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Waste pickers associated: problematic of working conditions in an organization located in the State of Rio Grande do Norte – Brazil

Catadores de recicláveis associados: problemática das condições de trabalho em uma organização localizada no Estado do Rio Grande do Norte - Brasil

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Resumo

Este estudo tem como objetivo avaliar as condições adversas de trabalho dos catadores em uma associação localizada no interior do estado do Rio Grande do Norte. A pesquisa foi realizada por meio de questionários, análise documental e observado os processos operacionais coletivos em tal associação. As técnicas de pesquisa foram a observação sistemática, aliada às técnicas de observação direta extensiva e documentação indireta. No total, 11 trabalhadores estão associados a essa organização; dez deles estão diretamente imersos nos processos produtivos, enquanto uma pessoa é o presidente da associação. Em relação aos riscos ocupacionais, esses trabalhadores foram expostos a todos os riscos ambientais (físicos, ergonômicos, acidentes, biológicos e químicos). Com relação às doenças, foram identificadas dermatites cutâneas, hérnia discal, disfunções respiratórias, leishmaniose, tétano e bursite. Quanto às medidas de mitigação, sugere-se a formalização de mão de obra, criação de PPRA e PCMSO com treinamentos, mapeamento de risco, sinalização, uso de EPIs e avaliações de saúde. Todas essas medidas podem ser apoiadas por associações municipais.

Palavras-chave: Segurança ocupacional do catador; Lei Federal 12305/2010; Atores sociais; Gestão ambiental

Abstract

This study aims to evaluate the adverse working conditions of waste pickers in an association placed in Rio Grande do Norte state's countryside. The research was carried out through questionnaires, documentary analysis and observed the collective operational processes in such association. The research techniques were systematic observation, allied to techniques of extensive direct observation and indirect documentation. Overall, 11 workers are associated to this organization; ten of them are directly immersed in the productive processes while one person is the association's president. Regarding occupational hazards, these workers were exposed to all environmental risks (physical, ergonomic, accident, biological and chemical ones). With respect to diseases, cutaneous dermatitis, disc herniation, respiratory dysfunctions, leishmaniasis, tetanus and bursitis were identified. Regarding mitigation measures, it is suggested the labour formalization, PPRA and PCMSO creation with training sessions, risk mapping, signalling, use of PPE's and health assessments. All these measures might be supported by municipal association.

Keywords: Occupational safety of waste pickers; Brazilian Federal Law 12305/2010; Social actors; Environmental management

1 Introduction

Over the last centuries, but more specifically after Industrial Revolution, the industrialization of production processes, besides the emergency of urban conglomerates and their consumption patterns, trigger the disposables era and consumerism culture. This dynamics is result of economic expansion model, which end up developing serious environmental problems caused by the vertiginous amount of solid, semi-solid or effluent waste deposited in natural environment, being difficult to be naturally decomposed due to their composition and quantity. These environmentally unsuitable wastes cause consequences to soil, air, and earth environmental systems, resulting in floods, degradation of air quality, manhole obstruction, soil contamination, increased disease rates, thus damaging both environment quality and human life (DANTAS et al., 2017a).

Considering this context, Brazil stands as a potential polluter. According the Brazilian Association of Public Cleaning and Special Waste Companies (ABRELPE) data, 218,274 tons of urban solid wastes were generated per day, being the Brazilian Northeast responsible for 43,894 tons per day (22.1%). Approximately 58.7% of residues produced in Brazil were adequately disposed, while the remaining percentage (41.3%) continued to be destined to controlled landfills or dumps. Such fact occurred in 59.8% of the overall Brazilian municipalities, accounting for about 30 million tons of waste per year, similarly to the previous year (ABRELPE, 2016). In addition to the amount of urban solid waste generated, another problem regards its heterogeneity, since treatment and destination of these wastes occur in accordance to their nature.

