are managed by two different government entities: the Ministry of Sugar manages state sugar cane farms while the Ministry of Agriculture manages mixed cropping and livestock enterprises. As Table 2 shows, sugar cane worker households earn higher incomes than households of workers in Ministry of Agriculture enterprises in all three regions, a result consistent with the long-standing policy of paying cane workers a wage premium for being in a strategic industry.[16] However, only in Majibacoa was the difference in mean household income by crop statistically significant.

The private sector in Cuban agriculture is also serviced by these two different ministries, depending on principal crop. However, the distinction by crop applies less well in the cooperative sector and not at all in the peasant sector. For example, even predominantly sugar cane cooperatives also engage in mixed cropping and livestock production, and may sell significant quantities of these products to the state procurement agency. Nonetheless, we maintain the crop distinction in Table 2 and find that household incomes are slightly higher among members of mixed production CPAs as compared to cane

CPAs in Guines and Santo Domingo, with the reverse pattern prevailing in Majibacoa. However, the difference in net income levels within each of the three municipalities is not statistically significant. The only robust result is that the members of the much better endowed mixed production CPAs of Guines earn household incomes significantly higher than their counterparts in Majibacoa.

Peasant producers belong to either Credit and Service Cooperatives (CCS) or Peasant Groups (Asociaciones Campesinas, AC). The members of the latter are ANAP members who sold or rented the bulk of their lands to the state in the late 1960s or 1970s when encouraged to do so.[17] They continue to farm small plots, averaging 3.18 hectares (Table 6), primarily for their own consumption. Both the CCS and AC are characterized by ANAP according to the principal crop produced, but we found that, in practice, the crop designation of the CCS or AC had very little to do with what these peasants actually farmed. More important to this analysis, was testing the proposition that peasants who sold or rented their land were worse off than those who did not. Much to our surprise, we found no statistical difference in household income levels among these two groups of ANAP members, although in Guines, the mean net household income of CCS members appears considerably higher than that of AC members.[18] In Santo Domingo, what clearly differentiates these two groups are the sources of household income.

SOURCES OF HOUSEHOLD INCOME

The three main groups of agricultural households differ, as expected, in terms of their primary source of household income. As Table 3 shows, households of state wage workers rely primarily on the income earned on the state farm by the wage worker interviewed (55%), and those of cooperative members, on the income earned by the member from work on the CPA (60%). Peasant households generate at least 74% of their net household income from farm production. Nonetheless, other sources of income are vital to the well-being of agricultural households, particularly, those of state wage workers and cooperative members.

In this section, we first examine the components of each groups' main source of income; then, we examine, in turn, each of the other sources of household income.

The Components of Enterprise Income

State Wage Worker Households — Our estimate of mean net income earned by state wage workers from their employment on state farms in these three municipalities, 2,579 pesos annually, compares favorably with the national data reported for state agricultural workers in the 1989 Statistical Yearbook, 2,229 pesos, probably capturing the effect of steady increases in agricultural wages in recent years. We have estimated the wage income of state workers as made up of two components, the actual wage income earned (including bonuses)[19] plus the value of the food subsidy derived from workers' purchases of food products at subsidized prices at their place of work. These sales consist of surplus products grown by the state farm to supply the worker's canteens (known as autoconsumo production) and are considered here as a component of income, since they are in addition to the normal quota of subsidized foodstuffs provided to every Cuban through the rationing system. We have estimated the subsidy as the difference in price between what the workers actually paid in 1991 (which generally is set at enterprise cost of production) and the retail price of these products in the state distribution system. While the food subsidy appears as a marginal component of gross household income in Table 4a (1.1% for the pooled sample), since what is known as "The Special Period in Peacetime" went into effect in August 1990, efforts have been stepped up under the National Food Program for state farms to increase their autoconsumo production.[20] In 1991 this effort was considerably more advanced on the state farms of Majibacoa and Santo Domingo than in Guines, judging from the data on the proportion of workers who were able to make such purchases (Table 5a).[21]

Cooperative Members — The significant difference in the level of mean net income among cooperative member households in Guines as compared to Santo Domingo and Majibacoa is largely explained by the much higher earnings of CPA members from their work on the cooperative. As Table 4b shows, Guines CPA members earn a higher basic "advance", but particularly, much higher profits than do cooperative members in the other two

municipalities. While the profits earned were quite low, 71% of CPA members in Santo Domingo reported earning profits as did 74% in Majibacoa; in Guines 88% did so. To underscore the profitability of the Guines cooperatives, it is worth pointing out that the average level of profits earned by CPA members in Guines was just about equal to the total average level of wage income earned by state farm workers.

Cuban production cooperatives take their production of autoconsumo very seriously, and sell significant quantities of foodstuffs to their membership at cost. Just the implicit subsidy of these sales constitute 12% of the gross household income of CPA members in Guines, 17% in Santo Domingo and 15% in Majibacoa (Table 4b). For the pooled sample of cooperative members, the mean value of the food subsidy was some twenty times greater than that received by state wage workers.

Peasant Farmers — Peasant households in Guines and Majibacoa rely much more on farm income than do those in Santo Domingo, largely explained by the relatively large number of peasants pertaining to Peasant Groups rather than CCSs in that municipality. As can be seen in Table 4c and 5c, peasants also pursue different farming strategies in the three municipalities.

The overwhelming majority of the gross farm income of Guines farmers is generated by their sale of agricultural products to the state; the large majority, 91%, sell crops to the state (Table 5c). They are somewhat less likely to engage in animal production and only 31% sold any livestock or small farm animals to the state, with income from this source a minor component of household income. In contrast, the gross farm income of peasants in Santo Domingo and Majibacoa is much more diversified, with a much larger share of them participating in animal production and sales and the sale of animal by-products (milk and sometimes eggs and cheese) than in Guines. Moreover, the average value of subsistence animal production and animal sales to the state significantly exceeds that of farmers in Guines. The relatively high level of the value of animal production in Majibacoa is largely due to the presence of a good number of cattle ranchers and dairy producers in the Majibacoan sample.

The relatively high farm incomes earned by peasants in our sample is largely explained by the large amount of land to which they have access, an average 12.16 hectares,

compared with the national average of 6.8 hectares.[22] Farm size is larger in our sample than in the nation as a whole, since we deliberately excluded regions specializing in either tobacco, coffee or cocoa production where small peasant farms tend to predominate. As Table 6 shows, average farm size of CCS members was largest in Guines and lowest in Majibacoa. Comparing members of ACs, it appears that those in Guines were more successful than those in Santo Domingo in retaining larger plots for their self-provisioning.

Multiple Class Positions

One of the most interesting differences between the three regions is with respect to the role of agricultural and animal production in households that might generally be characterized in class terms as "proletarian" or "collective". As Table 3 shows, income from net farm production (or plot production) constitutes 9% of the net household income of state wage worker and 7% of cooperative member households.

State farm workers in Santo Domingo (78%) and Majibacoa (67%) are much more likely than those in Guines (31%) to earn income from this source, and in absolute terms, workers in the former two municipalities earn some five times more income on average than workers in Guines from their own agricultural and animal raising activities. State farm workers in Majibacoa have access to rather good-sized land parcels, averaging 1.48 hectares. In contrast, in Santo Domingo the plots of state farm workers are quite small, averaging only 0.36 hectares; in Guines, these plots consist of nothing more than a worker's back-yard, averaging 0.08 hectares (Table 6).

Given their minimal access to land, state worker households in Santo Domingo are more likely to raise small farm animals for their own consumption than to engage in agricultural production (Table 5a). Nonetheless, the number engaging in agricultural production is impressive, and larger in Santo Domingo (50%) than in Majibacoa (42%), explained by the fact that during 1991 the state enterprises in Santo Domingo started loaning workers small strips of unused land for them to plant rice and other foodstuffs. This innovation of the "Special Period in Peacetime" had not yet caught on in Guines and was less

evident in Majibacoa than in Santo Domingo, perhaps because so many Majibacoan wage workers own land.

