



INTERVENTIONS OF THE PUBLIC PROSECUTOR'S OFFICE OF LABOR IN THE SUGARCANE SECTOR OF SÃO PAULO: A QUALITATIVE PERSPECTIVE OF THE ACTORS INVOLVED

Carmen Aparecida Herrera^{1*}

Mauro José Andrade Tereso²

Roberto Funes Abrahão³

Abstract

In 2002, the Brazilian's Public Ministry of Labor of the 15th Region received complaints reporting informality, slave labor and deaths by exhaustion in the sugar and alcohol industry. The attorneys organized a program of joint actions with the Ministry of Labor (MPT), the Reference Center on Workers' Health (CEREST), the Union of Rural Workers and the Rural Pastoral to intercede in that sector. This study sought to explore how the actors participating in that MPT program evaluated the actions undertaken in the period from 2004 to 2013. The research was based on documentary analysis of these actions and on semi-structured interviews with the different actors: MPT prosecutors, MT auditors, coordinator of CEREST, and representatives of the Union of Workers and Rural Pastoral. These interventions resulted in approximately 100 inspections, assessments of 200 plants and 850 companies, and 600 Terms for adjustment of conduct (TACs). The program benefited, directly or indirectly, 220 thousand workers in the sector. The greatest difficulties encountered: scattered territory; insufficient inspection teams; technical difficulty to apply the standards. Advances achieved: adequacy of the work environment; end of deaths due to exhaustion, less work precariousness. The interviewees asserted the effectiveness of the interventions in the sector.

Keywords: Public Labor Ministry; Deaths from Exhaustion; Workplace Safety; Precariousness of Work; Worker's Health.

1. INTRODUCTION

Brazil is one of the largest food producers and has one of the most productive agriculture in the world. Brazilian agribusiness was responsible for 33% of the gross domestic product, 42% of exports and 37% of employment, moving more than 150 billion dollars and employing around 17.7 million people. The agricultural sector is one of the fields of work that concentrates a large part of the most arduous work activities. The farmer, in addition to submitting himself daily to work with machines, equipment that is often unsafe and uncomfortable, exposes

¹ Planning and Management Council, Faculty of Agricultural Engineering, University of São Paulo UNICAMP.
*carmen.sesmt@gmail.com.

² Planning and Management Council, Faculty of Agricultural Engineering, University of São Paulo UNICAMP.

³ Planning and Management Council, Faculty of Agricultural Engineering, University of São Paulo UNICAMP.



himself to the risks arising from the handling of pesticides. These situations lead public inspection agencies to fine companies that, without complying with health and safety legislation, expose their workers to such risks (ABRAHÃO et al., 2015).

Brazil is the second largest producer and exporter of food, behind only the United States. Since 2008, the country has been the largest consumer of pesticides on the planet: 86% of all consumption in Latin America and 20% in the world (IBGE, 2018).

Export values in 2013 were US\$ 89.5 million, corresponding to 9% of the global market. The OECD-FAO expects that Brazil will become the largest food exporter in terms of production volume between 2022 and 2025 (OECD-FAO, 2019).

Only 1/4 of the group of workers engaged in agricultural production has a formal contract (IBGE, 2018).

Agriculture generated 9,821 jobs in 2015, being the only sector to show a positive balance, a result obtained thanks to the increase in production and exports of agricultural products, according to data from the General Register of Employed and Unemployed (CAGED). In 2015, the country increased agricultural production by 7.7% compared to 2014 and reached a record of 209.5 million tons of grains. In addition, the participation of agribusiness in the Brazilian trade balance was a record, accounting for 46.2% of all that was sold abroad. According to the interim Minister of Agriculture, Livestock and Supply, André Nassar, the good performance of agriculture in 2015 shows that Brazilian producers maintain strong confidence in the sector and continue to invest in food production to supply the domestic market and expand exports. In the first three quarters of 2015, the Domestic Product, all of which was reverted to employment (BRASIL, 2015).

In the last decades of the twentieth century, due to the insufficiency of oil and other environmental aspects generated by the use of fossil fuels, they ended up provoking the search for alternative fuels worldwide. Thus, the sugar-alcohol sector has been showing great expansion in recent years (BRASIL, 2010).

