
The Transition to Socialist Agriculture in Cuba: Some Salient Features

Brian H. Pollitt

Introduction

The tempo of the transition from private to social ownership of land and other means of agricultural production in post-revolutionary Cuba was extraordinarily rapid. The First Agrarian Reform Law, promulgated in May 1959 and substantially implemented by the summer of 1960, generally lowered the ceiling on the size of private farms to approximately 400 ha. In October 1963, the Second Agrarian Reform Law expropriated, with some exceptional cases, the total area of all farms exceeding 67.1 ha. In the final years of the 1960s, the area under private cultivation was further eroded by the sale or renting of such land to and by the state, accompanied by the negotiated integration of other private agricultural producers into the production plans of their local 'Peoples' farms'. From 1977, new emphasis was placed upon the collective pooling of individual private landholdings and means of production in 'Production cooperatives' and these comprised some 30 per cent of the one-fifth of Cuba's farm-area remaining in the private sector in 1982.

Pre-revolutionary Organisation of Land and Labour

The speed and scale of the transition to socialist forms of post-revolutionary agrarian organisation reflected, in large measure, an earlier process of agricultural development in which specialised, commercial farming, primarily for the export of cash-crops (principally sugar-cane and tobacco) was predominant. The expansion of sugar production from one to five million tons between 1901 and 1925, primarily financed by US capital and primarily destined for US markets, was decisive in the development of large-scale farming units employing predominantly wage-labour during the opening decades of the twentieth century. While a 'pure' form of plantation system (in which both agricultural and milling operations of the sugar industry were integrated in ownership and in which mill- and field-workers formed part of the wage-labour force of the same enterprise) was never predominant in modern Cuba, on the eve of the Revolution of 1959 the bulk of the agricultural wage-labour force derived its primary source of money-income from employment in large-scale cane-farms.

Cuba's highly differentiated agrarian class structure, with a majority of wage-earning agricultural pro-

letarians, distinguished her pre-revolutionary agrarian system from most, if not all, other agrarian societies subsequently to experience transitions to socialist agriculture. As is shown in Table 1, of an (underestimated) total of some 800,000 persons defined in 1953 as 'economically active' in agriculture, forestry and fishing, less than 30 per cent were classified as 'farmers and livestock breeders' and of the remainder some 60 per cent were classified as 'agricultural wage-workers'.

Most Census procedures yield statistically simplified rural occupational structures which exaggerate the delineation in clear-cut 'class-boxes' of more complex agrarian classes or strata. Table 2 shows the pre-revolutionary agricultural occupations of a sample of 1,061 married, male household-heads, between the ages of 25 and 55, as reported for 11 rural zones in Cuba in a rural survey directed by this writer in 1966. It indicates the spatial variations to be encountered in the balance of agrarian classes or strata; shows the diversity of pre-revolutionary tenure-arrangements to be found among 'farmers and graziers'; indicates the existence of a significant 'semi-proletariat' that combined both wage- and non-wage labour in agriculture; and suggested the diversity of non-agricultural wage-work activities undertaken by those formally classified as 'agricultural wage-workers'.

Figure I shows the concentration of Cuban farm lands in relatively large-scale units, according to data extracted from the comprehensive Agricultural Census conducted in the island in 1946. It shows that as farms increased in size (passing from predominantly 'non-wage' or 'peasant' to predominantly 'wage' or 'capitalist' forms of agricultural organisation), the general intensity of cultivation of the farm-area decreased and the aggregate level of productive specialisation increased. At the extremes of farm-scale, it could be seen that 63 per cent of the area in farms less than five ha in size was under crops. By contrast, less than 15 per cent of the total area in farms of 1,000 ha or more was sown to crops. It could be seen that less than half of the value of crops sown on farms less than 75 ha in size corresponded to sugar cane, with tobacco and other crops generating a greater proportion of crop-values. On the other hand, sugar

Table 1

**Economically active population (14 years and over) in agriculture,
forestry and fishing in Cuba in 1953**

category	active population, male and female (000s)			percentage of all agricultural labour reported
	total	men	women ¹	
Farmers and livestock breeders	<u>221.9</u>	<u>220.5</u>	<u>1.5</u>	<u>27.5</u>
farmers	217.9	216.5	1.4	
livestock breeders	4.0	4.0	...	
Agricultural workers, gardeners etc	<u>568.8</u>	<u>558.7</u>	<u>10.1</u>	<u>70.4</u>
administrators and foremen	9.2	8.8	0.4	1.1
agricultural wage-workers	489.0	480.5	8.5	60.6
non-wage family labour ²	66.7	65.5	1.2	8.3
gardeners etc	3.9	3.8	...	0.5
Fishermen, hunters and trappers	<u>6.0</u>	<u>5.9</u>	<u>0.1</u>	<u>0.7</u>
fishermen	5.7	5.7	...	
hunters and trappers	0.3	0.3	...	
Forestry workers	<u>10.8</u>	<u>10.6</u>	<u>0.2</u>	<u>1.3</u>
Total	<u>807.5</u>	<u>795.7</u>	<u>11.8</u>	<u>100.0</u>

¹The number of women is grossly understated because the Census enquired as to the 'primary' occupation of those enumerated. Women performing occasional seasonal work (including as wage-labour) and sharing in small peasant farm-labour (most conspicuously in tobacco farms) are normally classified as 'housewives'.

