

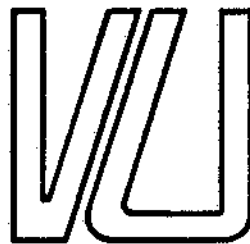
SERIE RESEARCH MEMORANDA

AGRARIAN TRANSFORMATION AND
THE RURAL LABOUR MARKET:
THE CASE OF NICARAGUA

Rudolf M. Buitelaar
Jan P. de Groot
Hermine J.W. Weijland

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FACULTEIT DER ECONOMISCHE WETENSCHAPPEN
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INTRODUCTION

The transformation of capitalist agrarian economies into socialist economies is a precarious policy, even in large, resource-rich countries. But for small, underdeveloped economies, transformation problems are larger, as such countries must continue to depend heavily on primary exports in order to be able to transform their dual, peripheral, capitalist production systems into more balanced and equitable economies.

In one such a small socialist economy, Nicaragua, the Sandinist government is seriously trying to avoid all the pitfalls associated with this policy (Morawetz, 1982). It has kept wages low, and it has reduced private and public consumption as much as it could. But, nevertheless, the economy is stagnating.

Apart from the serious problems invoked by the present war situation, the Sandinist policy met with an unforeseen major bottleneck in its thoroughly disturbed rural labour market.

In Nicaragua, agro-exports - mainly coffee and cotton - play a key role in economic transformation. The export earnings of these crops provide the only source to buy capital goods and inputs for new economic activities. Immediately after the revolution, the agro-export sector has been confronted with a shortage of labour in the harvest season. In order to explore how to overcome this obstacle, a number of labour studies have been undertaken and, subsequently, policy-measures have been implemented. The labour problem, however, is still growing, and the discussion on its causes and solutions therefore remains open. In the first part of this paper, the issue of the labour market disequilibrium is addressed by relating it to changes in the economic structure and the transformation policy. In the following part, a review of the current debate in Nicaragua will reveal that the discussion is inconclusive, mainly because of a lack of relevant data.

In order to get more insight in the rural labour situation and the dynamics of the labour market, a pilot survey was conducted in one of the coffee producing regions. In the concluding part some of the findings will be presented, followed by tentative conclusions and suggestions for improvements of the labour market.



PART ONE: Rural Labour Market Problems in Agro-Export Economies
in Transition

Underdeveloped agrarian export economies that have turned into socialist states, aim at transforming their agricultural structure. One characteristic feature of agriculture that has to be altered structurally is the subordination of the peasants to export production, a position in which the peasant sector was structured to deliver cheap, seasonal labour and cheap food to the agro-export sector.

This subordination is the outcome of a historical process which in many peripheral economies started more than a century ago, when through primary exports these economies were incorporated in the world capitalist system. Through land appropriation, repression and violence the producers forced the peasants to deliver their labour, especially for the harvest operations of the export crops.

In spite of technical developments in agriculture, this situation has not changed fundamentally. In many of these economies commercial farmers nowadays use machines for soil preparation, planting and cultivation and therefore require only little labour in the planting season. But, since better soil preparation together with biological-chemical innovations increase yields, a disproportionately number of labourers is required for the harvest operations. This accentuated pattern of seasonal demand for labour cannot be smoothed easily through mechanization of harvesting operations because this requires specialized, sophisticated, expensive machinery, the use of which in the low-technology environment of a less developed country is highly problematic. Thus it became necessary to hire more seasonal labour. By hiring seasonal labour, the production costs, which in a competitive world market are under continuous pressure, have been reduced by making labour costs more variable. This means that the cost of maintaining the labour force in the off-season is shifted to the peasant households who provide agricultural labour (De Janvry 1981:83).

Traditionally, the subordination of the peasants was reached by limiting their access to land and other means of production. They ended with too small or too marginal plots to eke out a living. The resulting dualism between the commercial farms and the peasant sector is functional as it generates a labour supply that suits the specific conditions of the agro-export sector. It places part of the reproduction of the labour force in the subsistence sector, thus creating a 'semi-proletariat'. But as De Janvry (1981:85) points out, the functional dualism between the commercial and the peasant sector has also contradictory elements, because the peasants who are seeking to maintain control of the production process and ownership of the means

of production will compete fiercely in factor and product markets. In the labour market they compete with landless labour, especially since their number is increasing rapidly, as having many children has been perceived as a survival strategy. In the land and product markets they will compete with other farmers. For many peasants this competition eventually results in a collapse of their resource base.

Thus over time an increasing part of seasonal labour is supplied by a rural proletariat, which, having lost access to land, survives in the off-season by a variety of incidental agrarian, rural, and sometimes even urban income sources. This proletarianization undermines the existence of the labour force, it induces migration, and endangers the long-term supply of cheap, seasonal labour for the export crops.

