

HFU Business School

International Economics, Business and Cultural Diplomacy (MA)

Master Thesis

**“An exploratory analysis of organizations of waste pickers in Belo Horizonte:
challenges and opportunities arising from the COVID-19 pandemic”**

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Abstract

The present research sought to deepen the debates about how the collector of recyclable material, a subject that has built his political resistance in the Brazilian scenario from the process of re-signification of garbage and his profession. Its empowerment observed from the end of the 20th century was concomitant with the growth of environmental discussions and the strengthening of the solidarity economy as an alternative for economic emancipation in Brazil. In this context, the individual who used to live on the margins of society established himself as a fundamental factor in the recycling chain and became an environmental agent.

The question that guided the investigation was *"how has the pandemic influenced waste pickers' solidarity organizations, given their challenges and opportunities?"*. In this context, two specific objectives were determined to be answered in the course of the research. The first sought to understand the relationship between the solidarity economy and the formation of waste picker collectives; the second aimed to identify the challenges and opportunities that could arise from these solidarity organizations' experiences. A vast theoretical analysis was conducted to understand the foundations of the Solidarity Economy, an alternative to the informal economy and a form of economic empowerment especially considered for vulnerable populations, as a way to include them economically. Using the case study of Belo Horizonte, a city with a history of alternative economic expressions and strengthened waste pickers' movements, we approached various actors of the recycling chain through qualitative research, using the in-depth interviews approach.

Among other findings, the research noted that one of the greatest challenges of the post-pandemic Solidarity Economy is related to the expansion of the capitalist market to areas traditionally aggregated by the Solidarity Economy, because they were previously considered to be on the "margins of society". However, these threats also give room for opportunities, from responses that reinforce the legitimacy of cooperatives and associations, through their contractual adequacy with the City Hall for the payment of the environmental service rendered, disconnected from the number of solid waste collected. We have learned that in the daily struggles and achievements of the waste pickers, challenges and opportunities go hand in hand.

Acknowledgements

As the time to deliver the thesis approaches
The feeling of gratitude for the opportunity unfolded
Who would think that this girl, born and raised in Belo Horizonte
Would make this far, and want to reach beyond

As a spiritual person, first I want to thank God
Who continually blessed me, and showed me how to love
Love and appreciate the incredible efforts
made by my mom Marcia and my father Raimundo
They believe in me, and I owe them the *mundo*

In this Journey I also want to show my appreciation
To my uncle, Simão, for believing in my formation
To my brother Lucas and sister Livia, my happiness and pride
Thinking about the inspiring people you became fulfills me with life

For my closest support, my dear Jakob
I am delighted, thankful and gratified
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You impacted my journey and I am and inspired

To the *catadoras and catadores*
I show my admiration
For your fight, resistance and empowerment
You deserve dignity and *respeito*

And now to the next challenge I go
Happy for the Memories, and ready for new Experiences

Obrigada Senhor!

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List of Acronyms

ACAMARES	Sarzedo-MG Association of Recyclable Materials Collectors
AGU	Office of the Attorney General
ASMARE	Association of Collectors of Paper, Cardboard and Recyclable Material
BH	Belo Horizonte
CADÚNICO	Unified Registry
CBO	Brazilian Classification of Occupations
CE	Circular Economy
COMARB	Baldim Association of Recyclable Material Workers
COOMARP	Cooperative of Workers with Recyclable Materials of Pampulha Ltda.
COOPAMARE	Cooperative of Collectors of Paper and Cardboard and Reusable Materials
COOPEMAR	Cooperative of Collectors of Recyclable Materials of the Western Region of Belo Horizonte
COOPERSOLI	Solidarity Cooperative of the Recyclers and Production Groups of Barreiro and Region
COOPERSOL	Solidarity Cooperative of Workers and Productive Groups of the Eastern Region
COVID-19	Coronavirus Disease 2019
CRAS	Social Assistance Reference Center
EES	Solidary Economic Enterprises
GESQ	Group of Solidarity Economy of Quebec
IBGE	Brazilian Institute of Geography and Statistics
INSEA	Nenuca Institute for Sustainable Development
IPEA	Institute for Applied Economic Research
MEI	Individual Micro Entrepreneur

MNCR	National Movement of Recyclable Material Collectors
MRBH	Metropolitan Region of Belo Horizonte
MTE	Ministry of Labor and Employment
NGO	Non-governmental organization
PLC	Project of Complementary Law
PNADC	Continuous National Sample Survey of Households
PNRS	National Solid Waste Policy
PPE	Personal Protective Equipment
PSA	Payment for Environmental Service
PT	Labour Party
SENAES	National Secretariat for Solidarity Economy
SOEC	Social Economy
SLU	Superintendence of Urban Cleaning
SUS	System Unit of Health
SE	Solidarity Economy
TRT	Tribunal Regional do Trabalho
UNICEF	United Nations Children's Fund
UNICICLA	Nova União-MG Association of Recyclable Materials Collectors
WHO	World Health Organization

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Chapter 1: Introduction

1.1 Problem Statement and Research Question

Seeking solutions to alleviate the consequences of poverty, evidenced in globalization and increasing social inequalities, is a major agenda among governments, intergovernmental organizations, academia, and part of private initiatives. The current development frameworks evidence the local approaches developed by groups that, to leave a vulnerable situation, proposed to transform the "rules of the game". When the priority is to find viable alternatives to global challenges, the relevance of the actors responsible for promoting a more sustainable world becomes evident. We have observed the growth of agendas dedicated to the promotion of collective solutions aimed at a more eco-friendly lifestyle: the United Nations created the 2030 Agenda for Sustainable Development, the Paris Agreement came into force in 2016 with 195 participants, non-governmental organizations (NGOs), scientists, and other members of academia seek to address the issue, seeking to contribute to a collective awareness of the importance of maintaining natural resources and transforming the style of consumption and waste disposal.

Nevertheless, those who think that recognition equals justice or reparation are mistaken: in this case, the inexorable importance of the work of these professionals is acknowledged, but no compensation is offered commensurate with the impact they promote. The reasons extend into the complexity of historical-social relations of disadvantaged groups, denied social privileges and even human rights - such as access to education, right to decent housing, among others - remaining to them what Chimamanda Adichie (2009) would call "the danger of a single story": finding refuge in the subalternity, surviving by working in the informal economy and living on the margins of society.

In the Brazilian context, vulnerable groups are mostly made up of women, blacks, migrants, indigenous people and people with disabilities. In the absence of alternatives for inclusion in the formal labor system, these individuals seek the informal economy's possibilities, risking their social security against unemployment and old-age

assistance. The economic crises and rising unemployment in the late 1980s reinforced the need to rethink individuals' economic inclusion, motivating reactionary movements against this status quo. In this context, Solidarity Economy (SE) was considered a viable alternative for marginalized groups' emancipation, with democratic participation, political empowerment, and self-management as its principles. With the concomitant growth of discussions on sustainability globally, the work of the collectors of recyclable material in the country was highlighted.

Our protagonist was the object of urban legends that denigrated his occupation: waste management was not socially well regarded, even though it was indispensable for urban centers' lives. In a world that, according to the World Bank (2018), 2.01 billion tons are generated annually, the waste picker (also referred to as "collector" and its Brazilian denomination, *catador*) emerges as an environmental agent and facilitator of sustainable policies. With the support of the church, academia, and NGOs, waste pickers have used the Solidarity Economy as a route out of informal arrangements by creating cooperatives and associations. The organization of the class was a major driver of the political movement that, class organization interests of more than 400,000 waste pickers in the country. A major urban center that is the stage for the struggle of the catadores is the city of Belo Horizonte, capital of the state of Minas Gerais, home to the second association of catadores in Brazil, Associação dos Catadores de Papel, Papelão e Material Reaproveitável (ASMARE), which today has 7 solidarity organizations with more than 200 individuals. The protagonism of the waste pickers' organizations in the municipality and its metropolitan region make this our territorial delimitation for the research.

At the beginning of 2020, the world experienced the consequences of the spread of COVID-19. The disease, which has caused millions of deaths worldwide, has impacted the health sector and has also influenced the economy and social life through the implementation of security and quarantine restrictions. For the group of waste pickers, the crisis was even more severe: waste management presented a great risk to these professionals' health. With growing uncertainties about the nature and scope of the virus, the Belo Horizonte City Hall determined to paralyze the selective collection of waste in March. The measure, motivated by the concern to protect the health of the catadores and the general population, also brought a perverse effect: by staying home,

these workers could not collect the materials essential to their economic reward. Unprotected financially, waste pickers lived through challenging times and had to rely on the community's help to guarantee basic resources, such as food, electricity, drinking water, and rent: the principles of solidarity were put to the test in this context.

As researchers, the situation aroused our curiosity since Solidarity Economy Organizations of waste pickers are commonly referred to for their degree of social technology and their suitability for the circular economy (CE). In the context of a pandemic, the effects of the moment can bring challenges and opportunities that emerge from periods of crisis, which drive reinvention and innovative processes. In this context, the question we proposed to investigate is:

How has the pandemic influenced waste pickers' solidarity organizations, given their challenges and opportunities?

Based on the scope of the question we challenged ourselves to answer, we had a general research goal to answer "how" the cooperatives were dealing with the COVID-19 crisis. As specific objectives, we sought to understand:

1. How the solidarity economy impacted the formation of collectives of *catadores*;
2. Identify the pandemic challenges and opportunities arising from the experience of the organizations of waste pickers in the Metropolitan Region of Belo Horizonte.

1.2 Methodology: Data Gathering, Sampling Methods and Coding

To answer the question and achieve our research's focal objectives, we defined a methodology based on two forms of investigation: secondary and primary research. It is important to state here that the objective of our study is to stimulate discussion about "the challenges and opportunities of waste picker organizations in Belo Horizonte" within the academic environment, not to claim that the results obtained here represent the totality of opinions and perceptions of waste pickers in the city.

Through secondary research, we dedicated ourselves to exploring existing data and theories, which included renowned scholars such as Laville, Lechat, Vieira, Singer, Gaiger, among others, who contributed incisively to the rethinking of existing economic models, especially in developing countries. We also analyzed the legal instruments that directly impact waste pickers, such as Law 12.305/2010, which established the National Solid Waste Policy (PNRS).

Our primary research was based on the exploratory qualitative research method, as this style of research helped us capture the local perspectives and contexts of specific populations adequately. We decided to conduct in-depth interviews employing semi-structured questionnaires, ideal for collecting data on individuals' perspectives and experiences. The method proved to be especially effective considering the sensitivity of the topic explored among the actors involved.

The sampling method chosen was non-probability, where individuals were consciously selected for their position among the stakeholders. The technique was selected because the aim of the research is not to test a hypothesis about a population but to foster the further the development of an initial comprehension of the potential and challenges of waste pickers in this pandemic; which is yet to be explored and is innovative in the field of research as it is a new phenomenon.

Finally, to interpret the interviews' answers and correlate them, we used the "content analysis" format for the interpretation (see appendices 3, 4, 5) through inductive coding. We performed it openly, basing the indicators on the qualitative data presented from the interview responses. We believe that our analytical perspective can examine the interviewees' responses in a less biased manner in this approach. On this basis, we categorized our codes using different frameworks. Some of them are considered "flat frames", for not classifying the importance of the codes. Others had a hierarchical character, allowing clear observation of how the correlation between codes was made.

1.3 Scope and Relevance

“The pandemic showed that invisibility is a human vanity, imposed on those who have less income, a simpler life condition, they become invisible not because they are invisible, it is a vanity of those who don't want to see.” Jorge Luiz (2020).

This investigation relevance comes from recognizing that certain social agendas suffer a characteristic silencing due to their approach to historically marginalized groups. Talking about waste pickers and their organizations is also an act of reflection on the historico-cultural consequences that, in times of an economy based on capitalism, weakens and removes these individuals' sense of belonging. It is to acknowledge and analyze the refinements and potentialities of more than 400,000 Brazilian workers: being a member of a collective and making it the instrument for successful economic inclusion is, above all, a political act. The status quo of perpetual marginalization of these individuals is challenged, and the belief that the only way to integrate into the economy is to be an employer or an employee.

As this work has presented in solidarity economy organizations, each individual owns the whole, in one of the most current and compelling forms of direct democracy experienced in developing countries. Investigating these associations and cooperatives is an invitation to observe the tendencies that emerge as poverty alleviation mechanisms, especially expressive in the Latin American context of popular development. The critical approach of COVID-19 will allow us to access this organizational model's limitations and potentialities and evaluate future research potential in this field.

1.4 Structure

The first chapter aimed to introduce the subject, the context, and the research question, presenting its thematic relevance, the chosen methodology, and the work scope.

The second chapter aimed to present a brief analysis of COVID-19 as the key context of our research, the waste picker as the subject, and the Solidarity Economy as an alternative to the formal economy. Observations are made about cooperatives and associations and how interdisciplinary responses can be beneficial to solidarity business.

Chapter three aims to introduce the case study of Belo Horizonte's case study, the research method, the research samples, and the explanation of the questionnaire sent.

Chapter four is dedicated to presenting the research findings, separated into categories: the waste pickers; the governmental entities, implementers of public policies; and other stakeholders in the recycling chain, such as technical assistance companies and solid waste donor agencies.

Finally, chapter five is dedicated to the investigation, answering the research question, presenting the limitations of the investigation and the potential for future research.

Chapter 2: The context, the subject and the economic activity

The present chapter aims to deepen the discussions about the objective “(i)” of the research, which wants to uncover the way solidarity economy impacted these collectives' formation. Initially, we aim to explore how the context of COVID-19 affects the whole system, affecting especially those immersed in the non-traditional economy, commonly occupied by groups in vulnerable situations. In line with our case study, we introduced the waste picker, the protagonist of a series of solidarity organizations that reinforce the importance of thinking of alternative forms of economic existence in Brazil. From their financial emancipation through the collection of recyclable materials, these individuals collectively use their means of production and are iconic - and yet, invisibilized - characters of the urban scene, with more than 400,000 occupants spread throughout Brazil.

The social marginalization that historically affects these groups inspired manifestations of resistance that advocate distinct organizational experiences as a form of political activism. It is in this context that we will present Solidarity Economy, the theoretical matrix of our investigation. Its bases, grounded on direct democracy, self-management, and political appeal, were essential to groups' economic emancipation in sub-citizenship situations. Their cooperatives and associations originated in the country in the late 1980s, have been considered popular innovations that, under the principles of solidarity economy, continue to give dignity to many individuals involved in poverty situations. Reflecting on them is essential to understanding these organizations' potentials and challenges in the midst of COVID-19, discussed from the primary research investigation, explored in the next chapter.

2.1 The Context: COVID-19

At the end of 2019, the WHO China Country Office was informed of a special kind of pneumonia, detected initially in Wuhan's city in Hubei province, in China. After discovering that a Novel Coronavirus caused the disease, Public Health Emergency was declared in many countries globally, considering its high spread potential and

seriousness for the overall population. In Brazil, the declaration of Emergency State was officiated by the Health Ministry on 03 of February, 33 days after the official notification from China to the World Health Organization (WHO) and four days after the organization declared COVID-19 an international emergency.

From that point forward, the Brazilian System Unit of Health (SUS) was responsible for identifying national events and adopting measures to mitigate the disease's risks (Tavares et al., 2020). The President of the Republic, Jair Bolsonaro, emitted a law detailing the measures to be taken considering public health's emergency. Amongst them were quoted isolation and quarantine, followed by other normative publications to better regulate different aspects of the country's policies and public services. Besides that, adaptations in the working environment were incentivized, with engagement through telework - Barbosa et al. (2020) estimate that, in the Brazilian context, only 22,7% of the work can be realized entirely at home. Economically, Federal tax reductions were observed, and the temporary suspension of tributes and the creation of extraordinary procedures for the liberation of commercialization of priority products for the combat to the pandemic.

One of the highlights of the national government's measures was the income transfer policy established by Law 13.982 on April 2, 2020. The law intended to establish "exceptional social protection measures to be adopted during the period of confronting the public health emergency of international importance due to the coronavirus (Covid-19)" (own translation) (PLANALTO, 2020). The Law aimed to grant Emergency Assistance of R\$600.00 per month for workers who with the following (among others) prerequisites:

VI - that it exercises activity in the condition of:

- a) individual micro entrepreneur (MEI);
- b) individual taxpayer of the General Social Security Policy;
- c) informal worker, whether employed, self-employed or unemployed, of any nature, including intermittent inactive, enrolled in the Single Registry of Social Programs of the Federal Government (CadÚnico) (...).

As Tavares et al. (2020) noticed, the "receipt of such aid is limited to two members of the same family and that the woman providing a single-parent family will receive two installments of the aid." (Tavares et al., p.118, 2020). The public highly criticized the measure, considering that more than 55 million (informal workers,

autonomous and unemployed people in Brazil) had to rely on this money - less than 60% of the minimum wage - for survival (Mattei et al., 2020). The moment was considered delicate not just for the health but also the capitalist system, with the economy deeply affected (Mazzucato, 2020; apud. Junior et al., 2020). With the lockdown measures in place, Junior (2020) believes that the crisis gives space for thoughts about the importance of the State, being necessary to enforce a combination between a state entrepreneur, private adventures, and social welfare to overcome the impacts of the crisis. Silber (2020) believes that the State has a central role in guaranteeing the market's stability in times of dysfunction. However, the Brazilian state reality endorsed many of the challenges from the crisis: it revealed the fragilities of the Brazilian economy, "heavily based on the informal economy, specialized in the production of primary goods for exportation, with the primary seller of commodities China, where the epidemic is said to begin" (Costa, p. 970, 2020).

Another sensitive topic is that in 2016, the Brazilian Federal government approved the Constitutional Amend n° 95, which transformed the Brazilian fiscal regime and implemented a ceiling in public spending for the next 20 years, a long-term strategy to control Brazil's financial crisis was facing since 2015 (Mattei et al., 2020) that was heavily criticized for its limited scope and directly impacted the allocation of costs for education, health, amongst other sectors in Brazil. With the rise of COVID-19 cases in the country, the fight against the disease was also severely impacted because of the lack of public resources for buying enough equipment such as gloves, masks, protective gear, and oxygen tanks.

The nature of this crisis endorses loss not just for the economy but also for human capital (Silber, 2020). Until 01 February 2021, Brazil had more than 9,2 million people infected, reaching the number of 225 thousand deaths in approximately one year of crisis. Silber affirms that "literature available since the Spanish Flu indicate that the countries that adopted radical isolation strategies had a faster economic recuperation" (own translation) (Silber, p. 107, 2020). However, the drastic consequences are also due to a lack of coordination between Brazil's different federative levels in the fight against COVID-19, which was a complicator, considered highly inadequate (Silber, 2020), and reinforced drastic outcomes in the country. Tavares (2020) believes that the crisis can be a greater problem in Latin America:

“The prolongation of the crisis is a challenge not only for health systems, but also for protection as more people become unemployed and informal workers start to have their restricted activities. In particular, this can be an even greater problem in Latin America, in particular the region's starting point, which had been growing below the global average, and recent fiscal austerity, which markedly reduced public spending on social policies.” (Tavares et. al, p.112, 2020).

Before the pandemic, the level of people not occupied of Brazil (in February 2020) was 11,6% (PNADC, apud. Mattei, et al., 2020). Mattei (2020) affirmed that most of the formal workforce received between one and three minimum wage. Ranking as the 9th place as an unequal country list globally (EXAME, 2020), Brazil's reality endorsed workers' vulnerability in informality settings, considering that all people in need did not grant Emergency Assistance. According to Silber (2020), the health crisis:

“(…) has highlighted the great inequity of Brazilian society and the new agenda should include a proposal for universal basic income that is sustainable from a fiscal point of view. Brazil will no longer be the same and the reform of the State and basic income for workers low-income groups have gained a new dimension in the country” (Silber, p. 114, 2020).

During the pandemic, the most affected groups are, beyond age, vulnerable groups, including black people, women, immigrants, and poor people, because of the limited access to sanitary services and proper healthcare (Tavares, et al., 2020). The necessary social restrictions measures for contagious control are restricting workers' and consumers' circulation, compromising the demand for products and job offers. The workers in precarious conditions, the impossibility of working through distance, and the ones who are pursuing jobs in the informal sector face the biggest risks in their occupations - their risks were immediate and affected them differently, considering the lack of social protection.

2.2 The subject: the *catador*

Having made a thorough reflection about the context of our research, our spotlight goes to the subject, the actor who is the protagonist of the solidarity enterprises that focus on our research: the collector of recyclable materials, also known as “waste picker,” and referred as “catador” in Brazil. For decades, as a member of the Brazilian

scenario, records of their presence date back to the 19th century, concomitantly with the development of urban spaces (Silva, 2017). The class has suffered the consequences of poverty, societal prejudice, and government neglect, being victims of a process of invisibility connected to the nature of their profession: the management of solid waste. Besides economic, political, and social exclusion, the spatial exclusion was also observed in the reality of these workers: their presence, unwanted in large centers, transformed the margins of cities and slums as the only adequate spaces for their existence (Correa, 2007 apud. Trombeta, 2012).

The marginalization of waste pickers has been portrayed in Brazilian urban legends and literature. One of the most iconic stories told to children refers to the "man of the sack": a character who wanders the streets, collecting materials and always keeping a sack on his back. In an attempt to cause fear in their children, parents said that if they didn't behave, the "man of the sack" would pick them up and take them away. The reiteration of this urban legend was made by a society that was not concerned with the consequences and daily prejudice suffered by these workers who found the "garbage" their possibility of survival. In the same vein, the social reality of these actors was also portrayed in literary works in the XX century - "as in the poems "O Bicho" (1947), by Manuel Bandeira, "Homens de Papel" (1968), by Plínio Marcos, in the novel "Quarto de Despejo" (1960), by Carolina Maria de Jesus, and video documentaries, as in "A Ilha das Flores" (1989)(Silva, p. 7, 2017). They capture, from various angles, the social segregation and challenges suffered by these workers.

“The Beast”

I saw an animal yesterday
In the filth of the courtyard
Picking up food among the debris.

When it founded something,
It neither examined nor smelled:
He swallowed greedily.

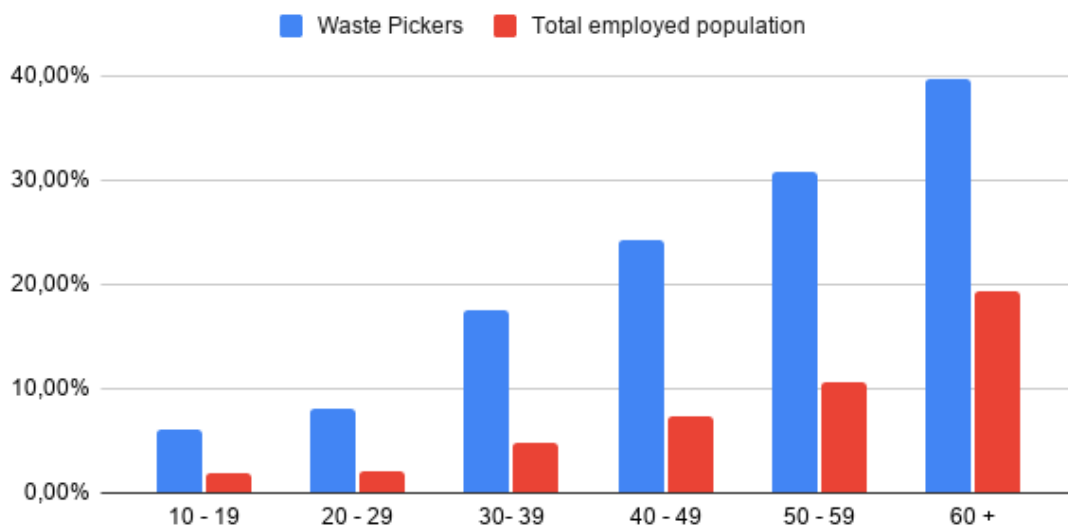
The animal was not a dog,
It wasn't a cat,
It was not a rat.