²Non-wage family labour' refers in general to the sons of peasant farmers employed on the lands owned or rented by their fathers and not paid a money-wage.

... = less than 0.5

Source: *Censos de Población, Viviendas y Electoral*, 1953 from Table 54, p 204; (Population, Housing, and Electoral Census, 1953).

cane comprised 75 per cent or more of the value of all crops sown on farms over 100 ha in size.

Pasture-land (and hence livestock production) was not represented in the diagram (Figure I), its importance, with that of certain other crops, being more clearly shown in Table 3. Nonetheless, the diagram permitted certain productive characteristics of the lands to be expropriated under the post-revolutionary agrarian reform laws to be predicted.

Agrarian Reform, Economic Strategy and Labour Shortage, 1959-63

The First Agrarian Reform Law formally abolished rents in cash and kind for some 100,000 smaller farmers who had cultivated their lands under diverse tenure arrangements, and with varying degrees of security of tenure. It also abolished the controls over land-use commonly conditioning pre-revolutionary

tenure agreements. These had been extensive for lands rented by cane-farmers and for those share-cropped by small-scale tobacco producers.

It could be seen from Figure I that (despite significant changes in the period 1945-58) the prime beneficiaries of this aspect of the Agrarian Reform were farmers who had produced an overwhelming proportion of the island's tobacco production and a disproportionate share of the value of all crops other than sugar-cane.

The Second Agrarian Reform Law of 1963, as is shown in Table 4, reduced the private sector of the national farm-area to approximately 30 per cent of the total. Nonetheless, farms of less than 67 ha in size, of some 170,000 or more in number, continued to produce a more diversified range of crops (including the bulk of the nation's coffee) than did the larger farms expropriated over the period 1959-63. Moreover, the generally more intensive cultivation depicted in

Table 2
Occupational structure in 1957 of those interviewed in 1966

ZONES

OCCUPATION IN 1957	ZONES										% of all agri- cultural workers	
	San Luis	Güines	S.A. de las Pegas	Mangaito	Cabai- guan	Escam- bray	S. Spiritus	Florida	Florencia	Alto Songo		Bayamo
owners	5	9	6	5	13	11	11	—	41	11	13	125
cash-renters	1	15	7	—	15	3	3	1	8	1	1	55
sub-renters	—	—	3	—	—	1	—	—	1	—	—	5
share-croppers	22	9	5	—	28	18	—	—	27	3	2	114
squatters	—	—	1	—	1	—	—	—	—	—	1	3
others	—	1	1	—	—	—	—	—	—	—	—	2
sub-total	28	34	23	5	57	33	14	1	77	15	17	304
farmer/A. W. and farmer/A. W. and R. W.	12	3	1	9	2	3	8	7	12	27	13	97
farmer/R. W.	21	1	—	—	1	—	—	—	4	—	1	28
sub-total	33	4	1	9	3	3	8	7	16	27	14	125
permanent non-wage A. W.	1	6	2	4	6	13	1	2	9	1	3	48
seasonal N. W. A. W. and S. A. W. or S. R. W.	4	1	—	3	1	6	2	5	—	3	4	29
sub-total	5	7	2	7	7	19	3	7	9	4	7	77
permanent A. W.- skilled	1	6	1	3	—	—	9	1	—	—	7	28
permanent A. W.- unskilled	4	12	13	10	13	8	19	15	2	1	22	119
seasonal A. W.- skilled	1	—	—	—	—	—	4	—	—	—	—	8
seasonal A. W.- unskilled	15	31	10	46	19	35	36	42	9	22	23	288
S. A. W. and S. R. W.	18	1	3	5	6	5	6	5	—	1	—	50
S. A. W. and S. U. W.	1	—	—	—	—	—	—	—	—	—	—	1
S. A. W. and S. R. W. and S. U. W.	—	1	1	—	—	—	—	—	—	—	—	2
sub-total	40	51	28	64	38	48	74	63	11	24	55	496
In agri- cultural work	106	96	54	85	105	103	99	78	113	70	93	1002
Total												100.0

Legend:
A. W.
S. A. W.

