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Income and Land Distribution in Guyana:

A Summary of Existing Information

Kenneth P. Jameson

Department of Economics
University of Notre Dame

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A SUMMARY OF EXISTING INFORMATION

A report submitted to the United States Agency for International
Development by Dr. Kenneth P. Jameson, Department of Economics,
University of Notre Dame.

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The Author

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Introduction

The experience in economic development during the post-war period has made a latent concern with questions of income and land distribution a dominant consideration in development policy. This is partly because of the experience of deterioration in the relative distribution of income and partly because of the scattered evidence of increases in absolute poverty even in countries which have had rapid rates of growth in per capita income; but a more fundamental reason is the growing awareness of the linkages between the distribution of income and assets and the pattern of development which occurs.

There is now ample evidence of the interrelation between skewed income distribution and high capital intensity of production, as well as high import content of production. In addition, such distributions tend to be self-perpetuating rather than self-correcting as had usually been thought, and policies which do not deal with them directly are likely to result in a continuation of poverty for large segments of the population in underdeveloped countries.

The policy implications of the above analysis have been embodied in the "New Directions" of AID and the "Basic Needs" strategies of the World Bank. Both imply a targetting of aid efforts at those most in need, and this targetting raises a series of analytical and empirical questions. Where and who are the poor? More importantly, how is their economic life organized at present, and in what ways can it be affected in a beneficial manner? Such questions provide the focus

for the present study of income and land distribution questions in Guyana.

In the first instance, it is apparent that the major focal point of poverty in Guyana is the rural sector, and consequently, much of the present treatment will focus on the rural sector. Section I of the paper will provide a general overview of the agrarian structure of the country as it relates to questions of income and land distribution. This will be followed by a general overview of the distribution of land and income in Section II, while Section III provides a disaggregation according to rural versus urban areas. Section IV is an attempt to synthesize the existing information on the rural sector which can be drawn from studies at the micro level. This section will show that there have been a large number of studies which contain information on distribution and on farm operation, though the final mosaic they provide of the rural sector is hardly complete. Section V summarizes the scant information which is presently available on the situation of the Amerindians of Guyana. As such, it is quite suggestive but highly inadequate.

The summation of these sections (VI) is an initial survey of questions of distribution in Guyana, allowing some initial conclusions to be drawn and suggesting a number of areas where additional work is likely to provide important insights into the problem of targetting resources effectively.

I. The Agrarian Context of Guyana

Either through prescience, good planning or good luck, Guyana is

in a much better position agriculturally than many of its neighbors and than many developing countries today. Agriculture received a major impulse during the Second World War when Guyana attempted to attain self-sufficiency, and the major development schemes undertaken by the government in the post-independence period have generally been in the agrarian sector. Thus, if there is a problem, it is not sheer neglect as is so often the case.

The government plays a dominant role in agriculture through a variety of mechanisms. The sugar plantations were nationalized during 1976 and are now run by the state enterprise Guysuco. Rice, the major foodcrop and also an export crop, eventually finds its way into the Guyana Rice Board which does the distribution, as well as portions of the marketing, storing, milling, harvesting, etc. The Guyana Agricultural Products Corporation takes charge of marketing a wide variety of products from meats to fish and vegetables. Prices are generally set by the government and they are definitely used to affect the economic situation and incentives of the farm population, as well as the urban population. Finally, in recent years, stringent restrictions on imports of certain products have been implemented, e.g. potatoes, apples and sardines.

It will be useful to divide the economy into five different components as they relate to agriculture. The first of these is the coastal sugar plantations which were dominated by Booker McConnell Corporation until the nationalization in 1976. These are the remnants of the plantation system which at one time had covered most of the arable area of the country until many plantations failed,

were sold off and eventually broken into small holdings or utilized in other ways. In recent years, Booker and Demerara Sugar Companies had holdings of around 208,000 acres in sugar cane. As might be expected, this type of cultivation, even after nationalization, is quite different from that undertaken in other sectors of agriculture. It is relatively large scale and industrialized, and its work force is unionized under the auspices of the opposition party, the PPP (Peoples' Progressive Party). Thus, the incomes of the workers on the sugar plantations are primarily set by the bargaining process between them and Guysuco. However, sugar workers have an additional source of income in the small plots of land which they have either from the estates or from other sources. These holdings do not provide any significant amount of output though they may be an important source of income for individual workers.

The entire coastal area from the Essequibo to the Corentyne is the area of rice cultivation, generally on relatively small holdings of land. Most of the farmers in this type of crop are of East Indian ethnic heritage, and the farms were developed either by land grants to buy out indentures starting around the beginning of this century or, in some recent cases, as a result of settlement which would have an impact on the food situation in the country.

Finally, there is the Northwest area which is far from being developed and will need substantial infusions of capital to become an important producer, and the savanna areas, generally dry and in grasses, used primarily for cattle raising. There are two main savannas, the Rupununi in the Southwest with vast private and govern-

ment holdings in cattle ranches, and the area around Ebini which is primarily government owned. In both of the latter cases, the land is generally of very low productivity and the per acre yield of beef is very low. In addition, all three of these areas are quite sparsely populated.

This simple division into five groups provides a first pass at income distribution. The "undeveloped" areas and the savannas will generally be found to be lower income areas. The sugar growing areas will generally have a higher average income than the other areas, though in the rice areas, which are intermediate, there will be a number of richer farmers whose situation is better than for most sugar workers. The urban areas will provide the entire spectrum of incomes, from the poorest to the wealthiest.

One final dimension of the agricultural sector should be noted at this point, and this is the distribution of ethnic groups. The rice farmer, and most sugar workers, will generally be of East Indian origin, though there are some blacks involved in those areas. Cattle ranching in the Rupununi area is generally carried out by descendents of the Portuguese, but the Amerindians also raise cattle and work the cattle ranches. In addition, the Amerindians are involved in small-scale, virtually subsistence, agriculture and in hunting in the interior areas. Thus, any conclusions which are specific to a particular type of production will generally also pertain fairly directly to a specific ethnic group.

II. Distribution at the Macro Level

Efforts to target activity to those who are most in need will

start from information on poverty gathered at a micro level. Nonetheless, there is an important linkage between what will be observed at the micro level, and the macro determination of income distribution. The best evidence we have of this is the Brazilian case which concentrated on macro demand stimulation, disregarding its impact on the distribution of income. There is now evidence that this process led to a decline in the relative income of the poor and also to a decline in their absolute income in many cases.

In Guyana the structural changes in the economy which have been brought about in the 1970s are likely to have a substantial impact on the macro indicators and on the micro experience. The expropriation of the Bookers' holdings in sugar, and of the bauxite concerns, has substantially changed the ownership position within the economy and the receiver of income from these activities. In addition, the attempt to attain self-sufficiency in food, with its effects on import and price policy, would again have substantial impact on income distribution. In both of these cases, macro level indicators of income distribution would give significant insight into the impact of these structural changes.

Having established the importance of such measures, it must now be indicated that the data which would be necessary to estimate the income distribution are not readily available in published form. Several sources would be potentially useful for this purpose. The 1970 Census did include questions on income. Unfortunately, the only economic data which have been published have to do with the industry in which persons are employed. Another potential source

would be the National Food and Nutrition Survey of Guyana (20) which was undertaken in 1969. Again, information on income was collected and is presumably available either in Guyana or at the Pan American Health Organization, but the published data do not provide income intervals. The same is true of the Ministry of Economic Development's "Household Expenditure Survey of 1969-1970" (7). There are several sources which may provide such information in the future, the main one being the labor force survey which was being completed in Guyana at the end of 1977.

In the absence of such sources, we must start from a scattering of other types of information. One of the more optimistic estimates of the distribution of income is that presented by S. Jain (15). Without providing any citation to his source aside from it being a household income survey from 1955-1956, he calculates the Gini coefficient* for Guyana as .42. This is relatively a very low value indicating that relative to other underdeveloped countries, there was a fairly equal distribution of income in Guyana. For example, the Chenery study (3) presented Gini coefficients for 13 countries which ranged from Yugoslavia's low of .33 up to Peru's .59. In this group, Guyana's value of .42 would have ranked it fourth, a very impressive showing. Unfortunately, without better documentation, it is difficult to interpret this value. For example, the dominance of Bookers and other British companies at the time

*

We will use the Gini coefficient as the measure of distribution despite the many difficulties with its interpretation and with its theoretical bases. For good or ill, it is the most widely used and available measure.

with their control on income generation makes the treatment of the incomes of expatriates crucial; and we have no indications of how it was handled.