Another result that is striking about the semi-proletarians of Santo Domingo and Majibacoa is that a few of them (at least 10% and 8%, respectively) are petty commodity producers, selling some agricultural or animal products to the state (Table 5a). Whereas sales of animals dominated these transactions in Santo Domingo, sales of agricultural products were quantitatively more significant in Majibacoa (Table 4a).

Although cooperative members have pooled their means of production, some continue to raise small farm animals or plant the patio of their newly-constructed homes with food crops and fruit trees, generating 7% of net household income from these activities. Having access to an average 0.03 hectares of land, CPA members are much more likely to engage in animal than agricultural production. Following the pattern in the state sector, CPA members were most likely to engage in agricultural and animal production in Santo Domingo (81%) and Majibacoa (71%) and least likely in Guines (34%) (Table 5b). However, the value of mean farm income was almost four times greater in this latter municipality, as compared with the others, largely due to the fact that the most frequent private activity of Guines CPA members was raising pigs for their own consumption, and a good size pig could be worth $400 to $500 pesos at official prices (Table 4b).[23]

The large number of state farm workers and cooperative members engaging in agricultural or animal production could be a phenomenon associated with the "Special Period in Peacetime", which Cuba entered into in August 1990 as Soviet oil deliveries faltered. Subsequently, almost all foodstuffs and consumer goods were rationed, leading to the steady growth of a black market during 1991. High black market prices as well as shortages may be providing the increased incentive for workers to raise their own animals or to plant whatever land they might have access to. Moreover, under the National Food Program the state is encouraging all who can to engage in self-provisioning, whether undertaken collectively or individually.

The conditions of the "Special Period" may also be encouraging state farm workers and CPA members to take on additional jobs to procure products in-kind or to earn extra cash to purchase a given item in the black market. For even though state wage workers and

cooperative members work full-time on a state farm or cooperative, and often raise animals and/or farm part-time, they also engage in other work, either for wages or payment-in kind. This "other worker income", while quantitatively small, is largely earned during paid vacations and week-ends.

State wage workers were most likely to engage in these other income generating activities in Guines (21%) as compared to Santo Domingo (14%) and Majibacoa (15%) (Table 5a). In all three municipalities the most common other income-generating activity was to work for peasant farmers for payment in kind; this was followed by work for cash wages, which could be for peasant farmers, a local CPA, or another state enterprise. Only 2.4% of the pooled sample of state wage workers received a pension from a job from which they had retired; even fewer earned income from artisan production or services (own-account work) or from the rental of means of production.

Somewhat surprisingly, since they earn higher incomes, cooperative members (21%) were even more likely than state wage workers (16%) to pursue these other income generating activities. Guines CPA members, just like state wage workers, were the most likely to have earned other income, although in absolute terms, CPA members in Majibacoa earned relatively more, particularly, from working for peasant farmers for payment in kind. Whereas in Guines and Santo Domingo CPA members were just as likely to work for payment in-kind as for wages, work for payment in-kind predominated in Majibacoa.

Other worker income was both absolutely and relatively more important among peasant farmers as compared to state wage workers and cooperative members. Over a third reported income from this source, with the majority of these reporting rental income as the primary source. In Guines and Santo Domingo, these farmers were often members of the Peasant Groups who rented lands to the state, thus earning rental income. In Majibacoa rental income is usually earned through the rental of oxen or horses either to other peasants, or to the state. It is likely that this latter practice increased in 1991 due to the lack of petroleum and the growing demand in all sectors for work animals.

Only 11% of the peasant farmers in our sample participated in wage work and only 1% worked for other peasants for payment in-kind (Table 5c). Semi-proletarianization is in no ways the important survival strategy that it is for peasants throughout Latin America,

largely explained by the large average farm size of Cuban peasants and the relatively high incomes they can generate.[24] Semi-proletarianization was most likely in Santo Domingo (27%), where as noted previously, a large number of peasants are members of Peasant Groups; 15% of those interviewed also receive a pension, having retired from their previous job as a worker on a state farm or other state enterprise. Finally, peasant farmers are more likely (3%) to engage in artisan production or services than are state wage workers or cooperative members, particularly in more traditional Majibacoa.

The Importance of Multiple Income Earners

The category "other household income" refers to the income earned by other household members, other than the interviewee, in whatever occupation, plus remittances. This source of income is most important for state wage worker households, constituting 37% of mean net household income (Table 3). The share contributed by other family members among cooperative households is relatively lower, 32%, and considerably so, 21%, among peasant households. Most peasant households have more than one household member engaged in farm production and are, thus, less likely to have another household member earning non-farm sources of income. Whereas only 54% of peasant households report income from this source, 62% of state wage worker and 78% of cooperative households report income earned by a household member other than the interviewee (Tables 5a, 5b, and 5c). In absolute terms, the income contributed by other household members is greatest in Guines and lowest in Majibacoa, reflecting larger household size and more income earners in Guines and, perhaps, differences in income generating opportunities in these two municipalities.

In terms of remittance income, or income contributed by family members not resident in the household, while a common practice, it is not quantitatively very significant in the composition of household income (Tables 4a,4b,4c). The practice was most frequently found among cooperative households (16%), followed by state wage worker (11%) and peasant households (10%). This practice was most frequent in Guines. In most cases, remittance income was for child support.

CONCLUSION

Our survey of agricultural workers in three municipalities of Cuba supports the proposition that, indeed, one of the main accomplishments of the Cuban revolution has been to ameliorate regional income disparities for the largest group of agricultural workers, state wage workers. The greatest regional variation in household income levels is to be found in the private sector of Cuban agriculture, where differential rents play a significant role in explaining differences in household income levels.

Our survey has also demonstrated that in zones characterized by sugar cane, mixed cropping and livestock production, the private sector in Cuban agriculture has done extremely well, generating household income levels significantly higher than among state wage workers. While we cannot conclude that the peasantry constitutes the richest group in Cuba, since our survey excluded regions characterized by typical peasant export crops, tobacco and coffee, where landholdings also tend to be smaller, it is clear from the three municipalities that we studied that peasant households can attain very high income levels. Moreover, our data suggest that collectivization has not significantly lowered the attainable income levels of peasants who have pooled their land to form production cooperatives. Finally, our data also show that Cuba's remaining individual farmers are contributing significantly to the goals of the revolution, deriving their principal source of income from substantial sales to the state of agricultural and animal products.

At a theoretical level, we hope to have demonstrated that while one can identify three well-defined sectors of workers in Cuban agriculture — state wage workers, cooperative

members and peasant farmers — neither they nor their households can be neatly classified as proletarian, collective, or strictly peasant. As we have shown, agricultural households in Cuba, as in other parts of Latin America, often participate in multiple income generating activities and hence, multiple class relations.[25] Moreover, individuals sometimes occupy multiple class positions: we found state wage workers and cooperative members who in addition to working for individual peasants for a wage or products, also engaged in petty production, raising animals or crops in their spare time. Some of these were even petty commodity producers, growing crops and raising animals which they sold to the state. And while the number of peasant farmers who participated in wage labor was relatively small by Latin American standards, many "peasant" households contain at least one income earner employed off the farm as a state wage worker or employee or even a cooperative member. Thus, even under state socialism, class relations are hardly monolithic.

Notes

* The co-authors are Visiting Research Fellow at the Institute of Social Studies, The Hague (spring 1992), and Professor of Economics at the University of Massachusetts, Amherst; Professor of Sociology at the University of Havana; Visiting Researcher at the University of Zurich (spring 1992) and Professor of Sociology at the University of Havana; and Economics Editor of the Social Science Press, Havana.