= Agricultural Worker
= Seasonal Agricultural Worker

N. W. A. W. = Non-wage Agricultural Worker
R. W. = Rural Worker
S. R. W. = Seasonal Rural Worker

U. W. = Urban Worker
S. U. W. = Seasonal Urban Worker

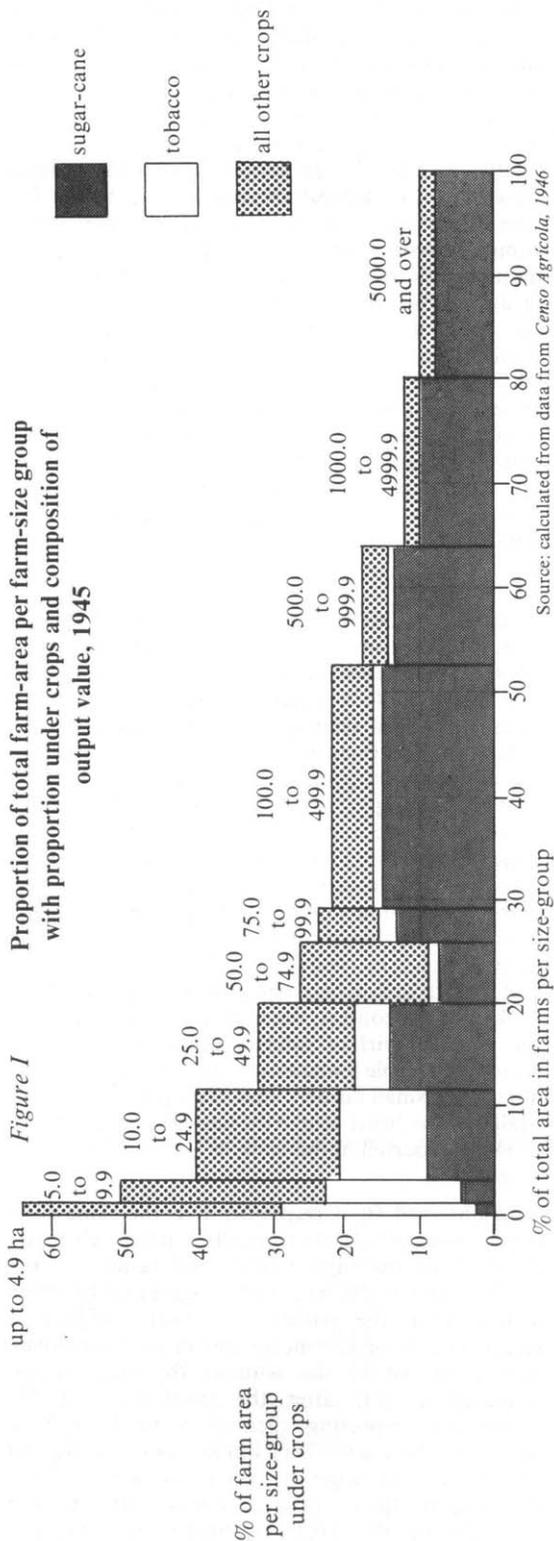


Table 3

Number of farms in Cuba, 1945, classified by principal source of income

principal source of income	number of farms in 000s	% of all farms	% share in total farm income	% of income from principal crop or activity*
Sugar cane	29.1	18.2	41.6	86.6
Livestock	28.8	18.0	20.9	82.2
Tobacco	22.8	14.2	10.2	75.9
Cereals and beans	26.8	16.8	9.4	63.8
Root crops	15.7	9.8	6.7	60.7
Coffee	9.3	5.8	2.7	75.6
Tree fruit	4.8	3.0	2.0	70.6
Garden truck	1.2	0.9	0.9	62.1
Other crops	11.4	7.1	5.0	73.9
Forest products	0.9	0.6	0.6	79.3
	9.1‡	5.6‡		
Totals	159.9	100.0	100.0	

* That is, the percentage of the total income of farms of each type which comes from their principal crop or activity. For example, farms whose principal crop was sugar obtained 86.6 per cent of their income from sugar; farms whose principal activity was cattle raising obtained 82.2 per cent of their income from cattle — and so on.

‡ No income reported.

Source: *Censo Agrícola, 1946*

Figure I in terms of the comparative sown area was maintained and partly reflected, as was to be expected, generally greater inputs of non-wage family-labour per hectare in smaller farms *vis-à-vis* those of predominantly wage-labour in larger enterprises.

The largest farms expropriated under the First Agrarian Reform Law were principally dedicated to cane production and to the extensive grazing of cattle and possessed substantial reserves of under- or unutilised land even when non-cultivable areas were discounted. While uncertainties as to when and how the Law would be applied provoked demands for 'land or work' from the agricultural proletariat historically employed as 'permanent' or 'seasonal' labour, there was no irresistible pressure from such workers for their sub-division for individual or loosely-organised private cooperative farming. Their organised pre-revolutionary struggles had generally been for better wages and more stable employment. Such farms were thus generally retained in large-scale enterprises and the 'People's farms' — ie a state farm in other contexts

— formally organised to pursue production targets set by national and regional agricultural planning agencies, was the typical organisational form in the state sector of agriculture by 1962.

