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THE ROLE OF MIGRATORY LABOR IN THE ECONOMIC DEVELOPMENT OF GUATEMALA

by

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This paper is an abbreviated version of the author's Ph.D. thesis of the same title.

INTRODUCTION

In this study the Lewis[1] model of economic development with unlimited supplies of labor has been utilized to interpret and to analyze the data collected by means of mail surveys, field surveys, and personal observations.

The Situation

Agriculture in Guatemala can be characterized by noting the existence of two sectors: the export sector, and the subsistence sector. The export sector consists chiefly of large farms producing cotton, coffee, and sugar cane, while the subsistence sector consists of extremely small farms producing mainly corn and other food crops, much of which is consumed on the farm by the farm family. The most important aspect of this situation, for the purposes of this study, is that the large farmers are able to hire the small farmers to work on a seasonal basis. This furnishes employment and income for the small farmers who migrate for varying periods of the year to work on the large fincas.

The number of migratory farm workers is very large. While difficult to determine, estimates are from 200,000 to 250,000 families, which means that about 1 million of the people in Guatemala were affected directly by this type of work in 1965-66.

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[1] W. Arthur Lewis, "Development with Unlimited Supplies of Labor," in A.N. Agarwahl and S.P. Singh (eds.), Readings in Economic Development, (London: Oxford Press, 1958).

Evidence from finca owners, alcaldes (mayors), and others indicates that the main source of supply of the workers is the so-called altiplano (highlands), consisting of parts or all of the departments of Sololá, Totonicapán, San Marcos, Huehuetenango, Chimaltenango, Quezaltenango, and Quiché, with the two departments of Huehuetenango and Quiché supplying the greatest numbers. However, according to a sample of 33,800 cotton harvest workers in a study made by the National Service for the Eradication of Malaria (SNEM), the numbers of workers from the departments of Baja Verapaz and Jutiapa were exceeded only by those from Huehuetenango and Quiché. Every department except the Petén was represented and of the 313 municipios in these 21 departments, 167 were represented in this sample. The workers from two departments, Escuintla and Retalhuleu, consisted of more voluntarios than cuadrilleros (contracted workers).

Objectives of the Study

The main objectives of this study were to determine the terms of employment of the workers and how these terms of employment affect the role of both of the agricultural sectors in the economic development of Guatemala. Other objectives were to relate these terms of employment to conditions in the home community, to estimate the future of seasonal employment for these people, and to suggest changes in the system of recruitment and transportation as well as changes in conditions on the fincas that would increase the workers' productivity and raise their levels of living.

Methodology

This study consists of a synthesis of information gathered from written materials, informal talks with government officials, economists, finqueros (farmers), alcaldes, etc., a mail questionnaire to alcaldes, a mail questionnaire to finqueros, and interviews with 42 administrators, 120 migratory workers, 59 colonos (permanent workers), and 33 labor contractors, commonly known as habilitadores. The 42 fincas visited consisted of 16 cotton fincas, 19 coffee fincas, 3 sugar cane fincas, and 4 fincas which produced both sugar cane and coffee on a large scale. Most of the fincas were considerably above average size since only the large fincas could be expected to have large numbers of migratory workers.

The 120 migratory workers were divided into two groups, one made up of voluntarios (28 in all), and the other made up of cuadrilleros (92 in all). This classification was made solely on the basis of whether the worker was recruited by an habilitator. With this criterion there were a few workers classified as cuadrilleros who did not contract for a fixed number of jornales[2] of coffee or cotton, etc. and called themselves voluntarios. However, the use of the word "voluntario" as used here included only those workers who travelled of their own volition from their home to the finca or from

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[2] The term jornales refers to a day's work. However, it may also refer to a certain task, such as the cutting of weeds on a specified area, or the picking of 100 pounds of coffee or cotton, which may require more or less than one day.

one finca to another in search of work. The workers who were recruited each day in a nearby village and returned to their home at night were not considered as migratory workers although they are an important part of the total agricultural labor picture.

Hypotheses

The following hypotheses were made on the basis of the Lewis model of development with unlimited supplies of labor:

1) Wages would be extremely low in capitalist employment, since earnings in subsistence farming are low. As indicated by Lewis, the laborers would be barefoot and living in shacks.

2) Wages in coffee picking would be lower than in cotton picking, since the slack season on the home farms coincides to a greater extent with the coffee season than it does with the cotton season.

3) The workers with the least income in the home communities would work the longest period each year on the large fincas.

4) Increases in production on the home farms and increases in employment in the home communities would decrease the labor supply and increase wage levels.

5) The workers earn a large portion of their annual income in capitalistic employment, the small plots being used only for part time residence.

6) Owing to low real wages earnings of the capitalists would be large, providing a potential source of savings and investment.

7) A large portion of the capitalists' earnings would not be reinvested in capital formation, due to the fact that investment

possibilities in the same crops are limited and capital flow from one activity to another is limited in an underdeveloped economy.

Characteristics of the Migratory Workers Interviewed

The 120 migratory workers interviewed in the present study originated from 17 departments and from 54 municipios. Two-thirds were from the altiplano, most of them from Quiché, Huehuetenango, and San Marcos.

Over one-third of those interviewed were single and one-half were below 20 years of age. Though the method of selection probably resulted in a disproportionate selection of the younger workers, observation indicated that there was a fairly large proportion of young men. The rather high percentage (21 percent) of the married migratory workers who had no children reflects the high percentage (24 percent) of the wives who were below 20 years of age. The 59 families who did have children averaged three children per family. Considering that the majority of these workers and their wives were below 40 years of age, it is likely that these families will continue to increase in size. All of this means that the number of persons dependent upon migratory labor will continue to increase as more of the young men marry and as family sizes increase. The proportion of single workers interviewed on the cotton fincas was much higher than the proportion on the coffee and sugar cane fincas.

The literacy rate for 120 interviewed workers was 27.5 percent. This is only about 2 percent less than for that of the rural male population as a whole, according to the 1964 census (with adjustment

for age composition), but the selection of workers to be interviewed on the farms probably prejudiced the sample in favor of the more literate. The difference in literacy rates between the migratory workers and the rural population thus is probably greater than 2 percent.

Less than 12 percent of the migratory workers' children who were of school age were attending school at the time of the interview. The fact that 82 percent of the adults had not attended school while 76 percent of the children 7 to 14 had attended school indicates that some progress has been made in education. Since children often start school after the age of 7 the gain may be larger than 6 percent. Two-thirds of those who had attended, however, had reached only the first or second grade. In few cases do the teachers of Spanish know the Indian language. Apparently, few of the children whose parents do not speak Spanish enter first grade after a year of Spanish knowing the language well enough to be successful in school.

Migratory work appears to be a factor which contributes to the learning of Spanish by workers and their families. All but about six of the 120 workers interviewed spoke Spanish. About 56 percent of those interviewed professed to speak only Spanish, although actually many of these knew the native language as well. Since the caporales (foremen), who speak both languages, generally convey the orders of the administrators, it is not necessary for the workers to learn Spanish. It appears however, that many of them do so.

Only nine of the families still made all or part of their own clothing. Thirty percent of the workers themselves and 45 percent of the other members of their families wore no footwear of any type.

About two-thirds of those who did wear footwear, wore caites, a type of sandal costing about 50 cents a pair.