Calculations can be made for somewhat more recent periods from Wilfred David's (5) data taken from tax returns. Such information, of course, is notoriously weak in the absence of heroic enforcement efforts, but it does have value in including all sources of income. It is likely to omit the lower end of the income scale, however. David provides data which allow calculation of Gini's for the years 1953-1959. The Gini for the initial year is .46 and it gradually rises over the period until it reaches .48 in 1959. Compared with the Jain value, the coefficient from David is a bit higher, and as is suggested above, it is probably an underestimate. In addition, the fact that it rises over the period considered indicates a tendency toward greater inequality in the last years of British rule.

The final source is the Manpower Survey of 1965 carried out under the auspices of the Ministry of Economic Development (8).* It provided frequencies of persons in various income groups and broke them down by sex and by Georgetown and other areas. Since this was mainly a manpower survey, it is likely to have omitted incomes from property and to have concentrated on the modern sectors.

*

An unpublished study for AID by Robert R. Nathan used 1970 Census estimates for income of household heads to calculate a Gini coefficient. Although the responses on the income question in the Census was often omitted for those reporting income, the implied Gini is equal to .41, exactly equal to the estimate from the Manpower Survey.

of employment, omitting rural farm areas. Thus, it is likely to have substantial biases. The calculation of the Ginis gives the following results:

Georgetown			Rest of Country			Total		
Male	Female	Total	Male	Female	Total	Male	Female	Total
.387	.43	.41	.37	.42	.39	.39	.44	.41

The magnitude for the totals corresponds rather closely to the calculation by Jain, though there is a ten-year difference in the time period. In addition, it is interesting to note that the degree of equality is slightly greater in the rest of the country as compared to Georgetown. Examination of the data indicates that one reason for this may be the virtual absence, outside of Georgetown, of wages in the highest income groups.

A second area in which some information on distribution is available is land holdings. The links between the distribution of this asset and income distribution should be apparent. In this case, there is information available from the Agriculture Census of 1954 and from the unpublished working sheets of the Census of 1968. Both have been compiled by Robert R. Nathan Associates for their study of the foodcrop system in Guyana (18). The validity of the 1968 data is widely questioned, while the 1954 study is viewed as the best overall study of agriculture in the country. Omitting the Rupununi area from consideration because of the bias that it would impart, calculations of a Gini coefficient can be made for the two years. In 1952, the value obtained is .44, while by 1968, it had risen to

.47. Two things are of note in these results. The first is that there was an increase in inequality over the period, a result parallel to that obtained from David's data on income. Secondly, the Gini is no higher for land than for income, which is a surprising result. Unfortunately, there is no direct way to compare this distribution with that in other countries. We can be assured that the distribution is more equal than in the Andean countries with their large haciendas, but it is hard to indicate what countries might have comparable distributions. It should also be noted that the figures for Guyana probably understate the degree of inequality. In the 1952 case, farms larger than 50 acres were omitted from the calculations, which would understate the Gini. In the 1968 case, farms with no or negligible land were omitted which would have the same influence.

There is one other macro indicator of distributional questions which is available. This is the Physical Quality of Life Index which has been calculated by the Overseas Development Council (19). It is a composite of basic indicators of well-being, the three used being infant mortality, life expectancy and literacy. It is interesting to note that all of these indicators are correlated with income distribution, because in countries with relatively equal distributions of income, it is generally found that performance on these indicators is relatively good. Our calculations indicate a correlation of PQLI and GINI of $-.39$ which is significant at the $.02$ level and indicates that increases in PQLI are correlated with increases in equality (decreases in Gini coefficients). If the data which the

developers of the PQLI have utilized can be accepted as valid, Guyana's performance on the PQLI is quite impressive. Among its grouping of countries with incomes between \$300 and \$699 per capita per year, Guyana PQLI value of 84 ranks third behind Cuba and Western Samoa. Guyana's per capita income of \$500 places it about the median for its group of 39 countries, but the value of 84 is far above the average value of 59 for those countries. Thus, on this measure, Guyana performs quite well, and this is likely to be a reflection of its distribution of income and land.

In summarizing this section it is apparent that any final conclusions would be impossible. But it seems justifiable to say that the distribution of income, and probably of land in Guyana, is at neither extreme of equality or inequality. All of the indicators place it in the middle ranges, trending towards greater equality than would be expected at its income level. The strongest evidence that Guyana performs well for its level of income is that given by the PQLI.

With this in mind, concern can turn to disaggregations of the income distribution with the expectation that the patterns found there will correspond to those found at the macro level.

III. The Rural-Urban Disaggregation

The International Labor Organization has estimated that 80% of persons below accepted poverty lines are located in rural areas. They also claim that definitions which are broader than income will show similar results.

As noted above, Guyana seems to perform on these broader mea-

tures in a fashion far superior to most countries at its level of GNP, and thus, there is likely to be some deviation from this pattern, though the division of the country between urban and rural sectors would remain an important one.

Examination of available information on Guyana does indicate a complex relationship between poverty and rural-urban location. The usual results are found when income or expenditures are utilized, i.e., the rural sector exhibits levels far lower than the urban sector. But other indicators are not quite so unambiguous. Public services do seem to be more available in urban areas, education being the main one of interest. Indicators of average nutritional status also seem to favor the urban area, though, in many cases, the discrepancy is rather small and unlikely to be significant in a statistical sense. In addition, in some areas of nutrition, the urban areas contain a larger number of persons with very deprived status. In the paragraphs which follow, these results will be elaborated on.

Table I presents a breakdown of the population by location. The urban areas are Georgetown, its suburbs, and New Amsterdam, which in 1970 accounted for 26% of the country's population. In the case of Georgetown, there occurred a process of suburbanization during the 1960s, and the three areas together had a rate of population increase less than 50% of that of the country as a whole. This is partly because suburbanization took place outside of traditional boundaries, but even in that case, the growth of the urban population was surprisingly slow.

TABLE I
Population by Major Areas - Censuses 1970 and 1960

Major Areas	1970 Population	1960 Population	Percentage Change
Guyana	699,848	560,330	+25.2
City of Georgetown	63,184	72,964	+13.4
New Amsterdam	17,782	14,053	+26.5
Suburbs of Georgetown	100,855	75,427	+33.7
East Bank Demerara	36,600	23,271	+57.3
East Coast Demerara	108,403	85,246	+27.2
West Berbice	32,975	26,524	+24.3
Rest of Berbice	132,468	101,458	+30.6
Upper Demerara River	28,949	18,845	+53.6
West Demerara	78,309	62,216	+25.9
North West District	16,269	12,809	+27.0
Essequibo Coast	57,180	45,457	+25.8
Mazaruni	12,682	12,029	+ 5.4
Rupununi	14,192	10,031	+41.5

Source: 1970 Population Census of the Commonwealth Caribbean,
Summary Tables (Georgetown: Ministry of Economic
 Development, 1975).

One other aspect of population distribution should be extracted from the census data. This is the overlap between the urban-rural distribution and the ethnic distribution of the population. Of the negro/black population, 43% lives in the urban areas, and they comprise 51% of the urban population though only 31% of the total population. The other major ethnic group is the East Indians who are 52% of the total population, but are predominantly rural with 87% of that ethnic group classified as non-urban. Similarly, whites, Chinese and Portuguese are almost entirely urban, while Amerindians are 98% rural. Thus, any conclusions about rural-urban relative positions are also conclusions about relative positions of ethnic groups.

The starting point for questions of distribution is the income of persons. If it is calculated correctly and imputations are made for non-monetary transactions, it can give a good measure of relative welfare of different groups. Data on rural-urban incomes are available from the National Food and Nutrition Survey of Guyana which was carried out in 1970 (20). It makes an attempt to impute non-cash incomes, but it is basically a survey of actual cash income which was derived from estimates made during the survey week. Table II presents the results obtained.

Table II

Income in the Urban and Rural Sectors

	<u>Urban</u>	<u>Rural</u>
Cash Income	773	382

Non-cash Income	11	36
Overall Income	784	418
(all are in Guyana \$)		

Source: PAHO, The National Food and Nutrition Survey of Guyana (Washington: 1976), p. 27.

Taken at face value, the disparity is substantial. Rural incomes are only 53% of urban incomes, even when imputations of non-cash income are made. Thus, it would seem that a dominant, if not the dominant, factor in questions of income distribution would of necessity be the rural-urban location of the person or family.