Between 1959 and 1963, Cuban economic strategy emphasized industrial growth and the diversification of agricultural production. Under-employed land was to be combined with under-employed wage-labour, primarily in the expanding state sector, to increase total agricultural output and employment and to produce a broad range of foods and industrial raw materials to substitute for imports and to contribute to industrial development. The myriad dislocative effects of the US political and economic blockade of Cuba vastly exacerbated the difficulties inherent in an already over-ambitious programme of industrialisation. Diverse measures of income redistribution in the towns sharply increased urban demand for food (particularly meat and poultry) while redistribution of income in the countryside, particularly in the smaller-scale farms that had traditionally supplied a high proportion of nationally produced urban food supplies, resulted in rising on-farm consumption at the expense of marketed surpluses.

The seasonal concentration of unemployment in the wet summer months — the ‘dead season’ — distorted

Table 4

Socialisation of means of production and services in the Cuban economy, 1961-77¹

(percentages)

<i>sector</i>	1961	1963	1968	1977
Agriculture	37	70	70	79 ²
Industry	85	95	100	100
Construction	80	98	100	100
Transportation	92	95	98	98
Retail trade	52	75	100	100
Wholesale and foreign trade	100	100	100	100
Banking	100	100	100	100
Education	100	100	100	100

¹Figures in the table refer to property not to production. In 1976, the output of the private sector represented about 4 per cent of national output (excluding trade) with the following shares by economic sector: 25 per cent in agriculture, less than 7 per cent in transportation, and less than 1 per cent in communication. (The per cent in the latter statistics refers not to national output but to the private share of output in each economic sector.)

²Private farmers owned about 33 per cent of the cattle and produced 80 per cent of tobacco, 50 per cent of coffee, 50 per cent of vegetables and fruits, and 16 per cent of sugar.

Source: C. Mesa-Lago, *The Economy of Socialist Cuba*, University of New Mexico Press, 1981:15.

statistics of average annual rates of unemployment in agriculture and concealed the (not untypical) fact that the proportion of the agricultural proletariat unemployed in the months of the sugar harvest — which coincided with the sowing and/or harvesting periods of most of Cuba’s other major crops — was relatively small. Expanding activity in the growing state sector of agriculture rapidly ran up against labour shortages as one branch of activity increasingly competed with another. Newly-created employment in the old ‘dead season’, partly created by investment in agricultural diversification and in rural building and construction, contributed to a reduction in the spatial mobility of labour in an agricultural system which, above all in the sugar harvest, but also in that of coffee and tobacco, had traditionally required vast armies of seasonal migrant labour from both towns and countryside. State farms conferred the rights of full employment and other benefits upon old ‘seasonal’ as well as ‘permanent’ workers and this reinforced other factors tending to ‘freeze’ agricultural wage-labour.

A sample of 1,061 male household-heads, interviewed in rural Cuba in 1966, were questioned as to the occupations of their brothers in that year and in the year 1957. Table 5 records the responses for 3,535 cases. A vertical reading of the columns shows the occupational structure in 1966 of totals reporting individual occupational groupings in 1957. It could be seen, for example, that of a total of 31 reported members of the army or police in 1957, only one remained such in 1966. A horizontal reading of the columns indicates the occupational structure in 1957 of totals reporting individual occupational groupings in 1966. From this, it can be seen that the total in the army or police in 1966 increased from 31 to 123, and that 59 of these had been agricultural workers in 1957. In the present context, the most important feature of the general swirl of inter-occupational movement reported in Table 5 was a comparative increase in the number of ‘small farmers’ and ‘semi-proletarians’ but a fall of some 20 per cent in the number of ‘agricultural workers’ reported in this sample.

Data obtained from respondents in the same rural survey showed that if the generally ‘landless’ character of much of the ‘agricultural proletariat’ in pre-revolutionary Cuba had been exaggerated by many writers, then the tendency of such workers to accumulate, by diverse means and for diverse motives, land plots within the without the state sector, increased notably after the revolution. Of 495 respondents reporting themselves to have been ‘agricultural wage-workers’ in 1957, 188 — or 38.0 per cent — reported ownership or access to a land-plot in that year. By 1966, land-plots were reported by 48.8 per cent of the 367 state farm workers responding and

by 67.7 per cent of 158 agricultural wage-workers without formal affiliation to state farms. Access to such plots increased household consumption of traditional food staples — now subject, together with virtually all other consumer goods, to a rigorous rationing system — but tended also to reduce the proportion of their workers' productive energies expended on state-owned lands. The combination of all such factors was a potent one and was made more so by a long-standing popular antipathy to manual cane-cutting when alternative employment opportunities were available. As is shown in Table 6, of a

sample of 602 state farm and other agricultural workers and 'semi-proletarians' interviewed in 1966, 212 reported that they had cut cane in 1957. Only half that number — 106 cases — reported that they had done so in the 12 months prior to their interview. It could be seen that the fall was disproportionately great for state farm workers.