The majority of both the cuadrilleros and voluntarios had been farmers before working on the large fincas, or were farming in addition to doing migratory work. However, one-third of the voluntarios, compared to only 11 percent of the cuadrilleros, had engaged in other types of work. Two-thirds of each group had worked eight years or less on the large fincas. However, 29 percent of the voluntarios had worked over 16 years on the large fincas, compared to only 10 percent of the cuadrilleros. One-fourth of the cuadrilleros and one-third of the voluntarios began going to the farms to work before the age of 15, indicating that at least this percentage of the workers were second generation migratory workers.

Conditions in Home Communities

A somewhat detailed description of the farming operations of the workers in their home communities is given here to illustrate the inadequacy of the small farms in terms of permitting workers to earn a living from farming.

One hundred seven of the 120 migratory workers had land to work in their home community. About two-thirds were owners; the others worked either rented land or land donated to them for their use. About 80 percent of the owners had inherited the land they were working. The amount of land controlled was extremely small, almost one-half being less than one hectare and 83 percent being fewer than three hectares. Three hectares is the size set by many writers as being

the minimum on which a family can subsist without other sources of income.

The areas actually cultivated were even smaller. About 61 percent of the workers cultivated less than one hectare. Only five cultivated over three hectares. Even when large areas of land were controlled, the area actually cultivated was extremely small.

Only one interviewed worker used a plow to till the soil. The principal tools used were the azadón (an over-sized hoe) and the machete. Other hand tools used less frequently were the piocha and the barra, used to make holes for planting, the macana used to pulverize the soil, and the hacha, or hatchet.

Of the 107 interviewed workers who cultivated soil, 105 grew corn. Average production was 15 qq. (cwt.) per hectare (10.7 bu. per acre). The value of this crop was 66 dollars per hectare (27 dollars per acre) based upon the average price of $3.92 per qq., as estimated by the workers themselves. In 60 cases the corn was interplanted with other crops such as black beans, habas (a large bean), squash or potatoes. The yields of corn on these plots were 1.5 qq. per hectare higher than the average, probably reflecting the better care and the greater return of human and kitchen wastes to the smaller interplanted plots (0.55 hectares) than to the larger plots (1.01 hectares) that were not interplanted.

Beans were mostly interplanted with corn. Of 58 cases, 51 planted the beans with corn with a yield of about 6 qq. per hectare compared to the 8 qq. per hectare for the other 7 cases. Twenty-one workers grew potatoes harvesting 19 qq. per hectare. The yields

were extremely variable, from 7.6 to 100 qq. per hectare. The lower yields were obtained when interplanted. Eleven of the workers grew small grains, chiefly wheat. Yields of wheat for 9 cases averaged 17.2 qq. per hectare. Seventeen quintales of oats were harvested from 0.44 hectares giving a hectare yields of 36 qq. Coffee yields in 5 cases averaged 7 qq. per hectare with a hactare value of about $70. Small amounts of habas, sugar cane, fruit, peanuts, yucca, rice, sorghum, chickpea, and squash were produced with a total value of $365. The habas, chickpeas and squash were interplanted with corn.

Eighty-five percent of the slightly less than $9,000 worth of crops was consumed by the farm family. A higher percentage of the corn was consumed as the farmers were more likely to sell the other crops, such as wheat, than to sell corn.

The farmers using improved methods averaged $87 per hectare while those not using such methods averaged $66 per hectare. The improved methods were the use of chemical fertilizer, manure, chemical weed or insect control, and improved seeds. Those who used animal manures averaged $116 per hectare while those who used one or more of the other practices averaged $76 per hectare. This does not necessarily mean that the use of animal manures is better than the other practices. The rate of application, method of application, the fertility of the soil, etc., are variables not considered.

Over one-half of the migratory workers had animals or poultry with an average value of $64, eliminating one worker who had $1,000 worth of horses. One hundred eight-four sheep were owned by the farmers from Huehuetenango, San Marcos, Quiché, Quezaltenago,

Totonicapán and Sololá. All of the 23 goats were owned by workers from Quiché. Most of the hogs were owned by the highlanders, chiefly those from Huehuetenango. Cattle and horses were owned chiefly by the workers from Jalapa and Jutiapa, though one worker from San Marcos had seven cows. The 684 poultry (mostly chickens, but a few turkeys also) were owned by workers from every department, though over 20 percent of them were owned by one worker from Suchitepequez. Despite the fact that the total value of the animals owned was nearly $5,000, sales were only $36, while $266 worth were consumed and $330 worth were bought.

There were 96 workers who cultivated land and who gave an estimate of the value of their land and animals. The average value of the land and animals owned was $264, as estimated by the workers themselves. If one were to include $10 for an azadón and a machete the average would be about $275.

Very few of the workers from the highlands reported that there were large fincas nearby on which they could work, but a large majority said work was available with neighbors who had somewhat more land. Only 28 said there was non-agricultural work available in the community. The average wage for agricultural work was 40 cents per day, but over 1/2 reported wages of 35 cents or below. About one-third received rations in addition to these wages. Non-agricultural wages averaged 59 cents per day, though 65 percent reported wages of 55 cents or below. Only 15 workers reported having off-farm earnings in their home communities, the amounts ranging from 90 cents to $424, with an average of $106. The proportion of workers who had

non-farm income in the community was higher for Guatemala and Jalapa than for the altiplano. Two-thirds of the habilitadores said that there was non-agricultural work in the community. The type most often mentioned was cottage industry. A few habilitadores observed that migratory workers did not engage in this type of work, though others in the community did.

The houses in which the workers lived were made of adobe or wattle and daub, with thatched or tile roofs. In Quiché, the majority of roofs were tile while in Huehuetenango and San Marcos they were thatched. All floors were of soil. The majority of the houses consisted of a single room with an average of 5.2 occupants. There were two cases in which the houses were lighted with electricity; otherwise ocote (pitch pine), kerosene lamps, or candles were used. About 55 percent of the houses had windows and 17 percent had some type of toilets.[3] Fifty-eight percent professed to get their water from a well or a pila (pipes). The value of the houses as estimated by the workers varied greatly, with an average of $103, leaving out one exceptional case. About 75 percent, however, were valued at $100 or less, and 42 percent at $50 or less.

A majority professed to eat more than double the minimum amounts of corn recommended by the Nutrition Institute for Central America and Panama (INCAP); and a majority, more than the recommended minimum amounts of beans and panela (crude sugar). From 5 to 25 percent ate varying amounts of one or more of the following: meat, milk, lard,

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[3]Generally the type called an outhouse in the United States.

rice, eggs, potatoes. About 85 percent drank coffee. Also there were a few who ate vegetables, fruit, bread, habas, noodles, or chili.

The average migratory worker who tilled the soil had a gross income of $83 from 1.04 hectares of land, with a crop expense of $10. The cost of animals bought was about the same as the value consumed and sold, leaving a net farm income of $73 per year. Net farm incomes averaged $50 for the married cuadrilleros, the difference reflecting the smaller area cultivated and the lower yields than for the other groups. The eight single voluntarios, on the other hand, earned an average of $107, with the values for the other groups falling between these extremes.

Food represented 73 percent of the expenses of the seasonal workers, and clothing, 18 percent.[4] Average family expenses were $151, or almost 100 percent greater than the average net income. Net income averaged $80 for the 118 workers who either spent some time in their community during the year or whose family members remained behind. The figure includes non-farm income in the community.

System of Recruitment and Transportation

This part of the study deals only with the cuadrilleros and not with the voluntarios. The cuadrilleros are recruited by finca representatives generally called "habilitadores," but sometimes called "contratistas" or "enganchadores." Apparently, this system of recruiting is used with 150,000 or more workers. Ninety-two of the

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[4]The value of the food produced is treated both as income and as expense.