Thus, according to the Brazilian Association of Technical Standards (ABNT) NBR-10004, solid waste can be classified into two types: Class I - Hazardous Waste and Class II – Non-hazardous waste. Class II waste may be divided into: Class II-A (non-inert waste) and Class II-B (Inert waste). Class I residues are those that may present with hazardous conditions, such as: flammability, corrosivity, reactivity, toxicity, pathogenicity, e.g. batteries, residual oil, paint and pigment residue, hospital waste, flammable residue, pesticide residues. Class II-A residues are those that do not fall under Class I - Hazardous Waste or Class II-B - Inert classifications and have water solubility, biodegradability and combustibility characteristics. Examples encompass organic residues such as food residues, but also include non-hazardous sweeping residues, scrap ferrous metals, rubbers, foams, ceramic, vitreous materials. Additionally Class II-B wastes are those that do not solubilize when in dynamic contact with water, such as rocks, bricks, glass, rubble/building, rubber gloves, styrofoam (ABNT, 2004).

The amount of waste, together with their composition as classified by NBR 10004/2004, are determinant factors to how treatment and final environmental disposal of these urban solid wastes should be. However, other adjacent factors influence this process, such as infrastructure, incentive policies, solid waste management by both governments and workers directly involved in this process. Thus, Brazil, aware of the solid waste issue complexity, the structural deficiency that end up affecting mitigation efforts to address negative environmental impacts and, above all, the social actors involved in this activity, participates in such debate and implements policies that could work this issue out. Among these measures, more specifically solid wastes, the National Solid on Waste Policy (PNRS) stands out.

In this perspective, Brazilian Federal Law 12,305 /10 established the PNRS, looking forward to establishing a new horizon in solid waste management, based on principles, objectives, instruments and measures. Among the PNRS measures, the obligation to creating and implementing the Integrated Solid Waste Management Plan into the state and municipal dimensions stands out, furthermore a reverse logistics system must be inserted, as well as selective collection, shared responsibility from the generation to waste environmentally appropriate final destination, the creation of waste pickers cooperatives and associations (BRASIL, 2010).

Considering this perspective, waste pickers occupy a central axis among the social actors involved in the management of solid urban waste. The activity has been regulated since 2002 (Brazilian Classification of Occupations - CBO n°. 5,192-05) and its function involves collecting, separating, classifying, processing and trading reusable and recyclable residues, in order to essentially contribute to solid waste management in urban areas (BRASIL, 2002). Due to the nature, variety and the precariousness of the working conditions imposed on waste pickers, at the same time as health and safety at work has been a

problematic issue, working conditions have been increasingly under debate in all economic segments, especially in the recycling sector related to associations and cooperatives.

According to studies addressing recyclable material pickers' activities conducted by the Institute of Applied Economic Research (IPEA), the waste pickers are submitted to several environmental risks throughout working hours. Environmental hazards are classified as: physical, chemical, biological, ergonomic and accidental hazards. Such environmental hazards may be exemplified by heat exposure, humidity, noise, rain, the risk of falls, running over, cuts and animal bites, contact with snakes, rats, flies and microbiological agents, bad smell gases, smoke that exudes from accumulated waste, mainly from slurry, work overload and weightlifting, contamination by sharps, chemical packaging and others (IPEA, 2013). It is worth noting that the absence of environmental education and adequate management of waste by public authorities are such risks, since the waste does not arrive with prior screening, causing the waste pickers to have contact with infectious bacterial agents such as contaminated needles and syringes. These materials not be destined to these organizations, besides being potentially risk factors for contagious diseases.

In order to combat this exposure to environmental risks, the Ministry of Labour develops, through Regulatory Norms (NRs), mechanisms and instruments aiming to protect workers. These standards are currently composed of 36 NRs which have gradually being updated as a result of new demands. Among the Regulatory Norms, the o Program for Prevention of Environmental Risks – PPRA (NR 9) must be highlighted. NR 9 establishes the obligation of elaborating and implementing a protection plan based on the engagement of employer, employee and institution, aiming at the protection or mitigation of the negative impacts of environmental risks exposure to worker's health, thus it is associated to the Occupational Health Medical Control Program (PCMSO), as foreseen in NR-7 (BRASIL, 1978b; 1978c).

In addition to these norms, NR-6 aims at the use of appropriate Personal Protective Equipment (PPE) in labour activities and such equipment must have Certificate of Approval (CA). The PPEs' purpose is individual protection for workers who have contact with aggressive agents to their physical and mental integrity (BRASIL, 1978a). In addition to the PPE, the NR-15, whose objective is to systematize unsanitary conditions, establishes that workers submitted to insalubrity should earn an additional that varies from 10 to 40% of the basic salary until the agent causing insalubrity is ceased. Regarding waste picker activity, such additional is maximum, therefore 40% of the minimum wage, due to the imminent risk to the worker's health (BRASIL, 1978d).

