

# Champions of productivity: pains and fevers in São Paulo's sugarcane plantations

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It was 10 o'clock in the morning on November 30th 2005 when I arrived at the headquarters of the *Cosmópolis Sindicato dos Empregados Rurais de Cosmópolis* (the Agricultural Workers Union) to interview sugarcane cutters.<sup>1</sup> It was the end of the sugarcane harvest in São Paulo. The workers were preparing to return home to the parts of Brazil they had left to come to work here. Before they set off, the union was preparing to check and ensure that its affiliated members had been paid according to legal agreements before officially ratifying the end of their contracts. This ritual "settling of accounts" was due to start at 2 pm.

Just after I arrived, still in the morning, I came across three young sugarcane workers at the union's office. The men, from Cajazeiras, a town in the semi-arid region of the state of Paraíba in the Northeast, had come to the union office to ask officials to intervene with a contractor who didn't want to pay them their legal due. This, after they had worked through the whole of the sugarcane harvest. After seven months in the plantations, if they did not receive their provident fund, holiday pay and statutory "13<sup>th</sup> salary" bonus, they would not have enough money to buy their tickets to return home to Paraíba. They were visibly debilitated. One man was taking a self-prescribed anti-inflammatory to ease the pain in his body. He was clearly very familiar with Buscopan tablets. Another was feverish, and said he was used to living with fever. He had had pneumonia at the start of the previous harvest and found it difficult to adjust to the cold weather in São Paulo.

While the president of the union was notifying the contractor, these three workers told me about some of the hardships they faced daily in the sugarcane harvest. They told me of the illnesses they suffered in São Paulo, and searched for the causes. Most of all, they talked of missing their families and of the poor diet.

The young men were all married, and, although there are those who bring their wives to São Paulo for the working season, these did not: the cost of travel and housing would be much higher if they had brought their wives with them. Instead, they preferred to stay in lodgings with ten other workers, each paying R\$40.00 rent per month. If their wives were with them, they would have had to rent a room or share a house with another couple, and

the cost of rent would increase to R\$80.00 per month. These workers were sending between R\$70.00 and R\$100.00 a month to help their families back in Paraíba.

For food, they paid R\$135.00 per month. This price was maintained only under the condition that they handed over to the lodgings management the *Cesta Básica*, the “basic needs” food basket to which the workers are entitled every month. However, if they missed a day’s work, they did not receive the *Cesta Básica* and, in that case, the price of their lodging would rise to R\$200.00 per month. But, with or without the *Cesta Básica*, the men complained about the food provided by their lodgings, which are commonly tied in to the contractors. They said they were given chicken to eat every day because it is the cheapest meat and, according to them, of “very poor quality”. On this diet, the men do not replace the energy their bodies lose when doing the heavy work of cutting sugarcane. To sum up: a poor diet, alongside the demands of the works overseer, translates into tiredness, pain in the body and spine, cramps and tendonitis.

As the conversation progressed, I noticed that the workman with the fever was getting more and more debilitated. At 2 pm, the contractor arrived for ‘the settling of accounts’. By 2.30 there was an agreement. Immediately after signing, the workman had a convulsive attack. The contractor got up, took his papers and left. The account settled, nothing could be proved against him or against the mill, and, it seemed, nor would anyone be able to count on him for assistance. A car was made available by the president of the union to take the man, and his workmates, to the local hospital. I decided to accompany them. The man was seen in emergency: a drip and other medicines were provided. Later, a Benzetacyl injection was given, the fever broke and, after a three hour stay, the patient returned to his normal state. Everyone at the hospital appeared to be familiar with these sugarcane workers’ illnesses.

While we were at the hospital we witnessed the drama of another workman, brought directly from a sugarcane field, bleeding from an enormous cut to the top of his foot. Many stitches were required. Even with the permission of the injured workman, the nurse prevented me from photographing him inside the hospital. So, a photograph was taken outside, showing the workman’s foot already bandaged. Then, right there at the hospital’s entrance, a third victim appeared. This time, an anxious father was supporting his son, who had been brought from the sugarcane field with cramp. The cramped arm did not move, there was great difficulty in walking, and the patient complained of stomach pains. Once more I followed the treatment process, and discovered that these severe cramps are also a very common problem among sugarcane workers.