The data reported herein were collected as part of the 1991 Agricultural Household Survey of the University of Havana, which counted with the additional participation of professors Miriam Garcia, Caridad Dacosta, Barbara Jorrin, Mabel Menendes, Joaquina Cruz and Daysee Castillo of the University of Havana. The survey was made possible through a grant from The MacArthur Foundation as part of the comparative project "Rural Transformation in Socialist Societies". A preliminary version of this paper was presented at the Conference on "Agrarian Transformation in Socialist Societies: Collectivization and its Alternatives", Rackeve, Hungary, June 1992.

1. The only other national-level rural survey carried out in the post-World War II period was Lowry Nelson's 1945-46 survey of 742 household heads in eleven regions of Cuba (Nelson 1970). This survey, however, gathered data on household expenditures rather than household income levels. See Pollitt (1967; 1977) for a discussion of its other deficiencies.

2. According to ACU (1972:211) this figure includes the valuation of subsistence plot production. Echevarria (1971:58), however, not only reports a higher mean income from the same survey, 658.22 pesos, but notes that it does not include the valuation of subsistence plot production.

3. We focus on agricultural households--those employed in the agricultural sector--rather than rural households since the latter category no longer has much relevance in Cuba, given its rapid process of rural "urbanization" over the last thirty years. In Cuba any settlement which offers basic social amenities such as electricity, potable water, a school, health post, etc., is officially categorized as urban. The great majority of those employed in the agricultural sector live in such urbanized settlements.

4. For example, see the study carried out by the International Labour Office (Ghai, Kay and Peek 1988: chpt. 6), as well as Zimbalist and Brundenius (1989: chpt. 10).

5. The exception is Pollitt (1979) and (1980). He carried out a survey of 1,061 male household-heads engaged in agricultural employment in 1966 in the eleven zones previously sampled by Nelson (1970). However, he does not focus on household income levels.

6. In each case, the municipalities were chosen to be representative of their respective provinces in terms of principal crops and of the distribution of the labor force between the three groups or sectors of agricultural workers. See the Appendix for a discussion of the sampling procedure.

7. This data appears to support the often heard argument among Cubans that the peasantry owns some of the best land in the country but does not exploit it sufficiently.

8. The Cuban national bank has set the exchange rate of the peso equal to the U.S. dollar since 1987.

9. Note should be taken of the fact that the Cuban Statistical Yearbook defines state agricultural workers as laborers, technicians and professionals working in the sector (CEE/AEC 1989: 106-7). The sum noted in the text is thus the average wage and salary income for the sector.

10. The highest paid group in 1989 were cultural and artistic state workers whose average salary was 2,683 pesos; they were followed by scientific and technical workers at 2,602. The lowest paid workers were those in commerce, 1,961 pesos, and in the services, 1,965 pesos (CEE 1989: Table IV.7). The lowest paid workers in Cuba thus earned 73% of the average annual salary of the highest paid workers.

11. It also should be noted that our estimates of mean net household income of state wage workers in the three municipalities are efficient estimates in the sense that the standard error is less than 5.3% of the mean in all cases (see Table A3).

12. This is supported by the fact that, although the sample size is small, but similar in all three regions, the standard error of the estimate for Guines (12.5% of the mean) is considerably larger than for the other two regions (5.7% and 8.7%, Santo Domingo and Majibacoa, respectively) (Table A3).

13. The least efficient estimate was that of peasant household income levels in Majibacoa, where the standard error constituted 14% of mean net peasant household income (Table A3).

14. Based on the Department of National Economy of the University of Havana's estimate of Cuban GDP of 19,260 billion pesos in 1989 and a population of 10,576,921. The Cuban Statistical Yearbook only publishes data for Global Social Product and National Income Created (CEE/AEC, 1989: Table III.3). The per capita figure for the former (in current prices) is 2,520 pesos, and for the latter, 1,264 pesos.

15. The standard error as a proportion of the income estimate, however, increases with per capita income as compared with net household income. In particular, per capita income produces poorer estimates for CPA members (16.5%) and peasant households

(19%) in Guines. On the other hand, the estimates for both CPA and peasant households for Santo Domingo and Majibacoa improve.

16. In 1985 all workers in the sugar industry earned a 15 percent job premium over the basic salary structure (Ghai, Kay and Peek 1988:40).

17. In the 1967-75 period, peasants living in the area in which the state sector was developing special plans in citrus, sugar cane, livestock production, etc., were encouraged to either sell or rent their land to the state. In the former case they were offered rent-free housing in new agricultural communities and encouraged to become wage workers on a near-by state farm after their land was purchased. In the latter case, they were allowed to keep a small parcel for self-provisioning, but also encouraged to work on a state farm; the majority of these remained members of ANAP (officially categorized as peasants) and pertain to the Peasant Groups. The large number of AC members in Santo Domingo is also due to the fact that a large dam was built in this municipality in the 1970s and many peasants lost the bulk of their farmlands. No such Peasant Groups exist in Majibacoa.

18. This analysis is, of course, plagued by small sample size and large standard deviations and standard errors. The standard error represented 21.8% of the estimate of Guines AC members' net income and 14.7% in Santo Domingo.

19. We attempted to collect more disaggregated data, asking workers their basic wage as well as the income earned as bonuses and premiums for over-fulfilling work norms or enterprise production targets. However, upon analyzing the data, we realized that workers in the sugar sector sometimes reported their 15% extra pay for working in the strategically vital sugar industry as part of their basic pay while at other times they reported it as a bonus. Since the categorization was inconsistent, we dropped the distinction.

20. See Deere (1992) for a discussion of Cuba's National Food Program.

21. It should be noted, however, that both the proportion of workers making subsidized purchases and the absolute subsidy implied in these purchases has been underestimated since some state farms, rather than making direct sales of foodstuffs to workers, deliver their autoconsumo production directly to the vianda and vegetable stands in communities adjacent to the farm for sale to the population at large. According to the brigade heads that we interviewed where this practice was common, it represented a more efficient distribution system than making sales at the work place although households other than of their wage workers may have been among the beneficiaries.

22. This national average was calculated by dividing the total land surface reported as owned by members of Credit and Service Cooperatives (833,100 hectares) by the number of small farmers (123,100) reported in the statistical yearbook (CEE/AEC

1989: Tables VIII.3 and IV.1). It excludes the 249,900 hectares of land owned by an undetermined number of non-peasants, those who are not members of ANAP.

23. Our estimate of income from animal production is based on the valuation at official prices of the animals consumed by the household or sold during 1991. The value of animal stocks was generally much higher than this figure.

24. See Deere and Wasserstrom (1981) for a summary of the major rural household income studies carried out in Latin America over the decade of the 1970s. They show that off-farm income made up well over half of household income for the great majority of peasant households, those with insufficient access to means of production.

25. The concept of multiple class relations is developed in Deere (1990).

Table 1: Agricultural Household Income Levels by Sector and Region
(annual, in current Cuban pesos)