In the face of this challenging and society-stereotyped context, which causes shame, humiliation and strongly discourages its appearance in public spaces (SANTOS; SILVA, 2011), the challenges faced by public power regarding PNRS management (TEODÓSIO; DIAS; SANTOS, 2016). Moreover, the challenges regarding working conditions in which waste pickers are involved, occurring in a similar way in other parts of the world (AMATE; CARNEIRO; HOEFEL, 2017; NAVARRETE-HERNANDEZ; NAVARRETE-HERNANDEZ, 2017), this research aims to evaluate the adverse working conditions in which waste pickers are submitted in the course of their activities as an associate member of an organization located in the state of Rio Grande do Norte.

2 Methodology

2.1. Study area

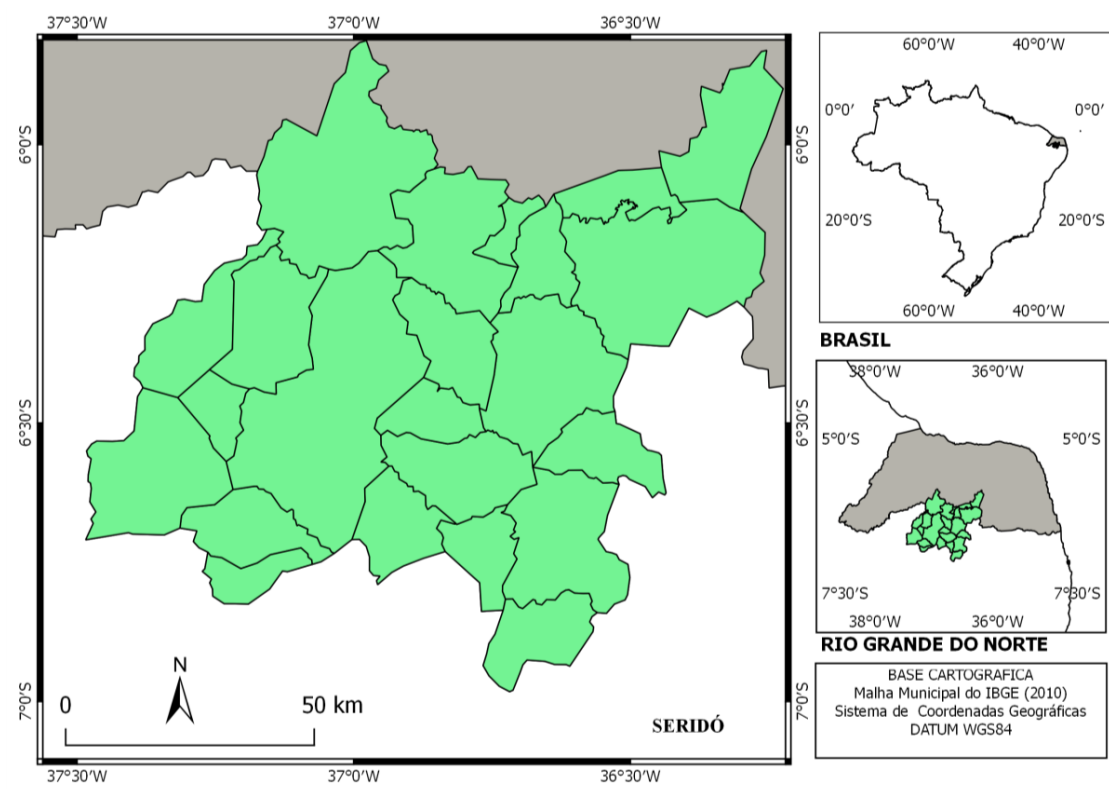
The research was carried out with a group of recyclable material waste pickers linked to an association of this branch, placed in a municipality from Seridó microregion, in Rio Grande do Norte state, Brazil. The Figure 1 illustrates the spatial location of the microregion Seridó/RN in which the association is located.