Sugarcane, initially transformed into sugar, and today also into fuel alcohol, occupies a prominent role in the world economy, in which Brazil is a leader, both in sugar production and in alcohol production (CESNIK, 2016).

According to Kohlhepp (2010), sugarcane has become one of the main products of Brazilian exports and is an option for employment and income, especially for the workers involved in the harvests. It is one of the most important crops in our country. Brazil is the largest



producer (34%) and exporter in the world, with the lowest production costs. From 1993 to 2001, sugar production was more than tripled.

According to data from ÚNICA (2019), in the 2017/2018 harvest, 641 million tons of sugarcane were harvested, produced in 10.23 million ha, which represents more than 16% of the area used for agricultural production in Brazil.

The development of this sector has always been marked by market fluctuations, but always supported by government intervention, and the history of the sugarcane agroindustry in Brazil, as stated by Scopinho (2003), is intertwined with the country's own history.

In the moments of severe crisis of the sugar economy in the 1930s, when the State assumed the role of direct administrator of the national economy, the Sugar and Alcohol Institute (IAA) was created in 1933, a government agency in charge of directing, controlling and promoting sugar and alcohol production at the national level. The history of government intervention in the sugar agroindustry dates back to colonial times, having been institutionalized procedurally, slowly and gradually, as a result of the claims and pressures of the producers themselves. These interventions were consented to and requested especially by the mill owners. (SCOPINHO, 2003).

A set of measures was created in the form of laws related to the stabilization of production, through the establishment of quotas for producers and criteria for setting prices, weighing, inspection, technical, legal, financial and social assistance, these in order to help reduce conflicts and harmonize relations between mill owners. The IAA disciplined the conflicting relations between mill owners and sugarcane suppliers. (SCOPINHO, 2003).

Agribusiness, in terms of the political aspect, has been the symbol of the country's economic development through the positive balance of foreign trade. Thanks to the increase in exports, especially of agricultural products in recent years, this balance is visible. It is important to reflect on the relations and forms of work implemented by this model of agriculture, taking into account not only the process of precariousness of labor relations and unemployment, caused by the use of machines, but also to deepen the discussion on the visible and invisible elements that characterize the complexity of work, based on the reality of this sector (SCOPINHO, 2003).

According to Laat (2010), in the production process, the activities of harvesting and industrialization of sugarcane are considered very important, as they involve a large number of workers and the impacts on their health. Unlike other countries such as Australia, where the



mechanized method is used, in Brazil the harvest was carried out by manual and semi-mechanized methods, with significant use of low-skilled labor. In recent decades, the work of the sugarcane cutter was remunerated by the production of cut sugarcane, requiring about 12 tons/day from the worker. In this way, the cutting of sugarcane is considered a degrading work, precisely because of the aggravating factors in the sugarcane harvest due to this production system. The worker can be exhausted to cope with the daily production imposed by the sugarcane organizations.

The evolution of production and labor relations in Brazilian agriculture has undergone important changes in recent decades. The mechanization of the agricultural sector was decisive in the structure of the labor market, especially in monoculture activities, such as sugarcane, with a significant influence on labor activities in the treatment of this crop. This new cycle of sugarcane cultivation is a reflection of variations that have redesigned the face of this area of national agribusiness, which moves R\$ 40 billion a year (SILVA FILHO and QUEIROZ, 2013).

The strategic importance of the sugarcane sector for the country and for the state of São Paulo is demonstrated both by the territorial area, which covers about 8,811 thousand hectares, and by the fact that it crushes the equivalent of 658,822 million tons of sugarcane in the 2013/2014 harvest. This productive sector grows annually, with a significant participation of the state of São Paulo, which currently brings together about 42.9% of the country's mills, according to the Ministry of Agriculture, Livestock and Supply. This production chain is the object of concern of public agencies and civil society because it exposes migrant workers to risks arising from the work process (VILELA et al., 2014).

