

Recyclable solid waste management: a case study on the partnership of a cooperative with a public building

The Pernambuco Court of Justice (TIJE) Strategic Planning, since 2016, reaffirms the urgency of the United Nations (UN) 2030 Agenda, related to the Sustainable Development Goals (SDGs). From this perspective, in 2017, the TIJE signed contracts aimed at selective collection by the Forum Desembargador Rodolfo Aureliano (FDRA). The objective of the work was to outline the scope of the TIJE to sustainability resulting from the contract with the Cooperativa de Trabalho de Catadores de Resíduos Sólidos Recicláveis (COOPAGRES) in the years 2019 to 2021. The method had a quali-quantitative approach, descriptive research of an exploratory nature, classified as applied and documentary of a case study. Recyclable solid waste (RSR) data comes from Sustainable Logistics Planning (PLS) and visits to COOPAGRES and FDRA. An increase in the collection and correct destination of RSR was detected in the PLS/2019; in 2020, the goals were readjusted due to the COVID 19 pandemic; in 2021, the result was higher than the target, due to the return to face-to-face work. In the conventional collection of the FDRA in the analyzed RSR, in 2019, the paper prevails in 45%, others RSR represent 29%, while the occasional collection had an average of 26%. In March/2022, the share reached 59%. In relation to the FDRA per capita index, in 2019, it was 155.55 kg/inhab/year: in 2020, 14.71 Kg/inhabitant/year and in 2021, 20.33 Kg/inhabitant/year. During the period, the FDRA obtained an improvement, but the planning in the management of RSR needs to spread a posture that aims at the intertwining of sustainability dimensions compatible with the elements of sustainable development, a global civilizing commandment.

Keywords: Sustainability; Recycling; Selective collect; Planning; Cooperative.

Gestão de resíduos sólidos recicláveis: um estudo de caso sobre a parceria de uma cooperativa com um prédio público

O Planejamento Estratégico do Tribunal de Justiça de Pernambuco (TIJE), desde 2016, reafirma a urgência da Agenda 2030 da Organização das Nações Unidas (ONU), relacionada aos Objetivos do Desenvolvimento Sustentável (ODS). Nessa perspectiva, em 2017, o TIJE firmou contratos voltados à coleta seletiva junto ao Fórum Desembargador Rodolfo Aureliano (FDRA). O objetivo do trabalho foi traçar o escopo do TIJE para a sustentabilidade decorrente do contrato com a Cooperativa de Trabalho de Catadores de Resíduos Sólidos Recicláveis (COOPAGRES) nos anos de 2019 a 2021. O método teve abordagem quali-quantitativa, descritiva pesquisa de natureza exploratória, classificada como aplicada e documental de estudo de caso. Os dados de Resíduos Sólidos Recicláveis (RSR) são provenientes do Planejamento Logístico Sustentável (PLS) e de visitas à COOPAGRES e FDRA. Foi detectado aumento na arrecadação e destinação correta de RSR no PLS/2019; em 2020, as metas foram reajustadas devido à pandemia de COVID 19; em 2021, o resultado foi superior à meta, devido ao retorno ao trabalho presencial. Na arrecadação convencional do FDRA no RSR analisado, em 2019, o papel prevalece em 45%, os demais RSR representam 29%, enquanto o recolhimento ocasional teve média de 26%. Em março/2022, a participação chegou a 59%. Em relação ao índice FDRA per capita, em 2019, foi de 155,55 kg/hab/ano: em 2020, 14,71 kg/habitante/ano e em 2021, 20,33 kg/habitante/ano. No período, o FDRA obteve um aperfeiçoamento, mas o planejamento na gestão da RSR precisa difundir uma postura que vise o entrelaçamento das dimensões da sustentabilidade compatíveis com os elementos do desenvolvimento sustentável, mandamento civilizatório global.


Palavras-chave: Sustentabilidade; Reciclando; Coleta seletiva; Planejamento; Cooperativo.


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INTRODUCTION

The Union is in line with the new requirements of planetary citizenship. It can be seen that the good practices considered by the National Council of Justice (CNJ) and by the Federal Audit Court (TCU) have been causing the restructuring and modernization of Justice, as well as the demands and control of the CNJ allows the Judiciary (PJ) to meet sustainability, permeated by the commitment to the Sustainable Development Goals (SDGs) and, with the five elements, People, Peace, Prosperity, Planet and Partnership, all of which are part of the Agenda 2030 of the United Nations (UN).

In Brazil, in 2020, influenced by the pandemic, around 82.5 million tons of urban solid waste (MSW) were generated in the year, meaning, on average, 390 kg of waste per inhabitant per year; that is, 225,965 tons per day. Thus, each Brazilian produced approximately 1.074 kg of waste per inhabitant per day in 2021, according to the Associação Brasileira de Empresas de Limpeza Pública e Resíduos Especiais (ABRELPE).