The choice occurred because this association has recently started its activities, and has been presenting with numerous difficulties regarding working conditions, specifically, health and safety issues at work. This questions are which is strongly associated to solid waste management problems faced by the municipality as well as the insufficient support from the municipal government for waste pickers, both in technical and infrastructure supports, in dissonance of the PNRS. It is important to highlight that part of this difficulty is associated with the non-construction of the landfill in the municipality of Caicó, as provided for in the State Plan for the Integrated Management of Solid Waste in the State of Rio Grande do

Norte (PEGIRS) (RIO GRANDE DO NORTE, 2012). According to PEGIRS, the sanitary landfill in the municipality of Caicó/RN was planned to serve 252,235 population, covering 25 municipalities, of which, one municipality is inserted. The problem is that it has not yet been built, hindering the proper management of municipal solid waste and, consequently, the question of the organizations of waste pickers located in these municipalities.

Regarding ethical delimitations, the following requirements were adopted: i) there was protection of the database collected during the research period; ii) there is absolute secrecy about all the information collected, safeguarding the privacy of the participants in the presentation of the results; iii) there is a guarantee that no data were presented individually, but collectively.

Figure 1 – Municipality geographical localization



Fonte: IBGE (2010)

2.2 Research procedures

The research was carried out between October and November 2016, through the observation of the working procedures, interviews and structured forms applied to the associated waste pickers. The first stage of the study was conducted from October 3rd to 7th with an explanatory approach, in order to obtain authorization to the research development and delimitation of the study field. In the following week, a form was applied and an interview was carried out with each association member. The form is classified as structured, organized into questions addressing the association's work structure, such as: employee profile, work shifts, role performed, organizational period, other work performed. The interviews occurred in order to collect the members' perception of working conditions.

In this stage, the waste pickers were asked about the organization and process of the work performed in the association, at this stage, waste pickers were asked about the organization and work process, as well as a detailed description of the activities, which safety measures were taken collectively and individually, if they use PPE's, as well as their frequency, perception of risks, which accidents were affected, period of remoteness. Then, in November, each operational process involved in the work activity

was observed and the conditions associated to such job were identified, as well as the occupational risks of each work stage. With all these information, we analyzed the documentary data from the association, aiming at verifying the numbers of accidents and withdrawals that occurred in years 2015 and 2016. The survey covered all the associated workers, a total of 11 people.

The research employed intensive and extensive direct observation techniques as methodological artifices, as well as systematic observation (MARCONI; LAKATOS, 2010). The Systematic observation is a very efficient analysis technique in collecting data and phenomena within a specific planning and objective. For this reason, as numerous risks in this activity were identified, it was sought to diagnose them precisely in each operational stage based on a rigorous observation (MARCONI; LAKATOS, 2010). These techniques are appropriate for this purpose, being able to create an accurate picture of the working condition of these waste pickers (DANTAS et al., 2017a).

3 Results and discussion

3.1 Work structure

The Association, object of this study, has been working in the field of collecting recyclable materials since 2014. The waste pickers perform their functions from Monday to Friday. The work shift is from 6 a.m. to 5 p.m., with lunch break from 11:30 a.m. to 1:00 p.m. The residues come from the urban perimeter, specifically from three neighbourhoods. Over the research period, the Association encompassed 11 associate waste pickers. Ten of those were linked to the production process and one was responsible for the administrative part, as the Association's president.

According to the Association, the operational process developed by the workers consists of 6 steps: collection, transportation, sorting, compaction, storage, trading. The first step is the collection of recyclable materials with potential to be commercialized in each house, mainly PET bottles (polyethylene terephthalate), cardboard, aluminum (pans, household utensils) and copper (electrical wire).

In the second stage, the material is transported to the association. The third step consists of sorting all materials previously collected and identifying those of interest by the waste pickers, whose aggregate value and potential income is considered reasonable by the Association, mostly focusing on cardboard, PET bottles, aluminum and copper in a presentable quality.

In the fourth stage the compaction of the separated materials is carried out when necessary. In the fifth one, the separated material is stored in a space previously delimited by the workers, who divide the material according to the four abovementioned material categories due to their homogeneity in order to be commercialized through intermediates.

The waste pickers are divided into three main collection groups: the first and second ones aim at collecting the material across different neighborhoods, while the other conducts the collected material sorting. One of the associates is the president, whose function relies on administrative issues.