According to Laat (2010), from 2000 onwards, there was an increase in reports of deaths due to exhaustion, work accidents, early loss of work capacity, pollution and its effects on public health, and diffuse damage that questioned the official discourse of a "green" ethanol. At the origins of this tragedy would be overwork and fatigue encouraged by pay and awards for production.

Alves (2006) reports that the sugarcane sector has been the scene of socio-environmental contestations, in view of the clash between its economic and political importance and the impacts already attested to the environment, public health and workers' health in several studies and researches. Data released by the media and provided by the Pastoral Service of the Migrant of Guariba (SP) inform that, between the 2004/2005 and 2006/2007 harvests, 14 sugarcane cutters died in the sugarcane region of São Paulo. They were young workers, aged between 24 and 50 years, migrants, from other regions of the country (north of Minas, Bahia,



Maranhão, Piauí). The causes of death on the death certificates of these workers are very vague and do not allow a conclusive analysis of what caused them. The death certificates only state that the workers died of cardiac arrest, respiratory failure or stroke. Friends and family, however, report that, before they died, they had complained of overwork, body aches, cramps, shortness of breath and fainting. To understand what caused these deaths, it is necessary to analyze the working conditions of these people. For this, it would be necessary to know the production and work processes to which they were subjected.

According to Vilela et al. (2014), the Workers' Health Surveillance (VISAT) of the Unified Health System (SUS) established actions to address problems related to the working and housing conditions of sugarcane workers in São Paulo, from 2006 to 2009, resulting in the definition of sanitary standards and initiatives at the legislative and judicial levels. However, even the most successful ones have not been able to reach the organizational determinants, especially remuneration for production, which challenges the traditional action of surveillance and has its impacts aggravated by the fragility of workers' representation.

Filgueiras (2012) points out that the National Program for the Promotion of Decent Work in the Sugar and Alcohol Sector is proof that the concentration of institutional efforts in a specific economic segment is a strategy that allows for more and better results. With this, the human resources of the Public Ministry of Labor (MPT) are strengthened, institutional integration between government entities is promoted, allowing for the improvement of the mechanisms for planning actions and operations, which, in the end, promoted the improvement of the social conditions of workers.

In 2002, the MPT of the 15th Region identified a serious situation in the sugarcane sector in São Paulo, especially in the sugarcane harvest by production, through complaints of problems related to its work environment. The complaints were related to the precariousness of labor relations – outsourcing of migrant workers, lack of formal registration, work in conditions analogous to slavery, irregular transportation of workers, sexual and moral harassment, and deaths due to exhaustion. During this period, a program of articulated actions (PROMO) was initiated in conjunction with several other agencies: SUS; Health Surveillance (VISA); Reference Center for Workers' Health (CEREST); Ministry of Labor (MT); Rural Workers Union; Rural Pastoral; Universities; and other instances of the state government that deal with policies for the sugar-alcohol sector (Brasil 2006-PROMO).



This study sought to know and explore how the actors evaluated the actions of interventions in the sugarcane sector in the State of São Paulo, in the period from 2004 to 2013, and the effectiveness of the Program orchestrated by the MPT.

2. MATERIAL AND METHODS

The research began in January 2015, through contact with the MPT Attorney of the 15th Region of Campinas in order to seek information for the study of actions and interventions of this Ministry of Labor that occurred in the sugarcane sector and related to the work environment in the manual cutting of sugarcane, and in particular the application of NR 31.

The first part of the fieldwork consisted of researching the material on the actions established in that sector, using documentary research and information from the Prosecutor himself.

After contacting the Prosecutor, it was possible to understand that the interventions took place in conjunction with other public agencies involved (MT and CEREST) and with the Rural Union and the Rural Pastoral, between the years 2004 and 2013. It was possible to identify the names of some people who had effective participation in these interventions for later contact in search of information on the performance of each of them in these interventions.

The area covered by the 15th Region of the MPT constitutes the entire territory of the State of São Paulo, excluding Greater São Paulo and Baixada Santista.