The Agro-industrial Export Strategy and Agrarian Reform, 1963-80

This 'flight from cane' — or at least from its manual cutting — contributed powerfully to the fall in Cuban

Table 5

The occupational structure of a sample of male workers in Cuba 1957, and 1966

1957-1966	farmers	semi-proletariat	agricultural workers	rural workers (non-agri)	urban workers	army or police	retired or sick	not working	school or university	other	not known	total
Small farmers	727	22	153	20	8	1	—	10	2	8	1	952
Semi-proletariat	19	90	24	5	—	—	—	3	—	—	—	141
Agricultural workers	40	11	1037	34	10	2	—	80	25	7	4	1250
Rural (non-agri) workers	19	3	98	84	4	4	—	7	—	5	3	227
Urban workers	41	4	142	27	333	19	1	9	2	6	3	587
Army or police	5	1	59	6	10	1	—	26	7	7	1	123
Retired or sick	11	—	42	11	12	4	27	3	—	4	1	115
School or university	1	—	3	—	1	—	—	63	8	—	—	76
Other	18	2	22	2	4	—	—	3	2	8	3	64
Total	881	133	1580	189	382	31	28	204	46	45	16	3535

Source: 1966 Rural Surveys, from 'Employment plans, performance and future prospects in Cuba', by B. H. Pollitt, Department of Applied Economics, University of Cambridge, *Reprint Series* no 349, 1971.

Table 6

Occupation structure of a sample of workers engaged in cutting cane and other agricultural work, Cuba 1957 and 1966

occupation	1957			1966		
	cane cutters	others	total	cane cutters	others	total
State farmers	145	228	373	62	311	373
Agricultural workers	46	112	158	35	123	158
Semi-proletariat	21	50	71	9	62	71
Total	212	390	602	106	496	602
per cent	35.2	64.8	100.0	17.6	82.4	100.0

Source: B. Pollitt, 'Employment plans, performance and future prospects in Cuba', in *Third World Employment*, R. Jolly et al (eds), Penguin, London, 1973, p 256.

Table 7

Cuba: production, exports and export prices for sugar

	thousand of tons		US cents per pound	
	production	exports	price paid by Soviet Union	world market price ¹
1959	6,039	4,951	—	2.97
1960	5,943	5,634	—	3.14
1961	6,876	6,413	4.09	2.75
1962	4,882	5,132	4.09	2.83
1963	3,883	3,520	6.11	8.34
1964	4,475	4,176	6.11	5.77
1965	6,156	5,316	6.11	2.08
1966	4,537	4,435	6.11	1.81
1967	6,236	5,683	6.11	1.92
1968	5,165	4,612	6.11	1.90
1969	4,459	4,799	6.11	3.20
1970	8,538	6,906	6.11	3.68
1971	5,925	5,511	6.11	4.50
1972	4,325	4,140	6.11	7.27
1973	5,253	4,797	12.02	9.45
1974	5,925	5,491	19.64	29.66
1975	6,314	5,744	30.40	20.37
1976	6,156	5,764	30.95	11.51
1977	6,485	6,238	35.73	8.14
1978	7,350 ²	7,231 ²	40.78 ²	7.80 ²

¹ International Sugar Agreement prices

² preliminary

Sources: ECLA, on the basis of data from Cuba's annual statistical reports; Banco Nacional de Cuba, *Desarrollo y perspectivas de la economía cubana*; International Sugar Organization, *Statistical Bulletin*, and United Nations statistics.

Reproduced from *Comercio Exterior* of the Banco Nacional de México, January 1981.

Note: The US dollar was devalued in 1972 from parity with the Cuban peso to approximately US\$1.00 = \$0.70 pesos but the change is not taken into account in relative Soviet and world market price statistics.

sugar production between 1961 and 1963 that was shown in Table 7. This in turn was to accelerate the expropriation of farms over 67 ha in size under the Second Agrarian Reform Law of October 1963. By that year it had become more than evident that the early post-revolutionary industrialisation programme was proving excessively costly in terms of imported capital goods and raw materials and returns on exceedingly high rates of industrial investment were disappointingly low. The relative collapse of sugar production, accompanied by a sharp fall in the quantity and quality of tobacco exports, meant that rising foreign indebtedness to finance industrialisation was accompanied by a steep fall in the economy's capacity to maintain, let alone increase, foreign exchange earnings. In 1963, accordingly, a radically different development strategy was adopted. Its underlying economic logic (which prevails to this day)

was that if the US blockade had destroyed Cuba's links with her major pre-revolutionary trading partner, the economies of the socialist bloc (and above all that of the USSR) comprised new, expanding markets for Cuban agricultural exports (of which sugar was overwhelmingly the most important), with favourable terms of trade for needed imports. As could be seen in Table 7, price stability characterised the Soviet-Cuban trading relationship in sugar from 1963 to 1972 and this contrasted sharply with the volatility of world market prices. Subsequently, Cuban sugar exports to the USSR were to be index-linked to the prices of Soviet exports to Cuba, including oil. From 1963, Cuba's rate of industrial investment was to be reduced while her export capacity was to be restored and further expanded. Renewed emphasis on industrial growth, and especially of industry related to the further processing

of raw materials of agricultural origin, was to await the necessary build-up of an adequate infrastructure (including trained personnel) and would then be financed by a dramatically increased foreign exchange earning sector. The latter meant, above all, sugar, with livestock, citric fruits, tobacco and mining, etc, in secondary roles.