Convulsions, machete wounds, cramps. What do these men who harvest sugarcane have in common? On the one hand, these three workmen’s

lives can be seen as a perverse continuation of the population movements from the Northeast to the South of the country, historically motivated by the difficulty of finding work or of gaining access to land in their home regions.<sup>2</sup> The building and the manufacturing industries have traditionally been the main destination for those who have left the Northeast to come to São Paulo.

Along with thousands of others, workers come from the Northeast every year with the specific intention of looking for work in the sugarcane plantations of São Paulo's modern mills. According to data from the União da Agroindústria Canavieira (Unica - Sugarcane Agro-industry Union), more than seventy thousand workers came to cut sugarcane in São Paulo in the 2006 harvest. In this world of comings and goings, the Pastoral dos Migrantes (Pastoral of Migrants), an organization linked to the Catholic Church, has identified countless cases in which the current medical treatments have not been effective.

Instances of the deaths of sugarcane workers are on the agenda of religious organisations and unions, and have been arriving at the Ministério Público (Public Prosecution Service), which is searching for links between heart attacks diagnosed in workers' death certificates and work conditions in the wealthy São Paulo countryside.

It is therefore necessary, to understand the episodes described above, to set them in the wider context of the expansion and modernization of the sugar and alcohol industry in the State of São Paulo. Firstly, we should look at the segmentation of the labour force within the sugarcane agro-industry



Photo courtesy of the author

*Rural worker with bandaged foot.*

which, with a mechanized harvesting system, demands manpower with specific skills, while reserving the manual harvesting principally for workers from the Northeast, who are used to facing “hard” manual work. Secondly, we should look at, the paradox brought about by a modernization of the management of this labour force that institutes a sophisticated system of incentives and awards for productivity whilst, at the same time, bringing on an unprecedented season of illnesses and deaths among sugarcane workers. This is what I intend to explore, to a limited extent as these are very complex questions, in this short article.

### **Sugarcane: technological modernization and intensification of manual labour**

The expansion of the sugarcane agro-industry is related to the good prospects of the international market for ethanol, seen as a less polluting renewable energy alternative to oil. Furthermore, the international sugar market is also favourable. Restrictions on subsidies for the export of sugar imposed on European producers by the European Common Market and the competitiveness of Brazilian production have been attracting investment from international groups for this agro-business in Brazil,<sup>3</sup> helping to ensure the expansion of activities in this sector.

A recent newspaper article has revealed the figures on which the sugarcane industry projects its future production:

In the next five years (to 2010) there will be 90 new mills established in Brazil, adding a sugarcane planted area of 2.7 million hectares to the 6 million hectares already occupied by the crop in the country. With this addition, production should jump from the 425 million tons projected for the 2006/07 harvest to 550 million tons by 2010. During this period the production capacity in São Paulo will increase through the construction of 39 new mills and the modernization of the units already in existence. (Unica, *Folha de S.Paulo*, 19.2.2006)

For various reasons, the modernization and the expansion of cultivation has, over recent sugar cane harvests, led to the co-existence of two harvesting systems in the sugarcane plantations of São Paulo’s modern mills: the manual and the mechanized systems. The proportion of use of one or the other system varies according to the strategy of each unit of production and the technical restrictions presented by the mechanical harvesters. So, for example, there are mills (such as São Martinho in the region of Ribeirão Preto) that harvest 90% of their sugarcane by the mechanized system, and mills (such as Ester, in the region of Campinas) that use it in only 15% of their sugarcane area. In fact, there is great degree of diversity. The Cosan group, which owns fourteen mills in the state of São Paulo, made use of mechanical harvesters in 30% of the area of each of these mills in the 2005

harvest. The Santa Adélia mill, located in the Jaboticabal district, used the system in 50% of its crop in the 2006 harvest and intends to expand its use to 70% in the 2007 harvest.<sup>4</sup>

Such establishment of new units of production, coupled with the modernization of mills already in operation, brings about changes in the dynamics of the sugarcane job market. One of its effects is the employment of a qualified workforce (agronomists, agricultural technicians, chemical engineers, accountants, production engineers, psychologists and others) mostly graduates from universities and traditional research centres such as the Instituto Agronômico de Campinas (Campinas Agronomic Institute), Coopersucar (Sugarcane Producers Co-operative) and Embrapa (Brazilian Agricultural Research Corporation). However, when it comes to the work in the field, this process has led to the creation of two substantially distinct worlds that correspond to the mechanized and the manual harvesting systems.