Based on the University's documentation of commitment to the confidentiality of information to the MPT, access to the information was allowed. Initially, the MPT's Program and Actions in the sugar-alcohol sector - PROMO (which involved the sugar and alcohol producing mills in the State of São Paulo) and the other actions were analyzed, which allowed, therefore, the analysis of the documentation, its description and subsequent synthesis. To carry out the field research with the participants of the actions, documentation was sent to the Ethics Committee and registration was made on the Brazil Platform. After the analysis of the research project by the Committee, the field research was released.

The other public agencies involved: MT and CEREST of Piracicaba, later informed the actions of each of them in the inspections together with MPT. The Rural Union and Rural Pastoral, which also acted in the interventions, provided information about their participation in the joint actions. Therefore, the set of documentation provided by all those involved allowed the development of documentary research.



The second phase of the research consisted of conducting semi-structured interviews with the different actors who had effective action in the interventions at the time reported in this research and experience of this circumstance.

7 actors involved in the joint actions were interviewed: 2 MPT Attorneys, 2 MT Auditors, 1 Coordinator of CEREST-Piracicaba, 1 representative of the Workers' Union and 1 representative of the Rural Pastoral, seeking to identify the perception/perspectives that each of them had about the joint actions. These interviews with the participants were conducted in the current location of each of them, through the signing of the Informed Consent Form (ICF).

The interviews were conducted in the cities of Bauru, Cosmópolis, Mogi Mirim, Piracicaba and Campinas, depending on the place of work or current residence of the actor involved. The time of the interviews with each of the actors varied between one and two and a half hours.

The semi-structured interviews with each actor were recorded and then transcribed for later systematization, seeking to identify similarities and differences in the speech of the different actors. The interviews were based on systematized questionnaires with the following information: personal data; role as an actor in the process; how their participation occurred; what is the contribution of your agency and/or your contribution to the process; difficulties encountered; advances achieved; what are the positive and negative points; and perception of the effectiveness of the program.

3. RESULTS AND DISCUSSION

The main results found in the documentary research allowed us to verify that the joint actions by the MPT, MT and CEREST bodies acted in an engaged and synergistic way and contributed positively to the transformation and awareness of the sector.

The joint actions of these public agencies demonstrated the effectiveness of the interventions and the legislation of NRs, specifically NR 31, 17 and 15, based the actions on the issues of exposure limits to workers.

The joint action of the MPT, MT and CEREST in the sugar-alcohol sector in the MPT15th Region, during the period from 2004 to 2013, accounted for impressive numbers: there were more than 100 diligences; 852 companies were fined - in addition to all the mills in operation at the time, approximately 200, the third parties involved are also included; the



number of Conduct Adjustment Commitment Terms exceeded six hundred; All more than 220 thousand workers in the sector directly or indirectly benefited.

The enhancement of the MPT's human resources promoted institutional integration between government sectors, according to Filgueiras (2012), allowing for the improvement of the mechanisms for planning actions and operations, leading to the improvement of the social conditions of workers. This fact is also corroborated by Jackson Filho (2015), who demonstrated, in his research, the importance of work engagement in public services, contradicting the negative image of civil servants, widespread in society, seen as privileged and who 'do not work'.

The MT played a relevant role through rural inspection in the mills, in the work fronts of suppliers, in the work fronts of the Rural Condominium and always in conjunction with MPT, which made it possible to solve the problems in the week of the fines. The MT prepared the assessment and the MPT established TACs, establishing the companies' commitment to solve the irregularities found. In situations where agreements with companies did not actually occur, other legal instances were resorted to, such as: Civil Action and Judgment. In these instances, the agreements would serve as a basis for the entire sector to effectively adapt in the areas of health and safety, and thus, all companies involved should effectively comply with what was determined.

NR 31, with a much wider range of items than NRRs, provided more technical elements for the inspection of MT, as well as for better understanding by companies in the sector and was considered extremely relevant for the promotion of these preventive actions, corroborating, according to Reimberg (2016), the effectiveness of joint interventions.