This new strategy emphasized the apparent contradiction between an increasingly radicalised, and by 1961 explicitly socialist, revolutionary process and the continued private ownership of some 30 per cent of farmland in operational units of up to 400 ha in size. An 'agrarian bourgeoisie', enmeshed with the equivalent of the Soviet *kulaks* or 'rich peasants', was rightly judged to be an active or latent enemy of the political trajectory of the revolution and there was strong evidence of declining investment and production in this sector after 1961. Political factors on one side, uncertainty as to the future of their holdings and constraints on what could be purchased with money income derived from private entrepreneurial activity in agriculture made an 'investment strike' in larger farms foreseeable by 1963. As could be deduced from Figure I, the lands they occupied possessed productive characteristics of crucial importance for the new strategy of national development to be fuelled by agricultural and agro-industrial exports. Comprising some 10,000 farms, they embraced more than one-quarter of the area then sown to cane and a disproportionate share of the national cattle-stock and of quality pasture-lands. They were expropriated on 3 October 1963, modest compensation being paid over a ten-year period, and the farms so affected were integrated into existing or newly-founded state farms.

Labour-shortage, Mechanisation and Large-scale State Farms

While the Second Agrarian Reform increased to some 70 per cent the farm area responsive to direct

mechanisms of planning and resource allocation, it did not, of course, resolve the problems of labour shortage previously outlined. Their solution was perceived to stem, in the short-term, from the mobilisation of voluntary labour, primarily for the sugar harvest, recruited from the Army, students and the urban labour force. In the medium term, it would be resolved by the mechanised harvesting of the sugar-cane.

In the 1960s however, technical problems of mechanising cane-cutting proved equally intractable both for Cuban and Soviet engineers. Neither possessed any accumulated practical expertise in the mechanised manipulation of such a heavy prime agricultural material over relatively protracted time periods in difficult operating conditions. Significant progress was made in the mechanisation of soil preparation for sowing and in the mechanised loading and de-trashing of manually cut cane in the first decade of the revolution. However, despite the deployment of significant numbers of combine harvesters best classified as 'experimental', a peak figure of only three per cent of the total cane harvested in any year up to 1970 corresponded to mechanised cutting. In the context of endeavours to expand sugar production to 10 mn tons by 1970 — ie to double the average level of production of the 1950s in the new market conditions prevailing, but with a professional cane-cutting labour force half or less than half the size of that active in immediate pre-revolutionary years — the primary consequence was an intolerable sharpening of the labour shortage crisis. In 1970, 8.5 mn tons of sugar were produced but the quantity of labour and transport drawn off from other sectors to attain this record figure was such as to disrupt almost all other plans for economic growth in agriculture and industry.

The prime virtue of large-scale socialist agricultural enterprises, from the time of the Bolshevik Revolution and before, was envisaged by Marxists to lie in their receptivity to the application of modern agricultural

Table 8

Combine harvester models

	<i>Massey-Ferguson 201</i>	<i>Libertadora 1400</i>	<i>KTP-1</i>	<i>total</i>
1976	439	162	683	1,284
1979	407	157	1,734	2,298

Source: 'Memorias', Ministerio de la Agricultura, Havana 1980.

N.B. Massey-Ferguson and Libertadora have cane-top cutters which the KTP-1 does not. Both the KTP-1 and the Libertadora cut green cane which the Massey-Ferguson 201 does not.

techniques and high levels of mechanisation that would vastly increase the productivity of both land and labour. Such theoretical advantages were not generally realised in Cuba's large-scale state farms in the 1960s. In the 1970s, however, more sober planning procedures, accompanied by relative breakthroughs in the mechanisation of cane-harvesting, began to yield their potential fruits. As can be seen in Table 8, the national stock of cane combine-harvesters of diverse types increased sharply, with machines to be paid for in convertible currency (and hence from the proceeds of trade in unstable and generally less favourable commodity markets) being progressively displaced by the KTP-1 combine.

This was of Cuban-Soviet design and was initially imported from the USSR but by 1977 it was produced or assembled in a Cuban industrial complex. By 1979, some 42 per cent of the sugar harvest was mechanically cut and, as shown in Table 9, there was a sharp fall in the number of cane-cutters (above all, of relatively low productivity volunteers) employed in the cutting of progressively larger harvests. As is shown in Table 10, while of erratic tendency, there was a perceptible trend for per hectare cane-yields to increase for both state and private sectors.