120 workers interviewed belonged to the category of cuadrilleros.

The total number of habilitadores is not known, but several lists obtained from labor offices, alcaldes, and a study by the Malaria Control group contained a total of 1,200 names, with but few repetitions. Ninety-three cotton farms, representing 20 to 25 percent of the employment on the cotton fincas, had hired nearly 500 habilitadores. According to these data, the total number working for cotton farms alone must exceed 1,000. The total number probably approaches--and may exceed--2,000.

Only 33 habilitadores were interviewed, but there was so much similarity in their answers that this small sample may be considered representative. Four were interviewed in the department of Guatemala, 13 in Quiché, 12 in Baja Verapaz and 4 in Huehuetenango. These 33 habilitadores worked for fincas throughout the coastal area, except for San Marcos.

The system of habilitación conformed in some respects to the labor code. A carta-poder is sent to the habilitador by the finca owner or administrator empowering the habilitador to contract workers for him for a period of one year. This carta-poder states the monthly salary to be paid to the habilitador, in accordance with the law. This stipulation is generally disregarded, however, and the habilitador is paid a commission instead. The finca administrator estimates his labor needs and makes a contract with the habilitador to supply a given number of jornales[5] to the finca. Both the

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[5]Equal to quintales picked of coffee or cotton or in some cases one day's work.

carta-poder and the contract must be registered with the labor department.

A sample contract supplied by an administrator of a finca of the Banco Agrario had several interesting features. Since habilitadores are prohibited from representing fincas, the word "contratista" was used instead of habilitador, though the latter is invariably used in verbal conversation. The contract stipulated that 8 cents per jornal was to be paid the habilitador; that is, 8 cents for each 100 pounds of coffee picked by the workers recruited by him. This contract stipulated that the wages to be paid the cuadrilleros and the commission to be paid the habilitadores could be reduced from the values stated (80 cents and 8 cents respectively) if the price of coffee were to drop.

Some habilitadores work for more than one finca, and many fincas hire more than one habilitador. In a list of 319 contracts between farms and habilitadores the names of 18 habilitadores were repetitions, indicating that there were few who worked for more than one farm. However, these 319 contracts represented 171 farms, indicating that the farms hired an average of almost two habilitadores per finca. The 93 farms involved in the SNEM study hired about four habilitadores per farm.

The habilitadores were generally paid commissions equal to 10 percent of the wages earned by the migratory workers which they contracted. The number of cuadrilleros contracted by each of the 33 habilitadores interviewed varied from 15 to 1,150, with an average of 258. Commissions ranged from $90 to $4,950, with an average of $1,626

for the contraction of 18,746 jornales. About 60 percent of the habilitadores earned over $1,000 a year from contracting workers. Apparently, in the three crops (coffee, sugar cane and cotton) about 18,000,000 jornales of work are performed by the migratory workers. At least two-thirds of this has probably been contracted through habilitadores. With an average of 10 cents per jornal (some receive 6 cents and some 15 cents) the habilitadores must have been paid about $1,200,000 for recruiting workers for the harvest of these three crops during the 1965-66 season. They received perhaps 10 to 20 percent more for the weeding, pruning, etc., for which some fincas hire migratory labor.

Most of the workers contracted for 30 days at a time. This was especially true in cotton and least true on the coffee fincas, especially in San Marcos. Some growers said they would like to have the workers contract for more than 30 days while some of the workers indicated that they would like to work for more than 30 days, but that contracts for 30 days only were offered by the habilitador. The growers would save if the workers contracted for longer periods of time since transportation costs would be lower. Some interviewed workers had stayed after the termination of their contract, which meant the grower did not have to pay the 10 percent to the habilitador for the extra work done by the workers. It seems likely that the custom of contracting workers for not more than 30 days at a time rather than 60 or 90 days gives the finca administrator more flexibility in hiring, since it may not always be possible to determine the labor needs in advance. The workers, while they obviously could

make more money if they remained longer, said they returned to their homes in 30 days because they did not like the climate on the coast, or that they had left their family behind. Not mentioned was the probability that as the yield diminished they were not able to pick as much per day, and that increases in the rate of payment were not raised sufficiently to make up the difference.

Most contracts were only with the head of the family or with the head and the older sons. The wives and children contributed to fulfilling the jornales contracted for by the head of the family. On government fincas, however, women, and children as young as 10 years of age had separate contracts, which entitled them to rations and payment of their passage.

An important part of the habilitación process was the anticipo given to the worker. This consisted of a sum of money ranging from $1.50 to $42, but more commonly $2 to $5, which was given to the worker in anticipation of his going to work on the finca. To repay this money, the worker's wages were later discounted. The anticipo was used to defray costs of the trip, to leave with the family in case the worker went alone, or to buy food on the finca before the first week's rations were given.

Some of the habilitadores said that the workers sometimes contracted with more than one habilitador receiving anticipos from each. A few said they had lost as high as $1,500 a year in anticipos in this manner. This figure appeared to be an exaggeration in view of the number of jornales contracted. Seventeen of the 33 habilitadores said they lent money to the workers in addition to the anticipos,

but none admitted charging interest. Fourteen habilitadores said the loans were used for illness or family expenses, while two said they were used for productive purposes.

Many of the finca owners said that it was the habilitadores that gained the most from this system. It was not possible to learn from the migratory workers whether or not they were taken advantage of by the habilitadores. However, judging from the evidence of statements of finca owners and of Appelbaum[6] it is likely that the workers were often cheated, and at times the finca owners also. It would appear that with this system of habilitación there are many chances for misunderstanding or plain cheating of the worker, especially in view of his low educational level. Generally, there appears to be suspicion on the part of each group of the other two groups.

The workers are generally transported by truck, about 50 to a vehicle, besides women, children, and belongings. In most cases there are no seats so they must stand for the entire trip. About 10 percent of the workers interviewed traveled on foot. Where bus service is available, many travel by bus. The cost by bus was $1.41 and by truck $1.76 per person. This probably reflects the shorter distances traveled by bus but indicates that the cost by truck is high.

The trucks are generally owned neither by the fincas nor by the habilitadores but by transportistas. It appears that the transportista also profits from the truck transport for cuadrilleros.

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[6] J. A. Appelbaum, "Migraciones Temporales en San Idelfonso Ixtahuacán" (original in English), Public and International Affairs, Vol. IV, No. 1, Spring 1966.

For example, he is paid close to $100 to transport a group of workers from Rabinal to a finca near the coast, a distance of 150 to 180 miles over roads that are fairly good.

As would be expected, the workers who spent the longest time on the fincas were usually accompanied by their families. The 120 workers in the sample were accompanied by 112 family members, despite the fact that about 38 percent of the workers were single. This indicates that the number of women and children who work on the fincas is quite high. Although a number of cotton finca owners said that only men engaged in cotton picking, the proportion of family members to adult male workers was not much lower than on the coffee fincas. It was much lower, however, on the sugar cane fincas, since sugar cane harvesting is harder work than picking cotton or coffee.

Housing varied considerably from finca to finca. On a few coffee farms and on most cotton farms the shelters consisted of a roof supported by poles without walls or partitions of any kind. Up to 500 workers slept in this structure. There was one finca with thousands of workers where there was no shelter whatsoever. Most floors were dirt and most roofs were steel. However, there were some fincas that had buildings of concrete block with divisions for each family or group of workers, with the upper part of the walls made of screen to keep out insects. On some fincas beds were furnished, but on most fincas the workers slept on the ground, in hammocks or on straw mats. About 30 percent of the fincas had sanitary facilities, and about the same percentage furnished electricity for the migratory workers. Ninety-five percent had water supplied from a well or pila, which

means that it was supposedly potable. Conversations with the administrators and owners indicated that the quality of the water was sometimes doubtful, however. Probably the workers sometimes drank water from other sources, as they often worked some distance from the finca headquarters and did not return during the day.