It was found that the total amount of waste collected in Brazil, in 2020, was 76.1 million tons/year, representing 359.3 kg/inhabitant/year, with 45,802,448 t/year (60.2%) having adequate disposal in sanitary landfills and 30,277,39 t/year (39.8%) inadequate disposal in dumps and controlled landfills, which implied collection coverage of 92.2% in the country. In the Northeast, it dropped to 81.51% (ABRELPE, 2021).

The Northeast Region had the amount of urban waste collection, in 2020, 16,575,614 tons of municipal solid waste, of which 6,016,948 t/year is equivalent to 36.3% of adequate disposal and 10,558,666 t/year, 63, 7%, inadequate disposal (ABRELPE, 2021).

The city of Recife, considered a metropolis for having a population of over 900,001 inhabitants, having 1,537,704 inhabitants in 2010, with an estimated population of 1,661,017 inhabitants in 2021, according to data from the Instituto Brasileiro de Geografia e Estatística (Brazilian Institute of Geography and Statistics - IBGE).

It is notorious that the foundations set out in the Federal Constitution of the Republic of Brazil, in art. 225, underpins the environmental dimension of national development, when it says that everyone has the right to an ecologically balanced environment, a good for common use by people and essential to a healthy life quality, imposing on the Public Power, and on the community, the duty to defend and preserve it for present and future generations.

Inserted in this legal framework is the relevant Law of the National Solid Waste Policy (PNRS) nº 12.305/2010, in which it advocates the encouragement of the creation and development of cooperatives and other forms of collectors association of reusable and recyclable materials, as well as the Basic Sanitation Law nº 11.445/2007. All these rules reinforce the challenge in the enterprise of social and environmental responsibility of all.

Scientists in a study on waste in a Court considered: it was evaluated that compliance with legislation is mandatory and, in the case of large waste producers such as the Rio de Janeiro Court of Justice, it is necessary to provide infrastructure for waste management in partnership with the municipalities, to prevent those who apply the deadlines provided by law to the citizen, not even meeting the deadlines set by them in

their Logistics Plan and since every big change starts with small attitudes, looking at the environment in a broad and global way, it is clear that the integrated management of solid waste locally affects the lives of communities directly and positively (ALVES et al., 2019).

This conjuncture of environmental circumstances led the Administration of the Pernambuco Court of Justice (TJPE) through the Sustainability Center to sign collaborative actions initially with (OSCIP) Moradia e Cidadania and, secondly, with two Cooperatives, aiming at the treatment of recyclable waste solids from the PJPE. Until the present date, the agreement with (OSCIP) Housing and Citizenship persists, exclusively for paper.

However, as for the contract with the cooperatives, only contract No. 02/2018, entered with the Cooperativa de Trabalho de Catadores de Resíduos Sólidos Recicláveis (Recyclable Solid Waste Collectors Work Cooperative - COOPAGRES) (metal, paper, cardboard, plastic, glass) remains, since contract No. 03/2018, signed with the Cooperativa de Trabalho de Coletores de Resíduos Sólidos BOLA NA REDE, had a brief term, as it was terminated due to administrative factors.

Regarding the management of solid waste from recyclables in the TJPE, it was found that improvements must be constant in the planning of environmental management, in alignment with the promotion of sustainable national development, as set out in the Law of Public Procurement and Administrative Contracts No. 8,666 /1993, in which it alludes, in art. 3rd, the compliance of the administration of basic principles (legality, impersonality, morality, equality, publicity, administrative integrity, the binding to the summons instrument, those related to objective judgment), as well as the principle of isonomy, the selection of the most advantageous proposal and the promotion of sustainable national development.

On the other hand, the new Administrative Procurement and Contracts Law nº 14.133/2021, published on 04/1/2021, elevated sustainable national development to the category of principle, provided in art. 5, the list of 22 (twenty-two) principles, being the following: legality, impersonality, morality, publicity, efficiency, public interest, administrative probity, equality, planning, transparency, effectiveness, segregation of functions, motivation, binding to the public notice, objective judgment, legal certainty, reasonableness, competitiveness, proportionality, celerity, economy and sustainable national development.

Despite the advancement of World Planning contained in the United Nations (UN) 2030 Agenda, to achieve Sustainable Development (SD), the 17 Sustainable Development Goals (SDGs) are highlighted, whose forecast seeks to encompass the social dimensions, economic, environmental and institutional, there is a mismatch with this Agenda, impacted both by the COVID 19 pandemic, as well as by the differences and repercussions of these ecological causes of the planet at the International, Federal, State and Municipal levels.