The animal, my God, was a man.

Manuel Bandeira (1947)

Historically marginalized and economically disadvantaged communities suffer the repercussions of social exclusion. The resulting low education level and low labor-market capillarity (Maria Silva, 2014) have made waste management the sole source of income and alternative to poverty. We can observe this from comparative data regarding illiteracy in Brazil. Figure 2 allows us to observe that there has been a human development related to illiteracy throughout Brazilian society, impacting the waste pickers. However, it is necessary to recognize the staggering developmental gap between the total employed population and the waste pickers regarding access to education. With the highest levels of illiteracy among both comparison groups, the population over sixty has a degree among waste pickers almost twice the national average. Even though there is a reduction in illiteracy among all age groups, it is observed that the reduction of illiterate people among waste pickers is not proportional to the reduction in the total population, reaching, among the 40 - 49 age group, three times the national average of 7.40%.

FIGURE 1: Brazil - illiteracy rate of total employed population and of waste pickers, by decennial age groups (2010)



Adaptation from: Dagnino and Johansen, (p. 121, 2017) based on 2010 IBGE Census and CEM sample microdata (USP, 2016)

We observed the heterogeneity of the waste pickers' life narratives. For example, some have been working since childhood, others through family inheritance, and others

to fight unemployment (Silva, p. 2017). Still, it is possible to trace a demographic profile of those belonging to the category. The data in Table 1 present a summary of Brazil's socioeconomic and demographic indicators in 2010 in the latest survey conducted by IPEA and prove the characteristic trends of poverty in Brazil. Among waste pickers, the demographic and socioeconomic levels related to vulnerability are higher than the total employed population. In terms of race, we observe a symbolic hegemony of the black population, 66.14%. The data corroborate the hypothesis that vulnerable groups mostly occupy activities with less social appeal. The level of informality, 50.62%, is considerably higher than the national average of 44.42%. One of the most critical factors is the monthly salary. Meanwhile, while the popular average was R\$1,271.88, waste pickers earned per month less than half, at R\$561.93.

TABLE 1: Brazil - summary of demographic and socioeconomic indicators calculated - *catadores* and total occupied population (2010)

Brazil: summary of demographic and socioeconomic indicators calculated - catadores and total occupied population (2010)				
Type	Name	Characteristic	Waste Pickers	Total occupied population
Demographics	Distribution by age groups (age structure)	Average age (years)	39,39	37,05
		Median age (years)	39	35
		Older people (%)	7,63	6,14
	Distribution per color/race (%)	White	32,72	50
		Black	66,14	48,52
		Other	1,14	1,48
	Place of work (%)	At home	20,05	23,41
		In this municipality, but not at home	73,92	64,71
		In another municipality	6,03	11,88
Socioeconomics	Anaphabetism rate (%)		20,34	6,06
	Degree of informality		50,62	44,42
	Heads of household		53,66	44,5
	Had income from retirement or pension (%)		5,48	6,94
	Income (R\$)		561,93	1.271,88

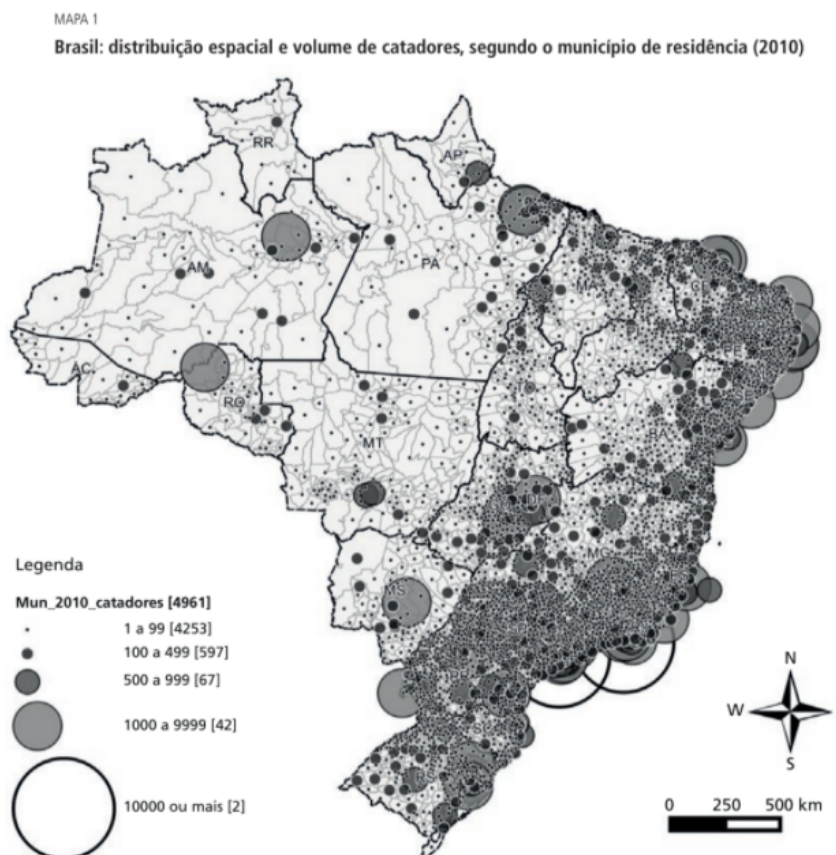
Adaptation of Dagnino and Johansen (p. 119, 2017) based on 2010 IBGE Census and CEM sample microdata (USP, 2016).

The complex and excluding dynamics of the labor market challenge the inclusion of vulnerable people who find garbage management their alternative for survival. They are intrinsically involved in what Jessé Souza would call "the Brazilian Scum" (2009), a social class that is little perceived and in a situation of sub citizenship (one who is not in the enjoyment of his or her citizen rights), and what Gentil (2008)

used the metaphor of "residual people" to define the form of insertion of these people in society. (apud. Silva, 2017).

Fortunately, there has been greater class awareness, and waste pickers have begun to explore viable possibilities for their socio-economic and political empowerment with the advance of globalization. The number of individuals involved in the activity is growing (Pinheiro and Francischetto, 2016), with no agreement on the approximate number of waste pickers in Brazil. While IPEA states that there are approximately 400,000 belonging to the class, with two-thirds belonging to males (Silva, 2017), the National Movement of Recyclable Material Collectors (MNCR) estimates 800,000, declaring that 70% are women. Data in the Recycling Yearbook predicts 400,000 to 600,000 waste pickers nationwide, estimating 55% of women in organizational formats.

FIGURE 2: Brazil - spatial distribution and volume of waste pickers, by municipality of residence (2010)



Source: 2010 IBGE Census and CEM sample microdata (USP, 2016) apud. Dagnino and Johansen, (p. 118, 2017).

The Map allows us to observe the regions with the greatest volume of waste pickers. We can observe that the volume is directly proportional to the large urban centers' size, especially expressive in the Southeast, South, and Northeast regions. According to the Panorama of Solid Waste in Brazil 2020, the solid waste generation between 2010 and 2019 has increased considerably, from 67 million to 79 million tons per year. The amount of waste collected, in turn, grew in all regions of the country. In a decade, it went from 59 million tons (2010) to 72.7 million tons. The collection coverage achieved a 4% increase, equivalent to 92%. Data from IPEA (2010), reiterated by the Third Sector Observatory, estimates that waste pickers are responsible for about 90% of all the recycled material in Brazil. In this context, the waste picker is placed as a key piece in the recycling chain.

Recognizing the waste picker as an environmental agent is to validate the productive activity of their occupation, dedicated to "building' value on certain waste and inserting it back into the production chain" (Baptista, p. 145, 2015). The chain has as its end "the reintroduction of recyclable materials in production processes to be transformed again into productive inputs. In this sector of activities, it has a fundamental role as the figure of the collectors of recyclable materials, which provide the basic inputs for the processing stage" (Silva, p. 7, 2017). The increase of its importance in the economic sphere was accentuated with legislative and political recognition about the need for effective governance in urban planning and public management in solid waste management, especially in large urban centers.

Waste collectors play a key function in the solid waste chain, as they extract several of these goods from the environment and thereby support the recycling industry (Michels et al., 2004 apud. Bastos and Araújo, 2015). The increase in the symbolization of the *catador* as an environmental agent brought to light the reality of their socio-economic unfavorable conditions, assuming the base of the production chain in the recycling industry. According to Batista, the recycling industries (at the top of the chain), together with the public power, cultivate the discourse of Socio-Environmental Responsibility, masking the emergence of the discussion about the "exploitation of the

work of individuals marginalized by society and the public power" (Baptista, p.145, 2015).

The challenge, in this perspective, was to get public and private institutions that benefit from the work of these professionals to align themselves in the fight to guarantee their rights. Therefore, it is necessary to analyze all waste pickers' fundamental rights, as contained in the Brazilian Constitution: "Social Rights" aims to guarantee the individual the exercise and enjoyment of fundamental rights. Among them, we highlight the freedom to come and go, equality before the law, and freedom of opinion and assembly and association as individual guarantees foreseen in Article 5°. Also, Article 6° affirms the right to work, housing, education, culture, science, food, and health. The key point in the discussion is that even though the rights are constitutionally guaranteed, the Brazilian reality endorses the constitution's merely symbolic valuation. This means that the constitutional precepts do not have enough binding force to guarantee their execution in the real world (Neto, 2008): Constitutional effectiveness happens through active governance, community support, and investment in these human resources.

A critical legislative milestone was the recognition of the Catadores in the Brazilian Classification of Occupations (CBO), by Administrative Rule 397/2002 of the Ministry of Labor, under code 5192-05. The document gives recognition and names and codifies the national labor market's occupations, important for integrating governmental public policies, especially for professional qualification programs. The standard briefly describes that waste pickers "Collect, sort, and sell recyclable materials such as paper, cardboard, and glass, as well as ferrous and non-ferrous materials and other reusable materials (CBO, 2002).

As a way of combating poverty, waste pickers in Brazil began at the end of the 1980s to strategically organize themselves collectively. The empowerment of the class came from recognizing their protagonism and indispensability in the recycling chain (Gouveia, 2012), helping in the creation of national organizations, such as the National Forum on Waste and Citizenship in 1998, coordinated at the time by UNICEF. With its focus on ending child labor, especially in waste management, the Forum opened doors for many other initiatives that would strengthen the creation of national and international networks of waste pickers. A moment of great importance was the 1st

National Congress of Paper Pickers, held in the city of Belo Horizonte (1999), where for the first time, the creation of a national movement of waste pickers was discussed (Silva, 2017). In 2001, I National Congress of Recyclable Material Collectors in Brasilia, the movement was officially founded, leading discussions of the national agenda until the present with the principles of self-management, direct democracy, class independence, and solidarity.

The collective strategy, especially in the 21st century, has been observed in two contexts:

This organization can be observed both in terms of political representation, with the mobilization of workers and their families around a professional category in search of social recognition and citizenship rights, and in economic-productive terms, with the formation of associations and/or cooperatives in order to join forces through collective work. (Silva, p.8, 2017).

From this, the Solidarity Economic emerges as a viable solution for these workers' socioeconomic and political strengthening. SE is presented as the ideal solution from the desire for emancipation from poverty (Bastos and Araújo, 2015) through organizational forms that value collaboration, solidarity, and democracy. The organizational forms most used by Brazilian waste pickers are cooperatives and associations. Such initiatives, although full of challenges that will be discussed in the course of the research, give light to the emancipating power of work in the collectivity, from the reinvention of the mechanisms of socioeconomic and productive insertion and strengthening of the principles of solidarity economy, which encourage participatory measures and policies and social emancipation (Maria Silva, 2014).

2.3 The economic activity: Solidarity Economy

Solidarity (noun): agreement between and support for the members of a group, especially a political group. (Cambridge Dictionary).

The application of Solidarity as a concept connected with the economy has an intrinsic relation with disparities: if there is a need for Solidarity, there is inequality of circumstances between the one that gives and the one who receives. Lechat (2002) avows that solidarity, beyond a value, is a fact and designates a reciprocal dependency

among actors. Moreover, it is also considered a moral duty of assistance that reinforces that society is actually unequal.

The Solidarity economy has its sources at the well known Social Economy (SOEC) with roots dating far as the XIX century in the European context (Gaiger, 2009), where the practices began in the first half of the late century and were, afterwards, appropriated by the state (Filho, 2002). The common root arises from a context where the ongoing Industrial Revolution raised debates concerning the efficiency of the self-regulatory market, increasing the political discussions about the economy and the conditions of the economic act. Entrepreneurship adventures established on SOEC were inspired by "associationist" ideologies, encouraged by the theories of Richard Owen, Karl Marx, Saint-Simon, and Fourier (Laville, 2009). They stimulated "the social transformation of the capitalist production relations and their replacement by socialist principles of equality and solidarity, based on the idea of self-management and worker control overproduction" (Singer, 2000 apud Leite, 2009). In the Industrial Revolution's context, with surplus labor and an increase in poverty, the economic power remained in a small elite's hand. The extreme inequality created a rupture "which was translated into a dynamic of popular resistance, bringing out a large number of experiences of solidarity largely influenced by the idea of mutual help (mutualism), cooperation and association" (França-Filho, p. 11, 2002; apud. Vieira et al., p.109, 2017).

The dominant organization of labour, imposed by the nascent capitalist enterprises, conflicted directly with the impoverishments conditions of large parts of the European population, "that at time were due to overexploitation of labour ,in the context of the birth of capitalism, as well as to unemployment" (Filho, p. 12, 2002). The occasion enforced the need of associativist movements for people in conditions of social vulnerability, being translated into dynamics of popular resistance and endorsing a large number of solidarity experiences influenced by mutualism, cooperativism and associationism (Filho, 2002). Its first aspects were seen in what they called societies of mutual aid, which brought the idea of social protection through collaborative practices (Filho, 2002; Lechat, 2002). These organizations were acquiring different structures, such as mutual companies, commercial business and associations, that followed the

same principles: (i) democratic decision-making, (ii) social goals, and (iii) limited return on capital and socialization of benefits (Utting et al, 2014).

The beginning of the recognition of the Social Economy was in France, country reference of the SOEC in Europe. The Long Depression (1873 - 1895) made collaborative organizations, such as cooperatives and associations, be seen as the only resources available for small producers (Lechat, 2002). The state concessions began in 1901, however, imposing many legal barriers to the activities, accepting just the ones that did not require any monetary exchange among private actors: in that context, they were allowed to do monetary transactions just with the expressive agreement and benefit of the public power. The regulation of concurrence, contributor to the Great Depression starting in 1929 in Europe, required the state's severe intervention, with strict implementation of economic and social policies. In precarious situations increased the need for cooperation endorsements, especially the ones connected to consumer and housing for workers (Lechat, 2002). The increase of state control marginalized the non-monetary economy, considering that the State had control of the Social Economy manifestations and started to make use of this organizational experiences to fulfil deficiencies in their own management of policies, specially after the Second World War in 1945.

The endorsement of monetary activities, with a series of self-managed companies with SOEC traits was observed in large scale during the 1970s, when the crisis of the capitalist system brought unemployment and a dramatic crisis for the working class. During the next decade, a critical point was the fall of the Berlin Wall in 1989, representing the end of the Socialist Utopia, reinforcing the creation of models of collaboration that could coexist in an emerging capitalist society, such as the communitarianism, ecologism, solidarity and voluntarism. With the gain of acknowledgment and recognition of enterprises based in the Social Economy, the State promoted the fragmentation of the organizational structures into their statutes and isolated their functions, integrating this theme in the dominant capitalist economic system. Cooperatives and associations, this way, were included in the mercantil economy, occupying mainly the sectors that had lower appeal to the capitalist enterprises (Laville, 2000; Filho, 2002).

Filho believes that the formalization and compliance with the regulations ended up to transform the profile of the people inside of the Social Economy: what before was acknowledged as political militants, fighting for their rights to labor, were substituted by technical and burrobratic professionals. The technical dimension was primed over its political object (Filho, 2002) for Social Economy, as they performed activities complementing the state. It is worth to mention that it was just possible to reach this level of agreement with the solidification of an advanced welfare state, where social and economic guarantees towards a dignified life are largely offered for citizens. Therefore, we agree with the definition that the Social Economy is:

“(…) composed of bodies that produce goods and services, placed under different legal conditions within which, however, the participation of men results from their own free will, where power does not originate in the ownership of capital and where the ownership of capital does not substantiate the application of profits”. (Guélin, p.13, 1998 apud. Lechat, p. 125, 2002).

While we see the contemporary understanding of the Social Economy as experiences that support themselves in the development of economic activities towards the realization of social goals, there is an intrinsic correlation between the activities of the SOEC and the ultimate desire of democratization of economy through citizenship engagement (Laville, 1999, apud. Filho, 2002). Nonetheless, it is important to observe that the desire of the Social Economy is not to bring a remedy for societies with growing inequalities: it is rather to define experiences of societies that already have a certain level of equalitiveness (Lechat, 2002). This is a crucial understanding towards affecting differentiating the Social and Solidarity Economy: the affirmation or absence of the political dimension from its organizational experiences (Vieira et al., 2017). The lack of political dimension in the social economy is what fundamentally distinguishes it from the notion of the solidarity economy. (Vieira et al., 2017). Some scholars believe that the solidarity economy can be seen as a movement of renovation from the social economy (França-Filho, 2002, apud. Vieira, et al., 2017). It is also plausible to believe that because of the roots of the social economy, the solidarity economy is a model that corresponds in a deeper sense with the experiences of developing states, as it tackles fundamentally social transformations that require political response in their existence.

Therefore, the Solidarity Economy supports its conceptualization considering that the economy is happening among unequal beings, while the Social Economy is, by

its principles and rules, an economy from equals. The SE brought to the public debate the notions of social utility and public interest to economic affairs. It refuses to limit the economic phenomena and endorses general reflections about definitions and institutions from the economy (Laville, 2009) while bringing principles and applicability to the concept of solidarity to the real world.

Widely studied by scholars, especially for its relevance in the socio-political context of the developing nations, we understand that the Solidarity Economy characterizes fundamentally specific organizational experiences of economic activities. While society is relentlessly connected with an economic system that requires capitalism gain, using collaboration and democracy as key organizational factors are the central point for SE systems' success (Laville, 2010). Its upbringing can be seen as an answer to the necessity to revise development models, directly impacting actors in the social world.

In a search for a definition of the contemporary conceptualization of the Solidarity Economy, Singer (2001) affirmed that its origin is interconnected by the need that the dominant system creates for people in economically vulnerable situations, aiming to bring to its associate's economic benefits which are not proportionate by the system. The economic history of Latin-American countries, marked by the recognition of informality as a structural, irreversible trace from the current exclusionary development model (Gaiger, 2009), raised the need for alternatives beyond the informality settings as the SE. We agree with Filho (2002), who classifies as a solidarity economy all the organizational experiences that follow a dynamic dedicated to answering local challenges through social, political, and economic responses. With the SE, the possibilities for transformative change do not lie with imposed theories that privilege one class over another. They lie with existing practices of workers, producers, consumers, and communities (Wright 2010, apud. p.6, Utting, 2014).

In a worldwide framework, Dacheux et al. (2012) consider the Solidarity Economy as "a label which campaigners for another kind of globalization utilize in order to combine initiatives which take different forms in different countries but have many points in common" (Dacheux, p.206, 2012). The Lima Declaration of 1997, made by the Intercontinental Network for the Promotion of Social Solidarity Economy, declares that "the Solidarity Economy incorporates cooperation, collective sharing and

action while putting the human being at the centre of economic and social development.” (Lima Declaration, 1997). The Group of Solidarity Economy of Quebec (GESQ) (2002) points out that solidarity economy practices share common objectives, such as:

- a) linking a productive activity with the satisfaction of the population’s needs by giving precedence to social needs rather than to profitability;
- b) producing goods and services by actively involving populations or segments of these populations within communities and locally-based social networks that are based on and promote the participation of women and men;
- c) building community-based networks at the local, regional and national levels based on consensus-building and cooperation rather than on decision-making and control;
- d) working towards the emergence of new economic and social regulations, namely collective and democratic methods of managing businesses and development. (GESQ, p. 6-7, 2012).

Utting et al. (2014) reached an understanding that SE organizations are separate from the state and are governed by goals and principles that prioritize social well-being, collaboration, and solidarity while being involved in the development of goods and services. We believe that SE is a "human-centric" economic approach towards development in the middle of a capitalist world, agreeing with the formulation of Dacheux et al. (2012) that acknowledges in its definition cooperation, collective sharing, and action while putting the human being at the center of economic and social development. The multifaceted reality of the SE made Vieira (2017), Filho (2002), and Gaiger (2009) agree that the Solidarity Economy enables the articulation between a commercial economy, not mercantile and non-monetary resources:

“The sale of a product or rendering of a service (a commercial resource); public subsidies from the recognition of the social utility nature of organizational action (a non-market resource); and voluntary work (a non-monetary resource). In it is found "a plurality of economic principles, since the resources come from the market, from the State and from society, via a logic of donation (France-Son, p. 13, 2002)” (Vieira, p. 110, 2017) (own translation).

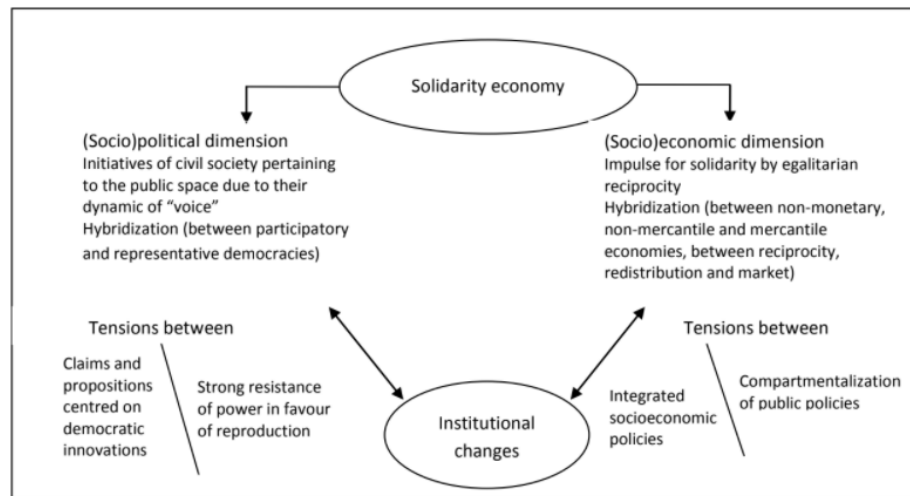
One crucial aspect of the SE is self-management, as it is one of the critical points of the organizational experience (Vieira, 2017). While some scholars believe that self-management is the democracy in the economy (Lisboa, 2005; Vieira, 2017), others believe that it goes beyond that: it changes the economic foundations. The

transformation is achieved while people and organizations involved in the SE are not primarily worried about maximizing the business's profit - they are rather interested in offering products and services that are useful to the human condition (Faria, 2017). In this context, the SE as the production model is characterized by equality of rights, production materials, and everything that belongs to the workers. The management is democratic and with the horizontal hierarchy as, when assigned, managers must fulfill strictly what was determined by the collective (Paul Singer, 2008). The social processes of the SE organizations propose three important aspects:

"a) a political-ideological construction of part of civil organizations and popular movements, demarcating with it a new field of practices in relation to those already known, the historical cooperativism or the micro and small enterprise - all also with their respective promoters and their own semantics; b) a new target for public policy action, presupposing deliberative processes and, simultaneously, the adoption of premises and definitions with a view to naming the real and acting upon it; c) a set of popular economic organizations - the focus of the analysis undertaken in the present article - as they came to have or to be recognized for sharing, to a diverse degree and subject to controversies, a singular social logic. " (Gaiger; Kuyven, p.14, 2020) (own translation).