Seasonal labour is sometimes hired abroad. This shifts the burden of maintaining the labour force to foreign economies where internal conditions are creating in a similar way semi-proletarian or proletarian labour that fits the demand of the agro-export sector.

For the peripheral capitalist state one of the important requirements is to ensure the reproduction of the peasantry as a source of cheap labour for the agro-export sector. However, this policy requires a reversal of the historical processes by which the peasant sector was subordinated. It requires land reform in a situation where technical change has increased the value of land, making its redistribution less feasible. It also requires a lessening of exploitation of the semi-proletarian peasantry, just when exploitation has been in fact intensified as a reaction to the tendency of peasants to migrate when their resource base has collapsed.

The peripheral socialist state, however, is also faced with a dilemma. On the one hand, socialist principles demand a restructuring of agriculture towards a more equitable production system. This implies, among others, the establishment of a strong peasant sector. On the other hand, export earnings from agriculture are the main source for foreign currency and therefore essential for the transition policy. It follows that the government has to (re)consider the role of its agro-export sector. It certainly cannot afford to do away with the large plantations, which are the major producers of export crops. However, a problem will arise from the side of the labour market, because the supported peasant sector will be increasingly unwilling to supply labour for seasonal work on the plantations.

The causes of the decrease of the labour supply may be manifold:

- The peasants perceive the revolution as a reversal of the historical process in which they have lost their land. Awaiting official mea-

- sure they may occupy land and extend subsistence production.
- The state gives the peasantry access to land. Also, the state farms in the agro-export sector may extend access to subsistence plots. Consequently, peasant families will supply less seasonal labour.
 - Basic needs policies will lead to a raised demand for food in urban and rural areas. The state not only gives the peasants access to land, but also other means of production such as credits, in order to induce them to produce for the market. Thus peasants will be stimulated to trade production surpluses instead of their labour force.
 - Alternative employment opportunities increase, especially in the public sector as the state extends its services (health, education, public utilities) to the lower classes.
 - The revolutionary period may be chaotic; confiscated farms lose their traditional labour, and the new administrators of state-farms have difficulties to communicate with the traditional labour market. Chaos is bound to prevail in areas where the state's authority has not yet been firmly established.
 - The revolution affects the country's external relations in such a way that foreign seasonal labour cannot enter the country.

The reduction of the seasonal labour supply is aggravated by the fact that harvest operations are often carried out by entire families. If, owing to the above reasons, male labour no longer participates in seasonal work, this might prevent women and children to go and work unaccompanied on a distant plantation.

In addition to its employment effect, the disturbance of the labour market has yet another effect, namely decrease of labour productivity, which can be attributed to various causes:

- Labour productivity before the revolution was based to a considerable degree on the ruling climate of violence and repression, which for example, made the functioning of labour unions impossible. Certain improvements of the labour situation such as shorter work times may lower labour productivity.
- During the revolutionary period the productivity of the confiscated farms may be affected; permanent crops are not maintained and the farms are being de-capitalized, while state farms may initially lack experienced management, and suffer from bureaucratic organization.
- The private, commercial farmers perceive the redistribution of credit and the tight control of the state on input and output prices as detrimental to their sector, and therefore reduce the care of crops, which leads to lower yields per hectare and per worker.

As most harvesting work is done on a piece rate basis, the decrease of labour productivity implies a reduction of the remuneration of labour, which in its turn will affect the supply of labour to the agro-export sector, unless a similar fall in earnings is also occurring on the peasant farms.

PART TWO: Agrarian Structure and Labour Market in Nicaragua

The pre-revolutionary period.

In the 19th century Nicaragua was pulled into the world economy by the coffee trade; coffee production expanded rapidly in the last quarter of the century.

In the beginning of the coffee boom, hardly any labour was available for the coffee harvest. Initially this was one of the most pressing problems for the starting coffee entrepreneurs. The rural labour force was still tied to the traditional self-supporting food economy and, through (semi) feudal arrangements, to the cattle ranches. Raising the wages for coffee-pickers was only a limited possibility because Nicaragua entered late into an already highly competitive international market. Furthermore, the workers were only needed during three to four months per year, so that the hiring of permanent labour was too expensive for the plantation owners. A combination of material incentives, violence and repressive laws proved to be effective in the creation of a labour force and a labour market. In this context Wheelock (1980:73) distinguishes several ways of 'de-peasantization':

- peasants were removed from their land with general or specific arguments such as the public interest or individual delinquency;
- impoverished through deteriorating terms of trade or were caught in a debt-trap by local moneylenders, and were finally evicted.
- migrated spontaneously to other areas or to cities because of a general atmosphere of terror in the countryside.