In this vein, it is assumed that part of the academies and societies are aware that the increasing urbanization of the planet implies pollution of the soil, air, water, of the entire environment, since the negative impacts have generated problems for the natural heritage of the world.

At the same time, even with humanity's technological advance, the environment issue lacks effective policies and needs partnerships from those with the power of making decisions, aiming at the dissemination

of information through social alerts so that there is, in fact, the awareness that implies commitment and care for the environment, as it is about safeguarding this and future generations.

It is widely recognized throughout the world that man is the largest producer of urban solid waste (MSW) of the 21st century. Therefore, human social, environmental and institutional responsibility is imperative to seek solutions to issues of all environmental causes.

Environmental sciences mean a fruitful field for the advancement of knowledge and the creation of technologies, constituting the public sphere, an appropriate place for the implementation of environmental legislation, with planned management, with the persistent aim of contributing to the resolution of the complex problem of contamination of the environment, as well as incorrect disposal.

Under the perspective of a recent study, the authors declined that cooperatives and associations of collectors, whose formation is encouraged by law, should be recognized as a provider of essential public service to society. Furthermore, it is inferred that they will hardly reach their goals without economic, social, and institutional support from the Government and society so that they can develop and provide decent and profitable work to their members. In this scenario, solid waste management, although it can serve as an instrument capable of protecting the environment and effecting the citizenship of the collector, if carried out in defiance of the principles and objectives of the PNRS, implies environmental setbacks and damage to human health, still imposing the social marginalization of waste pickers (ALVES et al., 2021).

To this extent, in the multidisciplinary task of strategic policies, the TJPE needs to strengthen initiatives aimed at mitigating the waste of resources in pursuit of sustainability day by day, in the path of the institutional challenge of sustainable development.

It is observed that the contractual execution with the COOPAGRES Cooperative represents an example for providing, in addition to the FDRA, a planned and substantial expansion. Therefore, it will provide a management of recyclable solid waste more consistent with the human rights relevance in this PJPE, in all its dimensions.

The objective of the work was to outline the scope of the TJPE to sustainability resulting from the contract signed with the Cooperativa de Trabalho de Catadores de Resíduos Sólidos Recicláveis (COOPAGRES) in the years 2019 to 2021.

THEORETICAL REVIEW

The Stockholm Conference of 1972, United Nations Conference on the Human Environment (UNCTAD), took place in the middle of the Cold War, when all Soviet countries were boycotted, generating an aura of pessimism. In 1987, by the Brundtland Commission report, that is, the World Commission on Environment and Development (CMMAD), called "Our Common Future", whose sustainable development definition means: meet the basic needs of all humans of this generation and use natural resources prudently and efficiently so that future generations can meet their basic needs.

Sustainable Development

In 1992, there was a call for the UN General Assembly held in Rio de Janeiro in 1992. It is noted that the world environment was one of optimism and globalization was settling in, the Berlin Wall had fallen, the USSR was dissolved, several communist countries transitioned to the market economy, thus, the sustainable development multidisciplinary theme gained popularity at this UN General Assembly (Rio de Janeiro/1992) (BARBIERI, 2020).

In this scenario, debates began. In September 2015, the next Agenda would emerge, post/2015, at the local and global levels, the global strategic plan of action for social inclusion, environmental sustainability, and economic development for the period from 2016 to 2030, reaffirming and summarizing all human rights with the inclusion of the 17 Sustainable Development Goals (SDGs). The document 'Transforming our world: 2030 Agenda for Sustainable Development' was approved by 193 UN member states, each with their specific intentions (goals), in a total of 169 goals.

The 2030 Agenda has as its keynote "leave no one behind", composed of 17 SDGs. These are associated with 5 elements, of which Person, Planet, Prosperity is related to the social, environmental, and economic dimensions, while Peace and Partnership, at political and institutional dimensions, all of which make up the aspects of sustainable development, these are interlaced with the objectives.

Sales (2020) corroborates that Brazilian constitutional norm stimulate the formation and performance of cooperativism, instituting an inescapable duty for public entities, in the most varied fields of administrative action, to honor the organization of cooperative societies. In addition to what the International Cooperative Alliance (ACI) argues that sustainable development is in the genesis and is the very nature of the cooperative movement and, as such, cooperatives can make specific and substantially different contributions to society than other types of organizations, especially in developing countries.

Cooperatives and Recyclable Solid Waste Management (GRSR) at TJPE

It is noteworthy that the new environmental policy of the Pernambuco Court of Justice (TJPE) will make the legal and administrative environment fruitful for organizations with a certain social vulnerability, in the perspective of economic and environmental improvement of the target audience of these entities and areas.