	Gross Household Income (s.d.)	Net Household Income (s.d.)	Household Size (s.d.)	Net Income Per Capita (s.d.)
STATE WAGE	4,921.28	4,901.62	4.02	1,346.24
WORKERS (n=286)	(2,329.04)	(2,321.64)	(1.67)	(662.27)
Guines	5,107.50	5,068.24	4.30	1,290.65
(n= 84)	(2,137.68)	(2,137.41)	(1.72)	(589.55)
Sto. Domingo	5,139.85	5,131.39	3.77	1,494.84
(n=101)	(2,329.50)	(2,329.62)	(1.50)	(678.60)
Majibacoa	4,547.84	4,533.27	4.05	1,243.88
(n=101)	(2,432.51)	(2,413.41)	(1.76)	(676.21)
COOPERATIVE MEMBERS	7,237.00	7,209.04	4.09	1,983.01
(n=97)	(5,088.38)	(5,082.57)	(1.42)	(1,746.32)
Guines	10,329.07	10,248.45	4.41	2,878.63
(n=32)	(7,241.41)	(7,261.37)	(1.66)	(2,694.42)
Sto. Domingo	5,959.67	5,959.67	4.10	1,517.32
(n=31)	(1,881.58)	(1,881.58)	(1.09)	(459.65)
Majibacoa	5,491.44	5,487.56	3.79	1,564.69
(n=34)	(2,784.37)	(2,786.28)	(1.39)	(739.81)
PEASANT FARMERS	10,090.88	8,249.93	3.99	2,445.31
(n=92)	(7,248.13)	(6,121.99)	(1.80)	(2,780.30)
Guines	12,938.84	10,017.18	4.29	3,114.65
(n=42)	(8,291.94)	(7,236.78)	(1.87)	(3,843.86)
Sto. Domingo	7,188.84	6,250.59	3.81	1,732.04
(n=26)	(4,688.38)	(3,815.58)	(1.94)	(792.61)
Majibacoa	8,250.82	7,323.17	3.67	2,046.69
(n=24)	(5,526.84)	(5,058.90)	(1.40)	(1,265.17)
TOTAL	6,395.45	6,021.33	4.03	1,689.15
(n=475)	(4,793.83)	(4,235.98)	(1.67)	(1,611.52)
Guines	8,246.78	7,432.94	4.32	2,097.13
(n=158)	(6,580.01)	(5,777.79)	(1.75)	(2,515.44)
Sto. Domingo	5,637.88	5,478.07	3.84	1,538.28
(n=158)	(2,890.56)	(2,603.87)	(1.52)	(668.34)
Majibacoa	5,308.56	5,158.45	3.94	1,433.66
(n=159)	(3,421.79)	(3,194.02)	(1.64)	(855.79)

Source: 1991 Agricultural Household Survey of the University of Havana

Table 2: Net Household Income by Sector and Principal Crop/or Form of Association
(annual, in current Cuban pesos)

	Cane	Mixed Ag/	Total
STATE WAGE WORKERS	5,215.98 (n=149)	4,559.72 (n=137)	4,901.62 (n=286)
Guines	5,685.52 (n=24) (2,266.09)	4,821.33 (n=60) (2,031.86)	5,068.24 (n= 84) (2,137.41)
Sto. Domingo	5,288.30 (n=56) (2,194.99)	4,936.12 (n=45) (2,473.14)	5,131.39 (n=101) (2,329.62)
Majibacoa	4,993.97 (n=69) (2,497.00)	3,539.90 (n=32) (1,869.51)	4,533.27 (n=101) (2,413.41)
COOPERATIVE MEMBERS	6,943.73 (n=51) (4,807.44)	7,503.20 (n=46) (5,355.80)	7,209.04 (n= 97) (5,082.57)
Guines	9,326.61 (n=16) (6,922.31)	11,170.28 (n=16) (7,472.43)	10,248.45 (n= 32) (7,261.37)
Sto. Domingo	5,623.95 (n=14) (2,180.89)	6,236.15 (n=17) (1,539.39)	5,959.67 (n= 31) (1,881.58)
Majibacoa	6,008.05 (n=21) (3,175.68)	4,646.77 (n=13) (1,693.67)	5,487.56 (n= 34) (2,786.28)
	CCS	AC	Total
PEASANT FARMERS	8,652.43 (n=74) (6,531.83)	6,595.20 (n=18) (3,571.31)	8,249.93 (n= 92) (6,121.99)
Guines	10,628.36 (n=35) (7,635.82)	6,362.24 (n= 7) (3,663.12)	10,017.18 (n= 42) (7,236.78)
Sto. Domingo	6,168.71 (n=15) (3,921.60)	6,961.28 (n=11) (3,389.88)	6,250.59 (n= 26) (3,815.58)
Majibacoa	7,323.17 (n=24) (5,058.90)	--	7,323.17 (n= 24) (5,058.90)

Source: 1991 Agricultural Household Survey of the University of Havana.

Table 3: Composition of Net Household Income by Sector and Region
(annual, in current Cuban pesos)

	Income earned on enterprise	Other Worker Income	Net Farm Income	Other HH Income	Total Net HH Income
State Wage Workers (n=286)	2,579.49 (52.6%)	80.44 (1.6%)	416.46 (8.5%)	1,825.22 (37.3%)	4,901.62 (100%)
Guines (n= 84)	2,770.82 (54.7%)	106.09 (2.1%)	104.05 (2.0%)	2,087.28 (41.2%)	5,068.24 (100%)
Sto. Domingo (n=101)	2,547.09 (49.6%)	83.37 (1.6%)	557.94 (10.9%)	1,942.98 (37.9%)	5,131.39 (100%)
Majibacoa (n=101)	2,452.78 (54.1%)	56.17 (1.2%)	534.80 (11.8%)	1,489.52 (32.9%)	4,533.27 (100%)
Cooperative Members (n=97)	4,289.03 (59.5%)	94.08 (1.3%)	495.14 (6.9%)	2,330.84 (32.3%)	7,209.04 (100%)
Guines (n=32)	6,542.95 (63.8%)	57.66 (0.6%)	952.56 (9.3%)	2,695.27 (26.3%)	10,248.45 (100%)
Sto. Domingo (n=31)	3,231.93 (54.2%)	59.72 (1.0%)	277.34 (4.7%)	2,390.69 (40.1%)	5,959.67 (100%)
Majibacoa (n=34)	3,131.52 (57.1%)	159.57 (2.9%)	263.19 (4.8%)	1,933.28 (35.2%)	5,487.56 (100%)
Peasant Farmers (n=92)	--	397.36 (4.8%)	6,099.30 (73.9%)	1,753.27 (21.3%)	8,249.93 (100%)
Guines (n=42)	--	243.28 (2.4%)	7,596.22 (75.8%)	2,177.69 (21.8%)	10,017.18 (100%)
Sto. Domingo (n=26)	--	778.82 (12.5%)	3,652.15 (58.4%)	1,819.62 (29.1%)	6,250.59 (100%)
Majibacoa (n=23)	--	253.75 (3.5%)	6,130.76 (83.7%)	938.67 (12.8%)	7,323.17 (100%)

Notes: See Tables 4a, 4b, and 4c for specific components of each source of income. Household is abbreviated as HH, above.

Source: 1991 Agricultural Household Survey of the University of Havana.

Table 4a: Composition of Gross Household Income by Specific Source: State Wage Workers

	Income Earned On State Farm:	Wage Income	Food Subsidy
Guines	2,770.82	2,718.02	52.80
	(54.2%)	(53.2%)	(1.0%)
Sto. Domingo	2,547.09	2,513.82	33.27
	(49.6%)	(48.8%)	(0.7%)
Majibacoa	2,452.78	2,382.21	70.57
	(53.9%)	(52.4%)	(1.5%)
Total	2,579.49	2,527.32	52.18
	(52.4%)	(51.3%)	(1.1%)

	Other Worker Y:	Other Wage Y	In-Kind Y	Rental Y	Own-Account Y	Pension
Guines	106.09	23.32	32.72	8.66	8.57	32.82
	(2.1%)	(0.4%)	(0.6%)	(0.2%)	(0.2%)	(0.7%)
Sto. Domingo	83.37	16.71	21.40	4.16	19.21	21.89
	(1.6%)	(0.3%)	(0.4%)	(0.1%)	(0.4%)	(0.4%)
Majibacoa	56.17	15.30	23.29	--	--	17.58
	(1.2%)	(0.3%)	(0.5%)			(0.4%)
Total	80.44	17.86	25.39	4.01	9.30	23.87
	(1.6%)	(0.4%)	(0.5%)	(0.1%)	(0.2%)	(0.5%)