Initiatives that are both citizen-oriented and entrepreneurial seek a dual political and economic dimension of the Solidarity Economy to fulfill its institutional obligations (Laville, 2010). The political dimension allows the participants to express their concerns about unequal social patterns and guarantees a framework that allows them to engage directly in collaborations that allow them to be heard. A critical aspect of SE is that its members equally own the organization: here emerges the actual realization of democracy. There is also the economic dimension, which is impacted by the principles of reciprocity and act with hybrid resources:

Figure 3: the two dimensions of the Solidarity Economy



(Laville, p.37, 2010).

The SE is directly influenced by structural shifts, as its complex structure increases political and economic tensions. The political appeal of the SE is expressed in the traditional economic experiences that recreate historical ways of manufacturing and living (such as indigenous peoples, quilombolas, among others); and also the experiences of workers who resisted and organized work initiatives in the face of the crisis as structures to alleviate poverty. (Molina et al., 2020). Organizations that are part of the SE allow the development of productive and sustainable forces in the long term and generate new behavioral patterns in a socio-economic-ecological viewpoint (Lisboa, 2005). The concept of solidarity is materialized by collaborative practices that have the community as their dominant actor, governed by active participation principles.

There is economic empowerment connected to the potential reduction of costs linked to economies of scale, processing value-added, and enhancing small producers' ability to negotiate higher prices, market information, transport, distribution networks, technology, and training in the name of the associates (Utting et al., 2012). This enhances the value of the social capital, important to the sense of ownership of each individual involved in SE organizational experiences. To endorse the impact of these organizations, the intrinsic political aspect plays a role in governance building, through the establishment of collective action dedicated to the construction of a bridge between governments and SE representatives to guarantee "a seat on the table" for the ones that

are directly affected by social and economic policies design and implementation (Utting et al., 2012). The Table gives us a better understanding of how the SE (indicated as "SSE") is constructed in comparison to the public and private sectors of the economy:

TABLE 2: Idea-type construction of the three sectors of the economy

	Public	Private	SSE
Dominant actors	State	Market	Community
Rationality	Distributive	Competitive	Cooperative
Relationship based on	Authority	Exchange	Solidarity/Reciprocity
Governance principle	Control	Freedom	Participation
Value creation	Public goods	Wealth creation	Blended values (social, ecological, moral, and economic)

(Dash, p. 7, 2014).

The Table synthesizes the "idea-type" construction that runs the Public, Private, and SE economies. As they coexist, we observe that the private economy fulfills an important social need towards including economically people that are not well assisted by the public sector's distributive rationality and are not receptors of the profits of wealth creation in the private one. The responsive role to the SE's societal pressing issue enforces the belief that it can be transitional, working as a bridge from informal frameworks to formal ones by giving legal status for activities otherwise performed in informal settings (Dacheux et al., 2012). The engagement with everyday active participation through democracy represents a "utopia" of a global project based on Solidarity:

In its strongest sense, the solidarity economy, therefore, represents a kind of utopia, a global project in which democratic debate constitutes the cornerstone of society, the social bond. In terms of the symbolic order, it disputes the orthodox definition of the economy which is used to justify capitalism. The solidarity economy acknowledges a range of methods for exchanging goods and services (the market, redistribution, reciprocity), thus exposing the gulf between wealth and economic wealth and revealing the role that ideology has played in the construction of the orthodox definition of economics. Above all, by combating liberal ideology, by contesting the domination of the economic order and by attempting to enrich and expand democracy it offers the prospect of an alternative society, the possibility of a better world, a utopian endeavour that combats the tendency towards xenophobic nostalgia found amongst the losers that economic globalisation has created. (Dacheux, p. 211, 2012).

In such a context, a scholarly debate raises questions where the "Solidarity Economy" will serve as the basis of a new economic climate, which does not only dramatically reduce the potential for negative social and environmental externalities associated with the for-profit benefit, but also encourages egalitarian patterns of resources and surplus allocation to promote social, cultural and power relations that can be considered democratic, empowering and emancipatory (Utting et al., 2014). SE's active realization empowered groups in vulnerability settings in the Brazilian context while endorsing organizational experiences towards poverty alleviation, convenient against informality. It allows the population to reduce systemic inequalities through self-management, democracy, and economic independence, with a strong political appeal of popular resistance.

2.3.1 The Brazilian path: Solidarity Economy as a poverty alleviation prospect

Singer (2008), one of the most distinguished intellectuals of the Solidarity Economy and Brazilian National Secretary of Solidarity Economy of the Ministry of Labor and Employment from 2003 to 2015, affirmed that the function of the solidarity economy remains the same as the one in the 1990s: including people in the production and social life, with special concern with young people in vulnerable situations. The scholar declared that the SE is based on the thesis that the contradictions of capitalism create development opportunities from economic organizations where the logic is opposed from the dominant way of production (Singer 2008). While there is a perception that SE has its existence conditioned to the capitalist economy's failure, the scholar affirms that SE is not just an answer: it is a superior alternative to capitalism (Singer, 2002). In this perspective, where the SE is not a result of crisis moments of capitalism, its growth and establishment require a solid foundation.

The Latin American context raised discussions about structural failures of market-centric approaches that have promoted economic liberalization, financialization, privatization, commodification, corporate control of global value chains, and business models that outsource environmental costs (Utting et al., 2012). The scholar affirms that the current market-centered (neoliberal approach) is the root of four major developmental problems:

- 1) The conventional formal sector of the economy's inability to generate more and better work and absorb the "surplus" labor associated with the growing informal economy.
- 2) Inequalities of income, wealth, and location within countries rose significantly, constraining people's productive and adaptive capacities, local economic development, access to markets, and realizing social, political, and civil rights.
- 3) Recurring and multiple crises linked to finance, food, and fuel highlighting the levels of human insecurity. The question is not only to minimize the impact of the crisis but also how to build economic and social systems that foster resilience to external shocks.
- 4) Fourth, industrialization and consumerism resulted in environmental degradation patterns and climate change that enhance shocks and vulnerability (Jackson, 2009 apud. Utting et al. 2012). It relates to low-intensity democracy or passive citizenship, where "participation is largely reduced to the electoral process and often cosmetic forms of stakeholder dialogue." (Adapted from Utting et al., p. 5-6, 2012)(own translation).

Following a tendency of other Latin-American countries, the Brazilian economy is considered a mixed economy with capitalist dominance (Coraggio, 2013 apud. Diniz 2019). This means that Brazil's economic behavior is based on profit - however, there is an expressive economy from the public sector, dominating production and consumer lines around the state. Incomplete modernization and accelerated urbanization increased inequalities and weakened prospects for the consolidation of the welfare state. (Diniz, 2019) This opened the way for other forms of collaboration to deal with the consequences of inequality and limitation of formal work, with the informal sector's rise and the dynamics to avoid it.

The disruption of Brazil's capitalist cycle in the 1980s triggered its most significant development crisis since 1840 (Pochmann, 2004). This crisis has devastated the labor market and contributed to adopting neoliberal policies aimed at the State's privatization of the productive sector. This led to creating new forms of labor productivity and increased mercerization of labor, subcontracting, and reducing guarantees and labor rights. In that context, the country has been listed as one of the largest exporters of primary goods (agribusiness and minerals). There was a sharp increase in the provision of services (third sector) during the 1990s, corresponding to most of the country's occupations, especially in the informal economy.

The endorsement of the third sector created new dynamics concerning income generation (Pochmann, 2004). It gave space for the advancement of solidarity economy

organizations, based on two main factors: the significant surplus in hand labor and social militants' strong movement. An interesting fact is that the crisis unemployed a large amount of qualified technical workers, instead of surplus from rural migration, which empowered the fight towards alternative social and labor organizations in Brazil (Pochmann, 2004): the SE was seen as a force for social change and alternative to the neoliberal globalization (Lechat, 2002 apud. Vieira, 2017); it is a democratic response of the social movements to the crisis provoked by the capitalist accumulation and inequalities in Brazil (Molina et al., 2020).

The studies about Solidarity Economy in the Brazilian context started to a broader extent during the 1990s, in the middle of a severe crisis that led to extreme unemployment levels. Luiz Inácio Gaiger, responsible for the ground-breaking round table "Ways of Fight and Resist Poverty," during the 7th Congress National of the Brazilian Society of Sociology (1996), reinforced the recognition of a diverse number of experiences (in that context, *Cáritas Brasileiras* projects) focused on poverty alleviation with principles of solidarity that brought to community services an organizational experience innovative and supported by local communities (Gaiger, 1996 apud. Lechat, 2002).

Economic analysis also confirms that in the complex Brazilian context, inequality is not reduced by economic growth: the distribution of wealth perpetuates unequal power relations in the country (Gaiger apud. Borges, et al., 2015). The increasing neoliberal strategy of the Brazilian capitalist market provoked social mobilization towards the dynamization of economic activities based on autogestion, democratization, collaboration. There is an understanding that the SE brings "collective experiences that, based on survival practices and strategies, bring to the economic scene also political elements characterized by solidarity, sustainability, participation, self-management - among others" (Molina et al., p. 174, 2020).

In that sense, the Solidarity Economic efforts took the perspective of addressing the instability and uncertainty that influenced people's material lives in vulnerable situations. There was a desire to reduce the degree of subordination to the formal economy while seeking a way out of informality circumstances complexities (Gaiger, 2009). To endure SE's manifestations, a high level of networking was incentivized at a national and local level, such as the Brazilian Forum of Solidarity Economy. In 1998,

the National Incubator Program of Cooperatives was created by the Brazilian Ministerium of Technology and Science, followed by the Technology Network of Popular Cooperatives, aiming the formation of cooperatives and the multiplication of support systems, with the systematization and advancement in the evaluation of experiences and academic theories towards giving more legitimacy to solidarity economy initiatives (Singer, p. 123, 2002 apud. Molina, p. 176, 2020). The organization represented, articulated, and followed public policies of solidarity economy, making a dialogue with diverse social movements.

The initiatives focused on solidarity economy have an intrinsically political character. This means that investment in the SE agenda depends on the aspirations of those in power. In President Lula's government, from the Labour Party (PT) (2003 to 2011), initiatives directed to the SE's empowerment were the priority in the Federal government's agenda. The SE's historical marker in the Federation was creating the National Secretariat for Solidarity Economy (SENAES) in 2003 as part of the Ministry of Labour. The SENAES was responsible for the execution of the public policies of SE. The Secretariat constructed a robust plan to foster knowledge about the thematic nationally, engaging partnerships and conferences that would contribute to the construction of tailored public policies, such as creating the Solidarity Economy Brazilian Forum. The budget available for the policy's sedimentation varied, showing growth until 2016, with the change in the government agenda with the impeachment of President Dilma Rousseff.

The 2016 impeachment brought a notable reformulation of the technical team, starting with Secretary Paul Singer's exit (that was the head of the Secretariat since its start in 2013), followed by all directors, coordinators, and technicals. The bond created with the SE's political movements was reportedly damaged by the changes, as the new team did not maintain the coordination levels cultivated by their ancestors. It is also worth mentioning that the SENAES lost the status of Secretariat acquired in 2003. From 2016 to 2019, the organism had a sub secretariat status connected to the Labour Ministry office.

In the current government, ruled by president Jair Bolsonaro, the remaining political institutions connected to Solidarity Economic policies' empowerment were marginalized and officially extinguished. Currently, the Ministry of Citizenship is

responsible for dealing with national policies related to the Solidarity Economy through the National Secretariat for Social and Productive Urban Inclusion work. Government officials affirmed the intentions to respect conceptualizations of what the solidarity economy means (Ministério da Cidadania, 2020), intending to promote actions that correlate it with the "conventional" economy, focus of the governmental "Progress Plan." However, nowadays, the synchrony with governmental policies enforced so far did not give the matter a spotlight on the National agenda. This factor also endorses the current federal government's political program, focused on strengthening traditional aspects of capitalist economic relations, therefore weakening relations and public policies focused on empowering SE initiatives.

In a trial to guarantee SE prerogatives in Brazil's legal landscape, congress officials, especially through an initiative from members of progressive parties, approved the Law N° 13.928/2019, which instituted the National day of the Solidarity Economy. Furthermore, there is currently a Project of Complementary Law (PLC) 137/2017, dedicated to instituting the National Policy of Solidarity Economy and creating the National System of Solidarity Economy. The normative aims to define guidelines about Solidarity Economy at a Federal level, endorsing principles such as democratic management, free engagement, fair prices practice, cooperation among entrepreneurs, fair and solidary commerce, fair results distributions, transparency, and publicity in the management of resources (Agência Senado, 2020). Besides that, the initiative also aims to create the National Registry of Solidarity Economic Enterprises. The project's rapporteur, Deputy Jaques Wagner (PT), enforced that:

"Therefore, it is important that the State legally recognize the existence of solidarity economy organizations and, more than that, strive to implement public policies aimed at fostering them. The legislator was right, therefore, not only to define, for legal purposes, the solidarity economy, but also to create a national policy destined to formulate and implement plans and actions with the objective of stimulating this important social arrangement" (Agência Senado, 2020).

Currently, the project is being analyzed at the Chamber of Deputies. While the prospective framework of SE is being sedimented in Brazil, discussions about the application of the policy and how this will affect SE principles were questioned: is framing the activities of SE in the legislative ground in Brazil a way to bring proximity

and social conformation among workers, such as the Social Economy experience? In our understanding, the Brazilian reality's political and economic complexity level does not allow Solidarity Economy manifestations to be emancipated from its political standpoint. As was mentioned before, the country is immersed in unequal socio-economic relations that are deeper than any intended judicial framework, unlike the reality experienced in advanced welfare states. The legislation, if enforced, will likely be a reminder of the potential from SE and its structures, giving individuals included in these organizational experiences a legal ground to claim their rights.

2.4 Solidarity Economy Organizations of *Catadores*: cooperatives and associations

The need for safe, long-term alternatives to waste management has become a pressing issue for governments, scientists, scholars, and society. The urgency for a policy that can support the ecosystem from the alarming consequences of urbanization for public health has the potential to create revenue through building a comprehensive waste management strategy towards contributing to poverty alleviation (Gutberlet, 2012). In this context, the cooperatives have enabled the collectors with social inclusion and rescue of their citizenship (Bastos and Araújo, 2015), with an agenda based on the Solidarity Economy. To produce a cohesive use of cooperatives towards political empowerment of its participants and community development (Zeuli and Radel, 2005), we must recognize the potential of these structures in tackling social, economic, and environmental targets, especially in vulnerable groups. SE organizations have the potential to offer employment options, create jobs, and improve overall environmental sustainability. (Gutberlet, 2012).

However, the Brazilian industrialization process accelerated urbanization in the country, with an intense number of migrations to large urban centers, especially during the second half of the XX century. Silva (2017) states that IPEA (2010) estimates pointed out that approximately 160 thousand tons of solid waste are generated daily in the country, of which between 30% and 40% are considered reusable and recyclable. However, the author states that:

"(...)establishing a calculation of the total economic potential of recycling in Brazil is a difficult task, even because the sector is not yet explored in a

systematic way throughout the national territory. Estimates by some research agencies indicate that only 13% of the total urban waste generated in the country is sent for recycling, and that the economic benefits gained from the sector could be at least six times higher than what has been registered currently (Ipea, 2010a)." (Silva, p. 9, 2017).

The first expressions of cooperatives and associations in Brazil date back to the 1930s, under the strong influence of those present in the European Social Economy. In that period, an important feature was that the labor was semi-qualified or qualified (Pinheiro and Francischetto, 2016), fundamentally different from the cooperatives and associations' reality that began to emerge at the end of the 1980s. After a reduced protagonism during the military dictatorship in Brazil (1964 to 1985), movements based on collaboration acquired an especially politicized bias, endorsed by the serious economic crisis the country was facing. The deepening of social inequalities and a growing exclusion process that took place at the end of the 20th century promoted a critical transformation in the Brazilian labor market: the growth in the number of workers in the so-called "third sector," that is, "service providers." These workers, often integrated into informal work systems, lacked employment status and stability and were deprived of social security and protection (Maria Silva, 2014). In this context, we observed the re-signification of the principles and motivations of collective organizational forms, which were (and still are today) based on solidarity, direct democracy, and self-management, typical of the Solidarity Economy.

The cooperatives and associations of recyclable material collectors (which we will also refer to as "solidarity organizations") emerged in the Brazilian context from the strengthening of the:

"(...) debate about the environment, the growing dimension of waste produced in cities and the need to mitigate its effects; on the other hand, economic restructuring, with the globalization of production and markets producing thousands of unemployed people and the tendency to the precarization of employment and labor relations." (Luttner et al, p. 361, 2016).

The first solidarity organization of waste pickers in Brazil was founded in 1989 due to several social actions of a religious nature, from the Catholic Oblate Order, which aimed to work with homeless people in Sao Paulo, from the development of welfare actions and labor organization. The Cooperative of Collectors of Paper and

Cardboard and Reusable Materials (Coopamare) was created, completing 32 years of existence in 2021. Inspired by this pioneer's success, several associations and cooperatives of waste pickers have emerged in Brazil, with leaders in the class, especially in the cities of São Paulo, Porto Alegre, and Belo Horizonte. From their strengthening and stability in the organizational structures, local governance projects have promoted partnerships from these collectives' inclusion in municipal selective collection programs. With the formation of the National Movement(MNCR) in 2001 and the ratification of the waste pickers as important parts of the National governmental agenda as of 2003, these solidarity structures acquired a much-needed political and class protagonism, albeit one shrouded in immense challenges. (Jesus and Barbieri, 2013).

Therefore, we define associations and cooperatives as voluntary unions of people who organize themselves to accomplish common objectives through democratic and equitable administration. From a technical standpoint, it is necessary to fulfill certain requirements to create associations or cooperatives in the Brazilian territory. It is important to emphasize that the difference between the two organizational types is rather a processual matter, considering that both are based on the same doctrinal principles and pursue the same goals. Article 5 of the Magna Carta states:

Art. 5 All are equal before the law, without distinction of any nature, guaranteeing Brazilians and foreigners residing in the country the inviolability of the right to life, liberty, equality, safety and property, in the following terms:

(...)

XVII - there shall be full freedom of association for licit purposes, paramilitary purposes being forbidden;

XVIII - the creation of associations and, according to the law, of cooperatives are independent of authorization, and state interference in their operation is forbidden;

XIX - associations may only be compulsorily dissolved or have their activities suspended by judicial decision, requiring, in the first case, a final and unappealable judgment;

XX - no one may be compelled to become or remain a member;

XXI - the associative entities, when expressly authorized, have legitimacy to represent their members judicially or extra-judicially; (Planato, 1988).

Associations have as their purpose the promotion of "social assistance, educational, cultural, political representation, defense of class interests, philanthropic; cooperatives have an essentially economic purpose. Their main objective is to make viable the productive business of their associates in the market". (CREFITO, 2010).

In both cases, their representations are made by individuals to guarantee the interests of the class, and self-management is cultivated as a management style. Moreover, in both designs, there is always a financial return on investment for the organization itself. These arrangements represent possibilities of overcoming the limits set by the capitalist economic order through new organizational experiences. She believes that these initiatives Maria Silva (2014) calls give alternative livelihoods to subordinated groups, mostly women, migrants, black people, people with physical or mental disabilities, the elderly, adolescents, people with low levels of education and professional qualification.

Regarding the normative developed especially for the collectors, the Table below summarizes the legislation with greater incidence for waste pickers:

TABLE 3: Set of actions developed for the collectors

Type	Objective	Results
Ordinance No. 397/2002 from the Ministry of Labor	Insertion of the activity "recyclable material collector" in the Brazilian Classification of Occupations (CBO) n°5.192, from the Ministry of Labor, in 2002.	Professional recognition of the category.
Decree of September 11, 2003	Creates the Interministerial Committee for the Socioeconomic Inclusion of the Collectors (Ciisc). It aims to act with the State agencies for actions to combat hunger, social inclusion, eradication of waste and articulation of policies directed to the waste pickers.	Creation of public policies for the collectors.
Decree n° 5.940/2006	Destination of recyclable material from public agencies to the collectors.	Increase the amount of material destined to the solidary economy enterprises.
Law n° 11.445 /2007	Institutes the PNSB.	Allows the signing of a contract for the provision of services with dispensation of bidding.
Law No. 12.305 /2010	Institutes the PNRS.	Determines the end of the garbage dumps and the inclusion of the collectors in the selective collection.
Decree No. 7.405/2010	It institutes the Pro-Catador Program, with investments for the organization and structuring of collective enterprises of collectors.	Effective public policies for the sector.

(Silva, p. 20, 2017).

The Decree 5.940/2006 instituted that the separation of "recyclable residues discarded by organs and entities of the direct and indirect federal public administration, at the generating source, and their destination to associations and cooperatives of recyclable material collectors", being a great driver for partnerships between these organizations and public bodies. We also highlight the National Solid Waste Policy (PNRS), Law 12.305/2010. Its objective is to dictate how efficient management of solid

waste will be carried out. Its elaboration, the result of discussions in the legislative power since 1989 (Pinheiro and Francischetto, 2016), comes as a response to the growing discussion of issues related to the increased consumption and disposal of solid waste from the late 1980s.

With long-term objectives (Art. 17, V) which directly interfere with policies and processes historically belonging to the Brazilian scenario (such as, for example, the existence of landfills) (Art. 15, V), the PNRS demands municipalities to formulate their waste management plans (Baptista, 2015). In this scenario, associations and cooperatives of recyclable waste pickers were included in a prominent role (Art. 7º, XII; Art. 36 §1º), based on "unprecedented incentives for the formation of Solidary Economic Enterprises (EES), profoundly reformulating the institutional environment for their operation" (Andrade, p. 2, 2014). The Law gave legitimacy to these solidarity organizations (Art. 8º, IV), through partnerships with the public sector, to be favored as the managers of recyclable or reusable solid waste at a local level. This so-called "integrated management" gives legitimacy to a range of dimensions connected to the empowerment of waste picker organizations as true environmental agents:

Political dimension: by recognizing the importance of the political dimension, the law allows for the necessary agreements and the overcoming of possible conflicts of interest that represent barriers to the implementation of good practices and economically viable solutions for solid waste.

Economic dimension: by maintaining the economic dimension in the concept of integrated management, the law favors the reinforcement of the practical need to make viable solutions for solid waste, as well as opens the way for the definition and implementation of economic instruments that favor environmentally sound postures on the part of the various social players.

Environmental dimension: by keeping the environmental dimension, the law points out the essence of waste management, which is the minimization of environmental impacts. Cultural dimension: as a novelty of the concept, this dimension points to the need to take into consideration the habits and values of local populations when defining the methods and procedures to be implemented for solid waste management.

Social dimension: the PNRS also points to the need for social control. (apud. Pinheiro and Francischetto, p. 15, 2016).

The public power deliberately encourages the institution of financing lines to attend the "implantation of physical infrastructure and acquisition of equipment for cooperatives or other forms of association of Collectors of Reusable and Recyclable Materials formed by low-income individuals" (PNRS, Art. 42, III). Also, government entities are encouraged to grant tax incentives for projects related to product life cycle

responsibility, giving priority to those in partnership with SE organizations (PNRS, Art. 44, II). Access to the union's resources related to urban cleaning and management of solid residues will be prioritized to the municipalities that implant selective collection - which denominates the "collection of solid residues previously segregated according to their constitution or composition" (PNRS, Art. 3º, V) - with the participation of cooperatives and associations of collectors.