In order to promote sustainable activities, the TJPE Sustainability Center, through the Permanent Bidding Commission (CPL), issued the accreditation notice nº 01/2017 - CPL, RP administrative process nº 025741/2017, session date on 23/ 11/2017, the demand being based on Unenforceability No. 45/2017, the result of which culminated in the execution of contract No. 02/2018 - Work cooperative of RECYCLABLE (COOPAGRES) solid waste collectors, in force to date through additives, and with positive impacts, allowing this partnership, so far, to expand the implementation to 10 (ten) buildings. In turn, the very short-term contract No. 03/2018 was signed with the Work Cooperative of solid waste collectors BOLA NA REDE.

Pursuant to CNJ Resolution No. 400/2021, it remains clarified that the agencies must consider the

dimensions of sustainable development – economic, social, environmental, and institutional – in an integrated, indivisible, and transversal way to achieve the associated goals.

National Goal 9 (nine) of the 15th National Meeting of the Judiciary in December 2021 is emphasized: ‘Stimulating Innovation in the Judiciary (all segments) - Carry out actions aimed at disseminating the culture of innovation in its various dimensions and in interactions with the Sustainable Development Goals of the UN 2030 Agenda, within the scope of the Judiciary’.

It is worth noting on the topic of waste management the Sustainable Logistics Plan (PLS), aligned with the National Strategy of the Judiciary (PJ), being a management instrument linked to the Strategic Planning of the agency, so in the topic of Waste Management, the PLS deals with monitoring the generation of waste, collection, and disposal in compliance with the legislation and relevant standards.

In turn, in the Sustainable Logistics Plan (PLS), 2020/2021, the TJPE stated: The implementation of the Judiciary's Sustainability Policy, carried out by CNJ Res. nº 400/2021, praises the PLS as an effective instrument that helps decision-making under the social, environmental, economic, and cultural aspects. The outstanding normative instrument allows those who make the institution to understand the relationship between the efficiency of work activities and the need to optimize public spending, as well as the urgency of disseminating sustainability as a management model, which must also adopt structured processes that promote sustainability based on environmentally correct, economically viable and socially fair and inclusive actions, culturally diverse and guided by integrity, in search of sustainable national development.

METHODOLOGY

The used method had qualitative and quantitative approaches. Under the prism of its objectives, the research is descriptive of an exploratory nature, classified as applied and documentary of a case study. A bibliographic survey was carried out on the subject in laws and regulations, in scientific works, using CAPES journals: Web Science, Science Direct, Scopus; Google Scholar; as well as institutionalized websites.

It constituted a general investigation of the processing of the contract between the TJPE and the Cooperativa de Trabalho de Catadores de Resíduos Sólidos Recicláveis (COOPAGRES), in the years 2019, 2020 and 2021, through information made available on the TJPE transparency portal about the Sustainable Logistics Plan (PLS), linked to strategic planning, according to data from the PJPE Sustainability Center.

It was verified through information from the Nucleus of the gravimetric composition of the RSR collected at the Forum Desembargador Rodolfo Aureliano (FDRA) in the years 2019 to 2021.

During the visit to COOPAGRES, an interview was carried out, as well as the gravimetric composition of that collected in March/2022. During the visit to the FDRA, information was obtained regarding the frequency of the number of internal and external audiences, in the years 2019 to 2021. Also, the presence of materials different from the conventional collection was found in the FDRA.

Study Location

The Forum Desembargador Rodolfo Aureliano (FDRA), also known as the Recife Forum, is located at

Av. Judge Guerra Barreto, s/nº, located at Ilha de Joana Bezerra - zip code: 50080.900, Recife - PE (Figure 1). The FDRA project was inaugurated in 2000, based on the architecture of Ancient Rome, the birthplace of Western Law.



Figure 1: Forum Desembargador Rodolfo Aureliano (FDRA). **Source:** Google (2022).

The building has 43 thousand square meters, distributed in six floors, being a ground floor - with a parking area for magistrates and service vehicles, and another five floors for the more than 80 Courts.

Although in the Court of Justice, the Forum has represented the conception of a fast, efficient, modern Judiciary and a quality judicial service: the Judiciary of the future, after about 22 years of construction, needs reforms and restructuring maintenance in its systems and equipment.

COOPAGRES Visit

During the visit to the Cooperativa de Trabalho de Catadores de Resíduos Sólidos Recicláveis (COOPAGRES) an interview was carried out, with the consent of the leader, Ms. Laudicéia Maria, from the cooperative member Maria, from other members, collecting images and information about the operational structure, working conditions, equipment, and artifacts.