	Gross Farm Y:	Sub Ag	Ag Sales	Sub An	An Sales	Sub BP	BP Sales
Guines	143.31	37.02	0.56	98.75	--	6.99	--
	(2.8%)	(0.7%)	-	(1.9%)		(0.2%)	
Sto. Domingo	566.41	157.69	12.13	199.64	138.11	58.83	--
	(11.0%)	(3.1%)	(0.2%)	(3.9%)	(2.7%)	(1.1%)	
Majibacoa	549.37	97.63	103.28	230.83	33.90	53.10	30.63
	(12.1%)	(2.1%)	(2.3%)	(5.1%)	(0.7%)	(1.2%)	(0.7%)
Total	463.13	101.04	40.92	181.02	60.74	41.58	10.82
	(8.9%)	(2.1%)	(0.8%)	(3.7%)	(1.2%)	(0.8%)	(0.2%)

	Other Household Income:	Earned by Other Household Members	Remittances	TOTAL GROSS Y
Guines	2,087.28	2,023.59	63.69	5,107.50
	(40.9%)	(39.6%)	(1.3%)	(100%)
Sto. Domingo	1,942.98	1,830.81	112.18	5,139.80
	(37.8%)	(35.6%)	(2.2%)	(100%)
Majibacoa	1,489.52	1,456.15	33.37	4,547.84
	(32.8%)	(32.0%)	(0.8%)	(100%)
Total	1,825.22	1,755.12	70.10	4,921.28
	(37.1%)	(35.7%)	(1.4%)	(100%)

Table 4b: Composition of Gross Household Income by Specific Source: Cooperative Member Households

	Income Earned on Cooperative:	Advance	Profits	Payment for Means of Production	Food Subsidy
Guines	6,542.95	2,785.16	2,539.02	--	1,218.77
	(63.4%)	(27.0%)	(24.6%)		(11.8%)
Sto. Domingo	3,231.93	1,985.87	245.99	4.42	995.65
	(54.2%)	(33.3%)	(4.1%)	(0.1%)	(16.7%)
Majibacoa	3,131.52	1,935.00	357.02	--	839.50
	(57.0%)	(35.2%)	(6.5%)		(15.3%)
Total	4,289.03	2,231.72	1,041.37	1.41	1,014.52
	(59.2%)	(30.8%)	(14.4%)	--	(14.0%)

	Other Worker Y:	Other Wage Y	In-Kind Y	Rental Y	Own-Account Y	Pension
Guines	57.66	46.94	10.72	--	--	--
	(0.5%)	(0.4%)	(0.1%)			
Sto. Domingo	59.72	52.03	7.69	--	--	--
	(1.0%)	(0.9%)	(0.1%)			
Majibacoa	159.57	47.66	108.97	--	2.94	--
	(2.9%)	(0.8%)	(2.0%)		(0.1%)	
Total	94.04	48.82	44.19	--	1.03	--
	(1.3%)	(0.7%)	(0.6%)			

	Gross Farm Y:	Sub Ag	Ag Sales	Sub An	An Sales	Sub BP	BP Sales
Guines	1,033.19	8.62	--	1,023.14	--	1.43	--
	(10.0%)	(0.1%)		(9.9%)			
Sto. Domingo	277.34	9.41	--	194.08	34.19	39.66	--
	(4.7%)	(0.1%)		(3.3%)	(0.6%)	(0.7%)	
Majibacoa	267.07	7.20	1.65	230.08	3.97	24.17	--
	(4.8%)	(0.1%)		(4.2%)		(0.4%)	
Total	523.09	8.37	0.58	480.20	12.32	21.62	--
	(7.2%)	(0.1%)		(6.6%)	(0.2%)	(0.3%)	

	Other Household Income:	Earned by Other Household Members	Remittances	TOTAL GROSS Y
Guines	2,695.27	2,585.15	110.12	10,329.07
	(26.1%)	(25.0%)	(1.1%)	(100%)
Sto. Domingo	2,390.69	2,378.11	12.58	5,959.67
	(40.1%)	(39.9%)	(0.2%)	(100%)
Majibacoa	1,933.28	1,787.95	145.34	5,491.44
	(35.3%)	(32.6%)	(2.7%)	(100%)
Total	2,330,84	2,239.55	91.29	7,237.00
	(32.3%)	(31.0%)	(1.3%)	(100%)

Table 4c: Composition of Gross Household Income by Specific Source: Peasant Households

	Gross Farm Y:	Sub Ag	Ag Sales	Sub An	An Sales	Sub BP	BP Sales
Guines	10,517.87	1,452.55	8,172.88	316.35	173.31	402.54	0.24
	(81.3%)	(11.2%)	(63.2%)	(2.5%)	(1.3%)	(3.1%)	
Sto. Domingo	4,590.40	808.16	1,707.82	770.15	746.27	539.73	18.27
	(63.9%)	(11.2%)	(23.8%)	(10.7%)	(10.4%)	(7.5%)	(0.3%)
Majibacoa	7,058.41	1,162.63	2,103.45	1,162.78	1,651.34	640.81	337.40
	(85.5%)	(14.1%)	(25.5%)	(14.1%)	(20.0%)	(7.8%)	(4.1%)
Total	7,940.25	1,194.81	4,762.47	665.41	720.81	503.47	93.29
	(78.6%)	(11.8%)	(47.2%)	(6.6%)	(7.1%)	(5.0%)	(0.9%)

	Other Worker Y:	Other Wage Y	In-Kind Y	Rental Y	Own-Account Y	Pension
Guines	243.28	41.14	--	180.42	--	21.71
	(1.9%)	(0.3%)		(1.4%)		(0.2%)
Sto. Domingo	778.82	368.92	--	173.88	68.31	167.71
	(10.8%)	(5.1%)		(2.4%)	(1.0%)	(2.3%)
Majibacoa	253.74	5.83	2.50	215.83	29.58	--
	(3.1%)	(0.1%)		(2.6%)	(0.4%)	
Total	397.36	124.57	0.65	187.81	27.02	57.31
	(4.0%)	(1.2%)		(1.9%)	(0.3%)	(0.6%)

	Other Household Income:	Earned by Other Household Members	Remittances	TOTAL GROSS Y
Guines	2,177.69	2,148.64	29.05	12,938.84
	(16.8%)	(16.6%)	(0.5%)	(100%)
Sto. Domingo	1,819.62	1,794.23	25.38	7,188.84
	(25.3%)	(25.0%)	(0.3%)	(100%)
Majibacoa	938.67	894.50	44.17	8,250.82
	(11.4%)	(10.8%)	(0.6%)	(100%)
Total	1,753.27	1,721.31	31.96	10,090.88
	(17.4%)	(17.1%)	(0.3%)	(100%)

Notes: The sub-components may not total, due to rounding. The abbreviations used are as follows: HH = household; Y = income; Sub = subsistence production or autoconsumo; Ag = agricultural; An = animal; BP = by-products, such as eggs, milk and cheese.

Source: 1991 Agricultural Household Survey of the University of Havana.

Table 5a: Participation Rates in Income-Generating Activities: State Wage Workers

	Income Earned on State Farm:	Wage Income	Food Subsidy
Guines	100%	100%	27.4%
Sto. Domingo	100%	100%	78.2%
Majibacoa	100%	100%	81.2%
Total	100%	100%	64.4%

	Other Worker Y:	Other Wage Y	In-Kind Y	Rental Y	Own-Account Y	Pension
Guines	21.4%	8.3%	13.1%	1.2%	1.2%	3.6%
Sto. Domingo	13.9%	3.0%	6.0%	1.0%	4.0%	2.0%
Majibacoa	14.9%	5.9%	11.9%	--	--	2.0%
Total	16.4%	5.6%	10.1%	0.7%	1.7%	2.4%

	Gross Farm Y:	Sub Ag	Ag Sales	Sub An	An Sales	Sub BP	BP Sales
Guines	31.0%	14.3%	1.2%	26.2%	--	10.7%	--
Sto. Domingo	78.2%	49.5%	4.0%	55.5%	9.9%	32.7%	--
Majibacoa	67.3%	41.6%	4.0%	59.4%	7.9%	25.7%	1.0%
Total	60.5%	36.4%	3.1%	48.3%	6.3%	24.5%	0.3%