The rations furnished to the workers generally consisted of corn, beans, salt and lime. The most common quantity of corn furnished was 12 to 14 pounds per week, and of beans 1 to 2 pounds per week. However, 50 percent of the cotton workers, 6 percent of the coffee workers and 17 percent of the sugar cane workers received no corn. The same percentages of the cotton and sugar cane workers, and 52 percent of the coffee workers received no beans. Many of the coffee farms furnished some low grade coffee also. A few received small amounts of panela, sugar, and rice.

The amount of food supplied in the rations was generally below the amount the workers said they ate in their home communities. About one-half, however, said either that they had brought some food with them or that they purchased food while on the finca. There was a total of 18 different varieties of food bought by at least one worker, even when fruits and vegetables were considered as groups rather than separately. The principal foods bought were beans, corn, meat, and coffee.

Work on the large fincas, especially in the lowlands, has a reputation of being bad for the health of the migratory workers. About 70 percent of the workers said they had been ill at some time or another while working on the fincas. About 7 percent of the coffee

workers, 25 percent of the cotton workers and 30 percent of the sugar cane workers said they had had malaria. These percentages reflect the location of the fincas, the cotton and sugar cane farms being at a lower altitude than the coffee farms. Other workers said they had had dysentery or diarrhea, diseases which often occur where sanitation facilities are either lacking or not used, which was the case on the majority of fincas. On the altiplano, the return of human wastes to the soil probably keeps yields higher than they would be otherwise. But on the fincas inadequate provision for or use of facilities for disposal of human wastes creates a health problem because of large numbers of workers.

Poisoning from insecticides has attracted national attention in Guatemala. About 1,500 persons were treated for poisoning and 10 deaths occurred during the 1965-1966 crop season. During the 1966-1967 crop season about 200 fewer were treated, but a few more deaths occurred than during the previous year. Most of the poisonings occurred on cotton fincas, though some occurred on other type fincas also.

Most of the fincas had some type of medical clinic. Twenty-three employed nurses. Most coffee and sugar cane fincas and one cotton finca hired a doctor who visited the finca once a month.

Incomes and Expenses of Seasonal Workers

The usual method of payment for seasonal workers was on the basis of piece work rather than by the day. The size of the tarea or jornal may vary from farm to farm, and on the same farm from time to time according to conditions.

On most coffee fincas the picked coffee was measured by means of a wooden caja, or box, into which the coffee was dumped. The amount of coffee picked was generally then recorded in the finca books. On some fincas the worker was given a colored token which he later presented for payment.

The caja is defined by law to be 100 pounds, although the exact weight varies according to the moisture content of the berries. On three of the fincas visited the caja held 123, 135, and 150 pounds, according to the administrators. Evidently this was not uncommon. Appelbaum[7] reported that about one-third of his informants complained that the caja was oversize on the fincas on which they had worked. On the basis of a 100 pounds caja the lowest wages paid were 40 cents per caja and the highest was 80 cents, according to the administrators. No workers said that they received as low as 40 cents and a few said that they received over 80 cents. According to the workers, the average wage per caja was 72 cents for the cuadrilleros and 75 cents for the voluntarios. According to the administrators, the wages were 65 cents and 68 cents. Any inexactness of measurement was invariably resolved in favor of the finca. For example, when the berries filled the caja between the seven-eights and one caja marks the workers were paid for seven-eighth of a caja.

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[7] Ibid.

The standard unit of weight for payment for cotton was 100 pounds. Sackfuls of cotton were weighed on various types of scales, the platform type being the most common. Since the sacks were weighed with the cotton the gross weight was discounted for the weight of the sack. According to an article in the press,[8] five pounds was the proper deduction for each weighing, which includes two pounds for the sack, two pounds for moisture and one pound for foreign material. According to the same article the usual discount was 15 to 25 pounds. The writer was told by an airplane pilot that a neighboring farm discounted 15 pounds, and one habilitador said that he had quit working for a finca because it had discounted 20 pounds. The largest discount actually observed was 10 pounds. It was obvious that a large amount was discounted on other farms also, although there did not appear to be any consistency in the amount.

The wage rates averaged $1.08 per quintal for the cuadrilleros, and $1.30 for the voluntarios,[9] according to the administrators. The wages reported by the workers averaged 7 cents less for the cuadrilleros and 13 cents more for the voluntarios.

Most, if not all, of the sugar cane is cut with the machete. Generally, it is heaped in piles from which it is then loaded into trucks, tractor-drawn trailers, or ox carts. Two or more workers usually work together. Apparently the cut cane is not weighed, but

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[8] Prensa Libre, September 19, 1966.

[9] Most of the cuadrilleros also received rations, while most of the voluntarios paid 30 to 40 cents daily for food.

rather estimated by the truck, wagon, or cart load. The wage rates were from 40 to 80 cents per ton, with the latter figure being most common.

There are other types of tareas for which the workers were paid. For example, on one finca two workers were interviewed who cleaned irrigation canals and were paid according to the length of canal cleaned. Comparisons were difficult, since the length of time needed to perform a certain task varies not only with the capacity of the worker but also with many other factors, such as the yields of the coffee bushes or cotton plants.

Besides cash wages the workers received certain perquisites, principally rations. Unlike wages, which the workers generally estimated higher than the administrators, the values of the rations were generally estimated higher by the administrators than by the workers. The administrators of the cotton, coffee, and sugar cane fincas estimated the value of weekly rations at 80 cents, 87 cents, and 90 cents, respectively, while the workers estimated them at 68 cents, 65 cents and 77 cents, respectively. As mentioned earlier, rations were not provided on all fincas.

No calculation was made of the value of living quarters, not only because it was negligible but because they are not really part of the worker's earnings since they already have homes in their own community. The value of the living quarters could be considered as part of income, but it would then also have to be considered as an expense of working on the fincas rather than as a contribution to their real income, as are the rations.

All of the coffee workers, most of the sugar cane workers and one-fourth of the cotton workers said that they were paid for the seventh day as required by law. According to the administrators, this payment was on the basis of what they earned during the week. Some administrators paid for one extra jornal for each 6 worked, regardless of how many days it took the workers to accomplish the six jornales. Seventy percent of the coffee workers, one-half of the sugar cane workers, and 8 percent of the cotton workers were paid for the official holidays. The coffee and sugar cane fincas also were more likely to pay for holidays of the finca, to give some compensation when the worker was ill, to supply free medicine, and to allow the picking of fruit. Thus, although the cotton fincas paid the highest wages, the perquisites received by the workers on the sugar cane fincas and especially on the coffee fincas made up for part of the difference.

These perquisites, as well as the difference in the climate, were probably the reason that a fairly high percentage of the workers interviewed on coffee fincas said they preferred work there, while a much lower percentage of workers interviewed on cotton fincas said they preferred to work on cotton fincas. However, five habilitadores said the workers preferred cotton fincas because of the higher pay. Two habilitadores said the workers preferred fincas in Tiquisate because of better housing conditions. Those migratory workers interviewed on the cotton fincas showed less preference for the particular finca on which they were working than did those on the other fincas. Apparently, many who claimed

indifference were not satisfied with the conditions on the finca on which they were working but knew of none better. Reasons for preference of one finca over another were: higher pay, payment for seventh day, free coffee and atole (a drink made of corn), free medicine, good water, easy work, shorter hours, better living conditions, and better housing.