COOPAGRES is located at Travessa do Gusmão, nº 187 - Bairro de São José, zip code: 50.020-520, Recife - PE, registered under CNPJ nº 05.093.501/0001-83; created in 2001; Capital Stock of R\$15,000.00 (fifteen thousand reais); Nature No. 214-3 (cooperative).

In 2001, selective collection was implemented in the city of Recife by the City Hall of Recife, with administration and management under the responsibility of the Empresa de Manutenção e Limpeza Urbana do Recife (EMLURB). The City Hall of Recife signed a partnership with some warehouses and Cooperatives, such as COOPAGRES, as it receives a weekly selective collection under the supervision of EMLURB (ARAGÃO, 2018).

The manager stated, regarding the weekly collection sent to COOPAGRES by EMLURB, that the gross weight is about 600 kg, but it comes with waste, requiring segregation by the cooperative members. It was added that in the PALHA DE ARROZ project, the City Hall of Recife has a broader role. It was also verified that the facilities work in a place assigned to the administrative responsibility of EMLURB. It was also found that the facilities work in a place assigned to the administrative responsibility of EMLURB.

According to the manager, in January 2022, the waste started to be transferred directly to REDE NOVA ESPERANÇA, located in the city of Jaboatão dos Guararapes, this network brings together 10 participants. This new way of transferring waste meant an improvement for COOPAGRES, both in terms of

the price per kilo of material, when intermediaries were eliminated, as this NETWORK receives the materials to send them to the Transformation Industry, meaning in this partnership that COOPAGRES obtains the destination certificate.

The COOPAGRES representative highlighted in the interview that the price of materials sold per Kg are cardboard R\$ 0.53 Kg; can/aluminum R\$ 8.20 Kg; paper R\$1.10 kg; pet bottle R\$ 2.80 kg; he also stressed that glass has the cheapest kg of R\$0.12, as it is a material with little competition in the city.

The photographic records of the COOPAGRES facilities, as well as the recyclable waste transported and collected by COOPAGRES, concerning the monthly collection, carried out on 03/07/2022 at the Forum Desembargador Rodolfo Aureliano (FDRA), are shown in Figure 3.



Caption: A: Forum Desembargador Rodolfo Aureliano (FDRA) transportation; B: arrival at COOPAGRES; C: discharge; D: balance; E: weight; F: transportation to the Rede Nova Esperança shed. **Figure 3:** Recyclable Solid Waste (RSR) - COOPAGRES at march/2022.

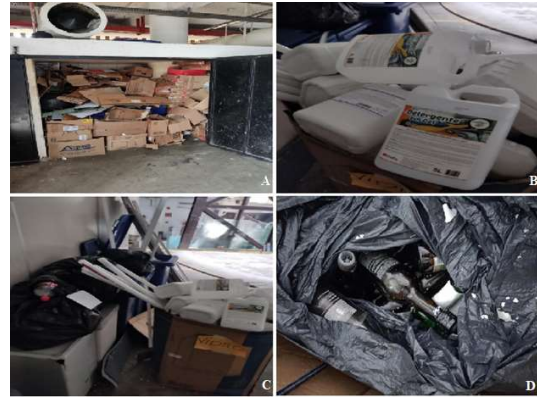
It was certified that the activities of COOPAGRES benefit 22 (twenty-two) families, because of this number of cooperative members, 13 (thirteen) are female and 8 (eight) males. As for the level of education, it varies from illiterate, semi-illiterate, 1st grade and 2nd grade; that the per capita income is about a little higher than the minimum wage, depending on the amount of waste, as well as productivity.

In terms of training, the Cooperative claimed that the last one, about two years ago, was through the project called RESGATE, between the Union and the State Government, about 3 (three) cooperative members were trained by COOPAGRES. As for the difficulties and risks of the cooperative members, the interviewee asserted that the greatest risk is concerning health, but there are few accidents, due to caution with the use of Personal Protective Equipment (PPE).

The representative of COOPAGRES showed interest in participating in the future accreditation that the TJPE should trigger. Therefore, it hopes to obtain a new contract by direct contract, aware of the essential contribution to the social, environmental, and economic aspects for the families involved and for the city of Recife. As reported by the coordinator of COOPAGRES, the average working time of the cooperative members is 6 (six) years, with some coming from the Muribeca/Jaboatão landfill, after its closure, as seen in Figure 4.



Caption: A: administration; B: entry; C: shed; D: yard.
Figure 4: Recyclable Solid Waste (RSR) - COOPAGRES facilities.



Caption: A- paper/cardboard; B- plastic; C- plastic/pet; D- glass. **Figure 5:** Forum Desembargador Rodolfo Aureliano FDRA Waste - conventional collection.