CEREST, acting as a technical assistant to the MPT of the 15th Campinas, acted on inspection issues together with MT in the workers' lodgings that effectively regularized the lodgings for the entire State of São Paulo. This body also worked in research articulated with universities, which made it possible to determine scientific parameters through the NRs to support the MPT's actions for the regulation of the sector. This research also allowed us to observe the relevance of the application of NR 17. It established the need to demonstrate the real work of workers through Ergonomic Work Analysis (AET), corroborating authors such as Abrahão, (2000) and Guérin et al. (2001) and Silva (2016), and was developed in the sugarcane cutting sector. These authors emphasize the objective of ELA, which is to understand the strategies used by workers to carry out their work activity in its physical, cognitive and organizational aspects, through the observation of the workers' real work. Also corroborating



Silva (2016) and Silva and Camarotto (2016), the analysis of the activity carried out allowed the understanding of the intrinsic aspects of the workers' actions and the respective constraints. The importance of the analysis of the activity, reinforced by Gemma et al. (2010), consists in understanding the work that is actually carried out, the difficulties encountered and the strategies used to overcome them.

The interviews allowed us to verify these improvements identified by the documentary research and to unveil in the speeches of the different actors involved, the main difficulties encountered, the advances and the effectiveness of the joint intervention program.

According to the prosecutor of Campinas who initiated the interventions, there was a whole precariousness of the working conditions in the sugar-alcohol chain and he felt that something needs to be done to change the sector. It was then that he sought to establish a specific program (PROMO) for the sector. At first, he participated as a volunteer in this program with another prosecutor, but then he continued alone and ended up presiding over PROMO. Through denunciations and visiting the workplaces, he realized that "it was the end of human dignity that form of work... to lodge...". The prosecutor explains that "the sector demanded an organized, orchestrated action". Therefore, his function was to organize and structure the actions as a whole. From a certain moment when a situation was observed that required specific intervention in a company, a lawsuit was initiated. This process could or could not be under his responsibility, thus dividing the processes with other prosecutors. Only through the MPT 7 prosecutors participated in the interventions, in the MT mobile group about 14 to 18 excellent auditors, in addition to the technical team of CEREST Piracicaba (engineers and OSH technicians).

The sugar-alcohol sector was spread over several territories and few personnel to compose the inspection teams. These difficulties enhanced the enormous challenge to be faced. Despite the difficulties, through the interventions there have been significant advances in improving working conditions.

According to the union representative, the death of workers had been noticed since 1993, but the union had no way to act. For her, most of the sugarcane cutters came from Paraíba and Minas Gerais, all states without an employment policy for this category. She reports that she even went to Paraíba for a week to see up close how they lived, and try to understand them: "why they accept to suffer so much here... and it was really much worse there than here." She even baptized that place as "the state of stone", because the only suitable lands that existed with good working conditions were in the hands of the mill owners, the rest was all sertão.



The union representative reports the situation in relation to the difficulties in relation to the most basic needs: "fights to be able to drink water... (on the work front)." For example, in the carreadores, streets that delimit the sugarcane courts, it was only allowed to drink water after harvesting about 300 to 500m of sugarcane. She expresses that this "was a way of forcing work for production", depriving the worker of satisfying one of his most fundamental physiological needs: to quench his thirst.

The representative of the rural pastoral pointed out that, before the interventions, the workers sought in a few months of the harvest to obtain income and acquire goods, such as motorcycles, bicycles, refrigerators, televisions, and that, for that, "they really had to kill themselves from working so hard." For him, the greatest contribution was the fact of uniting and aggregating institutional forces and civil forces to combat crucial points and help combat deaths from exhaustion, through the logistical structure of the Forum in the promotion of meetings.

The MT auditors reported that "it was really a work followed since the 2000s, joining thinking heads and squeezing here and there, and extracting quality from the standards. It was a shame because part of the result that would be achieved was lost by the loss of jobs (with mechanization)." They reinforce that the activity of an auditor is very complex, as it needs to develop 3 competencies: legal competence, based on knowledge of the laws and their application; technical competence, or at least the ability to identify risks, and evaluate the different possibilities for solutions; and, finally, the competence to deal with people, considering the importance of human relations to overcome difficulties, establishing dialogues to reach common interests (workers' needs and companies' goals), emphasizing that the "objective of inspection is not to punish, but to guide".

Punishment, infraction notice, embargo, interdiction are tools to be used in serious situations, in situations with a resistant employer, but it does not solve the problem. "What solves the problem is for the employer to adapt to the legislation."