By the end of the decade, better tillage practices (associated not least with traditionally greater per hectare inputs of labour) of the private sector appeared to be increasingly offset by rising yields in the state sector. These generally corresponded to a

Table 9

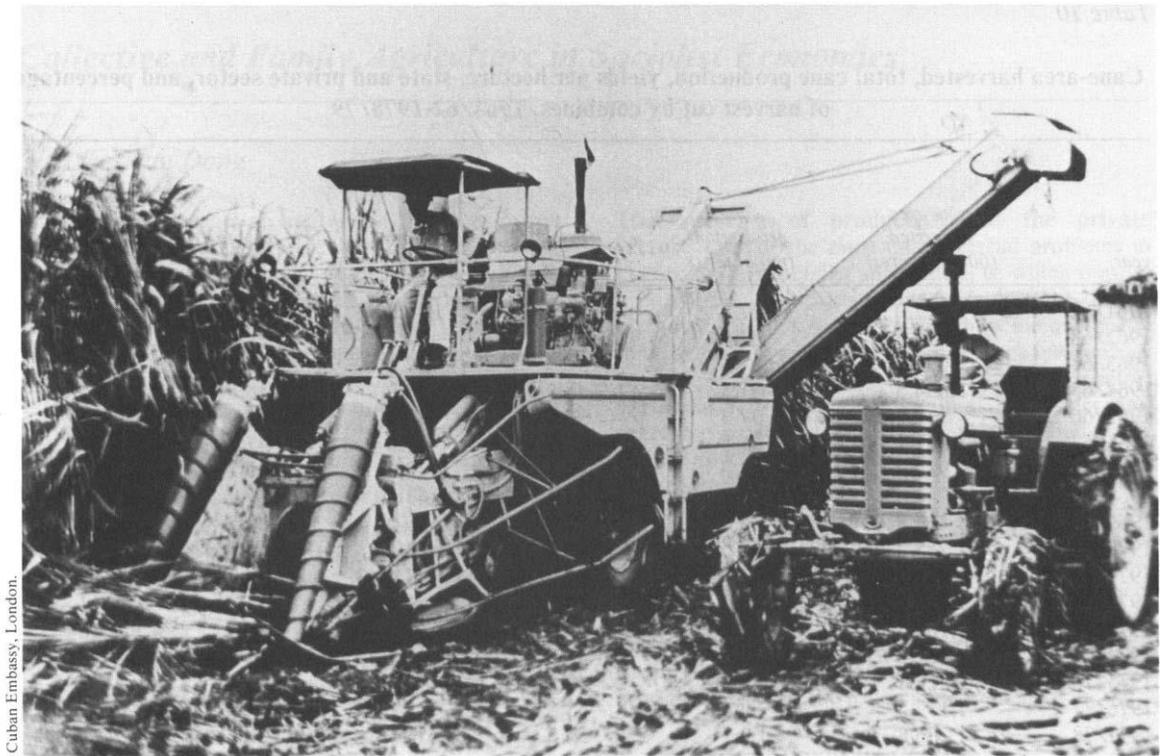
Cane-cutters employed in peak-periods of the sugar harvest, 1970-79 and percentage of cane harvested manually, state and private sectors

year	no of cane-cutters (000s)	% of harvest cut manually	total cane harvest (000s mn tons)
1970	350.0	99	81,514.9
1971	274.0	97	52,189.7
1972	210.5	93	44,303.0
1973	229.0	89	48,230.1
1974	200.3	82	50,373.3
1975	175.6	75	52,380.4
1976	153.3	68	53,783.9
1977	139.1	64	60,352.8
1978	153.9	62	69,652.9
1979	126.4	58	73.1 million

Source: Number of cane-cutters from 'Memorias', Ministerio de la Agricultura, Havana, 1980, and percentage of manual harvest. Total cane harvest from *Anuario Estadístico de Cuba, 1978*, Ch V, Table 7, p 68 for 1970-78; 1979 from *Guía Estadística, 1979*, p 8.



greater and progressively more effective use of irrigation, fertilisers and herbicides; to a reduction in the damage to plantations caused by both indiscriminate pre-harvest burning of cane and by the deployment of heavy machinery and equipment, in the hands of initially inexperienced operators, in field conditions that were imperfectly prepared or were too wet during harvest operations. Such yields seemed susceptible to more or less sustained future improvements and the possibility of further expanding sugar production via increased per hectare yields rather than via extending the area sown to cane was immensely important for non-sugar agricultural expansion. Large-scale state farms in Cuba, after two decades of costly experiment in both organisation and technique, appeared to be in the stage of assuming the 'industrialised' attributes imputed to such enterprises by Marxist writers on socialist agriculture relatively early in the twentieth century.



Cuban Embassy, London.

Cane-cutting machine on a Cuban state farm.

'Socialist Transitions' in the Private Sector of Agriculture

If the weight of the state sector, both in agriculture and economic development strategy as a whole, is evidently decisive, the role of the surviving private sector and the various organisational forms promoted within it lack neither importance nor interest. One million tons or more of sugar originates in this sector. It was and remains the major producer of tobacco and coffee. Diverse root-crops, vegetables and dairy and other livestock products supplied by private producers continue to be important in urban and rural food consumption.