Earnings of the workers depended upon the amount of work they performed. The workers interviewed were paid for averages of 1.05, 1.09, and 1.15 jornales per day on the cotton, sugar cane, and coffee fincas, respectively. This included the contributions of the wife and children. Therefore, one reason that average numbers of jornales per day was slightly higher on the coffee farms than on the other farms is that more members of the family accompanied the workers and took part in picking.

Personal observation and conversations with administrators indicated that the amount of coffee and cotton picked averaged 70 to 80 pounds per day per male adult worker. Some women picked more coffee than their husbands. The amount picked varied greatly depending upon the yield of the coffee bushes and the ability and ambition of the worker. One administrator on a cotton farm said that he had one family of cuadrilleros, consisting of several brothers, who each picked 130 to 150 pounds per day, and that if all his workers were of this caliber he would need to hire only about one-half as many workers. It is said that, at a cotton forum in August, the "famoso cuadrillero de Guatemala" picked only 40 pounds per day. One of the alcaldes said that the workers were able to pick only 50 pounds per day.

The migratory workers interviewed on the cotton fincas worked an average of 74 days per year. Those interviewed on the sugar cane farms worked 99 days and those on the coffee farms, 136 days. The migratory workers on the cotton farms who did not receive rations earned cash wages of $1.31 per day, compared to a cash wage of $1.04 per day for those who did receive rations. Taking into account the value of the rations, the second group received $1.18 per day. The first group spent 45 cents per day for food per family, and the second group 25 cents per day. Thus, the second group had 93 cents remaining above the cost of food, and the first group had 86 cents.

All of the migratory workers on the coffee farms were considered to have received rations, though on one farm they received only a small amount of coffee. These workers earned an average cash wage of 75 cents per day, and 13 cents worth of rations for a total of 88 cents. They spent 30 cents per day for food, leaving an average of 58 cents above food cost.

The sugar cane workers earned 97 cents per day with rations, and 88 cents without rations. The group with rations spent 19 cents per day for food, while the group without rations spent 39 cents for food. Thus, there was 29 cents difference between the groups in earnings per day above food cost.

For the three groups that received rations the average per capita daily expenditure for food was 13, 14, and 15 cents. For the two groups that did not receive rations the daily expenditures per capita for food was 25 cents and 20 cents. All of these figures include the value of rations both as earnings and expenses.

The average amount earned on the fincas was $103 (including rations) for 101 days of work. Thus, taken as a whole, the workers earned about $1.00 per day, including the value of the rations. This includes the value of earnings of the head of the family and the wife and minor children when they accompanied him. The 38 voluntarios worked an average of 107 days and earned an average of $117, while the 92 cuadrilleros worked an average of 100 days and earned $99. In the case of both the cuadrilleros and voluntarios, the single men worked slightly fewer days and earned slightly less than the married men.

As might be expected, the largest expenses were for food.[10] About 32 percent of the earnings were spent for this purpose while on the fincas. About 5.5 percent was spent for clothing and shoes and an equal percentage was used to repay the anticipo. Illnesses and other expenses each took about 2 percent. About 18 percent was taken back to the home communities by the workers. This leaves about 35 percent unaccounted for, which means that the amounts earned on the finca were smaller than calculated, that the workers spent more than calculated, that they brought more money back with them to the home community than they said they had--or all three. It is possible that their earnings were overestimated, but it is more likely that the amount spent while on the finca was underestimated. The evidence indicates that some bought food who said they had not.

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[10] Rations are included as both income and family expense.

It is also likely that they spent money for such items as lighting, drinks, and cigarettes which were not recorded. Placing the work on the fincas in the best possible light, it is calculated that the migratory workers returned to their home communities with the full 53 percent of their earnings not identified as having been spent on the fincas, rather than with the 18 percent they said they brought back. Most workers said that the money they brought back would be spent for food and clothing. Six workers said that this money would be used to pay expenses of cultivating their land.

The 53 percent of earnings brought back to the home community thus nearly eliminated the deficits in income as compared to expenses in the home communities. The living expenses of the married cuadrilleros in their home communities were 275 percent of their income; for the single cuadrilleros, 113 percent of their income; and for the voluntarios, somewhere between these extremes. It is significant that, for the married workers, a deficit still existed, while the single workers had slightly greater incomes than living expenses. The average net incomes for the migratory workers ($181) compared favorably with the $154 of the 70 migratory workers interviewed in the Hill-Gollás study.[11] The married cuadrilleros had an income of $164, just $10 more than those of the Hill-Gollás study. The composition of the income was different, however, The migratory workers interviewed in this study worked an average of 101 days,

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[11] George Hill and Manuel Gollás. Unpublished material from a study of the western highlands of Guatemala.

compared to 63 days for those in the Hill-Gollás study--a result of the location in which they were interviewed. The Hill-Gollás figures also did not include the value of rations received on the fincas.

In their home communities workers produced an average net value of $73 from 1.04 hectares of land which, according to Hill-Gollás and Wagley,[12] would require about 52 days of work. This is $1.40 per day worked, as compared to $1.02 per day for the work on the fincas. Actually, the workers earned $103 during the 101 days spent on the large fincas, but only $78 during the 264 days spent in the home communities. This amounts to about $1.00 per day on the fincas, and 30 cents per day in the home communities. The large number of days unemployed in the home communities accounts for this lower income per day.

The Hill-Gollás data indicates that the migratory workers interviewed in that study had less land and lower incomes in their home communities than did the non-migratory workers. It was thought, therefore, for the workers interviewed in the present study, that there might be a relationship between the number of days worked on the large fincas and the amount of land cultivated and income in the home community. When calculated without consideration of the number of dependents per worker, no such relationship was detected. However, when calculated on a per capita basis, there was evidence of a slight decline in income in the home community associated with an

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[12] Charles Wagley, "Economics of a Guatemalan Village," Memoirs of the American Anthropological Association, No. 58, Menasha, Wisconsin, 1941.

increase in the number of days worked on the large fincas, as shown in Table I.

Table I

Income in the Home Community

Length of time worked	No. Cases	Average number of family members	Family income	Per capita income
0 - 50	31	2.51	$ 79.42	$ 31.39
50 - 100	38	3.51	102.64	32.65
101 - 150	16	3.61	92.61	25.51
151 - 200	9	2.5	61.90	24.76
201 - 250	10	3.6	85.13	23.64
250 - 365	3	5.3	4.00	0.75
Total 101	107	2.91	$ 87.52	$ 30.70

However, those who spent less than 50 days working on the large fincas earned 73 percent of their income in their home community, as compared to 28 percent for those who worked 201-250 days on the large fincas. This is shown in Table II which includes only the 107 cases with farm income.