Meanwhile the legal system of landed property changed fundamentally. The communal and free lands were eliminated by law, and registered land titles became compulsory; land was obtaining a price. This process varied per region and actually it is still continuing in the country's large agricultural frontier.

The development over time of the land- and labour-market has resulted for the coffee plantations in the use of three main categories of workers: permanent, semi-permanent, and seasonal workers. The permanent workers live on the hacienda, and are employed throughout the year. In the slack season they are engaged in maintenance activities. They have a paternalistic relationship with the landowner. Semipermanent workers live near the hacienda, they own a small farm, or they rent a little plot of land from the hacienda. They used to offer their labour whenever needed, but mostly for weeding (June-July), preharvesting (September) and harvesting (December to March). Seasonal workers can be obtained firstly from the families of the permanent and semi-permanent workers; Therefore participation of women and children

is high, especially in the harvest season. Other sources of seasonal labour are migrant workers, travelling in harvest time from plantation to plantation within the region where they live; and jobless city dwellers, joining the rural labour force only in harvest time.

The labour demand in coffee production in Nicaragua coincides with those in sugar-cane and since the nineteen fifties also in cotton. There is a peak demand in the period mid-December till mid-March. The biggest problem for the labour force is therefore that it cannot be productively employed during the eight remaining months of the year. This labour problem was, and still is, a key problem for the Nicaraguan agro-export model.

In the pre-revolutionary period, the seasonal labourers had to fall back on subsistence agriculture, work on relief projects (e.g. INVIER-NO) or migrate to city-slums, living on whatever job they could find.

The agrarian reform and the rural development efforts, started at the beginning of the sixties, also provided a way out, but only for a small part of the seasonal labourers. Nunez mentions a number of 20,000 families benefitting as of 1977.

Because of the lack of field surveys on this specific question, no conclusive answer can be given as to what was the dominating way of maintenance of the labour force in the pre-revolutionary agro-export model. As will be indicated later this question is equally important in the discussion on the actual labour shortage in the agro-export sector, because the perceptions on the origin and nature of the seasonal labour force determine the policy proposals aimed at overcoming these deficiencies.

The post-revolution period.

The agro-based growth model, which led to a rapid accumulation of capital and wealth for a small elite in Nicaragua, and which kept the majority of the population in wretched circumstances, was a major cause of the downfall of the Somoza regime.

The FSLN government policies were new in that they were directed to the needs of the poor instead of the traditional elites, but they also contained a traditional element, in that they were still based on the earnings of traditional agricultural export products. Production and trade policies aimed at recovering and maintaining the pre-revolutionary levels of agro-exports. Thus initially little change was expected in the demand for labour in the export sector.

However, not surprisingly, soon after the revolution the coffee and

cotton farmers and especially the state-owned plantations were faced with growing labour shortages. Initially these problems were most serious in the cotton sector, but later the coffee sector met with even more problems. The government reacted with recruitment of voluntary labour. But it was clear from the outset that voluntary labour could only offer a short-term solution, because of its low productivity and of its adverse effects on other sectors of the economy. In 1984-85 more than 50.000 volunteers assisted in the harvest. Among them were students, government officials, nurses, international solidarity workers, etc.

Counter-revolutionary attacks, which after 1981 were increasingly backed by the US, had far reaching consequences for the economic situation of Nicaragua. Especially the compulsory military service which was established in the spring of 1984 had a serious negative effect on the supply of rural labour.

Another war-related and disturbing phenomenon in recent years has been the rapid inflation. As Vilas (1984b:119) has demonstrated, especially wage earners have seen their incomes decline in real terms. Inflation therefore aggravated the rural labour problem in that it had more adverse effects for wage labourers than for peasants, and induced the latter to withdraw their seasonal supply of labour.

Nicaraguan discussion on the labour shortage

In the first years after the revolution, the dominant view on the labour problem was formulated by a team of international experts under the direction of Solon Barraclough, who assisted the government in a loan request to FIDA. According to the FIDA report (1980:14), the main class in the Nicaraguan countryside is the semi-proletariat, a class that depends partly on salaries earned in the coffee or cotton harvest, and partly on working their own plots. Through extrapolation of 1971 census data, this class was estimated at 40 percent of the total economically active population. In addition there exists a landless sub-proletariate that has only a wage-income but is not employed during the larger part of the year. But according to this estimate the latter class is very small.

The FIDA report indicates that, after the revolution, seasonal labour became scarce in the export sector, mostly due to the fact that the peasants did not want to sell their labour, since they got the possibility of having a better life on their own plots. The report warned that the policy to strengthen and reorganize the peasant-sector tended to break one of the fundamental conditions for the functioning of the agro-export model: the existence of a labour reserve of peasants with low incomes and lacking alternative employment opportunities, which forces them to offer their labour during harvest time. The favourable

aspect of this labour reserve is the fact that it can maintain itself outside the export sector during the larger part of the year. But if this self-maintenance is extended by land reform, input-subsidies, cheap credit, technical assistance and guaranteed prices, then the labour availability to the export sector is reduced.