While there is no denying the substantial difference between the two sectors, there are some biases towards overstatement of its magnitude. To begin to see this, let us turn to information on expenditures which might have less of a bias toward understating rural incomes. Table III presents the expenditure data from the same Food and Nutrition Survey. In this case, rural expenditures amount to 69% of urban expenditures. In some categories, rural expenses per capita are greater than urban, e.g., school expenses, transport, amusements and clothes. In other areas such as rent and food, there are wide differences between the two with the urban sector spending much more. There are several problems in the data which indicate that the disparity may be less than noted. First of all, the difference in rent and in food indicates that there was probably no imputation for rent in rural areas and that own-consump-

Table III
Household Expenses & Credit Purchases
 (Food, Nutrition Survey)
 (EXPENSES)
 In Guyana dollars per caput per anum

Item	Urban	Rural
	<u>Mean</u>	<u>Mean</u>
Rent & Mortgage	97.10	17.10
Utilities	39.90	19.00
Payments to domestic servants	11.20	6.20
School expenses	17.70	19.10
Other hire-purchase payments	18.30	15.70
Saving and Insurance	37.00	27.40
Food	240.90	176.30
Transport	18.20	22.30
Amusements (alcohol, tobacco, etc.)	27.80	30.40
Remittances to persons outside the household	17.00	11.60
Clothes	29.70	38.10
Medical expenses	22.90	21.10
Religious (charitable) contributions	8.30	5.30
Short-term credit payments	24.00	15.80
Other	29.90	18.00
Total for those itemized above:	639.80	443.50

tion of food was not perfectly reflected. One other factor which is likely to cause difficulties in using these figures as measures of relative welfare is the question of price. Certainly food costs will be higher in urban areas because of transport costs, so we need to correct for the influence of relative prices before we can begin to translate incomes into welfare. It should be noted that this cuts both ways, for the rural dweller is likely to pay more for clothes and entertainment because of price differentials.

One additional aspect of the data should be noted. The per capita expenditures for the rural sector are higher than the indicated per capita income, G.\$443 out of an income of G.\$418. This of course can occur in the short run, but unless the time of the survey greatly affected the estimates of income and expenditures, there is a major flaw in the data. And, it is likely that a major component of this problem is an underestimate of income.

Although the argument has just been made that the biases in the survey were likely to understate the urban-rural disparity, evidence from one other survey corresponds with the Food and Nutrition Survey results. In 1969-1970, the Ministry of Economic Development carried out a Survey of Household Expenditures, the purpose being the development of a consumer price index. It provided a rural-urban breakdown and indicated that rural expenditures were 60% of urban. There is actually a remarkable similarity in the results. The Household Expenditure Survey was done on a monthly basis for families, but if we use average family size of 5.7 for rural areas and 5.3 for urban as derived from family size information in the Nutrition Survey,

we can present the results on a comparable basis in Table IV. In this table expenses in the urban area are uniformly higher, and the taxes and other category is another area where there is a substantial deviation. But the major point is that the overall patterns of this survey are quite similar to those from the Food and Nutrition Survey. It is likely that it would have biases similar to those noted in the case of the Food and Nutrition Survey, but unfortunately there is not enough information to assess them.

The only other source of information on comparative incomes comes from the Manpower Survey of 1965. It specifically excluded own-account workers, with the effect of eliminating the rural farmer, and making the rural wage earner the only rural representative. The median weekly income for workers was G\$20 in urban areas and G\$16 in the rural sector. Thus the rural wage earner attained 80% of the urban, a percentage far higher than that noted in the other studies. This may be the effect of the sugar workers on the wage data for the rural sector. Whatever the case, we find again that there is a substantial gap between urban and rural incomes and purchasing power, one which is consistent with the expectation that substantial amounts of poverty would be found in the rural sector.

Relative incomes are an indirect measure of the relative levels of welfare and much more information on poverty can be gained by examination of direct measures of welfare. One important component of welfare is the access to public services, and comparisons can be made between the urban and rural sectors on one essential public service, education. It is fundamental in two senses. First of all,

Table IV
Household Expenditures
 (Survey of Household Expenditures)

<u>Item</u>	<u>Urban</u>	<u>Rural</u>
Housing	109	46
Utilities	27	14
Household Services	11	1
Education	20	10
Food	225	174
Transport	22	11
Amusement	30	22
Clothing	34	30
Medical Care	34	21

*Household Durables	11	4
Miscellaneous	6	8
Taxes and Others	60	14

**Other Hire-Purchases		
Saving and Insurance		
Remittances		
Religious Contributions		
Other		
Total	597	358

*Categories unique to Survey of Household Expenditures.

**Categories unique to Food and Nutrition Survey.

it provides for the development of human capital which over time should have an impact on incomes and physical welfare. And secondly, it provides welfare directly through its ability to increase one's awareness of and ability to manipulate one's environment.

The 1970 Census did investigate educational attainments and found that on all measures urban dwellers are able to take greater advantage of education. Of males living in Georgetown, 23% obtained some level of school certificate. In New Amsterdam the percentage was 18%. The rates in rural areas are uniformly lower, ranging from Upper Demerara with 11% down to the Rupununi with 3%. The median is 5% in these areas.

The Food and Nutrition Survey found similar variance using as an indicator the percentage of "main providers" who completed school. In Georgetown, this stood at 86% while in the rural areas it was only 53%.

It should be noted that there are a number of difficulties with these data and their interpretation. But they can surely be utilized as an indication of relative access to public service. The results correspond to those obtained for one other public service, water/sanitation facilities. The Food and Nutrition Survey inquired whether households had piped water within 100 yards. In all cases in the urban area they did, but 16% of rural households did not have such access. Similarly 15% of rural households had no bathroom/shower while only 4.7% of urban households were lacking this facility. Similar disparities exist for food storage, with only 48% of rural household having a rodent-proof food safe as compared to 73% of urban households.

One other level of comparison is available from the Food and Nutrition Survey, and it probably is much closer to a final measure of welfare than any of the previous ones. This is the nutritional status of the two areas, and the survey report lists several indicators.

Measures were made of percentages of children of various age groups who showed malnutrition on the Gomez scale. ^{*} For newborns up to 11 years old, the mildest form of malnutrition (Gomez 1) was present in 11.2% of the urban children. In rural areas the rate was 32.3%. Gomez 2 rates were 2.3% in urban areas and 12.1% in urban areas, while for Gomez 3 rates there was a reversal with the 2.3% rural rate lower than the 3.2% urban rate. Overall the pattern seems clear, though the reversal would be interesting to investigate. For youth aged 12-23, a similar pattern exists. Gomez 1 rates are equal at 50%, but the rural Gomez 2 rate is 17.3% compared to the urban rate of 4.0%. Gomez 3 rates are 2.6% in the rural area and 0% in the urban area. While the Gomez classifications are controversial, the pattern seems fairly unchallengable, and later information tends to corroborate it. In terms of the Gomez scale, however, the data allow control for ethnic group, and the same pattern appears; rural rates are higher within ethnic groups than are the urban rates. It should also be noted that,

* Gomez scales are based on any of a variety of bodily measurement of children where comparison is made to a norm. Levels of malnutrition as calculated according to the degree to which a child falls short of the norm. The scale is widely used because of its ease of calculation, though it is open to a number of criticisms. Additional information is available from F. Gomez, "Malnutrition in Infancy and Childhood with Special Reference to Kwashiorkor" in S. L. Levin, ed. Advances in Pediatrics, Vol. 7 (Chicago: Yearbook Publishers, 1955).

correcting for geographic location, the rates are higher for East Indians than for Africans, a factor which may be influenced by biases in the Gomez scale.

Also available from the census are measures of deviation from standard height for a given age; standard muscle circumference for age; standard weight for height at given age; standard arm circumference for age; standard triceps skinfold for given age. Since one of the factors which will influence the results is basic physiognomy, which will differ substantially across ethnic groups, it is important to take the measure which is least sensitive to this factor, which to be the triceps skinfold. In this case we find a difference between urban and rural in the direction consistent with the above data. the percentage of the given group with a measurement less than 80% of the standard, 39.2% of urban males are in this category while 42% of rural males enter the category. Urban females have 36% in this group, while the figure is 40.4% for rural females.

Some more direct indicators of health are available as well. Dental pathology corroborates the urban-rural split, with 59% of rural males over 14 having dental decay compared with only 53.8% for urban males. There are also discrepancies in access to dental care: 80% of rural males have dental fillings while 11.4% of urban males have them. One indication that this may not be a strong factor, however, is that data for females show dental decay to be about equal among the urban and rural females over 14, while the rural females have fillings in 19.1% of the cases compared to 13.1% for urban females. The 6-14 age group, however, shows a wide discrepancy in favor of the urban: decay exists in

69.1% of the rural children and 54.2 percent of the urban, while 1.7% of rural children have fillings compared to 5.2% of urban children.