Table II

Annual Per Capita Earnings of Interviewed

Migratory Workers and Their Families

Days worked	No. of cases	Average in community	Percent in community	Average on fincas	Percent on fincas	Total	Percent
1 - 50	31	$ 31.39	73.4	$ 11.36	26.6	$ 42.75	100
51 - 100	39	32.65	59.8	22.29	40.2	54.94	100
101 - 150	16	25.51	40.2	37.93	59.8	63.44	100
151 - 200	10	24.76	29.9	57.99	70.1	82.75	100
201 - 250	10	23.64	28.6	58.23	71.4	81.87	100
251-365	3	0.75	1.1	70.28	98.9	71.03	100
Average	107	$ 28.26	47.9	$ 30.78	52.1	$ 59.04	100

As shown in Table II, earnings per capita in the home community increased only slightly with increases in the length of time worked on the large fincas, except for the group which spent almost the entire year working on the large fincas. The percentage of income earned on the large fincas increased steadily with the increase in number of days worked on the large fincas, but this was mostly due to the increases in the earnings on the large fincas. In general, total earnings increased with increases in earnings on the large fincas. These data indicate that many of the small farmers who earned in the home community more than the minimum amount necessary for existence nevertheless chose to work on the large farms, as did those who earned less. This indicates that many workers do not restrict their earnings to the amount necessary for existence. This evidence refutes the idea that the workers have a goal of a certain income and work less when they are offered more money.

In order to make possible a comparison between the migratory workers and the colonos some information was gathered on wages and living levels of the colonos. A limited number of questions were asked of the colonos, the questionnaire being designed chiefly to supplement rather than to duplicate a study of 1,800 agricultural wage earners done by the Instituto de Investigaciones Económicas y Sociales. The interviewing for this study has been completed and some information is available.

Cash wages of peones (unskilled laborers) were about $8.00 per month more on the cotton farms than on the coffee farms. About $2.50 of this difference was, however, eliminated by the higher

value of rations and land given on coffee and sugar cane farms, so that in terms of total earnings the difference was only $5.50 per month. Significant, however, was the fact that cash wages for the 16 permanent workers interviewed on the cotton farms was $44.66, compared to $35.86 for the 12 permanent workers on the sugar cane farms, and $21.55 for the 31 interviewed on the coffee farms. This was due to the larger proportion of skilled or semi-skilled workers interviewed on both the cotton and sugar cane farms as compared to the coffee farms.

In general, the living conditions were better for the colonos than for the migratory workers. At worst, they were able to have a house of their own, however humble. Over one-third had electricity, about 60 percent of the houses had windows, and about 25 percent had cement floors. Except for four colonos on cotton farms, all of the houses had roofs of steel or tile. Most had wooden walls, although there were some of adobe, cement block, and wattle-and-daub. These conditions are reflected in the opinions of some administrators and owners, several of whom said that conditions for colonos were "tolerable," while for the migratory workers they were "deplorable."

Nearly one-half of the colonos and less than 2 percent of the cuadrilleros had radios. However, a higher percentage of the colonos on the coffee farms had radios than did those on the other type farms, indicating that the earnings level may not have been the only factor involved in the acquisition of radios. A colono on a cotton farm was the only worker interviewed who read a newspaper.

A majority of the coffee and sugar cane fincas aided their aged residents and widows in one way or another. Few aged or widows lived on the cotton fincas, because the number of permanent employees were generally low and the fincas had not had been in existence--at least as cotton fincas--as long as most coffee and sugar cane fincas.

Most of the coffee and sugar cane fincas furnished schools and paid the teachers' salaries. The number of children living on cotton fincas was low, so few cotton fincas had schools. The schools were generally better constructed than the colonos' houses and most had electricity and toilets of some kind. Few of the teachers had received teachers' training, but on a few fincas they were normal school graduates. A much higher proportion of the colonos than of the migratory workers were literate.

The opportunities of migratory workers to remain on the fincas seem to be extremely limited, though a few were interviewed who spent all year there, returning every 30 or 60 days to the home community to sign a new contract with the habilitador. These workers could be considered as colonos, from the point of view of residence on the fincas, but were cuadrilleros from the point of view of their contractual arrangements with the finca administration. Slightly less than one-third of the workers interviewed expressed a desire to remain on the coast, about 60 percent of them expressing the wish to be colonos and 40 percent, voluntarios.

Efficiency of the Use of Migratory Labor

It is obvious that the presence in Guatemala of a large number of seasonally unemployed farmers is advantageous to the finca owners, since they do not have to maintain a year-round labor force large enough to do the work during the harvest season.

As the fincas appeared to differ greatly in the amount of labor used compared to the volume of production an effort was made to relate certain management practices to labor efficiency. It appeared from the evidence available that on the coffee farms there was a strong relationship between yield per hectare and labor efficiency. That is, the number of man-days needed to produce 100 pounds of coffee appeared to be considerably less for the fincas with the highest per hectare yields. The same relationship seemed to exist for the cotton fincas, but the differences in yields between fincas were substantially smaller than on the coffee fincas. Because of the small number of sugar cane fincas, and the fact that four of them also produced substantial amounts of coffee, no attempt was made to try to relate management practices to labor efficiency for these fincas.

Wages were generally highest on the most labor-efficient fincas. This was especially true for wages of the voluntarios and colonos on the coffee farms and for wages of the cuadrilleros and voluntarios on the cotton farms. There was likewise some correspondence between the number of persons housed per galera (crude dwelling) and labor efficiency. Those farms which housed the least workers per galera were those with the most labor efficiency. Little difference was found between farms of high and low labor efficiency in payment for

the seventh day or for holidays, in supplying medicines, in paying wages when a worker is ill, in providing football fields, or in hiring of the same workers year after year.

It cannot be said which is cause and which is effect. One could argue either that some fincas are more efficient because they pay higher wages or that these fincas pay higher wages because they are more efficient. If the first is the case it could be argued that the fincas should pay higher wages, since this would make them more efficient. If the second argument is true then the fincas should become more efficient and as a result pay higher wages.

Practices that finca owners said were effective in making labor more productive were: 1) transportation of the product by means other than the backs of the workers; in some cases, transportation of the workers themselves; 2) fair payment practices; 3) measures to improve the health and education of the workers; 4) in the form of loans of seed, fertilizer, etc., to colonos for their personal plots; 5) morale raising measures, such as recreation programs, and 6) measures to promote the consumption of manufactured articles. While a few of these practices increase efficiency directly, most of them are intended to increase efficiency indirectly by improving the health of the workers, gaining the workers' good will, or providing incentives for earning more money.

An attempt was made to determine the costs of production, although administrators were understandably reluctant to divulge this type of data. Estimates of the cost of labor were made from the wage rates and the numbers of workers reportedly hired by the farm

administrators. Estimates were made for other costs from figures reported by the farm administrators.

Data from the farms visited indicated that on all three types of fincas profits averaged about 30 percent of sales, although there was considerable variation among the coffee farms, one actually losing money and one apparently making a profit of 60 percent of sales. These figures compare roughly to estimates of the Ministry of Agriculture. Profits on the farms visited apparently were considerably more than $100 per hectare. These farms were probably above average, both in size and in management level. A reasonable estimate of the profits of the finca owners would appear to be $100 per hectare.

Conclusions and Interpretations

As hypothesized previously, wages were extremely low on the fincas. Many workers were barefoot and most of the dwelling units were shacks. Wage rates, however, were two and one-half to four times as high as daily earnings on the home farm. They were two to three times as high as wages for agricultural work in the home communities, and 50 to 100 percent higher than for non-agricultural work in the home communities. Lewis stated that wages in capitalistic employment would need to be two to three times as high as in subsistence farming. The evidence in this study supports Lewis' assertion.

Wages in coffee picking were found to be substantially lower than wages in cotton picking, as hypothesized. This was due partially to less agricultural activity in the home communities during the

time of the coffee harvest than during cotton harvest time. Less important reasons are the relative scarcity of corn during the coffee harvest season as compared to the cotton harvest season, and more adverse climatic and living conditions on the cotton farms as compared to the coffee farms. The data does indicate, as hypothesized, that the wage level on the large fincas is, to some extent, dependent on the opportunity costs in the home community.