According to FIDA the relevant policy to induce a higher supply of seasonal labour is to make the wages and labour conditions in the export-sector competitive with the peasant sector. The report further suggests new types of linkages between the peasant and the export sector, such as technical services from the export plantations for peasant farms.

Contrary to the findings of the Fida report, others have looked at the rural population as an essentially landless, proletarianized labour force. Vilas (1984:102,348) explains the labour shortage in the export crops not so much through decreasing supply of workers but through falling productivity of labour. The elimination of repression led to a lessening of the degree of exploitation, that is to a less intensive use of the available labour power. Decreasing labour productivity is seen as one of the main causes for the current shortage of labour. The policy implication of this view is that the labour shortage can effectively be reduced by mechanization and a subsequent rise in labour productivity. Contrary to the FIDA report it is thought that the strengthening of the peasant sector has no direct bearing upon the availability of seasonal labour.

As a consequence of this discussion a number of studies⁽¹⁾ were carried out in 1980 and 1981 to determine the class position of the rural labour force, which was considered to have important implications for policy formulation. One of the findings of these surveys was that the majority of the seasonal labour had no access to land. This might indicate that there was less semi-proletarian peasant labour seasonally employed in export crops than was suggested by the FIDA report. But at the same time it was reported that most of the seasonal labourers had no other source of income, which can only mean that most respondents were depending on other persons for their living, and could not be heads of households, as it is impossible to live on harvest-time wages for the whole year.

Institutional factors have been mentioned as an additional cause of the actual labour shortage (e.g. Colburn 1983). It is pointed out that in order to cope with the labour market problems, agro-export farms had developed specific communication channels and intermediaries. The revolution may have eliminated such institutions for the state farms, without replacing them by new ones, but many private farms and peasant

cooperatives may still rely upon traditional methods to find labour. Thus only the state farms are unable to cope with the new labour situation.

From the above discussion it is clear that the argument of the FIDA report that land reform and the strengthening of the peasant sector will reduce the labour supply for export crops is still open to debate.

Unfortunately, the ongoing war has contributed to a further increase of the labour shortage. It has not only the direct effect of withdrawing young men from the labour market, but also the indirect effect that people try to escape compulsory military service, either by fleeing out of the country, or by refusing to work on state farms. It is estimated that this might affect some 20 percent of the total rural labour force. In addition, the war-related inflation has also seriously disturbed the rural labour market. A comparison of wages for seasonal labourers and prices of peasant products shows that the seasonal labourers have lost 30 percent of their purchasing power vis-à-vis the peasant producers. It will therefore become increasingly difficult to attract agricultural labour from peasant households.

If anything can be concluded from the available macro-studies it might be that the low level of wages in the export sector is one of the main causes of the actual labour shortage. It seems very difficult to raise the level of real wages in this sector, as increases of nominal wages appear to result only in higher prices. Therefore the government has tried to warrant the basic needs of the workers through subsidies and controlled shops. But insufficient production and the impossibility to raise the imports of consumer goods cause shortfalls in the supply of wage goods, which reduce the real value of wages. In this situation access to land, and in particular access to a subsistence plot, becomes a central issue for rural labour. Not only for workers who have no land at all, but also for semi-proletarian peasants who can increase their work on their farms if they gain access to less marginal, better quality land. For farms growing export crops, it seems therefore that the offering of such subsistence plots to permanent and seasonal (or semi-permanent) labour, now, as in the 19th century, becomes one of the main instruments that can attract labour and tie it to the farms.

PART THREE: The Labour situation on Coffee Plantations in a Nicaraguan Region; Five Case Studies

Introduction to the Field Survey.

The ongoing discussion on the characteristics of the rural labour force calls for factual information of the rural labour situation, because most of the confusion and differences of opinion can be reduced to lack of relevant rural labour statistics. Given the absence of such data, one of the authors organized a pilot survey in the Matagalpa region, in order to analyse the issue at the farm level, in three types of production organizations: Large State Farms (LSF), Medium scale Private Farms (MPF), and Peasant Cooperatives (PC). The field work consisted of participative observation and interviews with key informants at five farms of the various size-categories. Each farm was visited by a team of two or three persons, who stayed at the farms for a period of two to ten weeks in the peak and slack season of 1984-85. Because of the lack of farm statistics there was no certainty about the representativeness of the selected farms, but the surveyors obtained the impression that they had picked among the better farms of the region. This was not considered an impediment, because the purpose of the study was to get a clearer insight in the dynamics of the agricultural labour market, rather than to come up with more or less exact estimates of employment levels. It was expected that the selected farms would offer information on some aspects of the labour problem which might be overlooked at the macro level. The survey included data collection on recent changes in employment, wages, and organization of production. In order to avoid complications arising from different crop patterns, only coffee production was studied.