At Figure 5, the types of recyclable solid waste (paper/cardboard, plastic/pet, glass) existing at FDRA on 03/07/2022, the day on which COOPAGRES carried out the conventional monthly collection, are shown. During the visit in March/2022 to the Forum Desembargador Rodolfo Aureliano (FDRA), the recyclable waste (AZ folders, metal/granite, folders, glass, wood) considered components of the occasional collection are shown in Figure 6.



Caption: A: potencial/folders AZ; B: metal/granito; C: folders; D: glass; E: wood.
Figure 6: Forum Desembargador Rodolfo Aureliano FDRA Waste- occasional collection.

RESULTS AND DISCUSSION

It is shown in the Sustainable Logistics Plan (PLS), Exercises 2019 to 2021 of the Pernambuco Court of Justice (TJPE, in Table 1, on the destination of paper, due to the COVID 19 pandemic, there is a behavior of reduction of this material.

Destination of PLS paper from 2019 to 2021 x General Collection of Recyclable Solid Waste (RSR) x General Total from 2019 to 2021 of the TJPE

It is important to note the drop in the 'general collection of recyclable solid waste (RSR)' at the TJPE in 2020, due to the COVID 19 pandemic, growing in 2021, due to the 'occasional collections', as well as the return of face-to-face work, even if in rotation from 50% to 70% of the contingent.

Chagas et al. (2020) state that complementary actions that aim to raise the awareness of the largest number of people about the importance of carrying out, daily and properly, the separation of waste, are needed, since the collection effectiveness depends on good technical planning, community participation in partnership with agencies responsible for the collection service, aiming to boost the recycling market.

Table 1: Paper destination x RSR General Collection X General Total at TJPE x PLS 2019 to 2021.

RSR/PLS	Base 2018	Goal 2019	Held 2019	Goal 2020	Held 2020	Goal 2021	Held 2021
A= Paper destination in Kg	20,198	20,000 ↓ 1%	18,818	10,000 ↓ 47%	10,326.16	30,000 ↑ 190%	11,659.22 ↓ 62.50%
Variation %	-	-	-683	-	-45.13	-	12.91
B= RSR General collection in Kg	1,730	1,928 ↑ 11%	7,652.17 ↑ 296%	2,600 ↓ 66%	3,089.83	3,500 ↑ 13%	12,136.85 ↑ 246.78%
Variation %	-	-	342.8	-	-59.60	-	292.87
A+B=Total in Kg destined for recycling	21,928	21,928 Keep	26,470.17 ↑ 20%	12,600 ↓ 53%	13,415.99	33,500 ↑ 150%	23,796.07 ↓ 30.19%

Source: Adapted from Sustainability Core TJPE (PERNAMBUCO, 2021).

Partnership in the Management of Recyclable Solid Waste (GRSR) of the Forum Desembargador Rodolfo Aureliano (FDRA) x Cooperatives x Gravimetry 2019 to 2021

Table 2 emphasizes the total of the Recyclable Solid Waste (RSR) general collection by the two cooperatives and by the Housing and Citizenship (OSCIP) (paper) in the Forum Desembargador Rodolfo Aureliano (FDRA). Regarding the total *occasional collection, in 2019, 3,560 kg were collected by COOPAGRES, in 2020, 780 kg of PVC mats were collected by Cooperativa BOLA NA REDE and, in 2021, 800 kg of iron scrap were collected by COOPAGRES.

It is observed that this occasional collection contributed to the increase of residues in the last three years. As for the global amount of waste, in 2020 and 2021 there was a decrease due to the contingency of expenses and the way in which activities are provided, through teleworking, resulting from the actions taken in the pandemic period (COVID 19).

In 2019, the largest share of RSR collected in the FDRA from conventional collection was paper, with about 43.47%, followed by solid waste (12.56%), cardboard, with 11.47%. While the occasional collection represented 32.50% of the total collected (Table 2).

In terms of RSR Composition of conventional collection in the year 2020, a similar result can be observed to the year 2019 regarding the collection of paper with about 43.99%. However, there was a reduction in the generation of solid waste and occasional collection (Table 2). Solid waste was 27.79%, occasional collection 19.62% compared to 2019 (32.50%), cardboard was 8.60%. It is still noted that the occasional collection/PVC mat had a considerable percentage, 19.62%, but the decline was due to teleworking in the pandemic.

In 2021, the waste collected, according to Table 2, paper continued to exceed all other materials, it was 48.47%. In second order, the occasional collection/iron scrap was 25.99%, there was an increase of 19.48% in cardboard, plastic was 4.78% and polystyrene appeared with 1.62%. As for the occasional collection, 32.50% in 2019; 19.62% in 2020 and, from 25.99% in 2021, it presented an average of 26.03% in the period, meaning a relevant position in the collection.