3.2 Occupational risks

When questioned about occupational risks, several hazardous factors were observed. Such risks can be classified as environmental risks, therefore all subcategories were identified. Environmental and occupational risks are split into five categories: physical, chemical, biological, ergonomic and accident hazards. Based on this, Frame 1 demonstrates the environmental risks observed.

The observed risks occur throughout activities performance, with greater or lower frequency depending on the work stage. At the collection stage in the neighborhoods, physical and ergonomic risks were identified, especially inadequate posture, excessive physical effort and heat exposure, besides solar radiation. The collection process is carried out aided by a hand cart, manually pushed by one of the pickers, which results in great loads of physical and repetitive efforts. Physical and ergonomic risks were also observed with greater intensity throughout the transportation phase.

The sorting phase occurs inside of the association shed, where repetitive upper limb efforts, chemical risks related to slurry and other hazardous gases were noticed. Biological risks occur in such stage as well,

exemplified by microbiological agents. Furthermore, residues accumulation attracts animals and insects, diseases vectors – e.g. rats, mosquitoes and cockroaches. Based on this, this screening stage potentially dangerous due to the contact with slurry and microbiological agents. The such contact may cause damage to human life (FERNANDES et al., 2012).

Frame 1 – Occupational risks observed

Environmental Risks	Types of Risks
Physical risks	High temperatures throughout the waste transport from the neighborhoods to the shed; High temperatures due to reduced ventilation in the shed; Exposure to solar radiation during the waste collection process; Noise from material pressers
Ergonomic risks	Inadequate postures; Excessive weight loading; Extended workloads; High productivity rates; Repetitive efforts.
Accident risks	Non-signaling pressing machines; Material falls; Cuts; Artificial and natural insufficient lighting. Snakebite.
Biological risks	Precarious sanitary conditions due to the presence of accumulated residues for many days; Concerning sanitary conditions of workers' toilet; Presence of animals and insects (e.g. rats); Contact with sharp materials such as needles.
Chemical risks	Direct contact with manure resulting from waste decomposition; Contact with toxic packaging, batteries, lamps.

The compaction phase encompasses a high incidence of physical risks arising from the mechanical presser's noise as well as accidents resulting from cuts and use of such machine. At the storage stage, the characteristic risks comprise ergonomic, physical and chemical ones. Regarding the trading phase, ergonomic risks were evident, especially inadequate postures, great efforts and loading high weights.

Overall, it should be noted that all risks, even the lesser hazardous ones, were observed in all stages developed by the waste pickers. Such risks are exacerbated by inadequate association infrastructure, which comprises poor ventilation, fiber cement roof, randomly disposed waste, absence of windows, thus aggravating the high exposure to the abovementioned risks. The observed risks are in line with the respondents' answers, who identified some of them, since 7 out of 11 consider direct contact with materials the most dangerous risk that ends up threatening their health, as previously reported by (FERNANDES et al., 2012).

The results observed by this study are similar to those observed in other studies, in all regions of Brazil. The work of Neves et al. (2017) in the south region, Freitas and Ferreira (2015) in the southeast region, Colvero e Souza (2016) in the central region, Dantas et al. (2017b) in the northeast region and Cruz, Gomes and Blanco (2017) in the northern region converge with the results observed in Table 1. These

studies show that waste pickers are subject to all professional risk groups during their work, cuts, dermatitis, weight bearing, among others.

Still according to the authors, the main justifications for this are framed in two scopes: external and internal. In the external scope, the lack of effectiveness of environmental policies aimed at these social actors, the lack of technical-economic support offered by the public power, the absence of environmental education actions. In addition, the unconsciousness of the role of the generator in the life cycle of the consumed-discarded product and, above all, the invisibility and stereotyping of the collectors before society are external factors that not only have caused physical damage, but also have caused great suffering.

Regarding the internal factors, low technical qualification, low level of education, absence of PPE's, difficulties in commercialization and consequent figure of the middlemen, low incomes associated with high productivity, location with infrastructure and inadequate sanitary issues are the main internal factors of accidents (CASTILHOS JUNIOR et al., 2013; DANTAS et al., 2017a).