In the 1960s, private agricultural producers were organised into the National Association of Small Farmers (ANAP). This included more tightly organised 'Cooperatives of credits and services', notably among tobacco farmers, but the majority of producers belonged to looser associations in which effective state influence upon productive decisions, exercised via the supply of credits, inputs and purchases, was less marked. A semi-spontaneous peasant movement for the collective pooling of individual private holdings in Societies of Agricultural and Livestock Production (*Sociedades Agropecuarias*) was given erratic official aid and support. Most of

these withered on the vine in the second half of the 1960s primarily because the direct attachment of private lands to state enterprises (by sale, rent or other arrangements) was given greater government priority.

By the mid 1970s, however, and given special impetus at ANAP's Fifth National Congress in 1977, great importance was attached to the promotion of Agricultural and Livestock Production Cooperatives (CPA). These were a more carefully organised variation of the earlier movement to pool private holdings in collective productive units owned and managed by the farmers forming their membership. In very explicit recognition of the counter-productive nature of coercing a peasantry into 'higher forms' of production, great emphasis was placed on the voluntary nature of the process of their formation. Stress was placed on the careful, independent valuation of the contribution, in terms of land and other means of production, of their individual members so that each could be differentially reimbursed from common funds in a relatively brief period of time. The rudiments of financial accounting were required to be mastered with the formation of a cooperative. Exceptionally low rates of interest on state credits were offered to them and they were given preferential treatment in the allocation of agricultural machinery and equipment.

Table 10

Cane-area harvested, total cane production, yields per hectare, state and private sector, and percentage of harvest cut by combines, 1961/62-1978/79

year	cane area harvested (000s hectares)	cane production (mn of tons)	yield per hectare			harvested by combines %
			total (tons)	state (tons)	private (tons)	
1961/62	1,117.0	37.1	33.2	35.7	31.7	—
1962/63	1,074.9	32.0	29.8	31.0	28.9	—
1963/64	1,033.9	37.8	36.5	37.4	35.0	—
1964/65	1,054.5	51.5	48.9	48.9	48.8	2
1965/66	937.7	37.4	39.9	39.1	42.0	3
1966/67	1,081.1	51.6	47.7	47.9	47.3	2
1967/68	987.9	43.6	44.1	42.4	49.2	3
1968/69	944.4	42.9	45.4	43.6	50.9	2
1969/70	1,464.3	84.4	57.6	56.0	63.5	1
1970/71	1,255.7	54.0	43.0	42.1	46.7	3
1971/72	1,211.9	45.9	37.9	37.4	39.9	7
1972/73	1,072.9	48.2	44.9	44.4	47.5	11
1973/74	1,105.6	50.4	45.6	45.0	48.6	18
1974/75	1,181.4	52.4	44.3	43.6	48.0	25
1975/76	1,226.1	53.8	43.9	42.7	50.3	32
1976/77	1,137.5	60.4	53.1	51.1	62.8	36
1977/78	1,236.8	69.7	56.3	55.3	61.2	38
1978/79	1,304.1	73.1	56.0	42

... unavailable.

Sources: Cane area, production and yields, 1961/62 to 1977/78, *Anuario Estadístico de Cuba, 1978*, Ch V, Table 7, p 68. For 1978/79, *Guía Estadística, 1979*, p 8. Percentage of mechanized harvest, *Memorias, Ministerio de Agricultura, 1980* for 1971/72 to 1978/79. For 1964/65 to 1970/71, 'Algunos aspectos sobre el desarrollo de la agricultura cañera en Cuba', O. Granda Balbona. Paper given at the Annual Conference of the Jamaican Association of Sugar Technologists, Kingston, Jamaica, MINAZ Doc no 1897, ATAC, November 1975.

By March 1982, almost 30 per cent of all farm land remaining in private hands was organised in CPAs with a continuing momentum for their further development. Their average size was small by comparison with some international ventures in peasant 'collectivism', numbering some 25 individual households. Their success in terms of increased gross production and income was widely publicised and was explained principally in terms of a more advanced division of labour in association with technically more advanced means of production and technique on lands now rationally devoted to their best crop-use. Stress was placed upon the improved access to electric-power supplies, pumped water and other social amenities attending the concentration of previously dispersed peasant households in small hamlets. Special emphasis was placed upon the improved situation of women in such cooperatives attending the breakdown of their social isolation and upon their heightened contribution to production and income facilitated by

collective labour-organisation and related child-care provision. All this reflected an important shift in the developmental 'model' for the private sector. In the 1960s, small-scale private farmers had generally been encouraged to see in the large-scale state farms the 'model' of the future, incorporating the most modern productive techniques available and realising the economies of scale viewed as essential for rapid increases in output and income. In the 1960s, however, the state sector was not conspicuously successful as a 'model' of productive efficiency. On the contrary, it was viewed by many farmers in the private sector as an example of wasted, scarce resources which they themselves would have used more productively. In the later 1970s, however, the 'model' for the private sector became its own CPAs. Modest in physical scale and agricultural techniques and the object of keen interest of neighbouring farmers and of organised visits from more distant areas, they showed every sign of appearing more relevant as institutions and more promising in terms of productive and social advance.