Measurements were also made of food intake sufficiency. Here the urban areas perform better. In those areas 61.4% of the households attain less than 90% of the required caloric intake, while in rural areas the figure rises to 68.5%. In protein intake, 51.5% of the urban households are deficient, while 55.6% of the rural households exhibit this problem.

One effect of these nutritional results is to blur a bit the patterns which had emerged from the earlier indicators of relative poverty between urban and rural areas. Measures of income, of expenditures, of wages, of education, and of service availability had all indicated that the urban areas relatively were in a far better position than the rural areas. Nutritional status measures in no way reverse this; however, the discrepancies are not as marked in many cases. For some groups, the Gomez differences are not great in absolute terms; and only children in rural areas exhibit significantly worse dental health.

One other aspect of these data comes from the protein and caloric intake measures. On the average, urban persons have higher attainments. But in the most deprived category, those whose intake is 70% or less of requirements, it is often the case that urban populations have a higher percentage falling into this category. While it is difficult to interpret this scant information, it is possible that the average levels of welfare would be higher in the urban areas as we would expect, but that the urban areas would exhibit smaller pock-

ets in which welfare was below that which was attained by the lower segments of the rural population. This would have definite policy implications. Nonetheless, as we turn to the micro level studies, the view that poverty is primarily a rural phenomenon has definitely been supported by the available evidence.

IV. Micro-Level Studies of the Rural Areas

For many problems of policy, the information presented above will allow estimation of the distributional consequences of particular options. However, it is quite apparent that there will be cases in which the distribution of land or income within a micro area will be a necessary input into any decision. For example, any policy for the Rupununi which overlooked the substantial disparities in the distribution of land would be highly unlikely to benefit members of the poor majority. Thus studies which deal with this problem will be important contributions.

Another area in which such studies will be valuable is in the information which they can provide on the actual operation of farms. An understanding of the complex undertakings of small farmers and of the numerous environmental factors which will affect their welfare will again aid substantially in developing activities which will benefit the target group.

In this section, we attempt to summarize the numerous micro-level studies which have been carried out in Guyana and which contribute in these two areas. The quality of the studies varies substantially; the type of information which they gathered is also quite dispa-

rate. In all cases there will be essential questions which were not asked or were not answered. However, when taken as a whole, the mosaic which these studies provides us can be pieced together into a view of the rural sector which provides significant insight into many of our concerns. In addition, the mosaic covers most of the relevant areas of the country, the one major exception being the Northwest where there is very little activity. There is less information than would be desired on the area around Georgetown and down the East coast and on the older, more established coastal areas. In addition, the information which might be available on the sugar plantations was not incorporated because of their rather particular condition.

It should be realized that for purposes of a comprehensive overview of distributions and farm operation, a national sample survey of farms and farm operation would be the only completely acceptable source. The closest approximation to this was the Agriculture Census of 1968, which is of little help since no information from it has ever been published. Apparently, part of the problem is the basic unreliability of the data.

Agriculture in Guyana is quite varied as noted in an earlier section. Thus it is important to note the coverage which is available from the micro-level surveys. A listing of the areas surveyed is given below with a brief description of the area and a brief overview of the type of study which was carried out.

Black Bush Polder: This is a government settlement scheme on the East Coast which was studied by consultants investigating the expansion of the scheme. A sample survey was used to gather information

on the farmers, who are mainly involved in rice cultivation. (11)

East Bank Demerara: A multidisciplinary group carried out the study of the resources of this area. Economic activity is quite mixed, ranging from plantation agriculture to commuting to Georgetown. (9)

Essequibo Islands: The Department of Geography of the University of Guyana carried out an extensive survey of the area which provides a wealth of information ranging from historical data to present-day tenancy arrangements. This is primarily a rice producing area, though coconuts are also grown. (25)

Foodcrop Study: This was not a geographically-bound study but surveyed four areas of the country: Parika on the Essequibo; the Pomeroon River; upstream Demerara; and two areas of Black Bush Polder. The concentration was on those farmers producing crops which are not primarily oriented to the export market. (18)

Riverine Area: A study of the Berbice River area based on a survey of 100 farmers. (24)

The Rupununi: No systematic survey of the area was carried out. However, Hewson, who had worked at the livestock station for years, wrote up an overview of cattle ranching in the area which provides a wealth of information. There is some additional information from studies of the Amerindians. (14)

Supernaam: The study was carried out as part of a feasibility study for a land reclamation project. The farm information is based on a sample of 31 farmers. (12)

Tapakuma: The sample size in the rice producing area was larger, 107 interviews. The basic goals of the study and the instruments used were quite similar to those in the Black Bush Polder and Supernaam studies. (13)

Locating these studies on a map shows that they have very wide-spread coverage and that there are few of the major agricultural areas of the country which are not represented. Piecing them together and drawing out their common findings allows for a general overview of distribution in the rural sector.

As a starting point, it will be useful to provide a general panorama to land distribution in the various areas of the country, working with information from the 1952 and 1968 censuses, realizing all of the problems which these data contain and which were noted above. Based upon the information on the size distribution of holdings, we can estimate Gini coefficients for the major census areas of the country, and these are presented in Table V.

Several major patterns appear from the data. First, almost without exception, there appears to have been an increase in the concentration of landholding during this 16-year period. In some cases there is a 20% rise and in the Northwest area the increase is 50%. Unless this is a statistical aberration, which would make it more difficult to account for the two cases of decreases in the Gini, the evidence points to a consistent increase in the concentration of landholdings across virtually the entire country.

A second factor of note which would seem to correspond with the

Table V
Gini Coefficients for Land Distribution

Geographic Area			
<u>1952 District</u>	<u>1968 District</u>	<u>Gini for 1952</u>	<u>Gini for 1968</u>
1-4	Corentyne-East Berbice	.39	.46
5-6	West Berbice	.39	.46
	Berbice	.39	.46
7-9	East Coast-Georgetown	.47	.53
10	East Bank - Demerara	.47	.51
11	Demerara River	.46	.52
7-11		.47	.53
12-13	West Demerara	.46	.44
	Demerara	.47	.51
14-15	Essequibo islands	.38	.46
16-18	Essequibo Coast	.43	.40
14-18		.41	.43
19	Northwest	.26	.39
20	Mazaruni-Potaro	.35	.35
	Essequibo (less Rupununi)	.42	.43
	Guyana, less Rupununi	.44	.47

Source: R. R. Nathan Study on Foodcrops (18).

first is that there is substantial variation in Gini coefficients, from a low of .26 to a high of .53, and that the values differ consistently across areas. Those in Essequibo county tend to be lower, with the isolated Mazaruni and Northwest areas the lowest. The second most isolated county, Berbice, follows with slightly higher Gini coefficients, while Demerara and the Georgetown area exhibit the highest Gini coefficients. So both from the cross-section view noted here and from the results over time, it appears that the changes in Guyana from 1952 to 1968, given the pattern of development being followed, tended to increase the concentration of landholdings. This of course raises the very important question of the impact of the current government's policies in this area. Given that they tend to be substantially different from those of the British colonial government, their impact is likely to be more beneficial. However, there is no information to document this expectation.

With this as background, we can turn now to the micro-level studies and can consider them at two levels. First of all, we would like to extract from the group of them any commonality which can be found so that generalizations can be made about the rural sector as a whole. The second level will be an abstract of results from the particular studies, which will be contained in an Appendix that provides specific consideration of the findings for any given area.

One starting point is information on landholdings and land distribution in the various areas. The Gini coefficients for the areas with information are presented below in Table VI.

Table VI

Gini Coefficients for Micro Areas

Area	Value of Gini
Black Bush Polder	.10
East Bank of Demerara	.76
Essequibo Islands (Wakenaam)	.66
Riverine Area	.52
Supernaam	.48
Tapakuma	.45 (1968) .47 (1972)

As can be seen from the table, the range of Gini coefficients is substantial. The Black Bush Polder area has virtually an equal land distribution, this resulting from the settlement scheme which provided all settlers 17.5 acres of land for their use. By the time of the survey, 16% of the farms were smaller than this, though none was larger; but the result is quite apparent. At the other end of the spectrum is the East Bank area with a Gini of .76, resulting from the 3% of the holdings which comprised 70% of the land. These were sugar plantations and if they were removed from the data, the Gini would fall substantially. The remainder of the land falls in the general range noted in the earlier statistics, and a review of the data indicates that the dominant factor in setting the Gini coefficient is the prevalence of large farms in the various areas. Thus any program in a rural area will be operating in a situation of relative equality except where there are substantial numbers of farms greater than 50 acres.