These causes, observed in all regions of the country, illustrate the Brazilian challenges regarding waste management and, above all, the social debt due to them that are the main social actors involved in this issue (FREITAS; FERREIRA, 2015; COLVERO; SOUZA, 2016; DANTAS et al., 2017b; CRUZ; GOMES; BLANCO, 2017).

3.3. Occupational diseases

When addressing occupational risks, many issues are embedded in such discussion. According to Dantas et al. (2018) working in direct contact with solid waste threatens workers' physical and mental integrity. Therefore, there is a need of further investigating the risks and potential damages that the nature of labour activities and working conditions imply to workers.

Based on this, when interviewed about occupational risks, all waste pickers pinpointed that the activity threatens their health. Regarding which risks they have noticed to be submitted to, 7 out of 11 mentioned that the greatest risks are related to contact with materials, while 3 out of 11 considered heavy working hours as the greatest cause of health problems. Concerning the greatest fear of waste management, 4 out of 11 reported being bitten by venomous animals, 3 of 11 suffered bacterial infection, 2 of 11 became ill and unable to work and 2 of 11 were already cut by sharp objects, then contracting serious illness. As for accidents, 3 of 11 suffered a snakebite and scorpion sting, 3 of 11 suffered from pressed material falling on the feet throughout the storage stage, 2 of 11 feels strong back and joints pain, additionally 2 out of the 11 presented with skin desquamation and difficulty in breathing. These accidents were qualitatively similar to those found by Alencar, Cardoso and Antunes (2009) and Castilhos Junior (2013) in studies developed in other regions of the country, revealing that the situation of the waste pickers is dramatic is independent of the regional factor.

In terms of work absenteeism, most reported never leaving work for more than 30 days, however, some medical certificates have already been issued once workers have infection signs, back pain and stings from venomous animals. Waste pickers are aware of the risks involved, precarious working conditions, demonstrate their dissatisfaction and seek other jobs, but as they usually do not get any other job, they remain in such activity as it is the only way to have income (NOGUEIRA; SILVEIRA; FERNANDES, 2017). In addition, affirm that waste pickers have low schooling levels, further reducing the chances of getting another activity (STERCHILE; BATISTA, 2017).

According to the association's president, there were 19 medical certificates, with an average of 1.72 cases per waste picker in 2016. In the previous year, overall medical certificates were 12, considering a group composed by 13 associates, with a mean of 0.92 cases by person. Compared to the two mentioned years, there was an increase in the absolute value of diseases (7 cases more), as well as in the relative numbers proportional to the number of workers (increase of 0.81 in cases per collector). These data demonstrate an increase in cases of occupational diseases because of poor working conditions related to urban waste management without adequate protection. It is worth noting that a considerable number of absences are not justified by medical certificates, once many waste pickers refuse to go to the doctor, and end up informing the president about their absence, which is largely noted in several localities of the country (AMATE; CARNEIRO; HOEFEL, 2017).

Addressing diseases, some workers presented with serious illnesses: dermatitis (3/11), herniated disc (2/11), breathing problems (1/11), leishmaniosis (1/11), tetanus (1/11) and bursitis (1/11). The other workers (2/11) reported not presenting with such problems, nevertheless they mentioned having been affected by flu, allergies, itching, headaches. It was also identified that two associates from the 2015 group were asked to leave the association due to serious diseases, which made it impossible to remain working in contact with waste.

3.4 Mitigation Measures

Considering the precarious working conditions the waste pickers are submitted to, some mitigation measures are suggested in order to attenuate the activity damages and conditions that affect physical and mental integrity of the waste pickers. According with Yiu, Sze and Chan (2018), the potential benefits of safety management system implementation hazard elimination and accident reduction, safety perception and awareness, operation efficiency, cost reduction and profit maximization. Among the possibilities, the implantation of a PPRA associated to PCMSO is suggested. These programs should include specialized technical training for the development of perception-action of risks, correct use of PPE, equipment and work area signalling, waste pickers' health screening, mainly periodically and for admission purposes, as well as environmental risks monitoring. These measures are important because individual safety performance influences safety outcomes in high-risk workplaces (XIA et al., 2018). As an adjacent element, the creation of a Risk Map of the shed is also suggested. It should be noted that all these measures can be carried out with a municipal government partnership, as provided by PNRS.