In this scenario, an interesting economic mechanism foreseen in the PNRS and reinforced in Decree 7.405/2010 is the Payment for Environmental Service (PSA). The line of thinking behind this concept is that the waste picker cooperatives' service with the collection of solid waste provides an environmental service. Solid residues, since these professionals did not recover them, would be thrown into landfills. Recovering this material for the productive chain contributes to the environment and provides a reduction of governmental costs in waste management. Therefore, PSA advocates believe it is fair to pay for the public service provided by these SE organizations (Andrade, 2014). The political dimension of the payment for environmental services is of great importance. They mean the recognition of the service rendered to the collective. Even so, it is not correct to say that the incentive, although welcome, solves the vulnerability status of the collectors: the PNRS and the Decree only establish the general lines of its existence, being the responsibility of the states of the federation to carry out the regulation to be applied locally.

Minas Gerais was the pioneer in implementing payment for environmental services to cooperatives of collectors through the program called "Bolsa Reciclagem." It was instituted and regulated by state law Nº 19.823/2011, and has in its legal nature "of financial incentive for the consideration of environmental services, in order to minimize the accumulation of the volume of waste and the pressure on the environment (...)" (Minas Gerais, 2021). Its feasibility requires a very nuanced series of technological variables relating to the efficiency of waste picker cooperatives, as well as the estimation of the costs of selective collecting and the future benefits that will arise from the introduction of integrated schemes for the collection and recycling of products (IPEA, 2010 apud. Andrade, 2014). It is important to say that the measure is not, therefore, a welfare provision: its nature indicates payment for the provision of a service.

An interesting fact about the selective collection is that IPEA estimates, only 2.4% of the urban solid waste collection service is performed selectively - from which waste pickers are responsible for more than 90% -, with all the rest performed as a regular collection (Silva, 2017). This means that more than 97% of waste is not separated at the generating source, mixing and compacting all the materials together, making it difficult or even impossible to recycle part of these materials. In this sense, it reinforces the importance and recognition of the waste picker's organizations' work as environmental agents, performing an essential job for the community, even though it is scarcely valued.

The creation of this policy was a milestone in the movement's quest for recognition of waste pickers and represented a certain level of political alignment and encouragement for these organizations' success. The worker's emancipation through the collective organization of an alternative labor process overcomes the exploitation logic of capital (Singer, 2002). From the process of humanization and formalization of garbage systems management (Gutierrez and Zanin, 2013), we could observe a transformation of popular consciousness, expressed even in the arts. Poems, previously full of hopelessness, now are replete with political force, struggle, and awareness in the occupational exercise of the class:

“If per ton sorted
were paid
life would be lighter
With guarantees assured
They only want to be heard
And also seen
They want visibility
And the importance established
So remunerate
the sorted ton
For these warrior women
Beautiful as the jasmine
Who on the treadmill live
The daily battle
Seeking queens of themselves
For freedom so dreamed of

Manager my dear friend!

remunerate

The sorted ton”

Nati Tonelo, catadora from the Esperança Recyclers Association - Florianópolis - SC (2017) (own translation).

The collective arrangements allowed these vulnerable individuals to achieve, from a common struggle, access to information, technical equipment, and public policies dedicated to the empowerment of their community (Zeuli and Radel, 2005), indispensable for their economic emancipation (Gutierrez and Zanin, 2013). For the success of these institutional arrangements based on the Solidarity Economy principles, these organizations' roles and attributions must be clear to those involved.

TABLE 4: Functions and attributions of a waste pickers cooperative

Administration	Control income and expenses, calculate income, make collections and payments, prepare minutes, control absences, meet legal requirements, have transparency in information.
Selective Collection	Planning and following up the collection, weighing the waste collected, evaluating the segregation at the origin, inventorying the households, ensuring safety at work, informing the households.
Sorting	Weigh classified material and rejects, take care of the equipment, take care of the organization of the space, take care of safety at work, monitor the quality of sorting.
Commercialization	Research new buyers (registration), negotiate prices, identify new business opportunities, evaluate the buyer, identify captive suppliers.
Coordination	Integrate the activities of the areas, make decisions on the common interest, solve relationship problems, share the income, encourage the participation of associates in decision-making processes, articulate new partnerships.

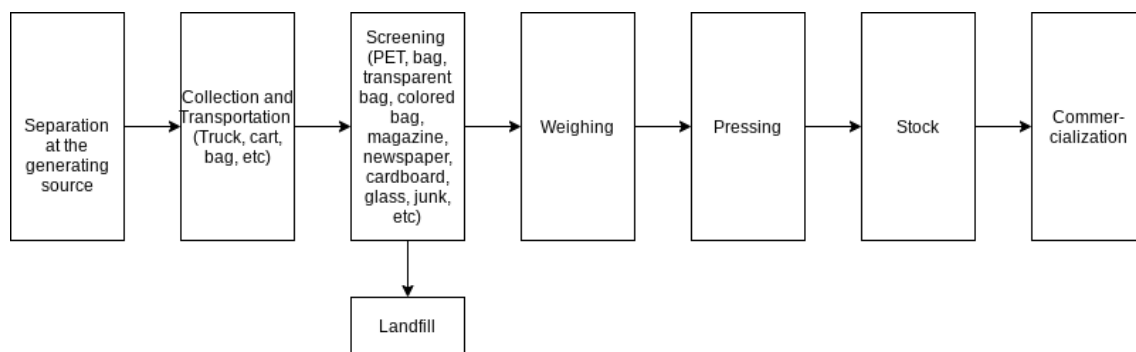
Source: Pinhel, Zanin and Monaco (2011); Silva (p. 26, 2017).

All these functions and attributions are divided among the organization members, who carry out the activities and are not subject to privileged treatment or reward regardless of their performance. Baptista recalls that "waste pickers are not 'employees' - for as long as they are in associations or cooperatives, they are partners and have no employment relationship" (Baptista, p. 145, 2015). For those responsible for the administrative work, it is necessary to seek partners to increase accountability, organizational skills, leadership: if this role is not done responsibly, the

association/cooperative can be severely damaged and uncharacterized (Pinheiro and Francischetto, 2016). According to Silva (2017), "there are cooperatives in which hierarchical relationships and lack of transparency in their internal information persist, which contrast with the ideal of self-management advocated in the field of solidarity economy" (Silva, p. 25, 2017).

In the Figure 5, we observe how the recycling work chain works:

FIGURE 4: *catadores'* work chain



Source: adapted from Oliveira and Lima, p. 4, 2012.

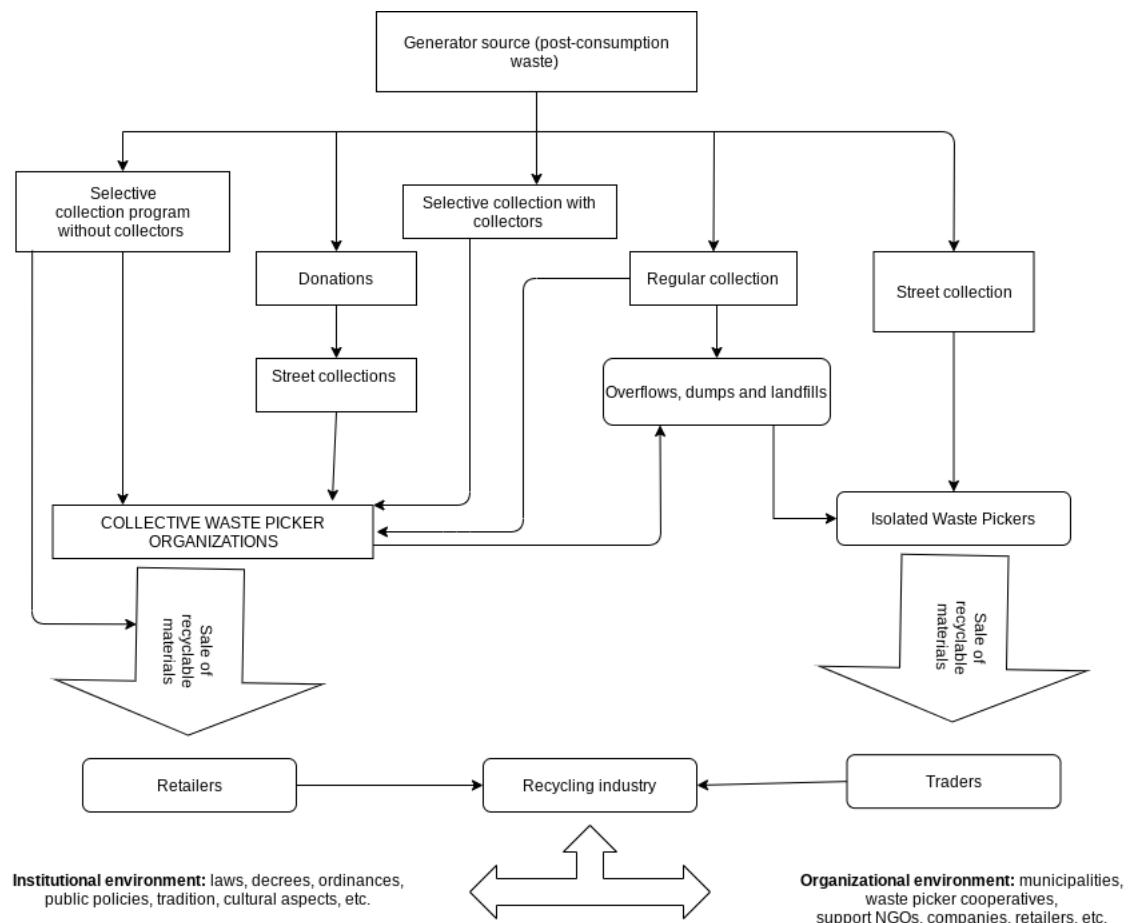
We can follow the diagram to observe that the first phase is separating the waste at the generating source. This means that the source of the waste found by the catador is made available from the disposal of material by households, stores, and public services in the community. This fact reinforces that social support is fundamental to these collectives' success (Trombeta, 2012).

The waste pickers' work chain shows that their functions require a certain level of preparation from the waste pickers. Even though the function does not require extensive prior technical knowledge, work performance can be improved by investing in these professionals' training. Because of this, these organizational experiences rely on the partnership of public and private entities, such as local government, NGOs, churches, and Academia. Through work organization and the support of partners, these organizations can promote better working conditions for those involved, directly impacting the quality of life. From the exchange of information between their members and partners, solidarity economy organizations have more power of negotiation with the public authorities by capturing resources for projects and monitoring sectorial public

policies. This directly assists in increasing social sensitivity about the work done and its socio-economic and ecological consequences for the community. With the financial return of the activity, the investment made can be invested in the training of the collectors, as well as improvement in the material resources needed for the exercise of the profession (Ministry, p. 22, 2013).

The structure of a supply chain unites decision-makers involved in an interdependent process through a flow of products and services in one direction (Gutierrez and Zanin, 2013). Observing Figure 5 will allow us to understand better how the relationships between the SE organizations are made together with other stakeholders in the recycling environment:

FIGURE 5: Recycling supply chain



Note from the source: Importantly, this is a general scheme of how the recycling chain works (flowchart). However, each specific product has one or even more - depending on the degree of segmentation - specific types of value flows, given its differentiated insertion in each industrial sector.

Source: adapted from: IPEA (2011) apud. Silva (p. 13, 2017).

The waste picker is responsible for the re-signification of the trash (see Figure 5). Through the selection of materials that would be disposed of and lose all their material value, the collectors perform environmental work - removing tons of waste from the environment - and social work, from the insertion of needy people in an occupation that promotes their economic emancipation. There is, therefore, a commercial re-integration of the material that would be discarded (Benvindo, 2010; Magalhães, 2012 apud. Silva, 2017). However, these individuals are severely harmed by what Silva (2017) calls the "monopsony structure" that characterizes the recycling chain. This is because a "large part of the products normally recycled (aluminum, ferrous metals, glass, and paper) is capital intensive and has in the economy of scale an important competitiveness factor" (Silva, p. 14, 2017).

Unlike SE organizations' internal arrangements, the recycling chain has a rigidly hierarchical arrangement. The top of the pyramid is occupied by a restricted number of recycling industries - which perform the pre-processing, processing, and transformation of recyclables into new products. Below them, we have the "intermediary organizations," which often make contact between the SE organizations and the recycling industries, buying the material from the associations and cooperatives (or independent collectors) and selling it to the industries. They occupy this position because they provide the collectors with more competitive conditions in the market than those negotiated by the independent collectors, who occupy the pyramid's base. This manner of structuring the post-consumer reverse production chain is controversial since scholars believe that the "unequal distribution of the value generated in the activity impacts waste pickers and the cooperatives, and at the same time makes the recycling chain financially viable" (Eingenhauer, et al., 2006 apud. Demajorovic, p. 517, 2014). This happens because:

For the autonomous collectors, the only option is to sell separately to the small intermediary organizations, without any bargaining power. Thus, they receive the smallest share of what is generated from the value in the recycling chain, despite contributing the largest share of what is collected. Grimberg et al. (2004) state that the intermediaries in the chain manage to obtain a 100% margin between their selling price and the price they pay to the collector. However, as Gonçalves-Dias (2009) states, this difference does not burden the recycling chain, since the very low value received by the collectors allows them to keep the price of recyclable material competitive until it reaches the

highest level of the chain. Lundgreen (2012) argues that this is a reality in several developing countries and that if the work of these collectors respected safety and environmental standards, the activities of collection and separation of materials would be financially unviable. (Demajorovic et al, p. 517, 2014).

The reasons presented by the scholars place in perspective the challenges of exercising solidary activity in a capitalist universe. Although the organizational experience of the Solidarity Economy promotes the valorization of the class and the effort to recognize alternative forms to the traditional economic status quo, we observe that the financial return of the waste pickers is subject to external factors that do not share the same principles. Therefore, economically, the class is hostage to a vertical and inelastic chain.

We observe that, in this context, the transformation must come from the conquest of greater protagonism of these organizations in the supply chain. An alternative would be to assume activities that were once related to intermediary organizations or even recycling companies in the production of recycled items (such as plastic bags). The task, however, is not easy. Besides the support of the local society, these organizations need to be supported with investments since their modest economic gains make it difficult to carry out large projects without external entities' support. Furthermore, governance must be implemented to endorse these individuals' democratic and popular work through public policies of social awareness and improvement of selective collection practices.

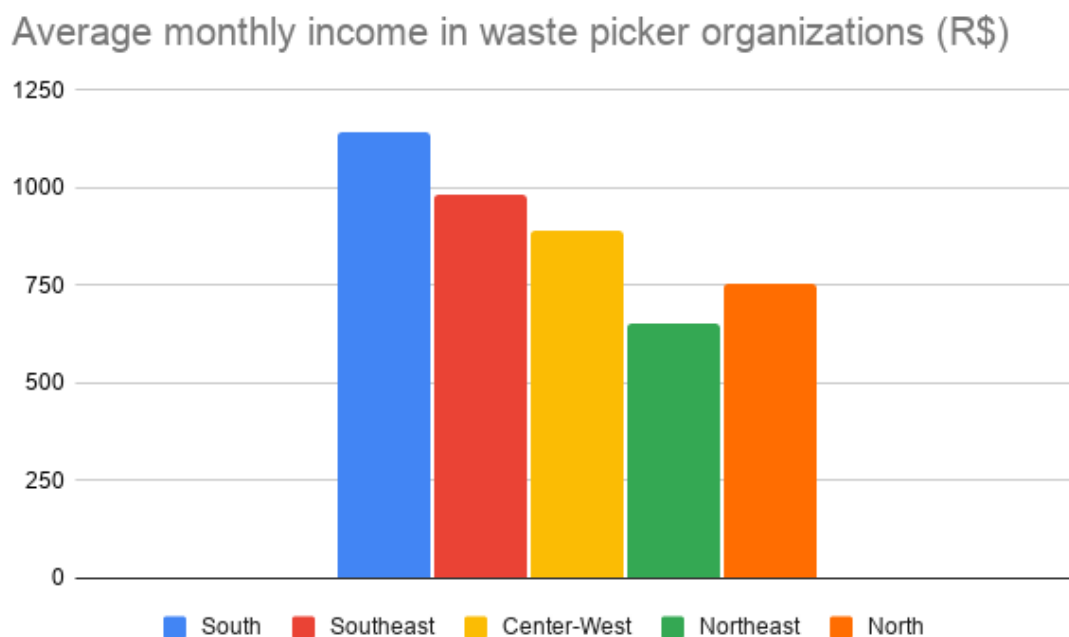
Interestingly, despite the intrinsic benefits to the collectivity, only 10% of Brazil's *catadores* belong to SE organizations (IPEA, 2011). Silva (2017) suggests that the reasons may be:

i) the preference of many waste pickers to act alone, in the name of a supposed autonomy in the management of their time and the result of their work; ii) a great deal of misinformation regarding the requirements for the constitution of cooperatives and associations; iii) requirement of specialized technical knowledge for the creation process of these enterprises, both in their constitution and management, which requires from the collectors the establishment of partnerships that guarantee them the necessary technical assistance; and iv) the view of the cooperatives as an external agent, and not as organizations formed and managed by the waste pickers themselves, who are the true owners of the enterprise. (Silva, p. 39, 2017).

This demonstrates that there is still a long way to raise awareness about the guarantees and obligations inherent to the participation in associations and cooperatives. Considering that most of them are people in vulnerable situations, we must think of public policies that effectively reach and inform the waste pickers about their possibilities. In this case, the political and grassroots movements should be the greatest ally in integrating these individuals into the organizations.

According to the Anuario da Reciclagem, 1829 mapped organizations of waste pickers in Brazil spread in the 26 states (plus Federal District). Data made available by the Recycling Yearbook (2020) show that in 2019, the average monthly income of waste pickers ranged from R\$1,141.58 in the South region to R\$651.49 in the North region.

FIGURE 6: Average monthly income in waste picker organizations (R\$)



Graph adapted from the Recycling Yearbook (ANCAT, p.40, 2020).

The disparity in monthly earnings results from "better conditions of infrastructure and access to waste management policies, especially selective collection" (ANCAT, p. 40, 2020).

If compared to the benefits brought by recycling professionals to Brazilian society, their monetary reward does not correspond to the activity's financial potential.

If all recyclable waste is processed, it is estimated to be R\$ 8 billion annually, whereas currently, this activity generates benefits between R\$ 1.4 billion and R\$ 3.3 billion annually (Junior et al., 2013).

The disparity in the waste picker's vulnerability and their weak position at the base of the recycling chain highlight the precariousness of the waste picker's work reinforced in capitalist societies (Bastos and Araújo, 2015). The presence of waste pickers as belonging to groups in social vulnerability situations reiterates the evidence of social exclusion of this group (Godoy, 2005). This exclusion is observed in the unhealthy conditions to which these workers are subjected daily, particularly concerning in the midst of the pandemic.

TABLE 5: Risk factors for the health of waste pickers

Factors	Description
Chemists	Waste in packaging, such as containers of toxic cleaning products, cement bags, etc.
Biological	Found with bottoms and bacteria in contaminated packaging, leftover food mixed with recyclable materials, infections due to disease-transmitting vectors, such as pigeons, rats, insects, etc.
Physical	Insufficient lighting, lack of ventilation, surfaces with uneven floors or floors with damaged floors, lack of or damaged roofing, hydraulic leaks, leaks, etc.
Accidental	Accidents during collection on the street (car accidents, being run over) or at the cooperative (loss of fingers when operating the press; unstable piles; unsafe surfaces; and cuts due to sharp instruments, glass, metal, paper and plastic mixed with other materials).
Ergonomics	Inadequate posture due to the absence of appropriate infrastructure in the collection, separation and processing of recyclable materials, absence of air circulation (ventilation), insufficient lighting, unsafe work organization.
Emotional Vulnerabilities	Social stigma, stress, depression, anxiety, power imbalance, emotional instability, addictions associated with drug and alcohol consumption, etc.

Adaptation of Silva, p. 17 (2017) from Gutberlet et al. (2016).

The risks associated with the profession range from the chemical factor, from contact with toxic elements in products to emotional vulnerabilities, intrinsically related to the social stigma recurrent in treating waste management professionals. These factors lead to the declaration of unhealthiness in the maximum degree of the activity, as established in Regulatory Standard n° 15 of the Ministry of Labor and Employment (MTE). (Oliveira, 2011).

The unhealthy conditions experienced by the waste pickers daily further raise the need for these professionals to be properly protected with Personal Protective Equipment (PPE) when performing their occupation. In research, Junior et al. (2013) sought to access the most common workplace accidents in the collectors' practice and the precautionary measures used to prevent accidents.

The research results showed that besides the dangers inherent in the handling of solid waste (such as exposure to glass, syringes, among others), these individuals are more likely to suffer body aches and osteoarticular problems (Junior et al., 2013). The author also mentions that, despite the severely unhealthy conditions, the collectors only consider work accidents as events with severe consequences. Still, the graph shows that the assiduous use of safety measures was not part of many professionals' daily routine. We agree with Junior et al. (2013) about the "need for investment in training and assistance to the waste pickers in order to increase the use of PPE, reducing health problems related to the activity of collection" (Junior et al., p.3120, 2013).

The unhealthy conditions experienced by the group and their social vulnerability position make it impossible for them to take advantage of private health plans. According to the Health Plan Pricing Panel (2015), the national average commercial value is R\$610.00. The value presented is outside the waste picker's reality, representing more than 90% of the average monthly values earned by waste pickers in the Northeast, for example. This reinforces the importance of public and popular health care in Brazil, guaranteed through the Unified Health System (SUS), which benefits about 180 million Brazilians per year (FIOCRUZ, 2020).

2.5 Interdisciplinary responses

The exploration of recycling on a large scale has been motivated by the increased level of consumption in urban centers in recent years, which has increased the need to rethink consumerism more sustainably and has given economic value to goods that would once be discarded. According to Silva (2017), this fact motivated the exploration of new technologies aiming to enable the development of the recycling chain. This is the key to the correlation between SE waste pickers' organizations and the circular economy and social technology fields.

2.5.1 The circular economy

The World Bank (2018) stated that worldwide, 2.01 billion tons of solid waste is currently discarded, with at least 33% of it not managed in an environmentally sound

manner. The challenges faced in solid waste management require interdisciplinary responses. Like the Solidarity Economy, the circular economy has a distinct logic from the market economy and the State (Laville, 1994 apud. Araújo and Vieira, 2017). The linear model of production and the increased consumption of goods and services supports the rapid disposal of materials (Foster, 2016). The CE emerged in the literature challenging the "make, use, dispose" pattern as an alternative way of organizing production (Foster, p. 7, 2016), motivating the dissemination of three principles: reduction, reuse, and recycling (Ghisellini et al., 2016).

The **Reduction principle** aims to minimize the input of primary energy, raw materials and waste through the improvement of efficiency in production (so called eco-efficiency) and consumption processes e.g. introducing better technologies, or more compact and lightweight products, simplified packaging, more efficient household appliances, a simpler lifestyle, etc. (Feng and Yan 2007; Su et al. 2013).

(...)

The **Reuse principle** refers to "any operation by which products or components that are not waste are used again for the same purpose for which they were conceived" (EU 2008). The reuse of products is very appealing in terms of environmental benefits as it requires fewer resources, less energy, and less labor, compared with the manufacture of new products from virgin materials (Castellani et al. 2015; WRAP 2011) or even recycling or disposal.

(...)

The **Recycle principle** refers to "any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations" (EU 2008). Recycling of waste offers the opportunity to benefit from still usable resources and reduce the quantity of waste that need to be treated and or/disposed of, thus also decreasing the related environmental impact (Cagno et al. 2005; Zhu 2008; Lazarevic et al. 2010, Birat 2015) (Adapted from Ghisellini, et al., p. 6-9, 2016).