Farm Technology and Labour Requirements for Coffee Production: The Setting of the Problem

The agricultural activities in coffee production consist of maintenance and harvesting. Maintenance includes weeding, pest control, maintenance of shading trees, pruning, soil cleaning, application of fertilizer, and replanting of coffee shrubs. Most of the maintenance activities are repeated several times per year, depending on the technology used. In general, one may distinguish three technology levels: high medium and low. High technology implies the use of new coffee varieties (Caturra, Catui) which grow faster but live shorter and have the highest yield per hectare. Shrub density with high technology is twice as high as that with low technology. High technology requires advanced

methods of soil conservation, intensive use of fertilizer, and integrated pest control, and consequently it requires the highest amount of capital as well as the largest number of mandays per hectare, not only because more operations are carried out, but also because, owing to higher coffee tree density, each operation requires more mandays per hectare. Low level technology represents the traditional production method. It has plants with low yields (Arabigo or Bourbon), and uses no chemicals. Consequently, this technique requires the lowest amounts of capital and labour inputs per hectare. Between the two extremes there exists a number of intermediate technologies. At a particular farm one will most likely find several technology levels practised simultaneously, meaning that some fields would be worked more intensively than others. When the supply of labour decreases, the farm can adjust its technology downwards. During the survey there were indications that this indeed happened recently on at least one of the five farms. According to a government official, an informed specialist, this case represented rather the rule than an exception. It seems that due to the general labour shortage, Nicaraguan coffee production is falling back to medium and traditional technology levels. According to the survey estimates, the technology mix in the five farms would allow for such downward shifts. This can be seen in Table 1, which depicts land and labour use per farm in the slack and peak season, as estimated by the farm managers.

Table 1. Land use and Labour requirements

Farm	Land use				Labour requirements			
	H	M	L	Total	per day		per hectare	
					SS	HS	SS	HS
(hectares)				(persons)				
LSF 1	52	13	3	68	90	500	1.3	7.4
LSF 2	43	12	11	66	95	n.a.	1.4	n.a.
MPF 1	0	50	0	56	80	230	1.4	4.0
MPF 2	0	35	28	63	70	200	1.1	3.2
SPC	0	9	2	11	12	40	1.1	3.8

LSF = Large State Farm H = High technology SS = Slack Season
 MPF = Medium Private Farm M = Medium techn. HS = Harvest Season
 SPC = Small Peasant Cooperative L = Low techn.

The table shows that the higher technology levels correspond with more intensive use of labour per hectare. This relation does not hold exactly, because soil conditions and labour quality differ per farm. Nevertheless, a marked difference can be observed between the technology levels of the upper three and the lower two farms. The upper three use the most advanced or medium level technology for the greater

part of their land and appear also to use more labour per hectare in both seasons. Considering the labour intensity of the modern large farms and the large numbers of workers required, it is plausible that the large farms experience a labour problem and are trying to adjust their technology towards less labour-intensive levels, which means that they would have to choose between mechanization or yield reduction. The question, however, is whether the labour problem is only a temporary phenomenon, caused by severe internal troubles of reorganization and external military actions, or a structural problem caused by the nature of the new regime itself. The next sections shed some light on this issue.

Labour supply and Productivity

The labour force of plantations in Nicaragua is highly differentiated. One distinguishes at least three categories²⁾: First, permanent labour, working full time, the whole year, on a particular farm. Second, semi-permanent labour, working regularly but only part-time or intermittently on the same farm. Semi-permanent workers usually have a small farm in the neighbourhood, and their family members also form a potential labour force to be called upon during the peak season. The latter belong to the third category, seasonal labour. Seasonal labour is employed only for harvesting. It includes a variety of labour categories of various origins, such as family members of the permanent and semi-permanent workers, migrant landless workers, city slum dwellers, and voluntary workers who are mobilized by the government. The distribution of the workforce over the three categories varies considerably per farm type, as is shown in Table 2, which gives the numbers of actually employed persons during the period of observation.

According to the survey estimates, the large state farms had employed the highest numbers of workers, but among these a disproportional large part was employed only irregularly or seasonally. Of the permanent work force of LSF 1, 30 men were drawn into the military, and the farm had therefore employed more women on a permanent base than had the other farms. Only state farms had access to voluntary workers, and

Table 2 Farm Labour by Type of Farm

Farm type	Workers			
	permanent	semi-permanent	seasonal	total
LSF 1	117*	30	1310	1457
LSF 2	47	102	n.a.	n.a.
MPF 1	80	0	150	230
MPF 2	60	0	143	203
SPC	12	0	28	40

*) 30 men were drawn into the military

LSF = large state farm

MPF = medium size private farm

SPC = small peasant cooperative

they used lots of them. On LSF 1 almost all seasonal workers were volunteers recruited from schools. On the other farms, about half of the seasonal labour came from the families of the permanent workers, and the other half came from other traditional sources. Semi permanent labour appears to be used only in state farms, where it is assuming increasingly large proportions.