A second important question which can be examined in many of the areas is the net farm income from agricultural production. This

is calculated from estimates of input costs and actual production and sale figures. In all cases, this is very low if the results of the studies can be accepted. Using official exchange rates for the year of the surveys, generally 1973, and thus expressing the amounts in dollars of that year, the highest income earners are in the Black Bush Polder area, where income ranges from \$260 to \$500 per year per farm. The average is \$368. The usual standard taken from interpretations of the Congressional Mandate is that target groups are those with net incomes less than \$150 per capita in 1973 dollars. Given the average farm family size of 5.5, it is apparent that even at the top of this income distribution, these estimates indicate a far lower income than the target. This is certainly the case in other areas as well. Using some manipulations, it is found that in Supernaam around 97% of the families would have per capita income below this level even under the most optimistic estimates of their output; in Tapakuma, the same would be true for between 95% and 97% of the farm families. In the Rupununi, only the large landowners would surpass this figure, with even the employed "va^qqueros" receiving only around \$128 US per year.

While admitting the consistency of these estimates of low levels of farm income, there are obviously a number of added factors which must be taken into account. The major one, of course, is own-consumption of farm products, which could add substantially to the real family income. None of these studies made specific correction for this. The only case where such an effort was made was in the Food and Nutrition Survey. It is interesting to note that in that

case own consumption added only around 10% to the families' real consumption. Other factors could also be considered here, and some, e.g. off-farm employment, will be mentioned later. But it will not be possible to obtain a complete view of the net income of these farmers, and thus, we will be unable to say the degree to which these impressively low income figures are poor indicators of farm-level income. We should note, however, that even substantial adjustments to the figures would still leave the per capita income of farm families below the \$150 figure in 1973.

A second general observation has to do with off-farm employment and use of labor, both family and non-family hired labor. At least from the bits and pieces of information obtained, there is relatively little off-farm employment in any of the areas, the possible exception being East Bank Demerara which has a large number of holdings less than 1 acre, an indication that many of these people may actually work in Georgetown. But in the other cases, relatively few people work off the farm, and income generated in this way seems insignificant in overall income. In Black Bush Polder only 14% of the population had off-farm employment, though 33% of the operators were in this category. In Tapakuma, 25% of the operators had such an activity. When the income from such activities are calculated for the Riverine area, the median percentage of income generated by farm activity was 70%.

Only Black Bush Polder and Tapakuma provide information on labor inputs, and the results differ substantially. In Black Bush, average family labor input is 279 days per year, while in Tapakuma

it is 356. Similarly, Tapakuma hires much more outside labor, with 72% of the farms hiring on the average 64 days of labor a year. On both counts Black Bush Polder is lower, with only 45% of the farms hiring, and then only for 28 days on average. The only indication as to why this difference might occur is in the time profile of labor activities. In Black Bush Polder, probably because of the water control, there is very little variation in labor inputs across months. However, in Tapakuma the variation is substantial, with plowing and weeding periods taking substantially greater labor inputs than the other activities. Another factor is the greater mechanization in Black Bush, where 94% of the farmers use tractors to prepare the rice land:

In all areas where family size was reported, there seemed to be an ample supply of family labor, with average family size generally around 6 and with the age profile such that there were on average two children over 15 years of age and therefore able to contribute relatively fully to farm operation.

Each of the studies contains an interesting array of additional information, but there are no other general observations which can be made from an overview. The main additional points of interest are presented in the Appendix which contains brief summaries of the major studies. This section has indicated the general context as seen in the micro studies, and as such it should serve to orient activities to be undertaken in rural areas and to indicate the range of variation which exists among the areas on questions such as labor input and land distribution.

V. The Amerindians

Previous sections made a number of references to the ethnic composition of the population and to differences in economic activity and location which correlated with ethnicity. However, very little has been said about the third largest group, the Amerindians, because of the substantial differences in their economic activity and their settlement patterns. These factors place them on an entirely different continuum, one which bears specific consideration.

The 1970 Census lists the Amerindian population as totalling 34,300 persons, though most writers use 40,000. They reside mainly in the interior areas, generally on reservations, and are 98% rural dwellers. Information on their economy is partial and disperse, but drawing upon the sources available (2, 4, 10, 23), some general comments may be made. The Constitution of Guyana guarantees the Amerindians ownership and control of their reservation land. One of their major problems and concerns is encroachment on the land by settlers, who stake claims, and by other speculators. This is a common pattern as has been documented extensively for Brazil by Davis (6), but it seems that the Indians of Guyana have suffered much less encroachment than those in Brazil.

For the most part, the Amerindians, who speak some ten dialects in the nine ethnic groups and who are predominantly of the Arawak and Carib tribes, live in some 90 remote and separated villages in the Riverine areas of the interior. There has been substantial activity among them by missionaries, and many of their settlements are focussed around missions and government outposts. Their general

pattern of living has been of two varieties. Most were traditionally engaged in a combination of small-scale, slash-and-burn farming and in hunting and gathering. Part of the process of contact with the rest of the society has been the settlement of the Amerindians and an increase in scale of cultivation which they undertake. Dagon's study (4) in a rather superficial manner describes the process which was taking place among the Waiwai, perhaps the most isolated Amerindian group, as a result of missionary activity. Their settlement was growing, the amount of land cleared was increasing, the range of products was increasing, and the importance of hunting and fishing was declining. Hammons (10) reports^a new pattern of "migrant gardening with Amerindians increasingly dependent on wage labor in logging or mining as a supplement to cultivation.

The second pattern is practiced in the Tupununi area of the Southwest where, in addition to small-scale farming, there is substantial cattle raising. Hewson (14) estimated that there were over 10,000 head of cattle which belonged to Amerindians and were run on their concessions from the Rupununi Development Corporation. In addition, a high percentage of the workers on the other ranches, the cowboys of Guyana, are Amerindians.

One of the most complete studies of the question of Amerindians was that carried out by the Amerindian Land Commission (1). It was based on extensive interviews and full consideration of a range of issues, including the possibility of development projects. It also documents the Amerindian communal orientation to land ownership which affects any policy directed at them.

The only direct survey results on the situation of Amerindians is contained in the Food and Nutrition Survey. In some measures of nutrition they seem very malnourished --e.g, on the triceps skin-fold, 80% of the males are below 80% of normal. However, other indicators are more favorable and it is likely that the disparate results are due to difference in physiognomy not taken into account in the survey standards. Nonetheless, what information there is indicates that by our usual standards of income, etc., the Amerindians stand at the bottom of the Guyanese society. But this is a very complex question, as well as one that is highly political. It is an open question whether the usual construct of "development projects" is relevant to the Amerindian situation. But to answer that one way or the other would require substantial investment of time for knowledge development, and a very slow and careful development of any action that would be taken.

VI. Summary

The previous pages have compiled and presented the existing information on income and land distribution and the meeting of basic needs. It should be apparent that there is substantial information available which when pieced together can provide a general view of the distributional situation and of conditions in the rural sector.

It should also be pointed out that there are some areas where there is an obvious lack of information, and which would be of great importance for any study of the rural sector. One of these is the question of the landless. There are bits and pieces of many of the studies which deal with this, but little coherent picture emerges.

It should be noted that this is likely to be less of a problem in Guyana than it would be in most Latin American countries, given the relative abundance of land. A good source for this information may be the Labor Force Survey which has been carried out by the Ministry of Economic Development and which is presently being processed.

A second area which is absent is that of rural industry. Most of the farm level surveys did not consider this directly, though they generally did ask about off-farm employment and some insight can be gained from these questions. Additional information would come from a more extensive treatment of rice through the Guyana Rice Board, with an attendant looking at the rice milling situation. In addition, the Ministry of Economic Development undertakes a questionnaire survey or Census of Manufacturing establishments which have over 5 employees. This exercise is carried out quarterly and then annually and could provide valuable information.

Finally, another fundamental topic which was not dealt with in this study was the rural-urban interface, a crucial component of any treatment of the rural sector. This again does not mean that information is lacking, for there is Census information on migration and there are enough pieces of information that it should be possible to detail many of the links between the two sectors. There may also be survey work in the urban area which could provide a snapshot of urban economic life and allow it to be related to the rural sector.