The prosecutors report that a major difficulty was the resistance of the mills to adapt. This resistance was orchestrated: who "determined (the actions) in the sector was a strong group". And when this company, which orchestrated the group, signed a TAC, all the other mills also started to adapt.

The representative of the rural union considers that the main advances achieved were: the union and with the Pastoral of the Migrant in Piracicaba; the partnership with CEREST; and the partnership with other public agencies. These partnerships made it possible to have direct



access to issues related to immediate complaints and, according to her, "the union did not have a specific project, but in reality it had a great purpose: our project was to defend life!". According to her, improvements have emerged with the joint actions and the objectives have begun to be achieved. And he reinforces: "for us, workers and trade unionists, the range with more information and more knowledge has been opened."

The representative of the rural pastoral evaluates the interventions as a great advance, as it allowed the approval of a state law to improve the housing conditions of rural workers and states that "Great work is not done alone!".

The prosecutors and auditors emphasize the positivity of scientific partnerships with the collaboration of professionals with excellent quality, providing a lot of exchange of experiences. The result of the research in the field (CEREST-Universities-FAPESP) technically demonstrated the dramatic nature of the activity, material that was later used in civil actions. This research quantified the movement of the sugarcane cutter, the actual amount of cut, data obtained with great propriety of the movement and the amount that the worker had to perform to meet the goal of 12 T days. Therefore, these subsidies set the tone of the MP in everything related to the environment, requesting AET, and breaks became mandatory, even companies instituted workplace gymnastics, the examination of movement became more qualified.

According to the coordinator of CEREST, this body "acting as a technical assistant to the MPT, things are moving!" This support contributed a lot to the joint fines, in addition to the strong performance of the technical sector within surveillance. "Piracicaba was very lucky with these articulations and with the committed people, from these bodies as well as from the Unions. (...) The people who wore the shirt."

Prosecutors also say that a major dilemma facing Brazil is laws that, although they exist, are not complied with. However, there was a great advance: "in the sugar-alcohol sector, compliance with the standards was greatly increased beyond the traditional parameters of Brazil, that is, more than 75% actually complied with the Standards, demonstrating the effectiveness of the program of joint actions of interventions.

It was a work that had a very relevant aspect, because after one or two years we could clearly see the improvement, we could see the reduction of problems, we could see the effectiveness of the program; Efficiency goes through this, because it was solved in the same week". They also reinforce: "when each agency acts individually, the results are limited, but the union of all is what allowed the effectiveness."



According to the prosecutors, thanks to this joint action (MPT, MT, CEREST, Pastoral and Union) it was possible to change the scenario of the sugar and alcohol sector. These actions helped the sector to transcend the state of precariousness that existed. And they conclude: "it was not possible to leave the sector 100% perfect, but if there had not been intervention in the way it did, the situation would have been much worse: more people would have died, more people would have gotten sick, more people without having their rights respected and suffering a lot from degrading work. We feel like we've helped a lot of people."

All the participants in the interventions say that the advances were justified by the fact that the actions were collective by the actors of the institutions involved and, mainly, according to the union representative: "the personal training of each one of them was important in the sense of seeking to defend a greater cause".

"The most positive thing about this whole story...", according to the prosecutor who initiated the PROMO, in addition to the result that worked, is to reinforce that "... It only worked because we worked together, because the situation was so serious that only one agency could not handle it". And he adds: "it was really an elite group working collectively".

The interventions of the Public Prosecutor's Office are always present as a strategy in the implementation of many articulations and all the Public Civil Actions were essential for the great advances in the sector and in the issues of public policies for the preservation of the health of workers in the sugar-alcohol sector. This integration is based on the studies of Jackson Filho (2015) who studies the Ergonomics of the Activity in Brazil, in the association between the possibility of providing public services and the health of public workers.

The synergistic way in which the different agencies acted during the interventions allowed the positive results achieved to be enhanced. This pattern, which proved to be quite effective, could serve as an inspiration for application in other conjunctures, reinforcing the need for the integration of agencies in the implementation of public policies in our country (HERRERA, 2019).