The Circular Economy proposes a sustainable model, ideal for the economic and environmental management of micro, small and medium enterprises, considering that working with limited funds in a scenario of globalization and rapid technological change is a constant challenge for these organizations (Hoffmann and Schlosser, 2001 apud Oliveira et al., 2019). In this way, the institutions aim to promote a transition to a system that allows products, materials, and resources to last in the economy for as long as possible, with minimal waste generation, providing new forms of innovation and local development (European Commission, 2015) (Oliveira et al., p. 1180, 2019). Beyond the eventual decrease of costs of industries, the circular development economic model suggests the regeneration of capital value, which is suitable for fostering the

equilibrium between the market and the climate while at the same time pursuing the productivity and efficiency of the whole production chain (Goncalves and Fonseca, 2019).

In the Brazilian context, a critical actor for circular economy policies is the waste picker. In the exercise of their occupation, these agents "contribute in a unique way to the operability and capillarity of waste management and management at local, regional, and national levels" (Rocha, p. 49, 2020). Although there are still no full circular economy production cycles in the country (Foster, 2016), Brazil has achieved a high rate of aluminum can recycling, surpassing 90% since 2004 (Associação Brasileira dos Fabricantes de Latas de Alumínio, 2020 apud. Rocha, 2020). This demonstrates that the pursuit of productive cycles based on the circular economy is possible, and the participation of the collectors represents an unequivocal protagonism for its fulfillment.

Aware of this reality, the aforementioned Federal Law 12.305/2010, which established the National Solid Waste Policy, gave legitimacy to the practice of reverse logistics. According to the legal precept, reverse logistics is characterized by:

"by a set of actions, procedures and means destined to enable the collection and return of solid waste to the business sector, for reuse, in its cycle or in other production cycles, or other environmentally adequate final destination" (Art. 3, inc. XII). (República, 2010).

Scholars recognize as one of the most innovative legal frameworks the "inclusion of collectors of reusable and recyclable materials in both reverse logistics and selective collection, recognizing the importance of the role of these agents in the capillarity of waste management in the country" (Guarnieri et al., 2020; apud. Rocha, p. 53, 2020). We observe the Law's immense potential in stimulating transformations in the Brazilian industry's production processes (Foster, 2016). Art. 7° provides:

(...)

"VI - incentive to the recycling industry, aiming to promote the use of raw materials and inputs derived from recyclable and recycled materials"

(...)

"XIV - incentive to the development of environmental and business management systems aimed at improving production processes and the reuse of solid waste, including recovery and energy use" (República, 2010)

The number of companies interested in reverse logistics is growing. In this sense, the dialogue between recycling chain players is paramount for the consolidation of transformations towards a recycling chain that, in addition to being more environmentally adequate, is also fairer and inclusive (Mota, 2005; Bunchaft, 2007 apud. Jesus and Barbieri, 2013). Therefore, it is possible to observe that corporate motivations directed towards promoting businesses with greater socio-environmental responsibility are the definers of the course of the recycling chain and its players. This happens because the companies have enough capital to promote the transformations, while the other players in the chain, due to their reduced economic capillarity, are hostages of the powerful industries' ambitions. SE organizations can be positively affected in this sense, starting from the increase of the interaction between them and the private entities at the top of the pyramid (Jesus and Barbieri, 2013).

2.5.2 The Social Technology

Another great ally of the Solidarity Economy is Social Technology, which aims to increase the value of a productive process through social-technical readjustment (Nascimento et al., 2018). This method can solve social problems in contexts of simplicity, low cost for application for social impact. Christopoulos (2011) states that:

This type of technology originates from a process of innovation resulting from knowledge created collectively by the actors interested in its use. In a political and social context in which emerging interests in the development of inclusive social policies, the processes, techniques and methodologies developed in interaction with the population represent an alternative to facilitate facilitating social inclusion and improving quality of life. (Christopoulos, p. 109, 2011).

Therefore, this technology results from community efforts to promote local innovations that can improve community members' living conditions (Faria et al., 2015). Its construction is political, presenting a social critique regarding the access of traditional technologies, commonly used to perpetuate power relations. Its logic opposes this status quo, acting through spaces and practices that articulate knowledge (which can come from traditional knowledge, daily experiences) and define the working class's resistance.

In SE organizations of waste pickers, this type of initiative is present through political connection and empowerment among the waste pickers themselves. In this context, the level of education and the degree of economic "prestige" are not what define collective knowledge. Waste pickers, through Social Technology, find spaces to develop their own processes and cherish the collective's well-being. These methodological and technical transformations are created from the popular knowledge (Varanda and Bocayuva, 2009), which comes from valorizing the practice in the communities. The technology generated from the optimization of local wisdom and practices is shared among community members and usually has in its solutions a human-centric character. When implemented and disseminated, they can influence public policies, foster the Academy and reinvigorate its political foundations.

2.5 Partial Observations

Chapter 2 contributed to understanding the context, subject, and economic activity that are the objects of the research.

Point "2.1" interpreted how the labor market was affected by the Coronavirus crisis, a key point of our research, focusing on people's consequences in vulnerable situations. We observed the development of actions and public policies focused on mitigating the pandemic's effects in the national territory. Furthermore, we have observed that those most affected correspond to the population considered to be on the margins of the State, such as waste pickers.

Point "2.2" aimed to approach the subject, the waste picker, giving important insights into their socio-economic and historical development, which goes from a condition of complete subalternity to political empowerment through collective movements based on the solidarity economy.

The Solidarity Economy, present in point "2.3", was an important vector for the economic emancipation of traditionally vulnerable groups, who were not part of the formal economy and found in the principles of SE a way to advance and politically demand their citizenship socially. We investigated how the Solidarity Economy was developed in the Brazilian context, with public policies still fragile, volatile to those in power's ambitions.

In point "2.4", we present a socio-legal analysis of the cooperatives and associations formed by waste pickers in Brazil, presenting the most important points in their struggle for recognition and how the construction of legal texts contributed to the reaffirmation of the Solidarity Economy policies, consequently promoting more guarantees to those involved. We also explored the chains' functioning (value, recycling, supply) in which these organizations are inserted.

With great interest and curiosity, we have also mentioned the great potential in the interdisciplinary constructions obtained by exploring this economic activity (point "2.5"), especially concerning the circular economy and social technologies.

We believe that we have met the challenge of understanding how the solidarity economy impacts the formation of waste picker collectives: through the viability of collective modes of production, strong support networks (locally and nationally), encouragement of democratic self-management, and with the endorsement of the political appeal in the construction of public policies that increase the recognition and dignity of the class.

In the next chapter, we will deal with the case study of Belo Horizonte and will seek to achieve our second objective: the identification of the challenges and opportunities arising from the experience of waste pickers in the capital and metropolitan region.

Chapter 3

Primary Analysis: The Case Study

In Chapter 3 of our research, the objective was to analyze the case study of the city of Belo Horizonte and to clarify the questions raised in the research problem that had not yet been resolved in previous chapters of this investigation: how have waste picker solidarity organizations dealt with the effects of the pandemic in 2020? What are the challenges and opportunities emerging from the context for these institutions?

The pandemic and its consequences are new to academic research. As far as the discussions in the field of waste pickers' organizations are concerned, there are few academic references to these workers' reality in the context of the health crisis brought about by COVID-19 in Belo Horizonte. Therefore, this research is considered emergent and necessary to bring to the forefront of the discussions populations emerging from vulnerability. This research's innovative character has motivated us to use primary research methods based on a qualitative investigation employing semi-structured interviews. To do this analysis, it was essential to understand how SE impacts these organizations (Chapter 2), especially in the complex Brazilian context. The previous investigation helped us conduct the interviews with more awareness of the topic and ask our interviewees pressing questions, considering the possibilities of in-depth interviews with semi-structured questionnaires. We emphasize here that the results obtained are not intended to necessarily represent the reality of the whole: the research was done with a sample of actors involved in the work of cooperatives and associations of collectors in the Metropolitan Region of Belo Horizonte, aiming to enhance and encourage discussions on the subject in the academic sphere.

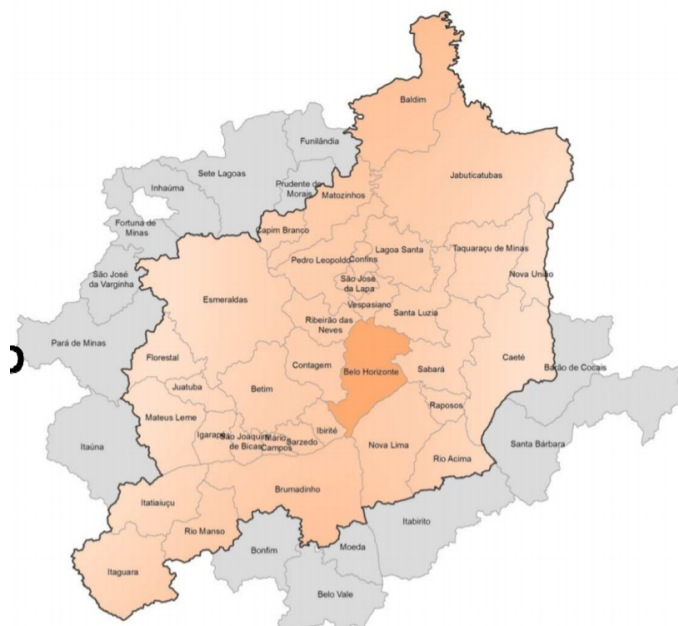
3.1 Introducing Belo Horizonte

This investigation point aims to contextualize the case study by presenting data that will increase the understanding of why the city of Belo Horizonte is considered a reference in the movement of SE organizations of waste pickers. We want to show these individuals' profiles and how the cooperatives and associations exercise their work in

the city, especially through the selective collection. This is fundamental so that we can then explore the questions formulated in the survey applied to these workers and individuals/organizations involved in the city's metropolitan region.

The capital of Minas Gerais, located in the southwest region of Brazil, is the sixth-largest city in the country, with a population of 2,375,151 people, according to the last census of Brazilian Institute of Geography and Statistics IBGE (2010). The city has 58.2% of employed people, with a population with nominal income per capita of up to 1/2 minimum wage equivalent to 27.8% (IBGE, 2010). The town is the center of the so-called Metropolitan Region of Belo Horizonte (MRBH), established in 1973 by Complementary Law No. 14, recognizing the great political and economic impact of Minas's capital Gerais on adjacent municipalities. This political-spatial cut-out dynamized the region's territorial management, facilitating displacement, employability, and allocation among the territories. Currently, 36 municipalities are part of the MRBH, and 16 of the Metropolitan Collar, composed of municipalities surrounding the MRBH.

FIGURE 7: Belo Horizonte, Metropolitan Region and Metropolitan Collar



Caption
Strong orange: Belo Horizonte
Lighter orange: cities of the Metropolitan Region
Gray: cities of the Metropolitan Collar

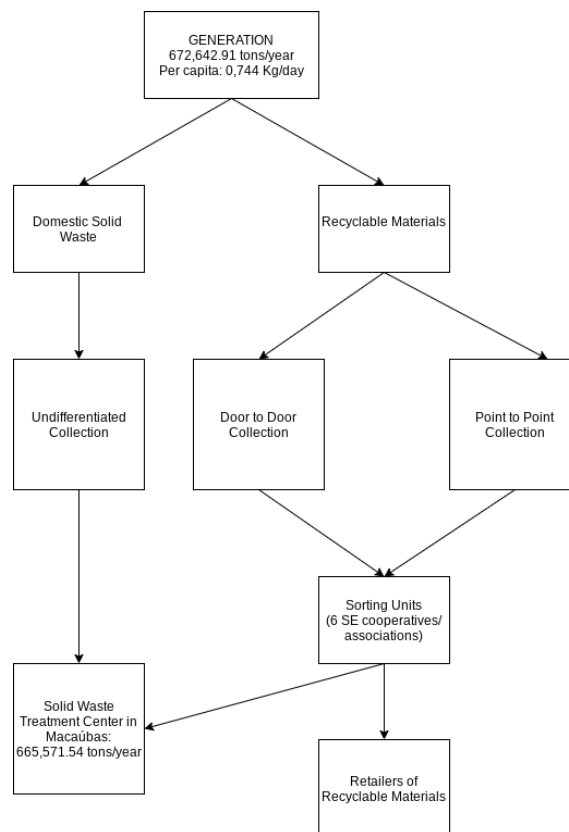
IPEA, p. 9, 2012.

Our choice for the city of Belo Horizonte was motivated by the reason that the urban center is one of the pioneers and a great reference in creating cooperatives and associations dedicated to the collectors of recyclable material. The city is the headquarters of ASMARE, created in 1990, and is the first association of waste pickers in Minas Gerais and the second in Brazil. It was founded by the Street Pastoral, linked to the Catholic Church, whose mission was to achieve the integration of homeless people and their families into the labor market. Aware of the intrinsic limitations to the economic integration of vulnerable individuals, these initiatives used two strategies: first, they propagated organizational experiences based on the solidarity economy to emancipate the waste pickers economically. The second strategy was creating partnerships to increase the capillarity of connections and the strengthening of the collectives of waste pickers. The National Forum of Studies on Street Population, created in 1993, brought together technicians and agents involved in the class projects (Pereira, 2011). Institutions such as *Cáritas Brasileira*, universities, and churches collaborated to hold in 1999 the 1st National Meeting of Paper Pickers in Belo Horizonte. At the meeting, the participants signed the guidelines towards the configuration of a national movement (the already mentioned MNCR), which became official during the 1st National Congress of Recyclable Material Collectors and the 1st National March the Street Population in June 2001 in Brasília.

The more than 220 waste pickers spread in seven registered SE organizations (Minas Gerais, 2020) make the city remain a national reference in the political struggle of recyclable material collectors, maintaining spaces for democratic discussion of the collectors and the community, such as the Waste and Citizenship Forum Belo Horizonte (BH), which "encourages conscious consumption (...), selective collection and valuing the category of the recyclable material collector as an entrepreneur and environmental agent of the urban environment" (INSEA, 2014). Also, the municipality is home to the ORIS group - the Inclusive and Solidarity-based Recycling Observatory - which brings together waste pickers, academics, engineers, and others interested in discussing the reality of the waste picker and stimulating the development of Social Technologies in the sector. During the years, achievements such as support with rents, the offering of machines, among others, were made possible by the public power to the collectors.

With the ratification of the PNRS, it was defined that the priorities of the national solid waste agenda would be the expansion of the selective collection, implementation of reverse logistics systems, encouragement of cooperatives and associations of collectors, and the management of a national information system on the management of solid waste" (PBH, p. 12, 2017). Based on these guidelines, the Municipal Plan for Integrated Solid Waste Management of Belo Horizonte was created, impacting the 9 city regions and influencing the surrounding municipalities to adapt their policies. In the capital, the policies directed towards solid residues have a principle in the Circular Economy and its precepts: reduce, reuse, and recycle. To this end, it was essential to establish strong partnerships with solidarity economy organizations, especially those of waste pickers.

FIGURE 8: Household waste - current situation



(PBH, p. 29, 2017).

The collection of household solid waste is managed by the Superintendence of Urban Cleaning (SLU), which through decentralized coordination in the nine regions of the city, has access to 96% of the population through the door-to-door collection (PBH, 2017). In the city, two types of collection are implemented: undifferentiated and selective. The undifferentiated collection, whose final destination is the landfill, and the selective collection contribute to reintegrating the material's productive value through the recycling chain. This collection, in turn, occurs in two modalities: the selective collection from "point to point," where residents go to specific locations in the city to deliver recyclable material, and the "door to door," where the professionals responsible come to the houses to pick up the goods. According to data from the 2013 Town Hall (2017), the recyclable material collected corresponded, in 2013, to an average of 606 tons per month, totaling 7,271.37 tons per year.

In 2019, the municipality of Belo Horizonte, through SLU, following the recommendation of PNRS, contracted through public call six of the seven organizations of catadores for the provision of selective collection services in the city. The door to door selective collection gave access for waste pickers from Asmare (Association of Waste Paper, Cardboard, and Recyclable Material Collectors); Associrecicle (Association of Recyclers of Belo Horizonte), Coomarp (Cooperative of Workers with Recyclable Materials from Pampulha Ltda); Coopemar (Cooperative of Collectors of Recyclable Materials from the Western Region of Belo Horizonte); Coopesol (Solidarity Cooperative of Workers and Productive Groups from the Eastern Region), and Coopersoli (Solidarity Cooperative of Recyclers and Productive Groups from Barreiro and Region) to reach the recyclable materials from the households. According to the Nenuca Institute for Sustainable Development (INSEA), the measure directly impacted approximately 200 waste pickers and their families. In this contract, the cooperatives and associations were paid to perform the environmental management service by removing recyclable material from the residences. It is important to highlight that the payment is restricted to the amount of solid material removed from the houses: the more residues, the greater the financial reward. If the residue, however, is not removed, the organization is not financially compensated.

On 23 March 2020, after analyzing the Coronavirus's risks and uncertainties, the Belo Horizonte City Hall determined the interruption of the selective collection in the

city. The measure, reinforced by a technical note prepared by the Nucleus Alter-Nativas (Production Engineering, UFMG) in conjunction with the Office of Integration (Architecture and Urbanism, PUC/MG), declared the great risk of contamination intrinsic to the exercise of the selective collection activity in the pandemic. The determination immediately impacted the cooperatives' members in Belo Horizonte and caused concern to independent waste pickers: the municipal registry indicates 1633 families of waste pickers registered in CadÚnico (among those within organizations and independent ones) (UFMG, 2020).

The attitude left the cooperatives and associations surprised and unprepared to deal with the new reality. In the following months, common news reports stated the vulnerability in which these workers found themselves: without collection, they had no income. Survival was limited to Emergency Aid from the federal government of R\$600.00 (see page X). Welfare policies were, more than ever, necessary. The class, composed mostly of people with low purchasing power, was weakened on two fronts: i) the inability to work due to legal determinations and ii) the limitations imposed by the risk that the disease imposed on workers in "risk groups." Selective collection resumed only on November 9, 2020. However, the conditions of the organizations, economically and socially, were impacted during this period. To find out more about the transformations undergone by these entities and the opportunities and challenges of these solidarity economy institutions, qualitative research methods were used to help clarify the questions raised.

3.2 Qualitative Analysis

During this period, the changes that have occurred are not yet saturated in the literature due to their unprecedented nature, being a research gap that has driven our curiosity. In this sense, from this point on in the research, we needed to use qualitative methods to fulfill research purpose (iii), to recall: "what are the challenges and opportunities of the pandemic identified from the experience of the organizations of waste pickers in the Metropolitan Region of Belo Horizonte." We set out to use a qualitative research method for data collection. The choice was made based on the belief that this methodology enables great investigative effectiveness in searching for

answers that value the actors' experiences in the midst of this distinct historical and socio-economic context.

3.2.1 Presentation of the sample

The sampling method chosen was non-probability, where individuals were consciously selected for their position among the stakeholders. The technique was selected because the aim of the research is not to test a hypothesis about a population but to foster the further the development of an initial comprehension of the potential and challenges of waste pickers in this pandemic; which is yet to be explored and is innovative in the field of research as it is a new phenomenon. To define who would be the actors invited for the interviews, it was essential to conduct secondary research to understand who the stakeholders are around the *catadores* organizations. From the study, a non-probability group was selected, as the objective of the research does not require the proof of a specific thesis: we emphasize the interest in provoking quality academic discussions without appropriating absolute truths since our sample does not aim to represent the entire movement of the city of Belo Horizonte.

Group 1 is formed by the organizations of recyclable waste pickers from Belo Horizonte and its metropolitan region. As protagonists of the research, this is the group that counted with the greatest variety of interviews. The decision to include organizations from the Metropolitan Region came from the interest in observing how the consequences of the Coronavirus influenced the measures taken by the organizations and the public policies that have been implemented in the region that, supposedly, was created due to the inexorable influence of the capital over neighboring municipalities. We interviewed 5 institutions from Belo Horizonte (BH) and 4 from the Metropolitan Region (MRBH) cities. They are:

TABLE 6 : Cooperatives and Associations Interviewed and Day

COOPEMAR (BH)	09/12/2020 0
COOPERSOLI (BH)	01/12/2020
COOPERSOL (BH)	01/12/2020
COMARP (BH)	18/12/2020
ASMARE (BH)	11/12/2020
COMARB (MRBH)	16/12/2020
ASSOCIAÇÃO MÃOS AMIGAS (MRBH)	09/12/3020
ACAMARES (MRBH)	09/12/2020
UNICICLA (MRBH)	01/12/2020

Source: made by the author.

Group 2 was formed by government stakeholders: the creators, implementers, and public policy evaluators. This group is considered a strategic partner of the organizations since, through their recognition and contribution, the collectors' work has been increasingly recognized and debated. The group, in turn, presents entities of local, municipal, and state relevance. After presenting the potentialities of the discussion and the research motivations, we interviewed the representative responsible for Mobilization at the Superintendence of Urban Cleaning of Belo Horizonte; the person responsible for the Center of Reference in Social Assistance in Nova Uniao, in the metropolitan region of Belo Horizonte; the director of Environmental Education and Institutional Relations of the state government, and the director of the Center of Reference in Residue in Minas Gerais, shown here:

TABLE 7: Governmental Bodies Interviewed and Day

Center of Reference in Residue (Centro Mineiro de Referência em Resíduos)	11/12/2020
Director of Environmental Education and Institutional Relations of the Government of Minas Gerais	12/12/2020
Head of the Social Policies and Mobilization Department of the Superintendence of Urban Cleaning (SLU)	16/12/2020
Social Assistance Reference Center (CRAS)	02/12/2020

Source: made by the author.

Group 3 was made up of other stakeholders with an important role in the associations and cooperatives of collectors. This group, of a mixed character, aims to promote insights not necessarily observed from the organization and government axis. It counts on the support of two technical institutions that assist the waste pickers; the academia, present through the participation of a university professor of environmental engineering, with vast experience in discussions about this type of organization; two federal public institutions, donors of recyclable material to the organizations; and representatives of the supply chain of the waste pickers: an intermediary company, and the representative of an industry that uses recyclable materials for the manufacturing of its products. This diversity allowed us to observe how these organizations are observed by various agents, which impact the performance of their work.

TABLE 8: Further Stakeholders and Day

INSEA	21/12/2020
University Professor J.	22/12/2020
Sustainability NGO representative Jk.	05/01/2021
Attorney's Office of the Union (AGU) - Donor	18/12/2020
Regional Labor Court - Donor	30/11/2020
Intermediary recycling enterprise	07/12/2020
Industry	08/12/2020

Source: the author.

Considering the particularities of each group, we chose to conduct the discussions in a semi-structured interview, where the guiding questions helped guide the research and analyze the data in common, without restricting the potentiality of the conversations held. In this context, the questionnaires were designed to achieve research-relevant insights.

3.2.2 In-depth interviews: explaining the questionnaire

The questionnaires' (appendix, 4, 5, 6) general goal was to assess the challenges and opportunities emerging from the pandemic for the waste pickers' cooperatives and associations in Belo Horizonte. For this, it was necessary to ask questions that could correspond to the reality of the individuals that are part of these organizations and their partners (Tables 8 and 9). Twenty interviews were conducted during different days of the interviewee's choice (appendix 1). Two questionnaires were previously prepared,

tailored to answer questions concerning the waste pickers' reality and their organizational experiences in the middle of a pandemic. The first one was applied to individuals who are part of the cooperatives and associations'. The second was applied to institutions considered as "partners" to the government and other stakeholders. Table 10 synthesizes the underlying motivations of specific sets of questions.