AppendixMicro StudiesBlack Bush Polder

The Black Bush Polder feasibility report was done by Harza Inc. - Aubrey Barkley during early 1972. This is a government settlement laid out in homestead "villages" where each family has 2.5 acres; the paddy land is apart, in 15-acre blocks. There were to be 16 interviews per village, and a systematic sampling procedure was used. If the selected farmer was not located, the next farm was substituted and the same procedure was utilized if farmers refused to cooperate, again a non-random factor. Field checking was carried out. In this process a sample of 66 rice farmers was obtained, and the information below is based upon this sample.

Several general observations can be made on the farmers based on overall descriptive questions. As might be expected, East Indians are the largest group of farmers, 95% in the sample. Fifty-three percent of the operators had been on their farm for less than 10 years, though 32% of the operators were over 50 years of age and 67% were between 30 and 50 years. This certainly reflects the mode of settlement in the Black Bush area.

It is apparent that there is a substantial family labor pool, for in those families with children, the average number is 6.4 and there are 1.3 times the number of children over 15 years of age as there are parents. Family labor input was reported differently. On a per-acre basis, it was estimated that 5.5 work-days per year were used per acre of rice. For 15 acres this would total 67.5 work

days per year. This does not correspond to figures given for "operation utilization on farm," which indicates on average 279 days spent on the farm. One explanation would be that 214 days of labor are spent on other farm activity aside from rice. In addition, 45% of the farms hired labor, using an average of 28^{work} days per year. The difference from Tapakuma may be due to greater mechanization, for 84% used tractors to prepare homestead and 94% for rice acreage. Most of the latter (38%) was custom-hire work. It is also interesting to note that there is very little monthly variation in labor use, the range being generally between 21 and 25 days per month.

Turning to distributional questions, estimates of land distribution are available from the farm survey. For all farms in 1972, the following distributions are obtained:

<u>Size (acres)</u>	1972	
	<u>% of Farms</u>	<u>% of Land</u>
Less than 5.0	4.5	.6
5.1 - 10.0	12.1	7.6
10.1 - 15.0	0	0
15.1 - 18.0	83.4	91.8
18.1 - 30.0	0	0
More than 50.1	0	0

Gini Coefficient: .10

It is hard to imagine a more equal distribution of land than this, and the reason for it is obviously the settlement pattern cho-

sen by the government. All persons are government leaseholders on 25-year leases. It is interesting to note that in 1973, 3% of the 1400 homesteads had been abandoned.

Two other factors will affect net income per acre: portion of the farm cultivated and yield per acre. Across the different villages, there is very little difference, with an average of 13.9 acres being planted in rice, .87 in vegetables, and 1.23 in fruits.

Some differentiation may also be made accordingly to inputs. Here it is found that 80% of farmers use custom labor and 14% have their own tractors; 66% use fertilizers; 83% use chemicals for disease and pest control; 92% take from 1-7 days to get their rice to the mill; and many have animals (work animals - 14%; cattle - 19%; sheep - 11%; goats - 11%; chickens - 89%; pigs - 2%). Also, 67% used credit; 41% came from the Guyana Rice Corporation primarily for custom work, and 32% came from friends, with only 15% from merchants.

Finally, one other potential source of family income is off-farm employment. In the Harza sample only 43 persons reported off-farm employment out of a total adult population of 298, most of them in fishing or marketing. Twenty-two of the operators indicated such employment.

The one piece of economic information which the study provided was an estimate of net income per acre calculated by applying prices to the output listed in the farm survey. Their estimate is that net income per cropped acre in 1973 was G\$55.55 for the rice. This implies that the net farm income from rice production for the average farm with 13.9 acres would be G\$772.15, or \$365 at the 1973 exchange

rate. One factor which would lower this amount is the productivity of the individual farm, which ranged from 8.8 to 17.2 bags per double cropping season per acre across the villages. This would give a range of net income of \$260 to \$500 per family per year.

Both Nathan and Harza studied Black Bush Polder, the former taking a sample of 77 from two of the communities, the latter having a total sample of 66 of which 30 were from the same two villages sampled by Nathan. Thus in the questionnaires there must be substantial overlap. However, because of the mode of presentation of data, there is little comparability.

There are two exceptions to this. The first is land distribution which both present. There is little variation in this dimension in Black Bush, and so one would expect their results to be comparable, which they are. In the Nathan sample 89% have between 10 and 25 acres, while 81% in the Harza study would fall in the same category. They do differ by a greater percentage on the group with 5-10 acres, with Nathan finding 1% in this category and Harza 14%.

The other area of comparability is in the land in crops as a percentage of all farmland. Nathan finds that 96% of the land in Black Bush was in crops while Harza found that in the two villages only 62% was in crops. While there is no direct explanation of the difference, it seems likely that it is due to Nathan's failure to check the claimed plantings of rice. Harza found a very low utilization of the available rice land.

East Bank Demerara

One of the most extensive studies was carried out under the

joint auspices of the Ministry of National Development and Agriculture, along with the University of Guyana. It is entitled East Bank Resource Survey, and it contains as much of a complete picture of a given area as any of the surveys found.

The East Bank is an area which begins above Georgetown along the Demerara River and continues up to the Soesdyke-Linden Road cut-off point, covering an area of 40 square miles. It was studied by a large and multidisciplinary group who first catalogued the resources available in the area and then pulled together the information on agriculture and industry to provide a sketch of the activity in the area. Most of the economic information is contained in Volume 3 of the study.

The general categorization of the area is that it has gradually been settled over past years, facilitated partly by the extension and improvement of the road. But contained within it are a number of "settlement schemes", along with the remnants of some failed schemes. Thus it seems in almost all ways to be a type of marginal area which is unlikely to provide a major focus of growth for its 23,271 persons in 1960 and perhaps as many as 28,000 by 1976. They benefit by proximity to Georgetown and two modes of transportation to that market center. This has provided the opportunity for a number of small-scale industries.

While all of these factors would be an important part of an integrated study of the area, for purposes of the present study it is of greater interest to look at the income or land distribution figures to see what they might indicate about the area.

The best source of data on landholdings was a survey carried out by the Ministry of Works in 1969. The implied holdings are listed below:

Land Distribution

Number and Area of Holdings By Size Group, East Bank, 1969

Size of Group	Number of Holdings	Percent of total Holdings	Acreage	Percent of total Acreage
1-5	6,768	88.79	3,632	5.09
5-10	392	5.15	3,668	5.14
10-15	254	3.33	2,881	4.04
15-25	86	1.13	1,682	2.36
25-50	58	0.76	2,522	3.54
50-100	18	0.24	1,342	1.88
100-200	12	0.15	1,713	2.40
200-300	3	0.04	780	1.10
300-400	5	0.07	1,692	2.37
400 and over	26	0.34	51,401*	72.08
TOTAL	7,622	100.00	71,315	100.00

Source: Hydraulics Division of the Ministry of Works, Hydraulics and Supply.

* Includes 7,371 acres owned by the Demerara Company Limited.

Gini Coefficient .76

As can be observed, there is a high degree of inequality in land distribution. One difficulty with the information is that one cannot be sure that all these landholdings are agricultural land; many may

simply be homesites for persons who work in Georgetown, and thus their inclusion would indicate more inequality than would be correct. This is made more apparent by the discrepancy between the number of holdings in this sample and those in the 1968 agricultural census, which showed only 595 working farms, and 304 farm families without land. Thus, one really cannot be quite sure what can be said about this question based on this information.

Turning to the type of tenure, again from the Ministry of Works data, one finds that most parcels are freehold, 6067 of the total number. Six are grants, 17 are permissions, and 1541 are leases. Nonetheless, leases comprise the major portion of the acreage, around 45,300 acres in all, compared with the 20,700 acres in freehold. Most of these leases seem to be of state lands.

There is also information from the census on the types of products cultivated. It is seen that there are a variety of crops produced, but that most land is devoted to rice, sugar and cassava. In general, small farms seem to have a wider variety of crops, and many of those are basic foodstuffs. But there does seem to be a tendency to produce more than one crop per holding. Apparently in recent years, there has been an increase in small-scale cane cultivation through the influence of the large cane producers. These farmers rely heavily on the machinery of the sugar plantations for crucial inputs, and in some cases the plantation work force also does the harvesting by hand for farmers.

Thus, as might be expected, quite a complex interaction among producers and farmers and others is found in this small area. Unfor-

Unfortunately there is not any real employment information available to begin to see to what extent the off-farm employment dominates the area and to what extent farming. Suffice it to say that land seems to be unequally distributed, the economic activity is complex, and a much better insight into this complexity is provided in this area than anywhere else.