Regarding the Environmental Risk Prevention Program (PPRA), NR-9 addresses the implementation of such program for both worker's protection and safety. This plan is seen as crucial in the present study, since the waste pickers, as abovementioned in topic 3.2, are exposed to several environmental risks. According to NR 9, PPRA must comprise 4 steps: annual planning with goal setting, priorities and timeline; strategy and action methods; data registration, maintenance and disclosure; periodicity and evaluation of the PPRA development. Adjustments to PPRA must be carried out at the end of the work year. In terms of content, PPRA should include anticipation and recognition of potential risks, establishment of priorities, control and assessment targets, evaluation of risks and exposure rates, implementation of control measures and evaluation of their effectiveness and efficiency, monitoring risks exposure, data registration and disclosure (BRASIL, 1978c). The PPRA implementation aims to eliminate the risks, however whether it is not possible, it may reduce the spread and mitigate the downstream effects of environmental risks. If the complete risk elimination is not possible, additional hazard pay must be considered, thus waste pickers earn its maximal percentage (40%) (BRASIL, 1978d).

The Environmental Risk Prevention Program must be strictly linked to the Occupational Health Examination Program (PCMSO), since while the PPRA aims at protecting the worker, the PCMSO acts on health preservation and monitoring, through medical assessment and reports as a technical basis for preserving the integrity regarding worker's physical and mental dimensions (BRASIL, 1978b). Based on such statements, it is possible to create and implement these programs, inserting the specialized technical training capable of sensitizing and instructing the waste pickers to correctly adopt the measures stipulated by the PPRA. The use of PPE is also a mandatory prerogative for worker's safety, as ruled by NR-6 (BRASIL, 1978a).

Another significant measure is a Risk Map elaboration and installing. According to the Department of Management and Planning of Goiás state (SEGPLAN, 2012), a Risk Map is an important instrument in this issue, aiming at reducing work accidents rates and damages to the worker's health, due to the its broad view concerning risks that workers could possible face throughout the labour activities performance. For SEGPLAN, there are six steps for creating and implementing a Risk Map: knowing the work process in the targeted place; identifying the risks in the analysed place; identifying existing preventive measures and their effectiveness; identifying health indicators; knowing the environmental surveys previously carried out in such place; elaborating the Risk Map considering the organ layout, indicating through circles the group to which the risk belongs, according to the standardized colour. Once the Risk Map has been prepared, it should be strategically located so that the waste pickers have easy access to the

visualization, as well as it must be constantly monitored and adjusted in consonance with other risks occurrence (SEGPLAN, 2012).

Finally, in order for all these measures to be effective, the presence of the governments and all technical staff available in the structures of the powers is fundamental. However, public participation is still very timid, making it difficult for any mitigating measures of the risks involved to be carried out (FERGUTZ; DIAS; MITLIN, 2011). Therefore, some authors identified that when waste pickers are formalized and have the technical support of the public authorities; the mitigating measures are successfully implemented, showing that this should be a priority of public authorities towards waste pickers (WILSON; VELIS; CHEESEMAN, 2006; DIAS, 2016).

4 Conclusion

Finally, it was observed that the activity performed by recyclable material pickers evidences adversities in terms of working conditions. Occupational risks encompassed by such labour activity belong to all groups of environmental and professional risks, thus presenting with physical, ergonomic, chemical, biological and accident nature. Examples of such risks are heat, strenuous physical exertion, high sound load, odour from slurry, inadequate postures, shallow or deep cuts, falling waste piles, sharp objects, needles among others. With respect to accidents, snakebites and scorpion stings, pressed material falls, strong back and joint pain, skin desquamation and difficult breathing stand out. As for diseases, there is a predominance of dermatitis, disc herniation, breathing problems, leishmaniosis and tetanus. Although there were no sick-leave, there were intermittent departures. The results suggest an increase in cases of workers' illness. In fact, there were associates who left the organization for occupational diseases.

Considering these threatening conditions for workers' health and safety, mitigation measures are suggested: PPRA and PCMSO implementation according to NR-9 and NR-7, respectively. Such programs must also contain technical training compatible with the waste picker activity, the correct use of PPEs, conduction of periodic and admission health screening exams, besides elaboration and implementation of a Risk Map of the shed. These measures must be supported by the municipal government, as established by the PNRS.

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