4. FINAL CONSIDERATIONS

In the early 2000s, the Rural Unions, the Pastoral da Terra and the media routinely denounced deaths of workers in the sugarcane harvest. The sugar-alcohol sector in the state of São Paulo presented a wide range of problems related to its work environment, with precarious labor relations – outsourcing of migrant workers and lack of formal registration, irregular transportation of workers, sexual and moral harassment, work in conditions analogous to



slavery, and deaths due to exhaustion. Friends and family report that, before dying, these workers complained of overwork, body aches, cramps, shortness of breath and fainting. It did not take long for these complaints and news to reach the MPT of the 15th Region, Campinas.

Based on these findings, the MPT of the 15th Region initiated a series of interventions in the sugarcane sector, through a program of articulated actions (PROMO) that resulted in regulatory proposals built together with several sectors of the SUS: Health Surveillance (VISA), Reference Center for Workers' Health (CEREST), Ministry of Labor (MT), representatives of workers, universities and other instances of the state government that deal with policies for the sugar and alcohol sector.

The interviews allowed us to identify the main difficulties encountered: a sector spread across several territories and few personnel to compose the inspection teams. These difficulties enhanced the enormous challenge to be faced. Despite the difficulties, through the interventions there have been significant advances in improving working conditions.

The Rural Union and the Rural Pastoral had a lot of openness and support from public agencies regarding the complaints about the situations suffered by workers in the sector, such as the difficulty in understanding and properly receiving payment for their work, the extension and intensification of the working hours faced, the moral and sexual harassment of workers, the degrading housing and safety conditions, in addition to deaths from exhaustion.

With the joint actions, these complaints were resolved very quickly, thus contributing to their solution and, mainly, to the end of deaths due to exhaustion.

CEREST, as a technical assistant of the MPT of the 15th Campinas, acted on inspection issues together with MT. The accommodations for the entire State of São Paulo were effectively regularized. This body also worked in research articulated with Universities, which made it possible to determine scientific parameters through the NRs to support the MPT's Actions and the regulation of the sector.

The regulatory standards - NR15, NR17 and especially NR31 - were extremely relevant for the promotion of these preventive actions and corroborated the effectiveness of joint interventions, both in the actions of the MT, and for the grounds of Civil Actions and Rulings.

NR 31 provided a greater technical basis, while increasing the adequacy of the work environment, less precariousness of work, the end of outsourcing, the end of deaths due to exhaustion and greater awareness of compliance with the legislation by managers in the sugar-alcohol sector.



The fundamental results found in the research allowed us to verify that the joint actions by the MPT, MT and CEREST bodies collaborated positively for the transformation and awareness of the sector.

Although the perspective of each of the actors involved was different, the perception of all of them about the joint actions demonstrated that, as a final balance, there was effectiveness in the process of interventions. The actors themselves highlighted that this was possible because the objectives were clearly common, those involved were extremely engaged and committed. It was possible to notice a certain feeling of "civility" in the actors' speeches, because in addition to the duty of office, the satisfaction of having worked for a just cause was evident.

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REFERENCES

ABRAHÃO J.I. Reestruturação Produtiva e Variabilidade do Trabalho: Uma Abordagem da Ergonomia- Psicologia: Teoria e Pesquisa, 16(1): 049-054, Jan-Abr 2000.

ABRAHÃO, R.F., TERESO, M.J.A., GEMMA, S.F.B. A análise Ergonômica do Trabalho (AET) aplicada ao trabalho na agricultura: experiências e reflexões. Revista Brasileira de Saúde Ocupacional, São Paulo, 40(131): 88-97, 2015.

ALVES, F.J Por que morrem os cortadores de cana? Saúde Sociologia, 15(3): 90-98, 2006.

BRASIL, Ministério do Trabalho e Emprego. Ministério do Trabalho realizou 138 mil vistorias em 2015. Disponível em <<http://www.brasil.gov.br/economia-e->



[emprego/2015/08/ministerio-do-trabalho-realizou-138-mil-vitorias-em-2015](#)> Data de acesso: 16/11/2015.