It was found that those who worked the longest on the large fincas did have slightly lower earnings in the home communities than those who worked a short time in the home communities. However, the differences were less than expected. This indicates that many of the workers who were above the minimum subsistence level of income, and not just those living at the existance level, felt the need for more income.

It was found that in communities where agricultural production had increased, local employment opportunities had also increased. Fewer small farmers found it necessary to go to the large farms to work. If this should occur in a substantial number of the home communities it would cause an increase in wage levels on the large farms.

Contrary to the hypothesis that the small plots were used chiefly for part-time residence it was found that, on the average, the workers earned nearly one-half of their annual incomes from the small farms. The majority of the workers earned more on their home farms than from the work on the large fincas.

Though accurate data are not available, it appears that earnings of the finca owners are large. These earnings could provide growth in the capitalistic sector if reinvested. However, it appears that much of the funds do not flow from one line of activity to another.

The data presented in this study support Lewis' contention that wage levels in the capitalistic sector are set by the productivity of subsistence agriculture because this sector contains the reserve supply of labor. Wages, of course, must be somewhat higher than what the poorest farmers are able to earn in order to overcome the psychological costs of transferring from one sector to another, to compensate for higher living costs, because of the action of labor unions, or because of the conscience of capitalists. The earnings of the reserve supply of labor in subsistence agriculture set a lower limit to wages in the capitalist sector. Lewis concluded that if wages in the export sector are to be raised, productivity in the subsistence sector must be increased.

Therefore, as Lewis points out, increases in efficiency in production of export crops mean that gains from the increased production accrue only to the buyers in the importing country, and least of all to the employees in the industries producing for export. He points out that in some countries sugar cane production is extremely productive, yet the workers go barefoot because they cannot afford shoes. It would seem, however, that the buyers are benefited only when a major portion of the producers of the particular export become more efficient. When the export industry of a particular country produces only a small proportion of world production of the commodity,

gains from increases in productivity accrue, not to the consumers in the importing country, but to the employers in the producing country.

Policies to be followed then depend upon what one is trying to accomplish. If the only concern is for an increased agricultural product, regardless of the distribution of income, the best place to concentrate one's efforts are probably on the large fincas. However, if wider distribution as well as increased income is important then one must concentrate one's efforts in the subsistence sector. Since increases in productivity in this sector will have the dual effect of both benefiting the poorest sector directly and also raising wages by lowering the supply of labor, the returns to the lower income classes from a given amount of effort spent on increasing the productivity of the subsistence sector may be greater than one would think at first glance. The increase in effective demand for non-agricultural goods is an important factor to consider also.

The effect of an increase in wages upon profits of the capitalist sector (including agriculture and non-agriculture) are important for their effects upon investment. Lewis says that if 40 percent of the national income goes to 10 percent of the income receivers, savings and investment should be great enough to foster rapid economic development, providing these individuals have a capitalist outlook rather than a renter outlook. Figures do not seem to be available on income distribution. However, calculations based on data presented at a 1967 seminar in Guatemala on the high cost of living[13] indicate

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[13]Dr. Arturo Classon and Enrique Santa Cruz, "La Incidencia del Costo de la Vivienda en el Costo de la Vida," a seminar paper.

that of the total income of the residents of the capital city, the upper 10 percent of the residents receive at least 53 percent of the total income. It would seem that, for the country as a whole, the top 10 percent must receive at least this percentage, since most of the finqueros live in the capital. It is not known, however, what proportion of this is income from rents and what proportion is income from capitalist activities.

Lewis points out that if the capitalist sector relies upon the subsistence sector for its food supply some increase in productivity is necessary to keep the terms of trade from turning against the capitalist sector. This could happen if the capitalist sector were to expand rapidly, causing a large increase in demand for food while the production of the food producing sector remained stagnant. Prices would therefore rise, causing demands for higher wages on the part of the wage earners in the capitalist sector.

The idea that the profits from export industries can be a source of funds for development is not new, of course. The International Bank for Reconstruction and Development recommended in 1951 that profits from the coffee industry be reinvested to foster economic development. No doubt some of the profits have been used for this purpose, but it is apparent also that some have been used for the importation of luxury goods, and some have been banked in other countries. Besides the obvious lack of political stability, the reasons for the lack of reinvestment appear to be that the coffee growers who are absentee owners are likely to have an outlook closer to what Lewis calls the "renter mentality" rather than the outlook of

modern capitalists. Lewis also speaks of the reluctance of capitalists to invest in a different line of activity from that in which they are experienced. With a limited foreign market, opportunities for the producers of cotton, coffee, and sugar cane to invest in the expansion of their own production is limited. Nevin[14] suggests that what is needed may be an expanded capital market, with the government taking the initiative of selling its own guaranteed securities and using the money for lending for development purposes. With such a device, he says, it may be possible to capture the savings of the capitalists for investment purposes, and even to encourage more savings.

Discussion

There are many workers who spend 60 days or more working on the large fincas. For these workers, and for others who will probably join them as land becomes even more scarce and as expectations rise, work on the large fincas is an imperative, as is the supply of workers for the finca owners. The suggestions that follow are made with the idea that a reasonable goal would be to raise the level of pay and of living conditions to the level of the better fincas. However, to subsidize the fincas which pay the lowest wages and offer the lowest living conditions would constitute unfair competition to those fincas already offering better conditions. An effort to raise the levels of wages and living conditions on the worst fincas should have the approval and support of the finqueros on the better fincas.

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[14] Edward Nevin, Capital Funds in Underdeveloped Countries, London: McMillan & Co., 1961.

While there may be some fincas which would lose money if the pay of their workers was increased to 80 cents per caja of coffee rather than the 40 cents now paid, such increases would help to make the fincas more productive and efficient. Myint[15] emphasized the role of a conventional standard of high wages in breaking the cycle of low productivity and low wages by forcing the employers to raise the productivity of labor. The high productivity of United States agriculture would never have been reached without high wages which not only affected employers, but also farmers and sons of farmers who strove to achieve levels of living equivalent to that of wage earners. The process was painful to many farmers but the process was not stopped because of this, even though the government sought to ease the required adjustments.

The National Employment Service is planning to attempt to replace the habilitadores by its own services. Though it has many obstacles to overcome it is hoped that it can succeed in drawing enough business from the habilitadores to make an impact. Perhaps, through this service, the finqueros can be persuaded to furnish minimal conditions to their workers, as it is planned that the service would not be available to any finca not offering such conditions. Some of the money now paid to the habilitadores could be used to make investments on the fincas in better housing, health facilities, etc. A recommendation to limit state bank credit to fincas furnishing

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[15] H. Myint, The Economics of Developing Countries, New York: Praeger, 1961.

minimum conditions was made in committee at the seminar on the high cost of living, but was defeated by some of the big land owners who are government officials.

The children of the migratory workers who do enroll in school generally miss a few months at either the beginning or the end of the school year. Even those children of migratory workers who do not accompany their parents to the large fincas to work may need to stay at home to work or may drop out since the parent is not there to encourage them to continue. Some type of program is needed to encourage the children to continue in school when they go to the large fincas. Perhaps, support of the schools on the finca on the basis of the number of children of migratory workers enrolled and payment to the parents for the amount of working time of the child foregone for school attendance would help. If nothing is done, the children of the migratory workers will continue to fall behind the rest of the rural children in regard to education.