For the mechanized harvest, the main criteria for the selection of workers relate to specialization, schooling and how close they live to the mill where they will work. The operational functioning of this system involves the integration of different specializations: drivers, tractor drivers, machine operators, mechanics, and others. These workers are employed directly by the mill through a work contract of indeterminate duration that ensures unemployment insurance when there are lay offs, as well as basic workers rights. Scopinho (1999) has made a study of the exploitation and illnesses to which these workers are subject, the rhythm and excessive length of the working day. In the mechanized harvesting system, the conditions and length of the working day are determined by the operational capacity of the harvesting machines, to which the worker is subordinate.

In the manual harvesting system, the selection demands are different and the type of work contract is for a set length of time, a “seasonal contract”. In this type of contract, the workers do not receive, by law, unemployment insurance at the end of the contract. Workmen in manual harvests are not subordinate and dependant on the rhythm of the mechanized harvester - they are not appendixes of a machine. In selecting workers for the manual harvesting system, priority is given to criteria of physical skills, dexterity, strength and stamina, and to how far they live from the mill where they will work. Physical strength and dexterity are essential criteria to ensure any increase in productivity in this harvesting system, which presupposes an intensification in the rhythm of work. In the manual harvesting system there has been no change in working tools, the machete continuing to be the tool of choice. Innovations are limited to improvements to the blade and handle.

The workers arriving from the Northeast have a suitable profile for the requirements of today’s manual harvest. According to the workers themselves, because they have, since childhood, been involved in arduous and

hard agricultural labour in the regions where they were born and grew up, the work in the sugarcane plantations does not scare them. Furthermore, according to technicians at the mills, they are preferred by the mill owners because they are more dedicated to the work and grateful to their employers for the job opportunity, which doesn't exist in their own regions. The pressing need to earn money, to ensure the subsistence of their distant families, has acted as a bridle to make them more tolerant of non-compliance of the labour laws, and with injustices and distortions that occur in the measuring carried out by team inspectors of their daily production of cut cane.

The particular characteristics of the manual harvest – in a context of the modernization and intensification of production – have led to the introduction of new forms of work control, among which is the measuring and weighing of the cut sugarcane and paying the worker according to his productivity. Add to that the particular type of cane that was cut, and we have a system for calculating salary. So, the logic of efficiency in manual harvesting is defined by the slogan: “The more you cut, the more you earn”.

To be selected by the mill, candidates will have to cut at least 10 tons of sugarcane per day. Otherwise, they will be dismissed. Generally this “pruning” is carried out up to sixty days after employment. The selection system works in the following way (without naming the mill, I relate here a case that I observed myself): Mill X contracted five thousand workers at the beginning of the harvest season. In the first month, the average individual production of this group was calculated. In the analysed case, two thousand workers who did not reach this average rate of production were discarded. In the second month, the same procedure was followed, now with three thousand workers. At this stage another thousand workers whose production was below the group average were “pruned”. So, the two thousand, highly productive workers, selected in this process were able to carry out the production *quantum* of the five thousand workers who started the harvest. These selected workmen can cut up to twenty tons of sugarcane per day and can keep to a monthly average of between 12 and 17 tons per day.

This case is not an exception. Work productivity in manual harvesting has doubled in relation to 20 years ago, when between four and six tons of sugarcane was harvested per day, without any substantial change in the harvesting methods or working tools (Alves, 1992). Not surprisingly, mills try to put in place motivational techniques to stimulate competition between workers and increase productivity. A financial incentive is given with bonuses awarded by the mills when production targets are reached, these are the *Programas de Participação de Resultados* (PPR - Programmes of Participation in Results). In the personal field, we highlight the awarding of bicycles, television sets, radios, refrigerators, etc to the more productive workers. It is in this scenario that the title “champion of productivity” appears.

## **The Vitamin and Hydro-Electrolyte Supplement: symbol of a painful modernization**

Cutting at least ten tons of sugarcane per day results in an enormous physical expenditure on the part of the workmen. At this intense level of work the risks of accidents increase, because the exhausted body loses precision when swinging the machete at the cane, and legs and hands became involuntary targets. The sequential and repetitive movements made by the workers favour the development of various conditions such as the ones already mentioned: body pains, tendonitis, bursitis and spinal problems.