CESNIK, R. Melhoramentos da cana de açúcar. Disponível em http://www.cienciamao.usp.br/tudo/exibir.php?midia=com&cod=_melhoramentodacana-de-acucarmarcosucro-alcooleironobrasilrevistacomciencian86abr2007>, Data de acesso: 27/08/2016.S

COUTO, J. L. V. Riscos de acidentes na zona rural. Disponível em. <http://www.ufrj.br/institutos/it/de/acidentes/acidente.htm>>. Data de acesso 27/05/2006

FILGUEIRAS, V.A. Estado e Direito do Trabalho no Brasil: regulação do emprego entre 1988 e 2008. 471 p. Tese (Doutor em Sociologia) - Faculdade de Filosofia e Ciências Humanas, Universidade Federal da Bahia, Salvador, 2012.

GEMMA, S.F.B.; TERESO, M.J.A.; ABRAHÃO, R.F. Ergonomia e complexidade: o trabalho do gestor na agricultura orgânica na região de Campinas – SP. *Ciência Rural*, Santa Maria – RS, 40(2): 318-324, 2010.

GUÉRIN, F.; LAVILLE, A.; DANIELLOU, F.; DURAFFOURG, J.; KERGUELEN, A. Compreender o Trabalho para Transformá-lo. A Prática da Ergonomia. São Paulo: Edgard Blücher, 2001.

HERRERA, C. A. Intervenções do Ministério Público do Trabalho no meio ambiente laboral no setor sucroalcooleiro no estado de São Paulo (2004-2013): Uma perspectiva qualitativa sobre a percepção de diferentes atores envolvidos. 124 p. Tese (Doutora em Engenharia Agrícola) – Faculdade de Engenharia Agrícola, Universidade Estadual de Campinas, Campinas, 2019.

IBGE. Censo Agropecuário 2017: Resultados Preliminares. Rio de Janeiro: IBGE, 2018

JACKSON FILHO, J.M. [Engajamento no trabalho, impedimentos organizacionais e adoecer: a contribuição da Ergonomia da Atividade no setor público brasileiro](#). *Revista Brasileira de Saúde Ocupacional*, São Paulo, 40(131): 98-108, 2015.

KOHLHEPP, G. Análise da situação da produção de etanol e biodiesel no Brasil, *Estudos avançados* 24 (68), 2010.

LAAT, E.F. Trabalho e risco no corte manual de cana-de -açúcar: a maratona perigosa nos canaviais. 206p. Tese (Doutor em Engenharia de Produção) – Faculdade de Engenharia, Arquitetura e Urbanismo, Universidade Metodista de Piracicaba, Santa Bárbara D’Oeste, 2010.



OCDE-FAO. Perspectivas Agrícolas 2015-2024 disponível em <www.fao.org/3/a-i4761o.pdf>. Data de acesso: 14/01/2019.

REIMBERG, C.O. Fundacentro: meio século de segurança e saúde no trabalho – São Paulo: Fundacentro, 2016.

SCOPINHO, R.A. Viggiando a vigilância: saúde e segurança no trabalho em tempo de qualidade total. São Paulo: Annablume/Fapesp, 2003.

SILVA, A.P. Ergonomia: interpretando a NR-17. 2ed. São Paulo: LTr, 2016.

SILVA, E.C.; CAMAROTTO, J.A. Contribuições da análise da atividade do trabalho no processo de retorno do trabalhador afastado por LER/DORT. Revista Terapia Ocupacional, São Paulo 27(2):131-137, 2016.

SILVA FILHO, A.; QUEIROZ, S.N. Workers from the countryside: the occult face of sugarcane production in Brazil. Brazilian Journal of Labour Studies - Revista da ABET, 12(2): 145-160, 2013.

ÚNICA, União da Indústria de cana de açúcar <<http://www.unica.com.br/convidados/3724648192036979688/setor-sucroalcooleiro-por-cento3Atendencias-no-terceiro-milenio/>> Data de acesso: 14/01/2019.

VILELA, R.A.G. Desafios para interromper a “maratona” perigosa dos canaviais. Ciência & Saúde Coletiva, 19(12): 4659-4668, 2014.