The shift from permanent towards semi-permanent labour at the state farms can be explained as a reaction to the increasing absence of the permanent workers.

At LSF 1, registered absence grew from a general 10 percent in 1983 to 30 percent for men and 40 percent for women in 1984. At LSF 2, a total of 149 workers was observed during the slack season, while the manager's estimates (table 1) show that ongoing agricultural activities required only 95 persons. The permanent labour force of 47 persons could not have done the entire job, but instead of hiring 48 additional workers, 102 semi-permanent, irregular workers were employed. The generally observed tendency of the permanent workers to start looking for less regular or seasonal wage labour may have several reasons. For one, it might be that working on the small peasant farms has become more attractive. It is also possible that non-agricultural activities offer relatively more income. Finally, it has been suggested that many rural workers have increased their geographical mobility as a survival strategy; a permanent living place would not offer adequate earning opportunities. It seems that particularly those who have fled from the war zones do not resettle quickly, but prefer to have several income sources in various places. Whichever reason may prevail, the fact is that state farms were unable to retain part of their permanent labour, and a further analysis of relative wages and other labour conditions might clarify this issue.

The labour situation at the private and cooperative farms is much more stable than at the state farms. At the former, no semi-permanent workers are needed; in the slack season practically all tasks can be done by the permanent workers, who are very experienced, because almost all were born on the farm and have worked in the coffee plantations for the greater part of their lives. There were only a few women among them. The medium and small farms also experienced shortage of labour. This, however, was not so much due to lack of supply, but rather to stringent credit policies of the banks. As the banks refused to advance money for wages, the medium size private farms had to dismiss several workers who were born on the farms, and whose families depended on farm wages. It is therefore plausible that in future also the medium size farms will employ semi-permanent labour.

At the cooperative peasant farms, no sign of shortage of labour could be observed in the slack season. The peasants are experienced workers, and most of them were born at their farms. After the cooperative was established, a few more peasant members had entered.

As can be seen in Table 1, all farm types employ many seasonal workers. It was observed that the traditional sources of these workers declined for the large state farms. In 1982/83, one of the state farms could attract 400 traditional workers; this number decreased to 130 in 1983/84, and fell to 60 in 1984/85. In order to compensate for this loss, voluntary labour was used. At the private and cooperative farms almost half of the seasonal work was performed by family members of permanent workers, while the other part was done by workers from traditional labour sources. On the large state farms, relatively few family workers were employed at harvest time. The intensive use of volunteers on the state farms implied that unskilled labour was prevailing on these farms, while at the private and cooperative farms better skilled labour prevailed. It was observed that the workers of the latter two farm types were also more involved with farm production and productivity, and gave extra care when and where needed. The workers on the state farms, on the other hand, were less skilled, and worked more automatically, and, in spite of higher technology levels, they produced less coffee per worker than the labour force in the private and cooperative farms. A comparison of profitability between a state farm and a private farm yielded the estimate that the private farm scored some 25 per cent higher, owing to higher labour productivity, manifested by higher yields and lower costs per land unit (Peschier & van Ruijven 1985: 49-51).

Summarizing the labour situation for the three farm types, it may be concluded that on the base of the collected information, the labour

problem currently encountered in plantations has many facets. The labour shortage is not just due to decreasing supply, but to a number of causes which vary per farm type. For the state farms, the quality of labour is just as big a problem as the quantity. Moreover, state farms often do not get their promised quantity of volunteers at the right time, when the coffee is ripe. Bureaucrats have no feeling for this, but traditional workers have; they seem to arrive always in time, whereas volunteers sent by the government arrive either too soon or too late. The problem of the state farm might therefore lie in its failure to use the traditional labour market, which responds quickly to informal communication. For the private farms in the survey sample, the major problem could be reduced to a financial problem. The cooperatives, finally, did not seem to have any labour problem at all. Nevertheless, one general problem was observed affecting both the large and medium farms, namely the tendency of workers to shift from the permanent towards the semi-permanent or seasonal category. This phenomenon should be related to the problem of maintaining the level of real incomes of hired labour as high as the incomes of peasants. This problem is solved in different ways in the various farm types.