Many of the workers spend only a month or two a year working on the large fincas. It would not take a large increase in production even on the small plots of land which they possess for them to increase their earnings by an amount equivalent to that which they have been earning on the large fincas. For example, according to the agronomist working with the cooperative at Santa Lucía Utatlán, the application of $38 worth of fertilizer per hectare would increase the value of the production of corn from $66 per hectare to $174, leaving a net gain of $70. It would appear that the continued and even increased support of existing cooperatives would be helpful,

as well as the organization of new cooperatives in areas where they appear to be feasible. The work of the various agencies assisting the cooperatives needs to be coordinated to avoid duplication of effort.

The scarcity of trained personnel--extension agents as well as cooperative managers--and the large number of very small farms would probably make it difficult and expensive to change farming methods. For example, the changing of the farming methods of one individual in the United States changes farming practices on a large area--perhaps 100 or more hectares--while in Guatemala to have an effect as large an area occupied by migratory workers would involve changing the farming methods of 100 individuals. In view of this, a program of reducing the cost of inputs may be more effective and cheaper in the long run.

In the community in which the author lived in the United States the soil conservation program (known by such names as Triple A and PMA) seemed to have had a greater impact than the extension services. The supplying of fertilizers at a low cost for the production of hay crops led farmers to increase fertilizer purchases for other crops. At first, there was little connection between the supplying of fertilizer by the government and the adoption of soil conservation measures by the farmer. Later, however, the furnishing of fertilizer and other aids was made contingent upon the adoption of conservation measures.

Some type of comprehensive plan of soil conservation, better land use, and the furnishing of needed inputs at low cost to the

campesinos with little resources could make an impact upon productivity in the subsistence sector in Guatemala. In the U.S., the soil conservation program was administered by persons elected by the farmers. These were generally not the best farmers in the community, but were generally somewhat marginal producers who wanted the job. Any such type of program adopted in Guatemala would need to be administered on the local level by persons who had the confidence of the people. The exact details of how the local community leadership can be utilized will be left to those who have studied the organization of local communities. A certain number of agronomists and soil experts would, of course, be needed to help implement this type of program.

A sampling of the Hill-Gollás questionnaires indicates that many of the campesinos of the altiplano are aware of the possibilities of production increases through the use of fertilizer, but are unable to buy it because of a lack of cash or credit. A program such as suggested would reduce the need for credit and would likewise reduce the risk of using new techniques. Many of the wheat growers this year did not make enough to pay for seed and fertilizer in 1966 because of rust. They lost money, whereas if they had planted their old seed without fertilizer they would have made something above the cost of seed. It is this type of risk that could partly be reduced by this type of program. Some might argue that such a program to increase productivity on the small farms would be useless, in view of the need to move the surplus highland population to other locations. However, if the campesinos of the altiplano

were simply transferred to new areas and were to use the same techniques in the new areas, production would increase somewhat, to be sure. However, if they were to learn new techniques before their transfer this would introduce more dynamism into the colonization process. In other words, if they could somehow be helped to make better use of the meager resources at their disposal in the altiplano it would help to make them more productive in a new area.

The process of introducing change in farming methods, especially among the uneducated, is not completely understood. Therefore, there is a need for research in communications. Such research would help change agents to understand how the campesinos can best be reached, and would help to make the best use of the money invested in extension efforts.

In spite of efforts to increase productivity in the subsistence sector underemployment and unemployment will probably continue in this sector, more than enough to supply workers for the coffee, cotton, and sugar cane fincas. Since an increasing number of the workers have no land, or only very small plots, one criterion for the establishment of new crops might be the employment offered. Migratory workers can be employed for about six months, if they begin working in the coffee harvest in September and then shift to the cotton or the sugar cane harvest. During the rest of the year there is some opportunity for employment in weeding, etc., in all three of these crops, but the number of workers involved is quite small. If seasonal employment can be found or created during the rest of

the year perhaps a movement toward year-round employment can be made, as was done in the United States.[16]

One of the hopes for relieving population pressure in the highlands is colonization. It appears from the evidence obtained in this study that the voluntarios who go from farm to farm each year might be better candidates for colonization than the cuadrilleros. One-fourth of the cuadrilleros interviewed, as compared to one-third of the voluntarios, were literate. Fifteen percent of the voluntarios interviewed and 33 percent of the cuadrilleros spoke only the native language. It is quite probable that the selection of the sample prejudiced these percentages; the general impression was that there was a greater difference than the figures show between the cuadrilleros and voluntarios in their ability to speak Spanish. If any type of educational program is to be undertaken in anticipation of or in connection with colonization, the voluntarios would probably be most able to take advantage of it from the viewpoint of literacy and Spanish proficiency.

Even more important, perhaps, is the difference in outlook between the voluntarios and the cuadrilleros. The voluntarios are more independent as they go from farm to farm to seek work on their own. Also, their experiences are probably more varied, since they come in contact with voluntarios from other regions. The cuadrilleros,

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[16] Olaf E. Larson and Emmit Sharp, Migratory Farm Workers in the Atlantic Gulf Stream, Bul. 948, Cornell University Agricultural Experimental Station and Economic Research Division, USDA, May, 1963.

on the other hand, are recruited by a member of their own community, are bossed by a caporal from their own community, and work together in a group from their own community. Thus, their contacts with members of other communities are less limited than those of voluntarios, and the social restrictions upon their behavior are probably more binding. Twenty-one percent of the voluntarios had no land, whereas 93 percent of the cuadrilleros had some land and a home in the altiplano, even though the amount of land was very little.

From the political point of view also it would seem wise to give preference for colonization to the voluntarios, since they are more likely to be a source of unrest than the cuadrilleros. If the National Employment Office were to establish an office in the south coast area, as contemplated, this office might be a point of contact of the voluntarios for the purpose of colonization as well as for employment.

The campesinos of the highlands have a long history of renting land far from their homes. In some of the villages, where employment has increased to the point that the campesinos no longer need to go to the coast to work on the large fincas, there are still some who do migrate to cultivate land. According to Piedra Santa[17] many colonos are having the finca lands taken away from them. Perhaps some of the public domain could be utilized by renting it at a reasonable cost to the campesinos of the altiplano who do not wish to completely sever their connections with their home communities.

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[17] Conversation with Mr. Rafael Piedra Santa, October 1965.

The entire question of colonization needs more study. The background of the present colonists, the soil fertility, the help they have received, and other variables need to be related to their successes in the present colonization projects. The soil in areas of potential colonization needs to be tested, both in the laboratory and in field trials, as there appears to be much difference of opinion regarding colonization possibilities. For example, FAO and FYDEP[18] are far from agreement on the farming possibilities in various parts of the Petén. It is hoped that what happened in other areas would not be repeated in the Petén; namely, the destruction of timber with the expectation of creating good farm land. In many places where this was done the land turned out to be unproductive and, as a result, homesteaders had gradually to be moved out.

The type of more or less spontaneous colonization taking place in parts of Huehuetenango and perhaps other departments may be important to study also. It is possible that not all the experience relevant to colonization is present in the current colonization projects. In Bolivia, for example, spontaneous colonization appeared to be more successful than planned projects, except for the foreign colonies of Japanese, Okinawans, etc.

The role of education, health, and nutrition programs in economic development have been described well by Schultz and others and

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[18] Fomento y Desarrollo del Petén, a Guatemala government organization, whose purpose is to develop the department of El Petén.

have been generally accepted as components of economic development. There is no need to re-emphasize the point here. It is sufficient to point out that the migratory workers are the group most in need of these services and that migratory work creates special problems, especially in education.