The questions 1 - 2 - 3 - 4 - 5 - 6 - 7 - 17 tried to reach the profile of the sample of people being interviewed. This allowed us to understand better the socio-demographic group we were investigating, vastly mentioned during the secondary research. It also indicates, inside of our sample, the level of social vulnerability these individuals are subjects.

The questions 8 - 9 - 12 - 16 - 23 - 24 - 43 dealt with the waste picker socio-political construction of his work, trying to grasp the reasons (why being a part of a cooperative is an opportunity?) The catador exists and resists, and we aimed to see how the development of the class's self-perception is nowadays.

Questions 10 - 11 - 18 - 19 - 20 dealt with the daily work reality in the middle of the pandemic. The restrictions in Belo Horizonte promoted changes for the occupation. Here, we were interested in seeing how these changes were being perceived by the waste pickers (there are positive points in the "new normal"?).

Questions 21- 22 - 34 - 35 - 36 aimed to tackle one of the most severely affected areas for the waste pickers: their income. With the closing of the cooperatives and associations, these professionals had to be extremely resilient. We want to know how this process was and the challenges/ opportunities they had in the way.

TABLE 9: Underlying Goals for the Interviews (*catador*)

QUESTION STYLE	UNDERLYING GOAL	A (catadores)
Profile	Is the profile of my research sample related to the data offered in the secondary research?	1 - 2 - 3 - 4 - 5 - 6 - 7 - 17
Importance of work	How has the political and social construction of the waste picker been? How do they recognize themselves?	8 - 9 - 12 - 16 - 23 - 24 - 43

Reality of daily work	Have there been any changes in the workday? Were they beneficial or harmful?	10 - 11 - 18 - 19 - 20
Economic reality before and during Corona	How has Corona affected the waste picker's economic emancipation process?	21 - 22 - 34 - 35 - 36
Workplace	Have there been changes in the workplace? Have the warehouses undergone any changes?	13 - 14 - 15
Medical access	Is access to health care, especially during the pandemic period, seen as by the collector? Any concerns regarding insalubrity and need for medical attention?	25 - 26 - 27 - 28
Impact of COVID-19	What were the reactions to the effects of the coronavirus? How did networking contribute to this process?	24 - 29 - 30 - 31 - 32
Direct questions: lessons, dangers, opportunities	Has something that has not yet been spoken been expressed here? Do organizations see crisis as a form of entrepreneurship?	33 - 37 - 38 - 39 - 40 - 41
Emotional Factor	How do crisis perceptions affect future prospects?	42

Source: the author.

Questions 25 - 26 - 27 - 28 address another pressing issue related to the waste picker that was endorsed during this crisis: access to medical facilities. We wanted to know if this professional, immersed in an unhealthy environment, has the support of the state towards guaranteeing his physical integrity.

Questions 24 - 29 - 30 - 31 - 32 were created to understand how the Coronavirus impacted the networking and community awareness created by the associations and cooperatives. They are important to effectively understand the level of disruption or opportunities caused by the virus.

The questions 33 - 37 - 38 - 39 - 40 - 41 were specifically planned to be at the end of the conversation. Considering their “requirement” for strong statements

regarding measures taken, creation of opportunities, and recognition of threats, we believe that the engagement and discussions created in the other questions would open the possibilities of answers with a deeper consideration of the activities they endured until this point in the journey.

Finally, question 42 allowed addressing the feelings, important indicators of underlying thoughts that could be addressed at the end of the interviews.

Table 11 dealt with the underlying objectives of the partner interviews.

TABLE 10: Underlying Goals for the Interviews (*partner*)

QUESTION STYLE	UNDERLYING GOAL	B (<i>parcerias</i>)
How the partnership works	How they are connected to the waste pickers?	1 - 2 - 3 - 4 - 7-8 - 9
Impact of COVID-19	How Covid-19 impacted the partnership?	5 - 6-10 - 16
Adaptations and perceptions	Ways to develop the partnership in middle the pandemic?	11-12 - 13-14- 15
Improvements and potentialities	Ways to develop the partnership in middle the pandemic?	17-18

Source: the author.

Considering the wide range of partners interviewed, we set out to outline questions that could be developed with multiple stakeholders. It is worth mentioning that interviews with partners ennoble the work, broadens the research's vision, and provides new insights.

Questions 1 - 2 - 3 - 4 - 7-8 - 9 aimed to understand the foundation of the relationships between partners and waste picker solidarity organizations, to uncover the "reasons" for the connections. This is important to understand what the partner's motivations are: some respondents, for example, aimed only at the business relationship; to others, it is the social emancipation of the individual.

Questions 5 - 6-10 - 16 sought to understand if there were any changes in the relationship with the organizations because of COVID-19 and what measures were taken to maintain the partnership in pandemic times.

Questions 11 - 12 wanted to know the perceptions of the changes caused by Corona and whether any adaptations were made permanently because of the pandemic. These questions help observe how necessary or interested the partners are in supporting the solidarity associations, capturing opportunities for engagement, or restructuring the relationship during this period.

Questions 13 - 14 - 15 required the interlocutor to express more directly their perceptions about the potential of SE waste picker organizations, complementing what was intended to be accomplished through questions 11 and 12.

Questions 17, 18 encouraged the partners to think about ways to improve their relationship with the cooperatives. These questions were especially productive because they accessed various potentialities in the SE organization and the partner's relationships.

Finally, we asked questions 19 - 20 - 21 about the biggest learnings, biggest dangers, and room for opportunity in the midst of the pandemic. Just as we asked the waste pickers at the end, we tried to capture the perceptions of the potentials and challenges of other chain members as well.

Chapter 4: Presentation of Findings

The presentation of the results of the questionnaire was based on the synthesis of the interviews, coded in a table (see appendix). Here we will present a reflection about the data obtained, grouped in blocks already presented in point 3.2.2 of the work. We will make the distinction of each group: members of waste picker organizations (Category 1); government (Category 2); and various stakeholders (Category 3). We remind you that the data explained here has the objective of promoting the increase of discussions about these solidarity organizations, their challenges and perspectives, without idealizing that the results obtained here be considered as representing the whole.

4.1 Category 1

Regarding the questions that sought to elucidate the "profile" of the waste pickers, we observed that most of the representatives were female (9 women and 2 men), between 41 and 60 years old (8 in this age group and one between 31 and 40). These individuals have varied levels of education: elementary school (1), middle school (2), high school (2), and university (3). For us, the reach of the chain at different educational levels demonstrates that these individuals involved in the solidarity economy recognize the potential of waste management and face the preconception that, as the CRAS representative said during his interview, that the "waste is the last barrier to human dignity". The group presented has between 6 - 10 years (4) and more than 10 years (5) involved in the recycling chain.

The questions regarding the "importance of the work" commenced by asking why the professional should work cooperatively. The answers were: necessity (2), unemployment without qualification (1), professional objective (3), and (3) another reason. In their justifications, what the waste pickers most said was about the mission that their work has for the planet's sustainability.

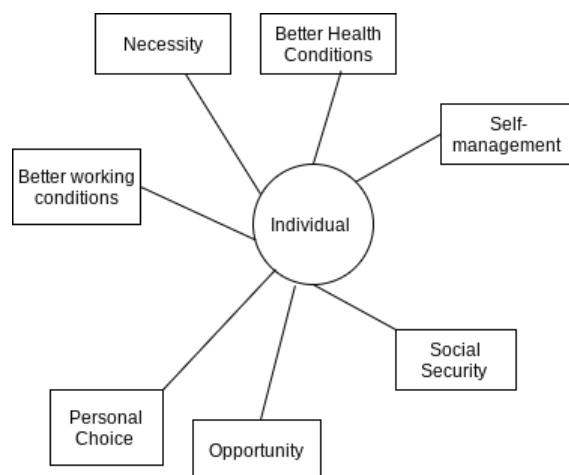
"I see the work of the catador today and I see it as a "mission", to take food to people's table's. They say we want to fight against poverty... we, catadores,

fight against poverty everyday. The capacity that I have of speaking, technical knowledge, everything, came from the catadores, a lot of knowledge. Many women created families and generated income through the catacao when the concept of recyclable materials did not even exist; there was just cardboard. They created ASMARE, and other entities in a national and international level; we are global references, coming from the street. It is a technology from the people. Now that it has started to give money, the companies are all looking, the capitalist is looking. Actually, we create technologies, but our people do not have access to university study. We must elaborate on our people. We need to formulate public policies, do projects." (Associacao Maos Amigas representative).

Still, on this topic, we find a connection in the answers about the importance of the work promoted by these organizations: through sustainability, social inclusion, love for the community, and belief that a new economy is possible are unifying waste pickers' manifestations.

"When you are in the process of building an association, you find people who are fragile because of their life story... you get women in extreme social vulnerability, financially, domestic violence, alcoholism, drugs, among others, especially those who are in the garbage dump. Society sees this as the last option that exists for work. Today we show that waste picking is one of the most important things in the country. The national solid waste policy has helped in this. We show people that they are not acting like subhumans, like a subcategory. That this opportunity can be seen in a completely different way, from victims to protagonists. Today the packaging stores depend on this work, on this labor. This should be exalted, not minimized. Today, they have this awareness of their work's environmental and social role, and they are empowered, recover their self-esteem, and change their history. It is not only about them. It is a consequence. However, I preach that we should be well paid for what we do, society should recognize that".

FIGURE 9: How cooperatives affect conditions from working people involved



Source: the author.

When asked about their main functions at work, it was clear that these settings provide a capillarity for the development of a diverse line of work. All of them are, first and foremost, *catadores*. However, other activities are developed as part of their organization's functions: the Table 11 shows that beyond sorting materials, they also act with Public Relations, Documentation, Commercialization, among others.

TABLE 11: Describe three main job functions.

COOPEMAR	Sorting Materials	President	Cleaner
COOPERSOLI	Leadership	Awareness creation	Political
COOPERSOL	Leadership	Awareness creation	Commercialization
COMARP	Sorting Materials	Public Relations	Press officer
ASMARE	Sorting Materials	Public Relations	Runner
COMARB	Sorting Materials	Administration	Meetings
ASSOCIAÇÃO MÃOS AMIGAS	Sorting Materials	Documentation	Reaching partnerships
ACAMARES	Social Inclusion	Environmental agent	Take care of people
UNICICLA	Sorting Materials	Administration	Political

Source: the author.

Regarding their daily work activities, we could observe that most of them had their job functions changed during the pandemic. There have been shifts in communication patterns and tighter sanitation measures, work start and end times (to avoid crowding in public transport). Interestingly, not all the cities around Belo Horizonte in the Metropolitan Region have implemented safety measures or stopped activities. Therefore, the associations in these localities examined for information and

recommendation through second-degree networks: a set of organizations that support each other and exchange resources and information towards mutual development.

The economic reality of these organizations suffered a serious setback. Considering that the SE model is known for reaching a level of economic empowerment for its participants, the COVID-19 pandemic damaged these organizations' foundations in Belo Horizonte when the selective collection was closed for seven months. The *catadores*, without ways to reach their basic resources, had to support themselves with welfare policies, such as the Emergency Assistance.

Even though they received the basic food basket from the municipality, the waste pickers felt the consequences of what they considered a lack in the contract: what could happen with the incidence of pandemics. Being contracted by the city and paid only from the garbage collected, the stoppage of activities fundamentally damaged their economic empowerment. Representatives clamored during the interview: "We want the City Hall to acknowledge the *catadores*. Since they already acknowledge that the selective collection done by cooperatives is way more cheap, on the other hand, they should pay the people inside of the warehouses as well" (COOPEMAR Representative).

During the months of the strike, the city, in partnership with organizations and academia, created a safety protocol to guarantee the workers' safety. In November, the cooperative members and associates were allowed to return to their workplaces, subject to strict health safety policies, which all cooperatives said they comply with. These transformations have driven the process of adaptation of the institutions. When asked, 7 out of 9 institutions affirmed that they would make long-term changes that were defined because of the pandemic, particularly: maintenance of cleaning methods, improvement of the infrastructure of the sheds, increase in social distancing measures. One of the answers even indicated the use of an opportunity generated to fight against the harmful effects of the pandemic: the cooperative started to process its own plastic.

When asked whether partnerships with clients and donor institutions have ended, we received an interesting piece of information, which was even confirmed by the government representatives interviewed: with the stoppage of the waste pickers, the recycling business's demand for and profitability had increased. Therefore, private initiative, through micro-entrepreneurs, was integrated into the recycling chain. When

the cooperatives and associations returned to work, the increase in the competition was immediately felt.

TABLE 12: effects of the shutdown on SE organizations

COOPEMAR	Donors became competitors
COOPERSOLI	Donors became competitors
COOPERSOL	Majority of public servant donors
COMARP	The decrease in materials / paused partnerships
ASMARE	The decrease in materials / paused partnerships
COMARB	Increase in the price of materials
ASSOCIAÇÃO MÃOS AMIGAS	Paused partnerships
ACAMARES	Lost partnerships
UNICICLA	Lost partnerships

Source: the author.

When asked about the biggest challenges they are experiencing in the pandemic, they were highlighted:

TABLE 13: challenges faced during Covid-19 pandemic

COOPEMAR	Micro-Entrepreneurs as competitors/ independent waste pickers
COOPERSOLI	Reduced Salary/ lack of selective safe

	selective collection
COOPERSOL	Try to normalize everything
COMARP	Security protocol/ networking support
ASMARE	Reduced salary/working hours/decrease in material
COMARB	Adaptations on working with the material
ASSOCIAÇÃO MÃOS AMIGAS	Decrease in material
ACAMARES	Reduced salary/ use of PPE/ sanitation
UNICICLA	Reduced Salary

Source: the author.

As members of the collectives, they were asked what was the biggest lesson of the pandemic. The word cloud presented the terms most mentioned by the waste pickers:

FIGURE 10: Word Cloud about the biggest lesson of the pandemic for SE organizations



Source: the author.

An interesting point is that 7 out of 9 organizations stated that there is room for opportunity in the pandemic. Among the initiatives, were highlighted: entrepreneurship, developing new skills, encouraging reuse stores, opportunities to publicize work, and opportunities for networking within the company.

4.2 Category 2

In our interviews with the government, we had the opportunity to engage with the Center of Reference in Residue of Minas Gerais, Director of Environmental Education and Institutional Relations of the Government of Minas Gerais, the Head of the Social Policies and Mobilization Department of the Superintendence of Urban Cleaning (SLU) and the responsible for the Social Assistance Reference Center (CRAS) in Nova Uniao (MRBH). Engaging with them was important to gain access to how public policy and government engagement with waste pickers is being done.

When asked about the functions of their sectors, they replied:

TABLE 14: Three main functions of the sector

Center of Reference in Residue (Centro Mineiro de Referência em Resíduos)	Regularization of the Recycling Grant	Expansion of the Recycling Grant	Re-opening of the Center of Reference in Residue
Director of Environmental Education and Institutional Relations of the Government of Minas Gerais	Environmental Education	Directing waste from public buildings to cooperatives	Creation of economic sustainability policies in buildings
Head of the Social Policies and Mobilization	Mobilization and Dialogue	Creation of public policies	Creation of the COVID-19 Protocol

Department of the Superintendence of Urban Cleaning (SLU)			
Social Assistance Reference Center (CRAS)	Organize programs, projects, benefits and social assistance services.	Protection and comprehensive care of the family.	Elaboration, execution, monitoring and evaluation of social projects Community articulation.

Source: the author.

Regarding the Center of Reference in Waste, the organization promotes engagement and discussion of public policies with waste pickers, besides coordinating a physical space for the class and the monitoring of the Bolsa Reciclagem (Recycling Grant). The person in charge of the sector informed us that the grant, which promotes the payment of collected material to cooperatives and associations, is a large portfolio of the state government, aiming to pay for workers' environmental services. The management of the public policy relies on the participation of the waste picker organizations, the Public Ministry, and the State Government, which must evaluate the documents and proofs of the associations quarterly and make the payment. The director affirms that, however, public policy's effectiveness depends a lot on the interest of the government.

To improve the relationship with the collectors, he believes that the way communication is done between the state government and the cooperatives should be more capillary. For this reason, he believes that the inclusion of technologies to contact these professionals was a beneficial change since people can meet without the need to be geographically close. However, he recognizes that the moment presents many difficulties for the class, usually an alternative to income generation for vulnerable populations. As the cooperatives' greatest lesson, he affirmed that is the positioning of the government as a partner of these organizations. The danger, for him, comes from work and the fear of unemployment. To overcome this period, the manager believes that the opportunity lies in the expansion of the business model currently exploited by the *catadores*.

The Secretary of Environmental and Institutional Education of the Minas Gerais State government has reinforced the government's commitment by creating a primer on COVID-19 to be disseminated throughout the state. Although the relationship between the State and the Collector has been legally motivated by Decree, from the obligation of donation of recyclable materials produced in public buildings to the cooperatives, it believes that a way to make the relationship fairer is with the payment for services rendered, beyond the Recycling Grant. When questioned, the professional mentioned that cooperatives are important in fighting for the individual to leave the welfare policies. As a waste picker, he has the opportunity to provide a service to the community and develop social technologies. This organizational model has great potential, according to her, to increase popular knowledge.

To improve the relationship between the State government and the waste picker, she believes in the elaboration and implementation of policies that motivate the entrepreneurship of the waste pickers. As the greatest learning, she believes it is the class's awareness about the need for PPEs, with the greatest danger being the discouragement of companies interested in developing the selective collection. Finally, she reinforces that security measures and the promotion of entrepreneurship are the class's best opportunities.

The person in charge of the CRAS in Nova Uniao, a city in MRBH, mentioned during the interview the challenge of carrying out social projects in the midst of the pandemic. At the moment, families in vulnerable situations were being mapped so that they could be offered training in associativism to include them in the labor market.

"The PNRS advocates social work with low-income families to form associations and thus train the necessary labor force to work in the productive chain. The social service has the task of helping and mapping, referencing these families, bringing them to the participation space, working with them the notion of associativism and the third sector, and putting them to work. From then on, they walk "on their own legs". From the formation point of view, our participation is more elementary. From the point of view of the productive chain and sustainability, we are supporting actors. But, in any case, we do not stop working there, in the heart of the situation, this need for sustainability" (CRAS Representative).

This year, they have sought to guarantee the existential minimum for the collectors to guarantee the emancipation and autonomy of the families. Their partnership with waste pickers, at the moment, is based on the organization of the

Forum on Waste and Citizenship. Unfortunately, the event has been canceled, and his visits to the waste pickers' warehouses have been restricted. He also mentions that job security has become even more deficient.

He reinforces the importance of the cooperatives and associations of waste pickers for the community and the State since they offer expertise to develop necessary work with lower costs. The transformation of people's lives from the work of the catadores takes place through personal development using social, psychological, and political empowerment. When asked about three ways to improve contact with the SE waste pickers, he advocated following up more closely with the waste pickers' families, establishing collective mentoring links, and encouraging the expansion of the waste pickers' work. When asked about his biggest lesson, he said that "invisibility is a human vanity"; believing that the biggest risks of the pandemic are infection and not taking advantage of the moment to reinforce the value of their work, which should happen from the demand of public policies designated for the improvement of their professional relevance.

Head of the Social Policies and Mobilization Department of the Superintendence of Urban Cleaning (SLU) endorsed the necessity to engage in dialogue and mobilization with the catadores, aiming to give them feedback on Sanitary policies enforced in the city, which stopped with the selective collection for seven months. She mentioned that her job functions changed to engage in communication through the internet, create the COVID-19 Protocol for the city, realize emergency meetings with community leaders, and prepare waste pickers to work again through the internet course formation. Considering that her sector is responsible for the selective collection contract, there was a high demand for welfare during the months the service was interrupted. The City Hall was determined to assist with PPE, as she guarantees high technical, legal, and political forces in favor of the inclusion from the catador. They also provide space for knowledge transfer through the Forum Waste and Citizenship Belo Horizonte to exchange information and construct tailored public policies for waste pickers in the city:

“(...) in a space she celebrates is also an empowerment environment for women. We should think about the new centralities. Selective collection can be complementary income for the population of more vulnerable neighborhoods. We need to advance in these areas in another model of selective collection. We need to design the public policy of how to reach with

the selective collection in peripheral regions and with less purchasing power.”
(SLU Representative)

She believes that the partnership can be enhanced by improving the SE organizations' contracts and the SLU, with direct channels of communications and the creation of bonds with the population. One of the biggest learnings, in her opinion, is that the government is assuming a position of partnership with the cooperatives and associations. For her, the biggest threat from the pandemic for these organizations would be protocol noncompliance. Finally, she reaffirmed the potential positive of reinvention of these organizations.

4.3 Category 3

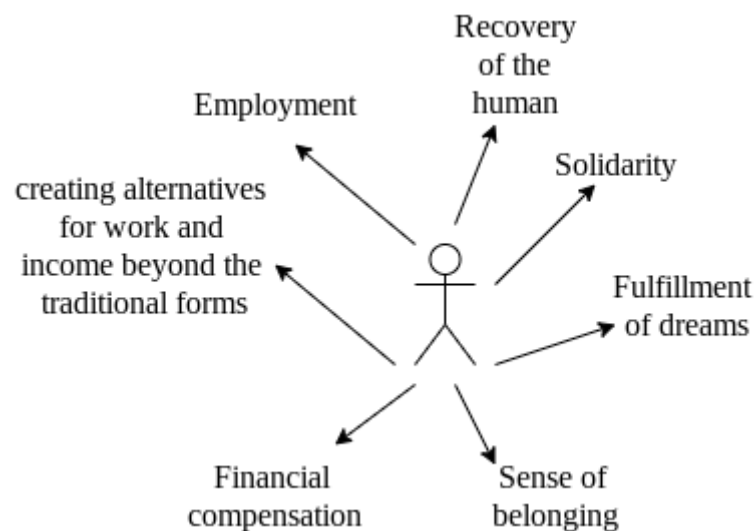
In this part of the research, we presented the synthesis of the last category we interviewed: non-governmental partners. The exploration of the cooperatives' link and associations with these institutions in the recycling chain is necessary, understanding that the government in its various spheres is not the only stakeholder that impacts these ES organizations. We interviewed representatives from the AGU and the Regional Labor Court (TRT), public agencies known as "large donors of paper and solid waste." We also sought knowledge from specialized technical advisors, INSEA, and an NGO in Sustainability. We also interviewed a university professor in the area of environmental engineering. Finally, we interviewed an intermediary recycling company and a final destination company in the value chain, making clothing and wallets from recycled materials.

When we asked whether they believe cooperatives and associations transform the lives of the people involved in them, all the stakeholders said yes. An interesting aspect is that, when justifying this, the companies belonging to the recycling chain reproduced only the economic view of these organizations, answering that they promote financial compensation and employment and that they generate inputs for their associates. The others, on the other hand, also tried to reproduce a human view of the activity.

“We work with people who are on the margins. We say that garbage is the last frontier of human dignity, because it is in the leftovers of society, of consumption, that these people are finding the means to survive. So they are

practically on the margin when it comes to the question of people's fundamental rights. When we organize people to come and work in a joint and collective way, you are working so that they can meet each other again, integrate and socialize in a collective space, and then you value the waste pickers' profession. This was one of the first themes that INSEA worked on in its origin, because until then the profession was not regulated by the government. We have worked on many frameworks of the legal framework that recognize this dimension of work and of the right, and when people are outside of this, they are also outside of the possibilities. Therefore, it is necessary that there is an effort from the public power, from society, from organizations for a million workers in Brazil, and at least 700 thousand still continue in this process of indivisibility in society. Therefore, it is necessary to give dignity, give voice, and help these people to find and reconnect in the urban space from the recognition of dignified work.!” (INSEA representative).