	Other Household Income:	Earned by Other HH Members	Remittances
Guines	75.0%	72.6%	15.5%
Sto. Domingo	70.3%	63.4%	10.9%
Majibacoa	54.5%	50.5%	6.9%
Total	66.1%	61.5%	10.8%

Table 5b: Participation Rates in Income-Generating Activities: Cooperative Member Households

	Income Earned on Cooperative:	Advance	Profits	Payment of Means of Production	Food Subsidy
Guines	100%	100%	87.5%	--	100%
Sto. Domingo	100%	100%	71.0%	3.2%	100%
Majibacoa	100%	100%	73.5%	--	100%
Total	100%	100%	77.3%	1.0%	100%

	Other Worker Y:	Other Wage Y	In-Kind Y	Rental Y	Own-Account	Pension
Guines	25.0%	18.8%	18.8%	--	--	--
Sto. Domingo	19.4%	9.7%	9.7%	--	--	--
Majibacoa	17.7%	5.9%	11.8%	--	2.9%	--
Total	20.6%	11.3%	13.4%	--	1.0%	

	Gross Farm Y:	Sub Ag	Ag Sales	Sub An	An Sales	Sub BP	BP Sales
Guines	34.4%	3.1%	--	34.4%	--	3.1%	--
Sto. Domingo	80.7%	9.7%	--	67.7%	--	48.4%	--
Majibacoa	70.6%	11.8%	2.9%	58.8%	8.8%	8.8%	--
Total	61.9%	8.3%	1.0%	53.6%	6.2%	19.6%	--

	Other Household Income:	Other Household Members	Remittances
Guines	78.1%	78.1%	25.0%
Sto. Domingo	87.1%	83.9%	6.5%
Majibacoa	73.5%	73.5%	14.7%
Total	79.4%	78.4%	15.5%

Table 5c: Participation Rates in Income-Generating Activities: Peasant Households

	Gross Farm Y:	Sub Ag	Ag Sales	Sub An	An Sales	Sub BP	BP Sales
Guines	100%	100%	90.5%	71.4%	31.0%	69.1%	2.4%
Sto. Domingo	100%	100%	88.5%	100.0%	65.4%	76.9%	7.7%
Majibacoa	100%	100%	95.8%	92.3%	79.2%	70.8%	16.7%
Total	100%	100%	91.3%	84.8%	53.3%	71.7%	7.6%

	Other Worker Y:	Other Wage Y	In-Kind Y	Rental Y	Own-Account Y	Pension
Guines	26.2%	4.8%	--	19.1%	--	2.4%
Sto. Domingo	57.7%	26.9%	--	23.1%	3.9%	15.4%
Majibacoa	25.0%	4.2%	4.2%	20.8%	8.3%	--
Total	34.8%	10.9%	1.1%	20.7%	3.3%	5.4%

	Other Household Income:	Other Household Members	Remittances
Guines	57.1%	57.1%	7.1%
Sto. Domingo	57.7%	57.7%	7.7%
Majibacoa	54.2%	45.8%	16.7%
Total	56.5%	54.4%	9.8%

Notes: Based on data reported in Tables 4a, 4b, and 4c. The sub-components may not total, due to rounding. The abbreviations used are as follows: HH = household; Y = income; Sub = subsistence production or autoconsumo; Ag = agricultural; An = animal; BP = by-products, such as eggs, milk and cheese.

Source: 1991 Agricultural Household Survey of the University of Havana.

Table 6: Individual Landholdings by Sector and Principal Crop/or Form of Association

(in hectares)

	Cane	Mixed Cropping/ Livestock	Total
State Wage Workers	0.90 (n=149)	0.41 (n=137)	0.67 (n=286)
Guines	0.12 (n=24)	0.06 (n=60)	0.08 (n= 84)
Sto. Domingo	0.48 (n=56)	0.22 (n=45)	0.36 (n=101)
Majibacoa	1.55 (n=69)	1.33 (n=32)	1.48 (n=101)
Cooperative Members	0.05 (n=51)	0.00 (n=46)	0.03 (n=97)
Guines	0.01 (n=16)	-- (n=16)	0.00 (n=32)
Sto. Domingo	0.01 (n=14)	0.01 (n=17)	0.01 (n=31)
Majibacoa	0.11 (n=21)	0.01 (n=13)	0.07 (n=34)
	CCS	**AC**	**Total**
Peasant Farmers	14.34 (n=74)	3.18 (n=18)	12.16 (n=92)
Guines	15.43 (n=35)	3.52 (n= 7)	13.30 (n=42)
Sto. Domingo	14.10 (n=15)	2.66 (n=11)	9.62 (n=26)
Majibacoa	12.90 (n=24)	--	12.90 (n=24)

Note: Individual landholdings include the private property of the agricultural worker interviewed, land owned by another household member, and land owned by a non-resident of the household and/or the state but worked by household members in usufruct. Only in Santo Domingo did a significant number of state wage workers hold state usufruct plots.

Source: 1991 Agricultural Household Survey of the University of Havana.

APPENDIX

Methodological Aspects of the 1991 Agricultural Household Survey

The 1991 Agricultural Household Survey was designed and carried out by the Rural Studies Group of the University of Havana under the MacArthur Foundation-financed comparative project on "Rural Transformation in Socialist Societies: Collectivization and its Alternatives." It constitutes one phase of the field research being carried out on the history of the Cuban agrarian reform process in three municipalities of the island.

Since budget and time constraints made a national-level study or survey of agricultural households impossible, it was decided to concentrate research efforts on the in-depth study of three provinces and municipalities which span the three natural regions of Cuba, encompass the three major agricultural activities (sugar cane, mixed cropping, and livestock production) and represent a spectrum of the level of development reached in rural Cuba by 1959. While systematic data are not available to rigorously measure this latter variable, it is generally accepted that the level of regional development in the pre-revolutionary period was strongly associated with a province's distance from the capital city of Havana, and the different phases of development of the sugar industry. Thus, in consultation with our advisory board, Havana province was selected as one of the most advanced provinces of the western region of the island, Villa Clara as a mid-point, both geographically and in terms of its level of development, and Las Tunas as a relatively backward province of the eastern region of Cuba. These provinces also have the advantage of having been the site of previous research efforts, providing secondary information not available for all provinces.

The three municipalities were chosen to be representative of the general conditions of the province with respect to natural resource endowment, the distribution of the economically active population in agriculture, and potential income levels. The final selection was made in consultation with provincial ANAP leaders and representatives of the various ministries and of Popular Power, and after field trips to various municipalities in each province.

It turned out to be a time-consuming and relatively difficult task to define the

population for the sample survey. First, it is quite difficult to collect consistent municipal-level data in Cuba for the three sectors in which we were interested: state agricultural wage workers, members of production cooperatives, and individual peasants organized into Credit and Service Cooperatives or Peasant Associations. Whereas data on the number and composition of the private sector in Cuban agriculture is collected by ANAP, data on workers on state farms is maintained by either the Ministry of Sugar or the Ministry of Agriculture, depending on the principal crop of the state farm. The data maintained by these institutions at the municipal level rarely coincided with that available from the local-level State Statistical Committee.

Moreover, the employment data collected by ministry officials on state farms aggregates state farm field workers, factory workers, technicians and bureaucrats. We thus found it necessary to gather data on the number of agricultural field workers (and whether they were manual or mechanized workers) at the level of each enterprise in order to define the population for the sample. Here, we ran into another problem. Since state enterprises often span several municipalities, we had to further disaggregate the number of agricultural field workers by potential place of residence, given the brigade or farm where they were employed, in order to limit the population to residents of the particular municipality under study.