Wages and living standards of the workers

Wages play a most important role in the agricultural labour problem. But it has to be stressed that in the current situation of rural Nicaragua it is not so much the money wages but the remuneration in kind that is at issue. Money wages are more or less equal for all types of workers. In 1984 it was about 45 Cordobas a day for a normal day task. At the time this money had a purchasing power of about 4 US dollars if spent on locally produced goods, but in terms of foreign goods it represented no more than 20 dollar cents. For the permanent and semi-permanent workers money wages differed according to the heaviness of the various tasks. The seasonal workers got paid per can of picked berries. In 1985 a set of standards and norms was introduced in order to obtain a fair differentiation of wages according to differences in jobs, and the government also announced a raise in nominal wages. But in spite of this, labourers and their families could not possibly live on money wages, which represented only the smaller part of their incomes. In addition to money wages, workers received a variety of incomes in kind such as food rations, housing, and plots of land to grow their staple crop or marketable products such as fruits and vegetables. Also the keeping of small livestock is very common for the workers' families. The totals of these additional earnings in kind can vary substantially, and it is highly likely that these income differences play a major role in the rural labour market.

According to the survey there were not only great differences in labour incomes between the farms, but also within the farms. On LSF 1, the largest state farm, land was offered to all permanent workers, but the provided plots differed significantly in quality and location. The other state farm did not have sufficient land for all permanent workers, and it also had a housing problem. Moreover, workers were not allowed to keep livestock. But it had a profitable horticulture project for its workers. The private farm MPF 1 had only 14 ha land available for its 20 permanent workers, which was obviously not enough, for some permanent workers had to rent elsewhere. The farm owner had established a working system that allowed the labourers to work their own plots. The other private farm offered the most favourable conditions. The permanent workers had sufficient houses and land, all their families kept small livestock, and the farm even provided free chemicals for soil preparation. The farm also offered other facilities such as a state shop, and labourers could use a truck for transportation. At the peasant cooperative the situation was the least favourable. Only 2 hectares were available for food production, and there was some horticulture and livestock. But the members shared the profits of the plantation, which may to a certain extent compensate for their lack of private resources.

According to the survey results, the conditions for the permanent workers at the large state farms and the medium-scale private farms could be better than those for the peasants at the cooperative. All larger farms could offer more land to their permanent workers than the cooperative could to its members, and on the average, the larger farms offered more facilities such as shops and transportation. The study also found evidence that these amenities were appreciated, and that particularly the land allotments functioned as a means to keep permanent labour on the farm. In one private farm it was found that the workers who spent more time on their own plots remained longer at the farm. They wanted to stay because they had their own crop on the land. The study could not reveal a negative relation between the daily working time in the plantation and on the own land, but it was obvious that some trade-off existed, and in one case this was made apparent by the working schedule that allowed for private activities of the workers at fixed intervals.

In conclusion: it appeared that large farms had sufficient potential to keep their workers. Their labour conditions could be improved, but particularly in the state farms this matter was not considered seriously by the management.

Organisation of production: decision making, recruitment policy

The decision-making process on the farms depends very much on the type of ownership. The simplest form exists on the private farms, which are run according to capitalist principles mixed with streaks of paternalism. The owner/manager makes all the production plans, directs the financial administration, and gives orders in the plantations, aided by administrative staff and foremen. The owner is conscious of the fact that farm production depends on the quantity and quality of the hired labourers, and the labourers try to develop good relationships with their superiors because they might receive substantial benefits in the form of housing and land allotments. As almost all workers were born at the farm, these relationships are deeply rooted and tend to servility. New workers are recruited from among the families of the permanent workers living at the estate or in the neighbourhood of the farm.

At the cooperatives the decision-making process is more complex, it depends more on informal than formal leadership. But in principle all members participate in decision-making. They can even decide collectively how to spend credits, which means that for cooperatives the choice between productive investments and consumption expenditures is part of their day to day reality. Both cooperatives and private farms depend very much on bank credits, which limits their decisionmaking power to a certain extent. Banking staff may require that certain techniques may be introduced or maintained when some credit is advanced. Recruitment of cooperative members is limited to the number of peasants having small farm plots in the neighbourhood. As for the recruitment of semi-permanent and seasonal labour, the members of the cooperatives perform the same activities as the permanent workers at the private farms, they all are scouting for new sources of labour to be called upon in emergencies and during the harvest season. It appears that such groups of involved workers have an important function in the rural labour market as (biased) communication channels and active recruiters.