The Essequibo Islands

At its mouth the Essequibo River is some ten miles wide, and situated in this area are the Essequibo Islands, the two largest of which are Leguan and Wakenaam. The historical development of these areas and the current usage of the land has been analyzed intensively in a series of three occasional papers from the Geography Department at the University of Guyana. The first is a general collection of small research papers, the second compiles some more developed studies about various aspects of the islands, and the final study was an analytical summary of the research written by John Kirby.

The insights on land tenure are of greatest relevance to the present topic of concern. The current tenure pattern originated from land distributions out of sugar estates during two depressions in the industry. In the first case, with emancipation and the decline of sugar, some of the lands were purchased by ex-slaves, and their ownership has been passed down in a type of communal ownership termed "children's land," where land belongs to those who use it and mechanisms for community maintenance of basic infrastructure seem to be lacking. The second group of lands was purchased by East Indian entrepreneurs during the 20th century. These tend to be the best lands

on the islands. Their present tenure depends upon the degree of division through inheritance.

Land is more equally distributed on Wakenaam, and in 1971, the distribution of land was calculated as follows:

Size (acres)	% of acreage	% of owners
0-5	6.4	47.5
6-10	12.8	22.3
11-20	16.3	15.2
21-100	28.8	11.9
100+	35.7	3.1

Gini Coefficient: .66

On Leguan, 56% of the land is held in blocks of over 100 acres, with the largest holding being 882 acres. In addition, on Leguan there is a high incidence of tenant farming on these large estates, something much less common on Wakenaam. It was estimated that 67% of the riceland was tenanted in the first case, with Wakenaam having 55% of its land so operated.

Another major undertaking on the islands is coconut production, and data are presented on the land holdings in this operation as well. Apparently the holdings of this type of land are loosely defined and the returns to be gained may be substantial, though there does not seem to be the intensive cultivation that is found in the case of rice.

Foodcrops

Robert R. Nathan Associates carried out a study of foodcrop production during early 1974. One component of their effort was a farm survey, and our concentration will be on that study. Four areas were

selected as foodcrop areas: an area around Parika on the Essequibo; the upper and lower Pomeroon River; the Demerara upstream from Timehri; and Lesbeholden and Mibikuri in Black Bush Polder. A variety of approaches were used in sampling; simple random in Black Bush Polder; some variant of clustered or systematic in the others. There is likely to be a substantial amount of non-randomness in the resultant sample. Only after-the-fact checking was carried out. In this process, a sample of 321 foodcrop farmers and 25 "other" farmers was obtained, and the information below is based on overall descriptive questions. As might be expected, males are the largest group of operators, 90% in the sample. Fully 37% of the operators were over 50 years of age and 50% were between 30 and 50 years.

It is apparent that there is a substantial family labor pool, for the average size of family is 6.5. Annual family labor input was not calculated; however, farm operators were classified by their involvement in farming. Nathan's category IIB is for farmers relying on off-farm employment, and we find only 9% are in this category, virtually all in Pomeroon and Parika. In addition, they calculated the "excess farm operator potential" by counting the number of sons who were employed but unlikely to replace the operator, calculating a total of 128. Another interesting insight is on the migration of persons: all in Black Bush Polder had lived elsewhere, mainly in Berbice; 60% in the other areas had lived elsewhere.

One factor which will affect farm income is the tenancy pattern. There was only one share tenant found, and apparently this was a temporary situation. Contract production existed only for a few

sugar cane farmers. Most had security of tenure for at least five years.

One other factor will affect net income per acre: portion of the farm cultivated. The general trends are as might be expected. Larger farms have a lower percentage of their farm land in crops.

<u>Size</u>	<u>Land in Crops as % of Farmland</u>
1-4.9	70
5-9.9	53
10-24.9	32
25-49.9	19
50+	15

The Riverine Area

Most population concentrations are on the coast and slightly inland. The Riverine areas provide another pattern of settlement, generally quite disperse but with some agglomeration at crucial transfer points or at other induced sites.

The TAMS study of the Intermediate Savannas has provided us with the best view of this type of pattern, looking at the Berbice River Community.

TAMS found five population centers, all stimulated by the activity of the central government: one mine, three agricultural facilities, and a defense training site. These groups contribute 4,008 persons to the total population of 5,308. Thus, there are roughly 1,300 "settlers"; 43% are mixed race, 34% Amerindian, 20% black, 2% Indian and the rest European. They are spread out along the Berbice River primarily in small clearings close to whatever land they are farming. They rely upon the river to bring their consumer goods and

ship what production they have on it as well.

Their agriculture is of the slash-and-burn variety, and land is plentiful to fallow it and to make legal titles unimportant. Ninety-eight percent had moved their plots in the last 5 years. The age profile seems to indicate outmigration among the youth, and the employment structure among males indicates that logging and working as laborers rival agriculture as the prime male occupation. However, the median percentage of income derived from farming is about 70%, which must indicate that other occupations take second place.

The median length of time farmers had worked their permanent plots was 16 years. Their plot size was distributed as follows:

	% Farms
Less than 1	21
1-3	26
4-6	25
7-9	14
10-12	7
13-15	1
16-20	2
20+	4

Gini Coefficient: .52

No information is provided on the factors determining farm size, though one would imagine that with unlimited land, family size should play a role. The study claims that corn is the major product along with bananas, coconuts, citrus, plantains, ground provision

and mangoes. There is also a smattering of livestock.

The Rupununi Area

This area of some 6,000 square miles is located in the far southwest of Guyana and is isolated physically from the rest of the country almost to the degree it is differentiated economically. For example, viable access to the area is only by airplane; few crops are grown except on a subsistence basis; cattle is king; and holdings are measured in square miles rather than acres. It is also in this area that the contact of the modern economy and the Amerindian economy is perhaps greatest.

The land of the area is poor and in an unimproved state has a low carrying capacity. The largest ranch in the area, called the Rupununi Development Company, ran in 1961 only 12 head of cattle per square mile, while on ^{the} other ranch studied by Levis there was an average of 16 head per square mile. In any case, this is "extensive" cattle raising.

The land in Rupununi has traditionally been Crown Land which is leased on a year-to-year basis, with almost automatically renewed leases.

The study by Hewson provides the only published information giving some insight into questions of landholding and income distribution, though it is very schematic at best. It is based on a smattering of documentation and a good deal of experience while Hewson was the director of the St. Ignatius Livestock Station from 1959-1965. It contains very little information on Amerindian agriculture, dismissing the Amerindian in a way reminiscent of the west of the

United States as "predominantly a hunter, fisher and farmer of semi-nomadic ways and of placid disposition" (p. 4). Certainly we would like to say more about the largest population group in the area. Granting its limitations, Hewson's study can provide some insights, though it is obvious that much more work would have to be done to understand the area.

The starting point should be the land distribution, and Hewson provides information on the 1964 leases as follows (p. 5):

<u>HOLDER OF PERMISSION</u>	<u>SIZE OF PERMISSIONS</u>
B. L. Hart, Co. *	242 ½ sq. miles
Inc. Trustees Church Guyana	50 sq. miles
E. McTurk	142 sq. miles
T. Rufino	50 sq. miles
C. Melville *	32 sq. miles
M. Orella	50 sq. miles
H. Melville *	50 sq. miles
L. D'Aguiar	100 sq. miles
E. E. Melville *	30 sq. miles
V. Davis	12 sq. miles
McDonald	50 sq. miles
C. Gorinsky	50 sq. miles
R. C. Ward	30 sq. miles
H. A. Hart	25 sq. miles
Rupununi Development Company	2,000 sq. miles (approximately)
Nappi Amerindian Reservation	100 sq. miles
Wapishana Reservation	400 sq. miles (estimated)
Potarinau and Kacushi Res.	200 sq. miles (estimated)
Achiwiib Reservation	200 sq. miles (estimated)

(1964 data)

* Indicates that the lands were taken over by the Government of Guyana in 1969 as a result of an insurrection by the Hart and Melville families. They are now operated by the Livestock Development Company, with 90% government control.

It should be noted that only the Gorinsky piece is a freehold

(at a noted rate of G\$15 per 50 square miles - p. 12) or owned, the rest being "leased." Also, the Amerindian reservation lands seemingly had recently been released to them by the Rupununi Development Corporation. On these lands are found about 10,000 head of cattle out of the area's 50,000 total.

While no population figures are available to allow an estimate of land distribution measures, it should be apparent that there is a high degree of inequality which may only be offset by Amerindian possession of forest and other lands which do not enter these statistics.