We initially intended to draw a sample of 4% of the labor force employed in agriculture in the fall of 1991, stratified according to its distribution among state enterprises, production cooperatives and individual peasant producers in each municipality. We encountered three different kinds of problems in carrying out our original survey design. First, the survey was being carried out under serious financial and time constraints. After completing the interviews in the first municipality, Guines, and realizing that each interview averaged over two hours, we had to adjust the total number of interviews we could carry out to the time available to complete the survey, resulting in a revised target sample size of 475 interviews. This decision meant sampling a lower proportion of those employed in agriculture in the municipalities of Majibacoa and Santo Domingo than in Guines.

Second, given the relatively small number of members of production cooperatives in Majibacoa and Santo Domingo, we decided to over-sample cooperative members in these

municipalities in order to have a sub-sample of sufficient size to be able to make regional comparisons. The number of state wage workers to be interviewed in these two regions was correspondingly reduced. Since the number of these to be interviewed in each municipality remained sufficiently large, this adjustment did not reduce the efficiency of our estimates of mean household incomes of state wage workers, as noted in the text. Moreover, over-sampling cooperative members enhanced the efficiency of these estimates of household income considerably, given their large variance. However, these adjustments in the composition of the samples of Majibacoa and Santo Domingo reduced their structural representativeness. The overall result was to introduce an upward bias in the municipal level estimates of agricultural household income in these two municipalities.

A third problem arose from that fact that, as we carried out the field work, we kept uncovering more precise data on the population employed in agriculture within the municipality, requiring us to revise our initial figures on the relevant population for the sample.[1] Our final estimate of the relevant population for each municipal sample is presented in Table A2. We ended up sampling 3.7% of the population employed in agriculture in Guines, 3.6% in Majibacoa, and 2.5% in Santo Domingo, for an overall 3.2% for the pooled sample.

It should be noted that our sample of 475 households represents a much higher proportion of the total number of agricultural households in these municipalities, since many of the 14,888 persons employed in agriculture belong to the same household. However, it was impossible to estimate the total number of households which contained either a state wage worker, a cooperative member or individual peasant producer.[2]

---

[1] For example, in Guines some 510 field workers of the state livestock enterprise had been originally characterized as working on a ranch pertaining to another municipality and had been excluded from our original definition of the municipal population. When these turned out to be Guines-based workers, they had to be included in our revised population estimates, presented in Table A2.

[2] ANAP does distinguish between the number of landowners (one per household) and total membership of the CCS and AC. However, in the case of the production cooperatives and state farms it would have required a census to determine the number of households these members and workers represented.

The survey was carried out by the co-authors and other members of the Rural Research Team of the University of Havana. We hoped that by carrying out the interviews ourselves we would make up for the deficiencies in small sample size through higher quality interviews and more accurate estimates. As noted above, the survey was conducted under serious financial and time constraints, since we had a limited budget in addition to an uncertain supply of gasoline, and the enumerators were full-time professors, able to undertake field work only during university vacations. We thus had approximately ten days to carry out the survey in each of the municipalities. We were also anxious to complete the survey in as short a time-span as possible, since conditions were changing rapidly in rural Cuba as a result of the "Special Period in Peacetime." We carried out the interviews in Guines in late December, 1991, and early January, 1992; in Majibacoa in late January, 1992; and in Santo Domingo in early April, 1992.

Our field techniques reflect all of the above constraints. We attempted to select our interviewees as randomly as possible; ie., so that each worker in each category have the same probability of being selected. However, we did not have the luxury of pre-selecting our interviewees through a totally random process (such as by lottery) and then attempting to locate them.

Our selection process was as follows: In the case of state wage workers, we distributed the number to be interviewed proportionately among all of the state cane, mixed cropping and livestock enterprises in the municipality. Upon arrival at a state enterprise, we would select approximately half of the farms or brigades of which the enterprise was composed as sites for our interviews, making sure that these were geographically dispersed so that we included workers living in different communities and working under differing conditions. At the farm or brigade level, whenever possible, we would obtain permission to go into the fields to select workers while they worked; we would choose the appropriate number to interview in a random manner, such as every other worker, or sometimes, all of the workers in a small working group. In other cases, we selected the workers to be interviewed following the "butterfly net" approach; we selected these at random as they came

in from the field for their mid-morning break or for lunch, or as they prepared to go home. In some cases where there was a close correspondence between a residential community (a batey) and a state farm, and we needed to carry out the interviews in the late afternoon or evening, we went door to door until we located a state farm wage worker at home to interview. Whenever it was apparent that a good number of women were employed as agricultural field workers we attempted to include them in the sample.

In the case of the production cooperatives, we chose a proportionate number of cane and mixed cropping/livestock CPAs, based on their total membership, in which to carry out the interviews, again assuring their geographical dispersion within the municipality. The CPA members were in most cases interviewed as they returned home from the fields to the CPA community, at the end of the working day, again, through the "butterfly net" approach. In some cases, we were able to locate a group of CPA members working in the fields and would randomly select a given number to interview when they completed their tasks. We excluded CPA presidents from our sample since they tend to be among the most educated and politically-connected members, and they are not always engaged in agricultural field work.

In the case of the individual peasant producers, we again made our initial selection of sites based on a representative distribution of Credit and Service Cooperatives and Peasant Associations by crop and numbers, and then, by geographical dispersion across the municipality. Upon arrival in a given community with a CCS or Peasant Association, we would contact one of the members of the Executive Committee, explaining that we wanted to interview members who were good, medium and poor farmers. We would then begin the time-consuming process of trying to locate the members to interview. Who we actually ended up interviewing very much depended upon who happened to be at home or working in a field near the homestead, subject to the rule that the interview had to include the principal farmer of the household. Since the members of the Executive Committee of CCSs and Peasant Associations are always farmers (and rarely party members), we did tend to interview the person who arranged the initial interviews, usually the president of the CCS or the officer in charge of production. After the first interview, we would ask the member to introduce us to another member to interview. This procedure and form of selection thus

follows what is known as the "snow-ball" sampling technique.

Since most of the interviews with members of production cooperatives and individual peasant producers were carried out in their homes, generally other family members participated in the interviews. This helped increase the accuracy of the data reported on the income earned by other family members. Also, on many CPAs, we were able to obtain precise data on the income earned by each cooperative member by category (advances, extra-income pertaining to over-time or over-fulfilling the norm, profits, rental income) and on the quantity and price of products sold as autoconsumo. Whenever the interviewee was unsure of this information, we relied upon the figures provided by the economic officer of the CPA.

The efficiency of our estimates of household income are discussed in the text. We are very satisfied with our estimates of household incomes of state wage workers and reasonably so with respect to that of cooperative members. Most affected by small sample size were our estimates of peasant household incomes which show the largest variance and standard deviations.

APPENDIX

Table A1: Distribution of Cuba's Land Surface, Agricultural Land and Cultivated Land, by Sector, 1989 (in 000s has.)

	Land Surface	Agricultural Land	Cultivated Land
State Farms	9,065.2 (82.3)	5,032.5 (74.3)	3,441.4 (78.0)
Private Sector	1,951.2 (17.7)	1,739.5 (25.7)	969.0 (22.0)
of which:			
Production Cooperatives	868.2 (7.9)	769.8 (11.4)	449.4 (10.2)
Peasants in Credit and Service Coops.	833.1 (7.5)	739.1 (10.9)	373.7 (8.5)
Other Individuals	249.9 (2.3)	230.6 (3.4)	145.9 (3.3)
Total	11,016.4 (100%)	6,772.0 (100%)	4,410.4 (100%)

Note: Agricultural land refers to cultivated land, natural pastures, plus potentially cultivable land not currently under cultivation. The land surface, in addition to agricultural land, includes forests, land not suitable for agriculture, and the land taken up by buildings and constructions.

Source: CEE/AEC 1989: Table VIII.3.