At the state farms, the decision-making process is highly centralized and complex (Ortega 1983:2). State farms are incorporated into large state enterprises, which run some 50 farms each. The enterprises, in their turn, are in fact run by the regional office of the Ministry of Agriculture and Agricultural Reform, which makes the broad outline for the production plans, fixes the budgets, and appoints the management of the state enterprises. It also informs the enterprises of new government policies. The detailed production plans of the state farms are not made at the farms but at the state enterprises. The director of the state enterprise appoints the managers of the farms, and the

state enterprise runs the entire farm administration; it authorizes all payments and purchases. At the farm level, the manager and an administration officer organize the daily work, which is done by work teams of 10 to 20 workers, led by foremen. The farm managers have little decision-making power over the production process. Also the workers can do little to alter once taken decisions. They may attend the monthly workers' assembly on the farm, which is organized by the workers' syndicate. Their complaints can be voiced by the workers' representatives in the production board of the farm, which evaluates the day to day management, the division of labour, and the work plan for the next two weeks. The farm board reports to the director of the enterprise. The director also hears the farm managers and the workers' representatives, but neither have a formal say in farm matters. All power is concentrated in the production board of the enterprise, constituted from among members of the enterprise staff, the syndicate, the political party, and the ministry of agriculture. This board decides on the annual production plan, the monthly plans, and the social and economic projects.

From the above it is clear that for the state-farm manager there is hardly any decision-making power left. He has to follow the strict and detailed production plans set by the larger enterprise, and the only way to influence production planning from below goes via the workers' syndicate, which is informed and involved on all levels of decision-making and has a powerful position. Nevertheless, many decisions have been made contrary to the workers' interests. For instance, workers are frequently transferred from one farm to another when the work situation seems to require this, and on the farms they are often denied little plots to work with their families. Their housing is usually of bad quality, and the workers have difficulty to obtain permission to keep their own small livestock. Thus it becomes increasingly difficult for the permanent workers of the state farms to earn a living for their families, and this the more so since the purchasing power of their money wages is decreasing. But also the managers of the state farms seem to have great difficulties to keep their position, as is illustrated by the fact that in 1985 management in one of the state farms of the study changed four times.

As the decision-making structure of the state farms is centralized, it follows that recruitment of semi-permanent and seasonal workers also becomes increasingly a responsibility of the central authorities. State farms have become very dependent on voluntary workers, who perform not only productive but also political functions as representatives of the socialist ideology and advocates of the Sandinist views. It is therefore plausible that the bias of the recruitment policy of the state enterprises towards non-permanent volunteer labour

does not stem only from economic motives. Considering the consequences of this policy, one may wonder whether the Nicaraguan economy can afford to continue it.

CONCLUSIONS

The Nicaraguan export sector is doubtlessly confronted with problems of labour shortages owing to a decreasing supply of labour; especially the war situation has reduced the availability of rural workers of all types, whether permanent, semi-permanent or seasonal. The interesting question whether land reform and the strengthening of the peasant sector has led to a decreasing supply of seasonal labour cannot be investigated in those circumstances.

On the micro-level it is not well possible to verify if, in effect, there has been a decrease of labour supply. On the plantation level there certainly are problems related to the provision of labour, but those are only partly supply problems.

Some findings of the survey on a number of coffee farms are:

- The state farms in particular are losing the connections with the traditional labour markets, they operate especially in the harvest season with voluntary labour which has a relatively low productivity, not in the least because of bad timing and a high turnover. Compulsory military service is a factor which affects specifically the labour supply to state farms.
- The private farms have financial problems owing to tight credit, which impedes them to keep all of the permanent labour they traditionally employ.
- The cooperatives did not seem to have major problems in contracting semi-permanent or seasonal labour.

Nevertheless, one general problem was observed affecting all types of farms, namely the tendency of workers to shift from permanent to semi-permanent or seasonal employment. This phenomenon should be related to the problem of maintaining the real incomes of rural wage labour, among others vis-a-vis peasant production. As a consequence non-monetary income components, especially access to secure and good quality subsistence land, has become a central issue in the rural labour market.

In order to overcome the labour problems, in particular those of seasonal labour, the emphasis in agricultural policy in relation to export crops should be on creating a labour demand which is more balanced over the year, thus making possible more permanent - and more productive - employment. This can be effectuated by measures such as mechanization of harvest operations, agronomic research and develop-

ment, e.g. changing the shape of coffee trees. These, however, are long run targets, as far-reaching changes are involved.

Production cooperatives with their flexible labour supply from members and their family labour seem also to show favourable prospects for such innovations, provided they have the appropriate conditions for mechanization.

Notes

(1) These studies include the following:

- Havens, A.E. and E. Baumeister (1983) Recruitment and Retention of Occasional Workers in the Export Sector of Agriculture in Nicaragua, Wisconsin: LTC and CIERA. Interviews with 1000 workers in the cotton and coffee harvest.
- INCAE (1981) Nicaragua; Estudio sobre Familias Recolectoras de Café y Algodón, Managua. Interviews with 180 coffee and cotton workers.
- data from a comparable survey of the Ministry of Work/CSUCA were never processed, Vilas (1984b:117) present some of the data.

2) Compare Wheelock's classification, presented in page 6 (cf. Wheelock 1980).

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