Similar problems beset efforts to estimate the distribution of income, for no imputed figures on Amerindian incomes are available and Hewson's data are quite old. From Levis, he indicated net income on a 50-square-mile ranch at G\$1,650 in 1960-1961 while the Rupununi Development Corporation had a net of G\$64,886. He estimates farm-hand income at G\$1 per day plus food for 140 days, though elsewhere he talks of skilled "vaqueros" receiving up to G\$135 per month with RDC. Year-round employees in the whole industry may amount to only 200 persons. Hewson indicates that there is no shortage of labor at RDC, which indicates that this may set some upper limit to income in the area.

In addition, there are a few ancillary activities which may generate added income: logging for fence posts ^{and} some tanning of leather.

If we were to take Hewson's figures, which imply an average wage in money terms of G\$140 per year per family (probably for the

early 1960s, this implies that those employed in the Rupunini area would be considered poor if this is defined as per capita income of less than \$150 in 1973. It is likely to be the case even if we impute the income received in the form of food and the income received by own-farm production and consumption. Thus, the only group which can be excluded on the basis of this information is the ranch lessees who seem to earn a net cash income far higher than \$150 per year and who certainly have a high own-consumption component as well.

Supernaam

The Supernaam feasibility report was done by Harza, Inc.- Aubrey Barkley during 1973. Little information is provided on the sample design, but it is indicated that 31 rice farmers were interviewed and the information below is based upon this sample. Some manually tabulated information from the 1968 census also appeared in the report.

Several general observations can be made on the farmers, based on overall descriptive questions. As might be expected, East Indians are the largest group of farmers (62%) in the sample; 28% are Negro. Some 43% of the operators had been on their farm for less than 10 years, and their mean age was 46.

It is apparent that there is a substantial family labor pool, for in those families with children the average number is between 5 and 6. In 1960, 60% of the population was in agriculture and 30% was unemployed, though it is hard to know what to make of this statistic. Little information is given about labor inputs, except to note that 29 of 31 farmers use a tractor for land preparation; 80%

of them hire a tractor from outside.

Turning to the distributional questions, estimates of land distribution are available from both the 1968 census and the farm survey. For the rice farms in 1968, the following distributions and tenancy patterns are obtained:

<u>Size (acres)</u>	<u>% of Farms</u>	<u>% of Land</u>	<u>% Owner Operated</u>	<u>Tenant Operated</u>	
				<u>% Pri- vate Owner</u>	<u>% State</u>
Less than 5.0	72.5	31.3	45.6	52.1	2.3
5.1-10.0	18.4	25.5	46.4	50.5	3.1
10.1-20.0	6.5	16.6	48.6	48.6	2.8
20.1-50.0	2.3	11.2	66.7	25.0	8.3
More than 50.0	0.3	15.4	100.0	0.0	0.0

Gini Coefficient: .48

Thus, we find a relatively equal distribution of land, though less than in Black Bush Polder. Overall, 96.7% of the farms are owned privately, and this is especially true for the large farms where owner operation is also the rule. Private rentals account for 50.7% of the farms, government leases for 2.6%.

Two other factors will affect net income per acre: portion of the farm cultivated and yield per acre. Overall, 44% of the land is cultivated, 36% in rice, 7% in pasture and 1% in ground provisions and coconuts. Of the remainder, 3% is in housing and 58% in canals, dams and bush.

Some differentiation may also be made accordingly to inputs. We find that 80% of farmers grow a "traditional variety of rice"; 30% use fertilizer but only 50% use chemicals for disease and pest

control. One-half of the farmers cut some of their crop by hand, generally using female labor. Their paddy is transported by truck to the mills. Thirty per cent sell only to the Guyana Rice Corporation.

The one piece of economic information which the study provided was an estimate of net income per acre, calculated by applying prices to the output listed in the farm survey. Net income was claimed not to vary by farm size. It is estimated that net income per cropped acre is G\$38.90 with traditional cultivation and G\$68.30 with improved. Taking these as correct, this implies that farmers with a size of farm less than 8.2 acres would have a net income less than \$150 per year, and with improved cultivation those with less than 4.5 acres would be in that situation. These estimates are highly suspect, of course. 1968 data would imply that 70% of the farmers are certainly below this amount, while if all cultivation were of a traditional sort this would encompass about 85% of the farmers.

Tapakuma

The Tapakuma feasibility report was done by Harza Inc. - Aubrey Barkley during early 1972, with one additional area, Johanna Cecelia added in March, 1973. Since two other studies were done by the same firms, it will be useful to detail their common methodology. They used an area frame of equal-sized grids and they randomly selected "one or two farms" within each grid based on names of farmers obtained from government offices. If the selected farmer was not located, the next farm was substituted; the same procedure was

utilized if farmers refused to cooperate. This non-randomness is difficult to assess in terms of its effect on the validity of the sample. Field checking was carried out. In this process a sample of 104 rice farmers and 3 non-rice farmers was obtained, and the information below is based upon this sample. Some manually tabulated information from the 1968 census also appeared in the report.

Several general observations can be made on the farmers, based on overall descriptive questions. East Indians are the largest group of farmers, 83% of the sample, and surprisingly 47.5% of the operators had been on their farm for less than 10 years though 43% of the operators were over 50 years of age and 51% were between 30 and 50 years. This must be a result of the mode of formation of these farms in the Tapakuma area.

There is a substantial family labor pool, for in those families with children, the average family size is 6 and there are roughly the same number of children over 15 years of age as there are parents. Annual family labor input averaged 356 work-days per year, ranging from 542 down to 222 across seven geographical subdivisions. In general, the months of greatest labor use are April, May and November, the beginning of the two rainy seasons, and labor use in those months is about double that of the low month. In addition, 72% of the farms hired labor, using an average of 64 work-days per year and employing labor most heavily in the weeding process. Other use is in the two plowings, harrowing and combining.

Turning to distributional questions, estimates of land distribution are available from both the 1968 census and the farm survey.

It is interesting to note that the census located 353 non-rice farms, but 226 of them had no land. It is likely that these are landless, but we cannot say. For sure, they apparently have a garden and some small amounts of poultry or livestock. For the rice farms in 1968 and all farms in 1972, the following distributions are obtained:

<u>Size</u> (acres)	<u>1968</u>		<u>1972</u>	
	<u>% of Farms</u>	<u>% of Land</u>	<u>% of Farms</u>	<u>% of Land</u>
Less than 5.0	34.7	10.1	18.0	2.0
5.1-10.0	48.0	36.2	34.0	7.0
10.1-20.0	12.9	15.1	33.0	11.0
20.1-50.0	2.4	6.1	9.0	8.0
More than 50.0	2.0	32.5	6.0	72.0
Gini Coefficient:	.454		.473	

There has been an increase in the concentration of land in the Tapakuma area. One factor which may bias the latter figures is the inclusion of uncultivated land, though the 1968 data apparently include bush land. This may be one area in which the sampling procedure gave a bias.

Another factor which will affect farm income is the tenancy pattern. The data from 1968 and 1972 give a similar pattern here. Using the latter we find that 30% of the farms are owned privately. This is especially true of the large farms, meaning that a high proportion (80% in 1972 data) of the land is owned privately. Private rentals account for 22% of the farms; coops, 5%; government

leases, usually for 25 years, 6%; and land development schemes (Tapakuma and Anna Regina), 32%.

Larger farms cultivate a lower percentage of their land, and per acre yields fall as the amount of cultivated land per farm rises. Across all types of tenure private renters seem to obtain the highest yield per acre.

Some differentiation may also be made accordingly to inputs. Here it is found that virtually all rice farmers hire custom labor, but no ground-provision farms do; 79% use fertilizer; 64% use chemicals for disease and pest control; average distance to the mill is 6.4 m and 46% take from 1-7 days to get their rice to the mill; and many have animals (work animals - 25%; cattle - 34%; sheep - 21%; goats - 11%; chickens - 69%; pigs - 30%) Also, 73% used credit; 42% came from Guyana Rice Corporation primarily for custom work, and 32% came from merchants.

Finally, in the Harza sample only 29 persons reported off-farm employment, most of them as laborers, salesmen or fishermen; but this does not seem to be a major contribution to family income.

Another piece of information which the study provided was an estimate of net income per acre, calculated by applying prices to the output listed in the farm survey. Net income was claimed not to vary by farm size. Their estimate is that net income per cropped acre is G\$38.20 on traditional land and G\$93.50 on improved. Taking these as correct, it implies that farmers with a size of farm less than 8.2 acres would have a net income less than \$150 per year in 1973 prices, and on improved land less than 3.5 acres would be in

that situation. These estimates are highly suspect, of course. From the 1968 data, this would imply 25% of the farmers are certainly below this amount while, if all cultivation were of a traditional sort, this would encompass 65% of the farmers.

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