Table A2: Population and Sample

MUNICIPALITY:	GUINES		STO. DOMINGO		MAJIBACOA		TOTAL	
	Pop.	Sample	Pop.	Sample	Pop.	Sample	Pop.	Sample
State Wage Workers								
Cane	478	24	2,879	56	2,320	69	5,677	149
Mixed/ Livestock	2,036	60	2,234	45	989	32	5,259	137
Sub-total	2,514 (59%)	84	5,113 (82%)	101	3,309 (75%)	101	10,936 (73%)	286
CPA Members								
Cane	303	16	139	14	152	22	594	52
Mixed/ Livestock	393	16	129	17	92	12	614	45
Sub-total	696 (16%)	32	268 (4%)	31	244 (6%)	34	1,208 (8%)	97
Individual Peasants								
CCS members	621	35	379	15	853	24	1,853	74
AC members	432	7	459	11	--	--	891	18
Sub-total	1,053 (25%)	42	838 (14%)	26	853 (19%)	24	2,744 (18%)	92
Total	4,263 (100%)	158	6,219 (100%)	158	4,406 (100%)	159	14,888 (100%)	475

Source: Authors' interviews with municipal-level State Statistical Committee and ANAP, as well as state enterprise managers; 1991 Agricultural Household Survey of the University of Havana.

Table A3: Confidence Intervals for Net Household Income and Net Income per Capita

Sector/ Municipality	Net Household Income	Standard Error	95% Confidence Interval	
STATE WORKER	4,901.62	137.29	4,632.62	5,170.62
Guines	5,068.24	233.21	4,604.39	5,532.09
Sto. Domingo	5,131.39	231.81	4,671.49	5,591.29
Majibacoa	4,533.24	240.14	4,056.83	5,009.71
CPA MEMBER	7,209.04	516.06	6,184.68	8,233.41
Guines	10,248.45	1,283.64	7,630.45	12,866.45
Sto. Domingo	5,959.67	337.94	5,269.50	6,649.84
Majibacoa	5,487.56	477.84	4,515.38	6,459.74
PEASANT	8,249.93	638.26	6,982.10	9,517.76
Guines	10,017.18	1,116.66	7,762.04	12,272.32
Sto. Domingo	6,250.59	748.30	4,709.44	7,791.74
Majibacoa	7,323.17	1,032.64	5,186.98	9,459.36
TOTAL	6,021.33	194.40	5,640.31	6,402.35
Guines	7,432.94	460.01	6,531.32	8,334.56
Sto. Domingo	5,478.07	207.31	5,071.75	5,884.39
Majibacoa	5,158.45	253.29	4,662.00	5,654.90

	Net Income Per Capita	Standard Error	95% Confidence Interval	
STATE WORKER				
Guines	1,290.65	64.33	1,162.71	1,418.59
Sto. Domingo	1,494.84	67.52	1,360.88	1,628.80
Majibacoa	1,243.88	67.29	1,110.39	1,377.37
CPA MEMBER	1,983.01	177.31	1,631.05	2,334.97
Guines	2,878.63	476.31	1,907.19	3,850.07
Sto. Domingo	1,517.32	82.56	1,348.72	1,685.92
Majibacoa	1,564.69	126.88	1,306.56	1,822.82
PEASANT	2,445.31	289.87	1,869.53	3,021.09
Guines	3,114.65	593.12	1,916.82	4,312.48
Sto. Domingo	1,732.04	155.44	1,411.90	2,052.18
Majibacoa	2,046.69	258.25	1,512.46	2,580.92
TOTAL	1,689.15	73.96	1,544.19	1,834.11
Guines	2,097.13	200.27	1,704.60	2,489.66
Sto. Domingo	1,538.28	53.21	1,433.99	1,642.57
Majibacoa	1,433.66	67.87	1,300.64	1,566.68

Source: 1991 Agricultural Household Survey of the University of Havana.

References

ACU. Agrupación Católica Universitaria. Por Que Reforma Agraria? Havana: Buro de Informacion y Propaganda, Folleto No. 23, 1958; reprinted as "Encuesta de trabajadores rurales, 1956-56," Economía y Desarollo, No. 12, 1972:188-213.

Chonchol, Jacques. "Análisis Crítico de la Reforma Agraria Cubana." El Trimestre Económico, Vol. 30, no. 1, 1983: 69-143.

CEE/AEC. Comité Estatal de Estadísticas, Anuario Estadístico de Cuba. Havana: CEE, 1989.

CEE. "Distribución y Uso de la Tierra del Fondo Agrícola y Forestal por Formas de Tenencia, Octubre 31, 1987." Havana: CEE, June 1988.

CEE. "Balance de la Tierra del Pais y su Utilización en 31 Diciembre de 1988." Havana: CEE, May 1989.

Cuba, Republic of. "Proyecto de Fomento de la Producción de Alimentos y Conservación del Medio Ambiente en la Provincia Las Tunas: Solicitud al PMA." Mimeo in 3 volumes. Havana, 1990.

Deere, Carmen Diana. "Socialism on One Island? Cuba's National Food Program and its Prospects for Food Security." Institute of Social Studies Working Paper Series No. 124, The Hague, June 1992.

Deere, Carmen Diana. Household and Class Relations: Peasants and Landlords in Northern Peru. Berkeley: University of California Press, 1990.

Deere, Carmen Diana, Mieke Meurs, and Niurka Peréz. "Toward a Periodization of the Cuban Collectivization Process: Changing Incentives and Peasant Response." Cuban Studies/Estudios Cubanos, Vol. 22, 1992.

Deere, Carmen Diana and Robert Wasserstrom. "Ingreso Familiar y Trabajo No Agrícola entre los Pequeños Productores de América Latina y El Caribe." in A. Novoa and J. Posner, eds., Seminario Internacional sobre Producción Agropecuaria y Forestal en Zonas de Ladera de America Tropical. Informe Tecnico No. 11. Turrialba, Costa Rica: CATIE, 1981, pp. 151-167.

Dumont, Rene. Is Cuba Socialist? London: Andre Deutsch Ltd., 1973. Translated by Stanley Hochman.

Echevarría, Oscar A. La Agricultura Cubana, 1934-1966. Miami: Ediciones Universal, 1971.

Ghai, Dharam, Cristóbal Kay and Peter Peek. Labour and Development in Rural Cuba. London: MacMillan Press/ILO, 1988.

Lehman, David. "Smallholding Agriculture in Revolutionary Cuba: a Case of Under-Exploitation? Development and Change, Vol. 16, 1985:251-270.

Mesa-Lago, Carmelo. Cuba in the 1970s: Pragmatism and Institutionalization. Albuquerque: University of New Mexico Press, 1978.

Nelson, Lowry. Rural Cuba. New York: Octagon Books, 1970.

Peréz, Niurka, Ernel Gonzalez, et. al. "Las Relaciones Político Económicas del Campesinado" Economia y Desarrollo No. 5, 1989:42-69.

Pollitt, Brian. "Estudios Acerca del Nivel de Vida Rural en la Cuba Pre-revolucionaria." Teoria y Practica, Nos. 42/43, 1967:32-50.

Pollitt, Brian. "Some Problems in Enumerating the 'Peasantry' in Cuba." Journal of Peasant Studies. Vol. 4 (2), 1977:162-180.

Pollitt, Brian. "Agrarian Reform and the 'Agricultural Proletariat' in Cuba, 1958-66: Some Notes." Occasional Papers No. 27, Institute of Latin American Studies, University of Glasgow, 1979.

Pollitt, Brian. "Agrarian Reform and the 'Agricultural Proletariat in Cuba, 1958-66: Further Notes and Some Second Thoughts." Occasional Papers No. 30, Institute of Latin American Studies, University of Glasgow, 1980.

Thomas, Hugh. Cuba: the Pursuit of Freedom. New York: Harper and Row, 1971.

Trinchet, Oscar. La Cooperativizacion de la Tierra en el Agro Cubano. Havana: Editora Politica, 1984.

Zimbalist, Andrew and Claes Brundenius. The Cuban Economy: Measurement and Analysis of Socialist Performance. Baltimore: Johns Hopkins University Press, 1989.