FIGURE 11: actions and functions related to the relationship with the Organizations of Catadores changed after Corona



Source: the author.

When asked about how the dynamics of partnerships changed during COVID-19, the companies said nothing changed during the pandemic in their relationships, while the other partners, technical in nature, in academia, and with donor agencies, felt the transformations in lines of communication and the amount of waste available for donation. TRT shared with us the differences in the numbers of solid waste donated between 2019 and 2020:

Table 15: Recyclable Material destination quantities for Asmare in 2019 and September 2020 (tons)

2019		2020	
janeiro	43.404	janeiro	860
fevereiro	1.063	fevereiro	1.059
março	854	março	376
abril	1.114	abril	0
maio	2.797	maio	0
junho	11.538	junho	10
julho	19.890	julho	259
agosto	4.365	agosto	0
setembro	9.970	setembro	77
outubro	22.475		
novembro	6.951		
dezembro	11.215		

Data offered by TRT 3° Region MG.

When asked about the three ways to improve the Partnership with Associations and Cooperatives:

TABLE 16: three ways to improve the Partnership with Associations and Cooperative

INSEA	Economic Development	Increase awareness of environmental policies	Energetic utilization of waste
University Professor	Increased awareness of the university	The commitment of academia to solving problems	Increase in the formalization of relations
Sustainability NGO representative	Improved communication	Improving the way they demand;	Less Academic Communication

Attorney's Office of the Union (AGU) Sustainability Sector MG - Donor	Transformation in Legislation	Environmental education	Payment Quota for environmental work performed
Regional Labor Court Sustainability Sector MG - Donor	Correct separation	Removal of waste on time and in the correct manner	Material weighing
Intermediary recycling enterprise	Try to find ways to make the organization loyal to them	Help the organization's warehouses with a better structure	
Industry	Structural way society deals with waste pickers	Inclusion of waste picker	

When asked about the cooperatives' biggest learning during the pandemic, partners agreed that strengthening class solidarity was a key point. Beyond that, the organization of labor and the insalubrity of spaces was also highlighted. Their essential role as environmental actors was reinforced, and with waste management in the spotlight, the challenges raised for *catadores* through the inclusion of new private actors interested in developing competitively in the area.

“(From the pandemic) two things became clear: first, how important it is for them to be formally included in waste management, because if they have a contract and etc they would have a way to survive, from discussing with their contractors how it would be. The second thing is that it became very clear to the market itself the importance of the collectors (...) the industry missed the material, which the collectors are. When they were forced to stop working, the link in the chain was broken. It was a great threat to the *catadores* (the interruption of selective collection), but also to the recycling chain itself.” (NGO Representative).

This group identified many threats from the pandemic: first of all, the danger of infection in the workplace in case of non-adoption of sanitary measures, that would lead to the closure of cooperatives once again. Another challenge is the invisibilization of the

waste pickers, the loss of space with the new enterprises in waste management. One of the answers goes further, stating that the lack of income generation can culminate in the ending of the ES organization in extreme cases.

On a lighter note, when asked about the potential opportunities that could emerge from the COVID-19 pandemic, the interviewees mentioned the possibility of creating new business models that could reinforce the importance of their role in the recycling chain. They also mentioned the possibility of publicizing more the work of the catadores with awareness-raising campaigns.

Chapter 5: Conclusions

5.1 Answering the research question

An exploratory analysis of organizations of waste pickers in Belo Horizonte: challenges and opportunities arising from the COVID-19 pandemic". To conclude our research, we recover the central research question: *"How has the pandemic influenced waste pickers' solidarity organizations, given their challenges and opportunities?"*. From this key question-two specific objectives were unpacked: (i) how has the solidarity economy impacted the formation of collectives of waste pickers; and (ii) identify the pandemic challenges and opportunities arising from the experience of the organizations of waste pickers in the Metropolitan Region of Belo Horizonte.

To answer the first specific question, we return to what we observed in chapter 2 of the research. There, we shared the learnings about the Solidarity Economy, which has found deep roots in Brazil, a country that stills struggles with deep inequality, which has been based on racial and gender exclusion since its formation. We observed that the organizational experience was an important vector of economic inclusion from vulnerable groups, striving to be included in the formal economy. We could realize that, in fact, the Brazilian context gives an ideal environment for the sedimentation of SE among collectives of waste pickers: the political factor as a principle enhances the search for sources of income that allows them to have access to social services as guarantees. Through SE organizations, the lack of support and basic resources that characterized them as individuals no longer exist: now, as part of an organized collective, the waste picker has gone from a condition of subordination to being an active builder of their own history. We consider, therefore, the SE as an enabler of direct democracy and economic inclusion.

To answer the second question, we identified challenges and opportunities arising from the experience of waste pickers in the organizations and other stakeholders involved. Chapter 4 (Presentation of Findings), allowed us to have an overview and a clear vision of the opinions and struggles of our interviewees. In the conclusion, we want to highlight some of the pressing points discussed in the previous chapter. As challenges, we observed that the process of moving people from a situation of

assistance to economic emancipation was impaired. The abrupt and unexpected form of the illness and its economic and social consequences did not allow the organizations to take proper measures to contain the damage and prepare their associates/co-operators. Therefore, many people found themselves without their salaries: let's remember here that, as co-owners of their institutions (cooperatives and associations), the lack of work directly impacts the financial return. In this case, many of the waste pickers in the organizations were without pay for nine months. To mitigate this drastic situation, which rendered the individual unable to work, we were able to observe a great characteristic of Solidarity businesses: the movement of networks for the guarantee of basic survival goods. During the period, they obtained food baskets and personal protection products donated by the community, partners, and the government. Many organizations saw this as an opportunity to encourage popular awareness about the impact of the waste pickers, through the use of social media, television, radio, among others.

Another major challenge was the performance of the work itself. From their work training, these individuals ran serious risks to their health and to the people around them, because discarded solid residues that were handled could be infected. To mitigate this effect, the city of Belo Horizonte, in partnership with research institutions and the cooperatives and associations, created a safety protocol that went into effect in November. The establishment of this safety protocol reinforced the opportunity for the cooperatives and associations to modernize, sanitize and organize their space better. In addition, the challenges inherent in the work gave scope for the strengthening of networking relationships, where organizations in Belo Horizonte and its metropolitan region could exchange experiences and influence each other. Regarding the government, there is an opportunity to strengthen the networks related to public policies between the capital and nearby cities, in order to standardize and give protagonism to the aspirations of this class.

However, besides the dangers inherent in the uncertainties and lack of financial independence during a pandemic, crisis contexts can be great innovation drivers. Therefore, having made the above considerations, we can affirm that the influence of the pandemic destabilized states, claimed lives, and forced the institution of serious lockdowns, which did not allow any economic preparation for the workers. It

challenged these individuals to seek alternatives for their survival, reinforcing the importance of Solidarity and networking for the mitigation of the socio-economic effects of the crisis. During this period it was possible to reconfigure the dynamics between cooperatives and their partners, from the reinforcement and support of allied institutions; and even the opposite effect: the appearance of new competitors that do not necessarily follow the principles and values of solidarity organizations. The entrepreneurial spirit and the search for alternatives incite the development of options linked to the circular economy and the growth of social technologies arising from periods of crisis are presented as great opportunity drivers from this moment.

Based on the information offered during the interviews, we decided to speculate about two possible crisis scenarios for the cooperatives, which will require joint work, support from other solidarity enterprises, public policies, and alignment of strategies:

(i) The first is that, with the increase of competitiveness or the rise of the obligations that are part of associations, the principles inherent to solidarity economies, such as direct democracy, horizontal and solidarity-based self-management, and the political appeal of collective demands, will be at risk. In this case, the opportunity is the empowerment and integration of the cooperative members in their responsibilities: they also need to feel ownership and understand the rights and duties connected to SE organizations. In this case, we would encourage the connection with institutions that can provide responsible training to cooperatives and associations, through the partnership with Technical NGOs, government departments, among others.

(ii) The second scenario is the imminent danger to the organizations' financial rewards by the expressive increase of competitors from the private field. Waste management is often considered a marginal profession. However, the pandemic has transformed this status quo, as the scarcity of recyclable materials on the market has driven up prices, making the market attractive to private companies. In this context, the opportunity will be to strengthen the existing networks of waste pickers so that, in a united front, they can continue to negotiate with the city government for a monthly payment for environmental services rendered, beyond the financial reward for the material removed from the environment (which already happens today through the selective collection). This measure, if it happens, will enable the class to be more valued

and sediment the role of cooperatives and associations as entities responsible for selective collection in the city.

Both examples require effort and resilience from cooperatives and associations. There is still a long way to go - the threats are many, as we could see during the interviews. However, the potential and the desire to innovate needs to drive these organizations. We reinforce that Social Technology and the Circular Economy in the waste pickers context are two of the most promising concepts related to the Solidarity Economy. They might be great sources of ground-breaking ideas, valuing human-centric experiences inside organizations and continuing to work and impact as heroes of sustainability.

5.2 Limitations of the investigation

The investigation carried out does not intend that the results obtained to be considered absolute truths in the context studied, recognizing the research's limitations.

The sample of individuals interviewed is small compared to the universe of individuals present in Belo Horizonte and their stakeholders' cooperatives and associations. The research was also limited by the non-probability character of the choice of interviewees.

Another limitation was the conduction of the interviews through the internet and phone, subject to network instabilities. At this point, safety measures of the COVID-19 pandemic do not recommend in-person contact with people outside of your household. Despite accessing satisfactorily many insights from the interviewers, through platforms like Zoom and Google Meet, it limits the potential to observe body language and use field research.

5.3 Potential for further research

Studying waste pickers and solidarity has opened a range of reflections about the construction of the capitalist world, rich in inequalities, especially in the case study within the Brazilian context. A ubiquitous expression is "within one Brazil, we have several Brazils": the premise is not only to mention the country's regional peculiarities but also to access the complex and diverse historical-economic-social reality within the same territory.

Although we are in favor of the implementation and development of organizations based on the Solidarity Economy model, we are critical of the limitations of this model. One of the questions that can be the fruit of future research is how broad the organizational structures of organizations that have Solidarity Economy as their organizational form can be. We note that the broadening of institutions reinforces the challenges intrinsic to its bureaucratization, self-management, and direct democracy. More than seeing Solidarity Economy as a complement to the formal economy or another level of capitalist development, it is important to ask ourselves about the development of this model beyond micro and small enterprises.

Transforming the individual and its manifestations as the center of academic research contributes with two factors: first, that its scientific contribution will help to clarify realities; the other factor is that human resilience allows for the constant transformation of the status quo - and consequently requires constant analysis of the social phenomenon. We observe that the network in which they are inserted actually goes beyond those involved in recycling. The phenomenon of social vulnerability has many fronts, and its study from a perspective of individual emancipation beyond the ideals of formal development is still little explored. We want to motivate research that can contribute to the unfolding of new social phenomena that are unveiling in Brazil's urban scenarios: the acts of self-determination coming from spaces of social marginalization. *Catadores* are individuals that are being empowered to be owners of their stories and the right they have to be acknowledged as human beings and respected for their potentialities. Their accomplishments and increase of societal recognition are felt socially: from the sub-human character represented in the poem "The Beast" de Manuel Bandeira (p. 11), to the poem of Nati Toleno (p. 37), where *catadoras* are "seeking queens of themselves", social transformation and political awareness is possible: we are conscious that there's still *a long way to go*.

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Appendices

1. List of interviews conducted

INTERVIEW WS	Cooperatives and Associations (Belo Horizonte and Metropolitan Region)		
A	COOPEMAR (BH)	09/12/2020	57m22s
B	COOPERSOL I (BH)	01/12/2020	59m16s
C	COOPERSOL (BH)	01/12/2020	52m27s
D	COMARP (BH)	18/12/2020	120m30s
E	ASMARE (BH)	11/12/2020	51m53s
F	COMARB (MRBH)	16/12/2020	38m01s
G	ASSOCIAÇÃO O MÃOS AMIGAS (MRBH)	09/12/2020	41m00s
H	ACAMARES (MRBH)	09/12/2020	53m55s
I	UNICICLA (MRBH)	01/12/2020	1:71m22s 2:10m06s

	Governamental Bodies (City Hall/ State)
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	government)		
J	Center of Reference in Residue (Centro Mineiro de Referência em Resíduos)	11/12/2020	62m29s
K	Director of Environmental Education and Institutional Relations of the Government of Minas Gerais	12/12/2020	61m33s
L	Head of the Social Policies and Mobilization Department of the Superintendence of Urban Cleaning (SLU)	16/12/2020	1: 29m37s 2:76m44s
M	Social Assistance Reference	02/12/2020	60m03s

	Center (CRAS)		
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	Other relevant stakeholders		
N	INSEA	21/12/2020	64m28s
O	University Professor	22/12/2020	101m49s
P	Sustainability NGO representative	05/01/2021	65m45s
Q	Attorney's Office of the Union (AGU) - Donor	18/12/2020	95m37s
R	Regional Labor Court - Donor	30/11/2020	43m55s
S	Intermediary recycling enterprise	7/12/2020	22m08s
T	Industry	08/12/2020	28m59s

2. Interviews Declaration

INTERVIEWS DECLARATION

I, Luená Abigail Pimenta Ricardo, declare that I have conducted 20 semi-structured interviews as a contribution to the research results.

I declare that the audios of the interviews are available for appreciation, as well as the schematization of their transcriptions, upon authorization of the advisors Prof. Dr. Eva Kirner and Prof. Dr. Frank Kramer, in which the request can be made to the e-mail luenaricardo@aol.com.

Luená Abigail Pimenta Ricardo

3. Statutory Declaration

STATUTORY DECLARATION

I, Luena Abigail Pimenta Ricardo, hereby certify this thesis is my own work and contains no material that has been submitted previously, in whole or in part, in respect of any other academic award or any other degree. To the best of my knowledge all used sources, information and quotations are referenced as such.

Luena Abigail Pimenta Ricardo

4. Waste Picker Organizations interviews: questionnaire and general answers

Waste pickers organizations

COOPEMAR
COOPERSOLI
COOPERSOL
COMARP
ASMARE
COMARB
ASSOCIAÇÃO MÃOS AMIGAS
ACAMARES
UNICICLA

PROFILE QUESTIONS

1. Gender:

Male	Female	Other	I prefer not to say
2	7		

2. Age:

18 to 30	31 to 40	41 to 60	+61
	1	8	

3. Status:

Married	Single	Divorced	Other
5	2	2	

4. School Attendance:

Illiterate	Elementary School	Middle School	High School	University
	1	2	2	3

5. Residence:

Own Home	Rent	Living in someone's house
6		2

Other: 1

6. What is the number of members of your family?

1-2	2-5	5-8	More than 9
2	7		

7. What is the monthly income of your family?

Less than minimum wage (less than R\$ 1039,00)	Minimum wage (R\$ 1039,00)	More than minimum wage, less than 2x	2x minimum wage (R\$ 2078,00)	More than 2x minimum wage

		minimum wage		
2	1	1	1	3

WORK-RELATED QUESTIONS

8. Reason for working in Cooperative:

Necessity	Unemployed without qualification	Only Opportunity	Professional Goal	Another reason
2	1		3	3

COOPEMAR	Mission
COOPERSOLI	Mission
COOPERSOL	
COMARP	Mission
ASMARE	
COMARB	Implement selective collection in the city
ASSOCIAÇÃO MÃOS AMIGAS	
ACAMARES	Mission
UNICICLA	Mission/ Lifestyle

9. Do you like your job?

Yes	No
9	

10. Describe three main job functions.

COOPEMAR	Sorting Materials	President	Cleaner
COOPERSOLI	Leadership	Awareness creation	Political
COOPERSOL	Leadership	Awareness creation	Commercialization
COMARP	Sorting Materials	Public Relations	Press officer
ASMARE	Sorting Materials	Public Relations	Runner
COMARB	Sorting Materials	Administration	Meetings
ASSOCIAÇÃO MÃOS AMIGAS	Sorting Materials	Documentation	Reaching partnerships
ACAMARES	Social Inclusion	Environmental agent	Take care of people
UNICICLA	Sorting Materials	Administration	Political

11. Have any of your job functions changed after Corona?

Yes	No
7	2

COOPEMAR	Overworking
COOPERSOLI	Overworking / COVID-19 protocol/Mobilization
COOPERSOL	COVID-19 protocol/ Sanitary measures
COMARP	Changes in communication patterns/ Mobilization/COVID-19 protocol
ASMARE	Changes at the start and finishing time/ changes in communication patterns
COMARB	Changes in communication patterns/ City hall did not give recommendations/ support from the network
ASSOCIAÇÃO MÃOS AMIGAS	Did not stop/ not getting material in some locations
ACAMARES	Insecurity/ Monthly income
UNICICLA	COVID-19 protocol/ Mobilization

12. What is the importance of your job?

COOPEMAR	Sustainability/ Employment generation/
COOPERSOLI	Love to the community/Believe in new Economy
COOPERSOL	Sustainability/ Environmental Agents
COMARP	Sustainability/ Social Inclusion
ASMARE	Sustainability / Social Inclusion

COMARB	Sustainability
ASSOCIAÇÃO MÃOS AMIGAS	Sustainability
ACAMARES	Sustainability/ Social Inclusion
UNICICLA	The human being: the collector / the community / the economy

13. How many people work at the Cooperative/Association before Coronavirus:

1- 10	11 - 20	21 - 50	51 - 100	101 - 200	200 - 300	200 - 300
1	3	4	1			

14. Has anybody gone out of the cooperative because of Coronavirus?

Yes	No
6	3

COOPEMAR	Pausing and others left
COOPERSOLI	
COOPERSOL	
COMARP	Pausing workers at risk
ASMARE	Pausing workers at risk
COMARB	
ASSOCIAÇÃO MÃOS AMIGAS	Pausing workers at risk

ACAMARES	Pausing and others left
UNICICLA	Pausing and others left

15. Anybody was infected with Covid-19 inside of your cooperative that you are aware of?

Yes	No
	8

16. How would you evaluate the contribution of cooperatives to the environment?

- **For the cleanliness of cities:**

Less important	Important	Very important	Doesn't matter
		9	

- **For less polluted rivers:**

Less important	Important	Very important	Doesn't matter
	1	8	

- **For the reusing of materials:**

Less important	Important	Very important	Doesn't matter
	2	7	

- For the preservation of the planet:

Less important	Important	Very important	Doesn't matter
		8	

- For the Reduction of visual pollution:

Less important	Important	Very important	Doesn't matter
	2	7	

- For the Reduction of high volume in dumpsters:

Less important	Important	Very important	Doesn't matter
		9	

17. Time in the profession:

0-5	6-10	10 or more
	4	5

18. When do you work (weekdays/weekends)?

5 days a week	7
6 days a week	
7 days a week	2

19. Diary working hours:

Less than 8 hours	8 hours	More than 8 hours
3	4	2

20. Has it changed with Covid?

Yes	No
6	3

COOPEMAR	
COOPERSOLI	
COOPERSOL	Reduced material
COMARP	Time change to avoid crowded public transportation
ASMARE	Time change to avoid crowded public transportation
COMARB	
ASSOCIAÇÃO MÃOS AMIGAS	
ACAMARES	Reduced material
UNICICLA	Change in routine

21. Salary before Covid-19:

Less than minimum wage (less than R\$ 1039,00)	Minimum wage (R\$ 1039,00)	More than minimum wage, less than 2x minimum wage (between R\$1039,00 and R\$2078,00)	2x minimum wage (R\$ 2078,00)	More than 2x minimum wage (more than R\$ 2078,00)
3		5		

22. Salary after Covid-19:

Less than minimum wage (less than R\$ 1039,00)	Minimum wage (R\$ 1039,00)	More than minimum wage, less than 2x minimum wage	2x minimum wage (R\$ 2078,00)	More than 2x minimum wage
8				

23. In a normal situation, how cooperatives affect conditions from involved working people, in your opinion?

COOPEMAR	Personal choice
COOPERSOLI	Opportunity/ Dignity/ Importance of social security

COOPERSOL	Social Inclusion
COMARP	Importance of Social Security
ASMARE	Necessity/ Unemployment/ Lack of education
COMARB	Increases self-esteem
ASSOCIAÇÃO MÃOS AMIGAS	Necessity
ACAMARES	Better working conditions/ better health conditions
UNICICLA	Family conditions/ Autonomy/ Self-management

24. Corona changed how cooperatives affect conditions from the people that work there?

Yes	No
8	

COOPEMAR	Social distancing
COOPERSOLI	Need to external support
COOPERSOL	Paused occupation
COMARP	
ASMARE	
COMARB	Physiological aspect/ Fear of contamination

ASSOCIAÇÃO MÃOS AMIGAS	
ACAMARES	Physiological aspect
UNICICLA	The need for external support

25. Do you believe that other people in cooperatives have access to healthcare?

Yes	No
8	

26. Public or private?

Public	Private
8	

27. In a normal situation, how is it (access to healthcare)?

COOPEMAR	Good
COOPERSOLI	Good (must be better)
COOPERSOL	Good
COMARP	
ASMARE	Good
COMARB	Good
ASSOCIAÇÃO MÃOS AMIGAS	Great
ACAMARES	Easily accessible (non-complex

	situations)
UNICICLA	Good (need to give more attention to waste pickers)

28. Does the way that you receive medical treatment have any transformation, in your opinion?

Yes	No
7	

COOPEMAR	More attention
COOPERSOLI	More dedication
COOPERSOL	More restrictive/ Less access to non-priority treatments
COMARP	
ASMARE	Less access to non-priority treatments
COMARB	Faster/ more organized
ASSOCIAÇÃO MÃOS AMIGAS	More restrictive/ Less access to non-priority treatments
ACAMARES	Worse/ Slow
UNICICLA	

29. Was your cooperative prepared to deal with the Covid-19 pandemic?

Yes	No
	9

30. How affected was your organization to receive recyclable materials?

Not much affected	Moderately Affected	Severely Affected
2	2	5

COOPEMAR	Affected by the sanitary requirements
COOPERSOLI	
COOPERSOL	
COMARP	
ASMARE	Residents sanitizing materials
COMARB	Fear in collecting the material
ASSOCIAÇÃO MÃOS AMIGAS	
ACAMARES	
UNICICLA	Residents supported the organization

31. Did any partnerships end during the pandemic?

- **With clients**

Yes	No
1	8

- **With donor institutions**

Yes	No
4	5

COOPEMAR	Donors became competitors
COOPERSOLI	Donors became competitors
COOPERSOL	Majority of public servant donors
COMARP	The decrease in materials / paused partnerships
ASMARE	The decrease in materials / paused partnerships
COMARB	Increase in the price of materials
ASSOCIAÇÃO MÃOS AMIGAS	Paused partnerships
ACAMARES	Lost partnerships
UNICICLA	Lost partnerships

32. What are the challenges that your cooperative is facing during the Covid-19 pandemic?

COOPEMAR	Micro-Entrepreneurs as competitors/ independent waste pickers
COOPERSOLI	Reduced Salary/ lack of selective safe selective collection
COOPERSOL	Try to normalize everything

COMARP	Security protocol/ networking support
ASMARE	Reduced salary/working hours/decrease in material
COMARB	Adaptations on working with the material
ASSOCIAÇÃO MÃOS AMIGAS	Decrease in material
ACAMARES	Reduced salary/ use of PPE/ sanitation
UNICICLA	Reduced Salary

33. Which measures are you promoting inside of the cooperative to cope with the Covid-19 pandemic?

COOPEMAR	Compliance with sanitary regulations
COOPERSOLI	Compliance with sanitary regulations
COOPERSOL	Compliance with sanitary regulations
COMARP	Compliance with sanitary regulations/ infrastructure improvement
ASMARE	Compliance with sanitary regulations
COMARB	Compliance with sanitary regulations
ASSOCIAÇÃO MÃOS AMIGAS	Compliance with sanitary regulations
ACAMARES	Organizational change/ compliance with sanitary regulations
UNICICLA	Compliance with sanitary regulations/ mobilization with partners

34. What was the monthly income of your Association (organization) in total before the pandemic?

R\$ 1000 - R\$ 5000	
R\$ 5001 - R\$ 10.000	2
R\$ 10.001 - R\$ 20.000	2
R\$ 20.001 - R\$ 30.000	
R\$ 30.001 - R\$40.000	
R\$ 40.001 - R\$ 50.000	1
R\$ 50.000 - more	1

35. Did the pandemic affect the monthly income of your Cooperative/Association?

Yes	No
8	1

36. What is the current monthly income of your association in total?

R\$ 1000 - R\$ 5000	1
R\$ 5001 - R\$ 10.000	3
R\$ 10.001 - R\$ 20.000	
R\$ 20.001 - R\$ 30.000	1
R\$ 30.001 - R\$40.000	

R\$ 40.001 - R\$ 50.000	
R\$ 50.000 - more	

37. Is there any adaptation that your organization will do lastingly that you decided because of the Coronavirus pandemic?