In work, the author considered that it is necessary to share responsibilities between public authorities, cooperatives/associations, the manufacturer and distributor of products and the community, through selective collection, aiming to reduce the volume of solid waste and waste generated, as well as the use of recyclable waste, generating benefits and income for recyclable collectors and consequently reducing the impacts caused to human health and the environmental quality resulting from the life cycle of products. We must create awareness that we are able to control what we produce, that waste is fundamental in this process and that there are federal, state, and municipal laws and regulations that guide us and that we must comply with (BIEZEK, 2019).

According to scientists, the result of the study suggests that when citizens receive information about the benefits of recycling, such as separating waste and participating in the design of programs, they are more likely to participate in recycling campaigns. It was also found that when municipal leaders are interested and prioritize solid waste, they support strategies that include more efficient collection systems, recycling, better infrastructure, and low-cost recycling technologies. The success of recycling does not depend only on the levels of participation, but on the efficiency of equipment and infrastructure.

Table 2: Recyclable Solid Waste (RSR) x Cooperatives x Gravimetric Composition of Forum Desembargador Rodolfo Aureliano (FDRA) at years 2019, 2020, 2021

Recyclable Solid Waste (RSR) FDRA	Weight/Kg 2019	% Gravimetry 2019	Weight/Kg 2020	% Gravimetry 2020	Weight/Kg 2021	% Gravimetry 2021
Paper	4,762	43.47	1,749	43.99	1,492	48.47
Cardboard	1,257	11.47	342	8.60	589	19.14
Solid Waste	1,376	12.56	1,105	27.79	147	4.78
*Ocasional Collection	3,560	32.50	780	19.62	800	25.99
Polystyrene	0,00	0,00	0,00	0,00	50	1.62
Total in kg	10,954.90	100	3,976	100,00	3,078	100
Variation %	-	-	-	4,930.65	-36.29	-76.16

Source: The authors with data from the Sustainable Core (2022).

Recyclable Solid Waste (RSR) COOPAGRES x Forum Desembargador Rodolfo Aureliano (FDRA) at march/2022

According to a visit, the sample of 100% of the composition of March/2022 collected from the Recyclable Solid Waste (RSR) of COOPAGRES, coming from the Forum Desembargador Rodolfo Aureliano (FDRA), demonstrates that in this 2022 fiscal year, paper will continue to be the predominant material, reached about 58.81%, followed by cardboard at 34.85%, after plastic with 3.48% and glass with 2.86% (Table 3 and Figure 1).

Table 3: Recyclable Solid Waste (RSR)- COOPAGRES x FDRA - march/2022

Recyclable Solid Waste	Weight/Kg	%
Paper	209.6	58.81
Cardboard	124.2	34.85
Plastic	12.4	3.48
Glass	10.2	2.86
TOTAL	356.4	100

It was found in the gravimetric composition of the three years studied that paper is still preponderant, an average of 45.0%, even though in March it increased to 58.81%. It should decrease as

administrative complications are resolved for the implementation of more digital in the Judiciary, with more innovative practices.

The fact is that, according to a study carried out, the valorization of collectors/cooperatives, also, from an environmental perspective, means that their work implies that municipalities pay them for the positive externalities that their work allows in the collection, separation, sorting, and sale of recyclables to the environment, in addition to the social and economic inclusion of the participants of these informal or formal organizations (CASTRO, 2019).

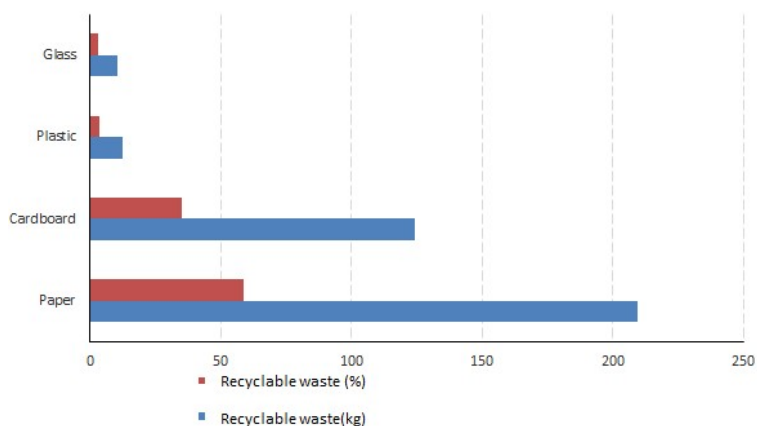


Figure 1: Recyclable Solid Waste (RSR) - COOPAGRES X FDRA - March/2022.

In a study carried out by Miranda et al. (2020), similar results were obtained for the composition of recyclable solid waste in partnership with seven cooperatives of collectors in the city of Londrina-PR, in which the highest percentage was of paper, followed by glass, plastic, long-life packaging (Tetra Pak) and metal.