Muscle cramp is also a common ailment in sugarcane workers, starting initially in the hands, locking them, and causing great pain. The workers say that cramp is a sign of weakness in the body. Generally, it tends to occur during the afternoon, when the tiredness is at its height. From the hands it moves to the legs, until it has spread through the whole body. Each minute that passes the cramp increases, and if there is delay in treatment the workman may die. A doctor interviewed in the field of this research expressed himself about cramp as follows:

when a workman is subjected to a workload that his body is not accustomed to, and if he is already in a weakened state or carrying a pre-existing condition such as heart disease, the outcome can be sudden death, particularly when the work is both excessive and sweat-producing. Excessive sweating provokes a loss of electrolytes, of salts from the organism. If you take a look at a worker's coloured shirt, it sometimes appears white because of his loss of salts. Cramp is the first symptom of someone with hydro-electrolyte disturbance. The cramp is the accumulation of lactic acid in the musculature. The sufferer becomes all contorted, like someone possessed. To give some idea of the severity of the condition, what occurs is almost like a convulsion. And it hurts, it hurts a lot. When a trained athlete, such as a professional footballer, gets an attack of cramp he is immediately substituted. Just imagine the hard work routine that the rural worker is subjected to. The correct treatment is hydration with a saline solution drip. There are some mills now that supply a powder to mix in with food in order to replace some lost vitamins and proteins. I have never witnessed a sudden death due to hydro-electrolytic disturbance, or cramp. Usually, the person arrives at the hospital already dead.

From the point of view of the mills, the acceptance of this reality has demanded a search for a technical solution. The doctor interviewed referred to the free distribution by the mills of a vitamin and hydro-electrolyte supplement indicated for workers engaged in intense physical activity. In fact, in some mills, workers at the harvest take this product daily before starting their work in the fields. With this stimulant the body pains disappear, cramps diminish and productivity increases. The workers feel comfortable taking this

product. They request greater doses than are permitted because when super-energized they can produce more and, therefore, earn more.

They also turn to anti-inflammatory drugs - prescribed by doctors or freely acquired at drugstores to alleviate spinal and muscular pains, bursitis and tendonitis. By using such drugs they ensure a quick return to work without prejudice to their productivity and without need for time off work, something condemned by the mill and of no interest to the workers – who only get a small sum for a day not worked, just R\$14.00 in the 2006 harvest (and, as it has already been said, with any absence from work they also lose the “*Cesta Básica*” for that month).

Saline drips and drugs are a useful expedient adopted by the mills and by the workers themselves to ensure a rhythm of work that goes beyond the physical capacity of many. As in a “natural selection” process, only the fittest survive. But the question is: *how* and *until when* do they survive? Saline drips and drugs can be seen as an expression of the paradox of a type of modernization and expansion of the sugarcane crop that ruins the very labour force that makes it grow. We still do not have quantitative data detailing the consequence of the use of these palliatives. However, invalidity retirement amongst workers of a young age, and the occurrence of deaths of workmen due to excessive workload at the sugarcane plantations of modern mills, as has happened in recent sugarcane harvests in São Paulo, are clear evidence that invite responses from many different levels of government.

### **Final note: in search of decent work**

The media has been registering the pride felt by the inhabitants of the State of São Paulo, in relation to progress, to the quality of life, to being the biggest producer of sugar, alcohol and orange juice in the world. In this boastful scenario of self satisfaction slogans appear such as: “This is the Brazil that got it right” and “Ribeirão Preto: The Brazilian California”. As far as sugar/alcohol production is concerned, the recent expansion has widened the economic supremacy and power of the São Paulo mill owners in the planning of activities of the sector, displacing the traditional oligarchies of the Northeast.

Pedro Costa’s verses, published in the magazine *De Repente* (5.2006), offer an interpretation of this reality, naming work in São Paulo’s modern agro-industry as “semi-slavery”.

The sugar mill owners  
Show off this vision  
Policies of easy winnings  
A culture of exploitation  
An archaic way of thinking  
From the time of slavery



The workman from the country  
Is more than just exploited  
Cutting ten tons a day  
To stay in work  
He who cannot reach the quota  
Is already unemployed.

Thousands of North easterners  
Live with these obstacles  
In a semi-slavery job  
Their eyes have lost their sparkle  
Wake up Brazil, wake up!  
To look after your children.