Yes	No
7	2

COOPEMAR	Plastic processing
COOPERSOLI	Sanitary measures/ care for the elderly
COOPERSOL	Sanitary measures
COMARP	Improvement in infrastructure
ASMARE	
COMARB	Social distance/ sanitary measures
ASSOCIAÇÃO MÃOS AMIGAS	Sanitary measures
ACAMARES	Social distance/ sanitary measures
UNICICLA	Sanitary measures/ improvement in infrastructure

38. Your cooperative made use of any government assistance?

Yes	No
	8

39. As the manager of the cooperative, what is your most significant learning from the pandemic?

COOPEMAR	Resilience / community awareness
COOPERSOLI	Community awareness
COOPERSOL	We need to have an emergency fund
COMARP	Community awareness
ASMARE	Increase of respect/community awareness
COMARB	Community awareness
ASSOCIAÇÃO MÃOS AMIGAS	Community awareness
ACAMARES	Cooperativism is worth it
UNICICLA	Community awareness/ Unity

40. What is the biggest threat from the pandemic for your Cooperative?

COOPEMAR	Infection with COVID-19
COOPERSOLI	Infection with COVID-19
COOPERSOL	Infection with COVID-19
COMARP	Public transportation
ASMARE	Infection with COVID-19
COMARB	Infection with COVID-19/ no support from City Hall

ASSOCIAÇÃO MÃOS AMIGAS	Infection with COVID-19
ACAMARES	The volatility of people/ remain solidary
UNICICLA	Infection with COVID-19

41. Is there any room for opportunity in this Pandemic?

Yes	No
7	2

COOPEMAR	Entrepreneurship
COOPERSOLI	Fear
COOPERSOL	
COMARP	Entrepreneurship/ Development of new abilities
ASMARE	For interrelations in an organization
COMARB	For interrelations in an organization
ASSOCIAÇÃO MÃOS AMIGAS	Development of new abilities
ACAMARES	Entrepreneurship/ Reutilization Store/ Virtual store
UNICICLA	Publicizing the work

42. Feelings regarding the job today:

- It is satisfied with the situation before Covid-19:

Yes	No
4	4

COOPEMAR	The desire for more engagement with the City Hall
COOPERSOLI	Contracts/ Political aspect
COOPERSOL	
COMARP	
ASMARE	
COMARB	Bad partnership with City Hall
ASSOCIAÇÃO MÃOS AMIGAS	Bad partnership with City Hall
ACAMARES	No selective collection in the city
UNICICLA	

- It is satisfied with the situation during-Covid 19:

Yes	No
2	6

COOPEMAR	Less material available
COOPERSOLI	Routine change/ loss in work achievements
COOPERSOL	

COMARP	
ASMARE	
COMARB	Lack of public awareness
ASSOCIAÇÃO MÃOS AMIGAS	Plans ruined
ACAMARES	Plans ruined
UNICICLA	Right direction/ solid work in the city

43. Do you have any other points that you believe it is important and you would like to share?

Yes	No
	9

Important: Some of the questions and answers were structured beyond the framework, considering the plasticity of its "semi-structured" nature, upon the discretion and evaluation of the researcher. The decision of the interviewee to answer or not a determined question was respected by the interviewer.

We endorse that the discussions do not necessarily represent and do not intend to be considered as an overall representation of the matter studied. We wanted to promote discussions and open the debate of this necessary and original matter in academic settings. We enjoyed the possibilities of in-depth interviews to capture realities, impressions and understandings from individuals related to the organizations.

The data presented here represents a source of comparison from the compiled interviews obtained by diverse stakeholders. The assessment of the entire content of the interview may be made upon request by e-mail luenaricardo@aol.com, under the analysis and approval of the research supervisors.

4. Government interviews: questionnaire and general answers

Government

PROFILE QUESTIONS

1. What is the name of your sector?

Center of Reference in Residue in Minas Gerais
Environmental Education and Institutional Relations of the Government of Minas Gerais
Social Policies and Mobilization Department of the Superintendence of Urban Cleaning (SLU)
Social Assistance Reference Center (CRAS)

2. What are the three main functions of your sector?

Center of Reference in Residue	Regularization of the Recycling Grant	Expansion of the Recycling Grant	Re-opening of the Center of Reference in Residue
Environmental Education and Institutional Relations of the Government of Minas Gerais	Environmental Education	Directing waste from public buildings to cooperatives	Creation of economic sustainability policies in buildings
Superintendence of Urban Cleaning (SLU)	Mobilization and Dialogue	Creation of public policies	Creation of the COVID-19 Protocol
Social Assistance Reference Center (CRAS)	Organize programs, projects, benefits and social assistance services.	Protection and comprehensive care of the family.	Elaboration, execution, monitoring and evaluation of social projects Community articulation.

3. Any of your overall job functions changed after Corona?

Yes	No
4	

Center of Reference in Residue	Everything made by the internet now.
Environmental Education and Institutional Relations of the Government of Minas Gerais	Home Office
Superintendence of Urban Cleaning (SLU)	Communication through internet, creation of COVID-19 Protocol, emergency meetings, formation of catadores through EAD platform
Social Assistance Reference Center (CRAS)	Difficulty in the development of social projects

4. What are the policies your sector is implementing towards sustainability connected to recyclable materials?

Center of Reference in Residue	Engagement and discussion of public policies with waste pickers/ Center for Reference in Waste/ Recycling Grant
Environmental Education and Institutional Relations of the Government of Minas Gerais	Center for Reference in Waste and Recycling Grant
Superintendence of Urban Cleaning (SLU)	Selective collection contract
Social Assistance Reference Center (CRAS)	Mapping and referencing families in vulnerability/ offering formation in associativism/ including them in the working space

5. Was there any change in these policies because of COVID?

Yes	No
3	1

Center of Reference in Residue	Just more use of internet/reduce bureaucracy/ intent to regularize payment
Environmental Education and Institutional Relations of the Government of Minas Gerais	Creation of Guidelines about COVID-19
Superintendence of Urban Cleaning (SLU)	Selective collection stopped for nine months/ course of capacitation/ assistential help for catadores
Social Assistance Reference Center (CRAS)	We could not organize the Waste and Citizenship Forum or go to the warehouse

6. Which measures are you promoting to cope with the effects of the Coronavirus pandemic?

Center of Reference in Residue	Provision of grant for environmental service/ Grant is not welfare, is for service
Environmental Education and Institutional Relations of the Government of Minas Gerais	Home Office
Superintendence of Urban Cleaning (SLU)	Assistential support/ return of selective collection via formation/ checklist/ support with personal protection equipment
Social Assistance Reference Center (CRAS)	Change in strategy to reach assistance and income again

7. Tell me the reasons your sector has a partnership with cooperatives and associations.

Center of Reference in Residue	Improve dialogue/ Payment as a right foreseen by law for the services they did
Environmental Education and Institutional Relations of the Government of Minas Gerais	Legally motivated by decree
Superintendence of Urban Cleaning (SLU)	Technical/ Legal / Political forces in favor of the inclusion from the catador

Social Assistance Reference Center (CRAS)	Ensuring the autonomy and emancipation of families
---	--

8. How does the partnership work between you and the Cooperatives/Associations?

Center of Reference in Residue	Through the payment of the recycling grant/ opening of the reference center/ soon opening of selective processes in other towns
Environmental Education and Institutional Relations of the Government of Minas Gerais	Donation of recyclable materials produced in the buildings to cooperatives
Superintendence of Urban Cleaning (SLU)	Selective Collection/ Forum on Waste and Citizenship/ Support with warehouses and PPE
Social Assistance Reference Center (CRAS)	Through the organization of the Municipal Forum on Waste and Citizenship

9. How would you rate your partnership with the Cooperative/Association?

Excellent	1
Good	3
Normal	
Not so good	
Horrible	

10. How is the dynamic in your partnership after Covid-19:

Something changed?

Yes	No
4	

What?

Center of Reference in Residue	Committee of Recycling is online now
Environmental Education and Institutional Relations of the Government of Minas Gerais	Momentary pause in the delivery of recyclable materials
Superintendence of Urban Cleaning (SLU)	Creation of Crisis Committee/ Creation of EAD course/ fiscalization/ delivery of EEP
Social Assistance Reference Center (CRAS)	Access to the warehouse.

11. Is there any adaptation that your organization is going to do permanently for your partnership that you decided because of the Coronavirus pandemic?

Yes	No
2	1

What?

Center of Reference in Residue	Maintain the Committee online
Environmental Education and Institutional Relations of the Government of Minas Gerais	Requirement of PPE on the premises of the premises
Superintendence of Urban Cleaning (SLU)	
Social Assistance Reference Center (CRAS)	

12. What is your perception of the changes caused by corona?

Positive	Negative	Does not matter
1	2	

Why?

Center of Reference in Residue	Challenging moment/ deal with difficulties
Environmental Education and Institutional Relations of the Government of Minas Gerais	Greater agility and use of online tools
Superintendence of Urban Cleaning (SLU)	Proved capacity of resilience/ Strengthening relations with movements/ Negative: suspension period/ population disengaged
Social Assistance Reference Center (CRAS)	Suppression of community articulations

13. What is the importance of Cooperatives/ Associations in your opinion?

Center of Reference in Residue	
Environmental Education and Institutional Relations of the Government of Minas Gerais	Fight for the exit of assistencialism for the entrepreneurship from service provision / development of social technologies
Superintendence of Urban Cleaning (SLU)	
Social Assistance Reference Center (CRAS)	Essential. Give expertise to develop work to meet the needs of state with less cost.

14. Do you have direct contact with people from the cooperatives/associations?

Yes	No
4	

15. Do you think that cooperatives/associations transform the lives of people involved?

Yes	No
4	

If yes, how?

Center of Reference in Residue	Generation of resources for vulnerable population
Environmental Education and Institutional Relations of the Government of Minas Gerais	Raise popular awareness
Superintendence of Urban Cleaning (SLU)	Empowerment environment for women/ movement in Belo Horizonte has women as majority
Social Assistance Reference Center (CRAS)	Personal development through social, psychological and political empowerment

16. Do you think the coronavirus impacted the work in cooperatives?

Yes	No
4	

How?

Center of Reference in Residue	Suspension of work
Environmental Education and Institutional Relations of the Government of Minas Gerais	No income/ mandatory use of PPE
Superintendence of Urban Cleaning (SLU)	Suspension of work/ reduce of consumption/ reduce of delivery from recyclable materials.
Social Assistance Reference Center (CRAS)	Working safety

17. Does your partnership need any kind of transformation?

Yes	No
4	

18. Tell me three ways to improve your partnership with Associations/Cooperatives.

Center of Reference in Residue	Dissemination of Information	Improve internal communication in associations	
Environmental Education and Institutional Relations of the Government of Minas Gerais	Contractual adaptation for the payment of services	Closer ties with waste pickers	Favoring entrepreneurial policies of the waste pickers
Superintendence of Urban Cleaning (SLU)	Improvement of contracts with SLU	Improvement in communication	Creation of bonds with the population
Social Assistance Reference Center (CRAS)	Follow up more closely with families	Establish a collective orientation link	Possibility of expansion

19. What do you think is the biggest learning from cooperatives during the pandemic?

Center of Reference in Residue	Empathy/ Government is a partner
Environmental Education and Institutional Relations of the Government of Minas Gerais	Protection through PPEs/ opening up popular awareness
Superintendence of Urban Cleaning (SLU)	Government is a partner/ Closer relationship
Social Assistance Reference Center (CRAS)	That invisibility is a human vanity.

20. What is the biggest threat from the pandemic for Cooperative?

Center of Reference in Residue	Danger related to the work/ fear of unemployment
Environmental Education and Institutional Relations of the Government of Minas Gerais	Discourse of companies that want to discourage selective collection

Superintendence of Urban Cleaning (SLU)	Protocol noncompliance
Social Assistance Reference Center (CRAS)	The virus and to not take advantage to increase value to the work of the catadores themselves.

21. Is there any room for opportunity in this Pandemic?

Yes	No
4	

Center of Reference in Residue	Ampliation of business model aspirations
Environmental Education and Institutional Relations of the Government of Minas Gerais	Entrepreneurship / Safety measures
Superintendence of Urban Cleaning (SLU)	Possibility of reinvention
Social Assistance Reference Center (CRAS)	To demand public policy tailored for the improvement of the profession's relevance

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6. Further Stakeholders: questionnaire and general answers

1. What is the name of your sector?

INSEA
University Professor
Sustainability NGO representative
Attorney's Office of the Union (AGU) - Donor
Regional Labor Court - Donor
Intermediary recycling enterprise
Industry

2. What are the three main functions of your sector?

	With the individual	Critical formation	With the society/public policies
INSEA			
University Professor	Give classes	Case Studies (Contact just through work of students)	Academic Partnerships
Sustainability NGO representative	Fundraising for the recycling supply chain	Commercialization Networks	Aggregate material in the chain
Attorney's Office of the Union (AGU) Sustainability Sector MG - Donor	Implementation of the Sustainable Logistic Plan	Conscientization Mechanisms	Implementation of Decree 5940/2006
Regional Labor Court Sustainability Sector MG - Donor	Sustainable Logistic Plan	Joint purchases of materials	Internal selective collection
Intermediary recycling enterprise	Reduce environmental impact	Contribute with the cleanliness of the city streets	Generating Jobs

Industry	Awareness campaigns	Rethink Consumption	Impact the world
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3. What are the policies your sector is implementing towards sustainability connected to recyclable materials?

INSEA	
University Professor	
Sustainability NGO representative	Inclusion of cooperatives in waste management as service providers
Attorney's Office of the Union (AGU) Sustainability Sector MG - Donor	Selective collection and donation to cooperatives
Regional Labor Court Sustainability Sector MG - Donor	Selective collection
Intermediary recycling enterprise	Give correct destination of the material to the industry
Industry	Sustainable products

4. Tell me the reasons your sector has a partnership with cooperatives and associations.

INSEA	Creation of the organization based on solidarity work with the street population/ organizations of waste pickers
University Professor	Previously responsible for the environmental management at the University
Sustainability NGO representative	Great demand for sustainability/supporting enterprises
Attorney's Office of the Union (AGU) Sustainability Sector MG - Donor	Sustainability/ Legal obligations Decree 5940/2006
Regional Labor Court Sustainability Sector MG - Donor	Social/ the need for correct waste management

Intermediary recycling enterprise	Commercial relation
Industry	Sustainability/ Commercial relation

5. How does the partnership work between you and the Cooperatives/Associations?

INSEA	Technical Assessment
University Professor	Through disciplines environmental disciplines/Case studies
Sustainability NGO representative	Technical Assessment
Attorney's Office of the Union (AGU) Sustainability Sector MG - Donor	Law/ Donating the material
Regional Labor Court Sustainability Sector MG - Donor	Donating the material
Intermediary recycling enterprise	We buy their material
Industry	They are in line at the production chain

6. Do you think that cooperatives/associations transform the lives of people involved?

Yes	No
6	

If yes, how?

INSEA	Recovery of the human
University Professor	Psychological effect/ Solidarity/ Social cohesion
Sustainability NGO representative	Fulfillment of dreams/ creating alternatives for work and income beyond the traditional forms
Attorney's Office of the Union (AGU) Sustainability Sector MG - Donor	Social inclusion

Regional Labor Court Sustainability Sector MG - Donor	Income/ social interaction/ sense of belonging
Intermediary recycling enterprise	Financial compensation
Industry	Employment and Income generation

7. Any of your actions and functions related to the relationship with the Organizations of Catadores changed after Corona?

Yes	No
6	1

INSEA	Isolation and distancing from waste pickers
University Professor	Routine changed
Sustainability NGO representative	ORIS online setting/ no “offline” contact with cooperatives, just online
Attorney's Office of the Union (AGU) Sustainability Sector MG - Donor	Donation had to stop temporarily
Regional Labor Court Sustainability Sector MG - Donor	Reduction in residue/
Intermediary recycling enterprise	Increase of market value of the goods/ stop in the use of possible contaminated material/ respect to sanitary regulations
Industry	No changes

8. Which measures are you promoting to cope with the effects of the Coronavirus pandemic?

INSEA	Occupational safety protocol for pandemic and post-pandemic/ Improved hygienic conditions in barns/online training on COVID-19/ population awareness
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University Professor	University is closed/ Feel lack of sensibility for the collective
Sustainability NGO representative	Actions for the inclusion of waste pickers in the public emergency determinations/ Manual to allow the reopening of the selective collection in the city halls/ national survey in the public defender offices
Attorney's Office of the Union (AGU) Sustainability Sector MG - Donor	Home Office
Regional Labor Court Sustainability Sector MG - Donor	Home Office
Intermediary recycling enterprise	Necessary sanitary requirements
Industry	No measures

9. How would you rate your partnership with the Cooperative/Association?

Excellent	3
Good	2
Normal	1
Not so good	
Horrible	

10. How is the dynamic in your partnership during Covid-19:

Something changed?

Yes	No
5	2

What?

INSEA	Communication style/ professionalization
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	of social media
University Professor	No Communication/ pause in the academic field works
Sustainability NGO representative	Limited Communication
Attorney's Office of the Union (AGU) Sustainability Sector MG - Donor	Pause in the donations
Regional Labor Court Sustainability Sector MG - Donor	Pause in the donations
Intermediary recycling enterprise	Nothing changed
Industry	Limited vision of the chain

11. Is there any adaptation that your organization is going to do permanently for your partnership that you decided because of the Coronavirus pandemic?

Yes	No
3	3

What?

INSEA	Technical consulting/implementation of online training
University Professor	
Sustainability NGO representative	Try to produce materials in a more dynamic (less technical/academic) way to engage the interlocutor
Attorney's Office of the Union (AGU) Sustainability Sector MG - Donor	Implement for all AGU units the term of commitment with the cooperatives/ increase the selective collection of solidarity
Regional Labor Court Sustainability Sector MG - Donor	No permanent changes

Intermediary recycling enterprise	Incentivize the use of masks
Industry	No

12. What is your perception of the changes caused by corona?

Positive	Negative	Does not matter
2	4	1

Why?

INSEA	Government indifference to the category
University Professor	
Sustainability NGO representative	Isolation/ fear/ disinformation/ culture does not encourage planning and organization/easier to talk about self-care
Attorney's Office of the Union (AGU) Sustainability Sector MG - Donor	Positive: Caused attention to the unhealthiness of the activity/importance of careful waste separation/ Perverse: fear/
Regional Labor Court Sustainability Sector MG - Donor	Negative: rise in stress level/ Negative: Home Office is possible
Intermediary recycling enterprise	Did not change organization conditions
Industry	Increase of inspection/ attack in the market

13. What is the importance of Cooperatives/ Associations in your opinion?

INSEA	
University Professor	Environmental Agents/ Circular Economy/ Income Generation
Sustainability NGO representative	Modelo de trabalho e renda para populações vulneráveis/essencial para a cadeia da reciclável

Attorney's Office of the Union (AGU) Sustainability Sector MG - Donor	Inclusion of the individual economically and socially
Regional Labor Court Sustainability Sector MG - Donor	Indispensable for society as a whole/ reduction of poverty/ generation of income
Intermediary recycling enterprise	Financial support for catadores/ clean the city
Industry	Essential for recycling

14. Do you have direct contact with people from the cooperatives/associations?

Yes	No
5	1

15. Do you think the coronavirus impacted the work in cooperatives?

Yes	No
7	

How?

INSEA	Loss of work object
University Professor	Unhealthy environment/ They are getting more assistance
Sustainability NGO representative	
Attorney's Office of the Union (AGU) Sustainability Sector MG - Donor	Loss of the work object
Regional Labor Court Sustainability Sector MG - Donor	No access to waste from large generators (public agencies)/ hazardous waste management hazard
Intermediary recycling enterprise	Loss of work object / lack of material/ No financial return

Industry	More inspection/ not so much harm
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16. Does your partnership need any kind of transformation?

Yes	No
4	2

17. Tell me three ways to improve your partnership with Associations/Cooperatives.

INSEA	Economic Development	Increase awareness of environmental policies	Energetic utilization of waste
University Professor	Increased awareness of the university	The commitment of academia to solving problems	Increase in the formalization of relations
Sustainability NGO representative	Improved communication	Improving the way they demand;	Less Academic Communication
Attorney's Office of the Union (AGU) Sustainability Sector MG - Donor	Transformation in Legislation	Environmental education	Payment Quota for environmental work performed
Regional Labor Court Sustainability Sector MG - Donor	Correct separation	Removal of waste on time and in the correct manner	Material weighing
Intermediary recycling enterprise	Try to find ways to make the organization loyal to them	Help the organization's warehouses with a better structure	
Industry	Structural way society deals with waste pickers	Inclusion of waste picker	

18. What do you think is the biggest learning from cooperatives during the pandemic?

INSEA	Strengthening class solidarity
University Professor	Strengthening class solidarity
Sustainability NGO representative	Having to pay attention to the organization of work
Attorney's Office of the Union (AGU) Sustainability Sector MG - Donor	Handling insalubrity / specialized equipment is needed / handling of rodents and fliers
Regional Labor Court Sustainability Sector MG - Donor	Need for social responsibility
Intermediary recycling enterprise	Learning as a human: human fragility
Industry	That waste pickers are essential to avoid the worsening of a sanitary crisis

19. What is the biggest threat from the pandemic for Cooperatives?

INSEA	Non-adoption of sanitary measures/closure of cooperatives
University Professor	Invisibilization of waste pickers/ danger of infection in the workplace
Sustainability NGO representative	Survival/ loss of space with new enterprises of collection
Attorney's Office of the Union (AGU) Sustainability Sector MG - Donor	Danger of infection in the workplace
Regional Labor Court Sustainability Sector MG - Donor	No income generation/ contact with toxic waste/ associations cease to exist
Intermediary recycling enterprise	Danger of infection in the workplace
Industry	Danger of infection in the workplace

20. Is there any room for opportunity in this Pandemic?

Yes	No
7	

INSEA	Creation of new business models
University Professor	Opportunity to raise collective awareness/ Increased mechanization of the process (without taking away the human factor)
Sustainability NGO representative	Reaffirm the importance of their role in the recycling chain
Attorney's Office of the Union (AGU) Sustainability Sector MG - Donor	Awareness-raising opportunity
Regional Labor Court Sustainability Sector MG - Donor	Possibility of publicizing more the work of the catadores
Intermediary recycling enterprise	The enterprise gained more commercial partners
Industry	Increase of awareness on invisibility discourse

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