Per capita index RSR x Forum Desembargador Rodolfo Aureliano (FDRA)

The largest number of PJPE cases are processed at the Forum Desembargador Rodolfo Aureliano (FDRA), which is also attended by a considerable population.

According to information from the FDRA Administration, the number of internal and external audiences was increased by 1,715,000 people in 2019, and the 2020 audience suffered an abrupt drop due to the pandemic, it was 58,497 people and, in 2021, there were small increase to 62,587 people.

Therefore, it represented a per capita index of 155.55 in 2019, it dropped to 14.71 in 2020 and, from 20.33 in 2021, when the presence began to be stimulated again with the improvement of pandemic indices, evidencing the conventional collection waste considerable in the FDRA, as occasional collection is not included (Table 4).

Tabela 4: Forum Desembargador Rodolfo Aureliano per capita RSR index (FDRA).

Recyclable Solid Waste Year FDRA	RSR FDRA Kg/Year	Population FDRA/Year	Per capita index Kg /Hab/Year/day
2019	10.954,90	1.715.000	155,5509 0,41
2020	3.976,00	58.497	14,7125 0,04
2021	3078,00	62.587	20,3336 0,05

Source: based in the FDRA administration.

In accordance with a study, it appears as vital topics to be observed, mainly in the contracting

instrument to be concluded between the parties: the feasibility of contracting through a legal entity of an associative nature of the collectors, in association or cooperative; the need for remuneration compatible with market prices; the responsibility of the public administration to observe issues involving the use of adequate equipment to ensure compliance with technical, environmental and public health standards; as well as the absence of decisions, on the part of political entities, aimed at supporting the activity developed by recyclable material collectors (CARNEIRO, 2021).

Furthermore, according to Moreira (2020), ethical action is imminent, and requires, in addition to individuality through ethics, collective ethical action, as a practice of the primacy of solidarity, for the purpose of achieving the result of sustainability, in the equalization plan between business activity and consumer society.

CONCLUSIONS

This partnership between the TJPE and COOPAGRES is fundamental, because in addition to mitigating environmental problems, it favors the social strengthening of the income of a marginalized and invisible population that provides a primordial service to the environment, but which will only survive with integrated policy and management that enables training and awareness of everyone.

It is inferred from the provisions of the Judiciary's Sustainability Policy that the TJPE has been adopting Strategic Planning and PLS with a view to promoting sustainable actions, thus, the study demonstrated the gradual evolution of the TJPE in the opportunity of improving waste management, modeling the processes of way that promote sustainability, based on integrity, in search of sustainable national development.

From this research, the issue of recyclable solid waste emerges as an opportunity for the TJPE to accept the suggestions: First, make it possible for the evident occasional collection to be resolved in the planning of the partnership between COOPAGRES and FDRA, identifying whether the cause is merely contractual management or, if it is necessary, to modify the terms of future contracts, to encompass a better solution to the destination of the occasional collection of the FDRA. Second, it is proposed that the TJPE implement systematized electronic tools that are necessary and sufficient to aid in the planning and monitoring of sustainable activities. Third, it is expected that the TJPE will be able to expand collections and destinations of recyclable waste through other cooperatives or associations in 'pole' cities in the regions of the State. Fourth, undertake sustainable practices in the administration and management of recyclable solid waste that consider the gravimetric composition, which is still predominant in paper, to reduce this material with the resolution of probable operational and managerial difficulties.

It is believed that the TJPE, by adopting this more aggressive and structured posture, the Institution's actions can undoubtedly be environmentally correct, economically viable, socially fair and inclusive, and culturally diverse, aimed at the five elements of sustainable development (People, Peace, Planet, Prosperity and Partnership), enshrined in the SDGs with their corresponding dimensions, social, economic, environmental, political and institutional, all intersect and constitute the sustainability configured in the 2030

Agenda.

This macro challenge of the elements of the 2030 Agenda needs a restructuring partnership with the PJPE, the State, the Municipalities, Society in general. The responsibility is everyone's, as well recommended by environmental regulations.

It is noted that when the relationships of the COOPAGRES members are diagnosed, regarding the predominance of the female gender; the barriers to be overcome in the search for awareness of the cooperative organization value with all partnerships (public sector, market and general public); it is indicated that in future works, the best path of identity and autonomy can be investigated for a better professionalization of the cooperative members, which will certainly characterize an increase in income, to benefit economically the families of the components and surroundings of the Cooperative and the locations of the housing, aiming at inclusion and structuring of precarious lives, in addition to potential social, cultural and environmental gains for all.

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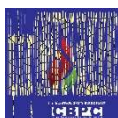
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