Whereas, the doctor we interviewed points to the necessity of a “medical policy” specifically tailored for the sector that chooses its “champions of productivity”:

Now for you to really arrive at a conclusion it would be necessary for a policy of health at work for the sugarcane cutters, where they would be given an electrocardiogram before they start working, checked to see that their renal function was balanced, as well as their aerobic capacity. There is a lack of such a medical policy for this sector. However, we do see some movement in that direction from some doctors in the workplace, but there is lack of legislation in place. Of these ten deaths in the fields, if you were to investigate, one may have had a vascular accident, another may have had pancreatitis. But the question of the worker’s health needs to be evaluated and a worker’s health protection programme needs to be put in place.

Clearly, to improve working conditions in the sugarcane plantations of São Paulo’s modern mills, it is necessary that productive opportunities be increased in the Northeast, as the poet suggests. What is expected from modernization is that it will be accompanied by an appropriate workplace medical health policy.

From the labour unions point of view, however, the controversy arises around the following question: to reaffirm a “conquest” in the productivity gain of the manual sugarcane harvest or to fight to substitute this form of remuneration for a salary? This controversy is high on the trade unions’ agenda. There is no consensus. However, all agree that it is urgent to increase the price paid for cut cane, creating mechanisms so that workers can control the measuring and weighing of the cane, and also effectively participate in its pricing.



*Manual harvesting of sugarcane: cramp in hands may lead to death.*

Strictly speaking, it means improving the mechanisms for inspection so as to prevent the undignified working conditions frequently found in all sugarcane producing regions of the country, as well as in the modern mills of São Paulo. Dignified work protects life. Work in the São Paulo sugarcane fields in the 21<sup>st</sup> century, even when dressed up with the sophistication of Human Resources Departments, has caused much suffering and death among workers in a very Brazilian “California”.

## Notes

- 1 The interviews referred to in this article were carried out within the ambit of research about the migration of workers from the Northeast – in particular from the states of Maranhão and Piauí – to the sugarcane harvest in the modern mills of São Paulo. The research involves the Institute of Economy of the Federal University of Rio de Janeiro, to which I am connected, and researchers from the Federal Universities of São Carlos (SP), Maranhão and Piauí, and has the support of the Secretary for Higher Education of the Education Ministry. A book and a documentary film about the conditions of life and work of these workmen in the Northeast and in São Paulo, making explicit the causes and effects of these migrations in the country’s interior, are near completion.
- 2 About migrations from the Northeast, see (Garcia Junior, 1989), Moraes (1999), Carneiro (2007), Menezes (2002), Salles (1982), Moraes et al. (forthcoming) and Rezende (2004).

- 3 Data from Unica, the Sao Paulo Sugarcane Agro-industry Union, record the participation of foreign groups and investment funds in the sector. These groups already control around 5% of national sugarcane production – around twenty million tons. The entrance of foreign companies into the sector started around 2000, with the French group Louis Dreyfus. In 2001, the group Tereos (ex-Beghin-Say) acquired mills in the State of São Paulo. The Argentinean group Adeco Agropecuária has announced its entrance into the country in recent months, together with the Infinity Bio-Energy investment fund, that has incorporated the Evergreen and BDF funds, one of whose members is the French bank Société Générale. According to a statement from a technician at the Campinas Agronomic Institute, there are countless requests for information from big international groupings (Australian, Dutch, German etc.) about soil mapping with a view to the acquisition of properties and investments in sugarcane.
- 4 Information obtained from interviews with technicians from the Human Resources Departments of the mills referred to, carried out in October 2005, as part of research about migrations.

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*ABSTRACT* – Since 1970, the sugar cane agro-industry has been going through modernization and production diversification processes that have guaranteed its expansion beyond traditionally productive regions. In recent years, these processes have received more attention due to sugar cane and alcohol's favorable conditions in the international market and to the international investments in the sector. These changes affect the labor market dynamics, selection processes, kinds of labor agreements, organization of agricultural labor, as well as workers' profile. In this context, agricultural entrepreneurs still give priority to hiring migrant workers during the sugar cane harvest. The main reason for this preference is the high productivity of these workers in cutting sugar cane. Since childhood, they have been used to the hard work on the land to ensure means of survival to their families. The work at the sugar cane plantations does not scare them, even when the demands put them at the limit of their physical capacities, deteriorating their body and bringing serious consequences to their health. This article shows the deterioration of work conditions in sugar cane plantations and exposes palliative measures put in practice by sugar factory proprietors in order to improve work conditions and not to alter productivity levels, remuneration and production control.

*KEYWORDS*: Sugar cane agro-industry, Labor, Health, Exploitation.

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