NOSS RETHINKING PLASTIC POLLUTION

VOLUME **2**

SINGLE-USE PLASTICS IN BRAZIL: POLICIES AND LAWS

ESCOLA DE ARTES CIÊNCIAS E HUMANIDADES

noss Núcleo de Pesquisa em Organizações, Sociedade e Sustentabilidade

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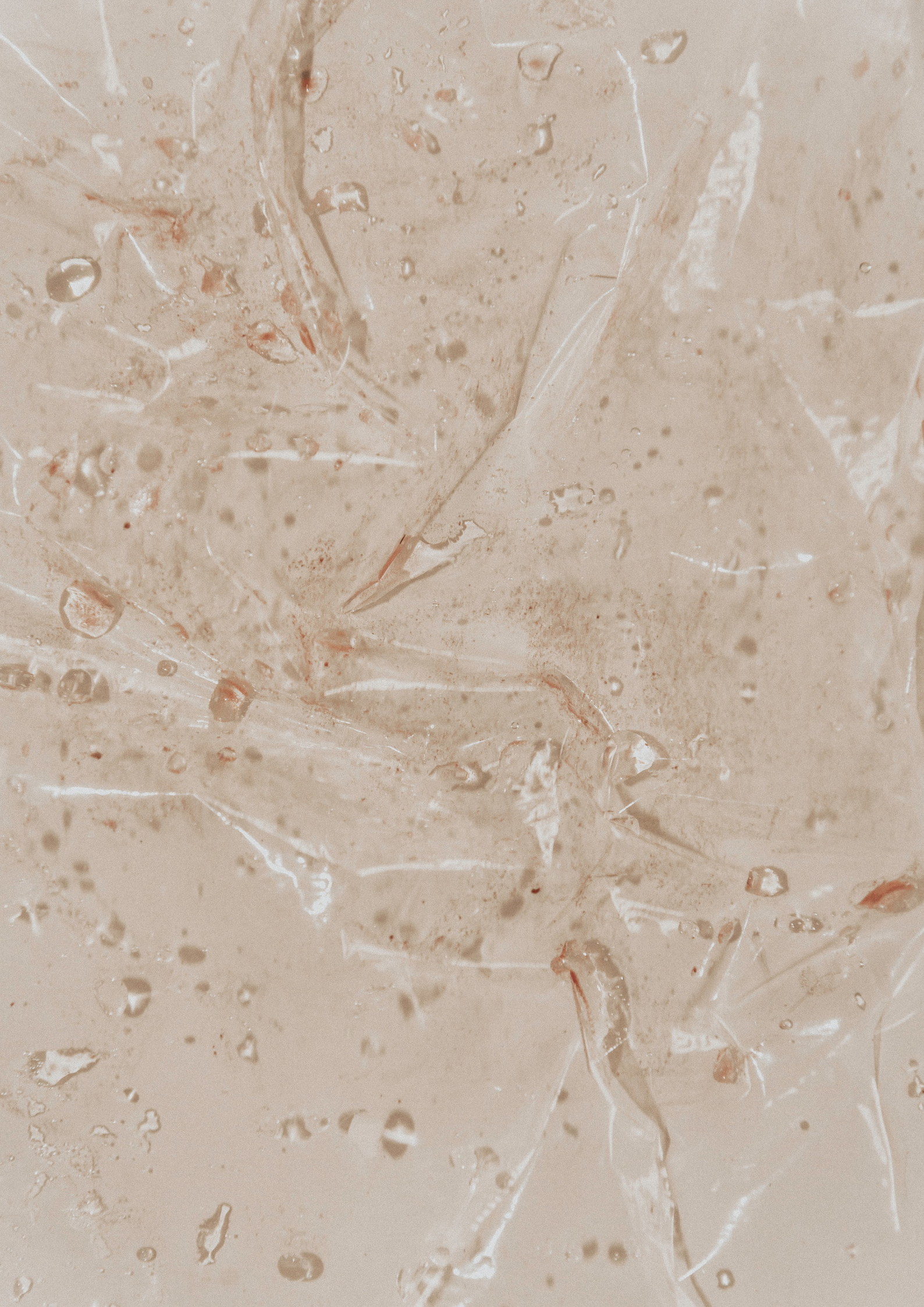


FOREWORD

This collection is one of the results of the project "*Rethinking Plastics Governance in a Post-Covid World*", funded by the University Global Partnership Network (UGPN). This project is a collaboration between researchers from the University of São Paulo, the University of Surrey and the University of Wollongong, who together form part of the *UGPN Rethinking Plastics Network*.

Through an interdisciplinary team, the project aimed to verify policies on plastic pollution before, during and after the Covid-19 pandemic. To this end, regulations, governance, and oversight structures that affect consumption and society's perception of plastic materials were examined. This is a qualitative study of secondary data that brings the Brazilian situation in the governance of single-use plastics in the face of the Covid-19 pandemic.

SINGLE-USE PLASTICS IN BRAZIL: POLICIES AND LAWS

Images of litter in the marine environment have drawn public attention to the huge problem of plastic pollution. In a short time, news became frequent in the media of a city or country that banned single-use plastics (ALMEIDA, 2019). In Brazil, local governments are increasingly adopting measures specifically aimed at reducing consumption of single-use plastics through bans, fees, and taxes.

Such measures reflect the consensus of various members of society (government, NGOs, population) on the environmental and human health problems caused by plastic pollution. In this context, it is important to reflect on policies and laws that translate how society and stakeholders organize themselves to make decisions about something of public interest. These reflections involve understanding the system by which organizations are controlled, the mechanisms by which they, and people, are held accountable. Therefore, this bulletin is structured in two dimensions: (i) Policies and (ii) Laws.

1

ENVIRONMENTAL POLICIES RELATED TO SINGLE-USE PLASTIC

Environmental policies in Brazil emerged in the 1980s. Such policies, especially those aimed at municipal solid waste (MSW) management, are the result of international conventions and the mobilization of groups that articulated themselves for this purpose. Table 1 shows the main Brazilian policies related to single-use plastics.

BOX 1: Brazilian policies that provide legal and institutional frameworks to deal with plastics and their impacts.

NATIONAL ENVIRONMENTAL POLICY (PNMA, IN PORTUGUESE

National **1981**

DESCRIPTION

It is the most comprehensive and influential landmark of Brazilian environmental policy to date.

APPROACH GIVEN PLASTIC

It does not address plastics directly but offers tools to control environmental pollution.

STRATEGIES TO DEAL WITH THE PROBLEM

- Environmental quality standards: preventive instrument, fundamental for pollution control (water and air quality standards).

COMMENTS

PNMA institutionalization process still presents a duality framework. On the one hand, there are great advances in the establishment of regulatory instruments and mechanisms; on the other hand, there is a prevalence of arguments based basically on economic rationality (Burztyn and Burztyn, 2012).

NATIONAL SOLID WASTE POLICY (PNRS, IN PORTUGUESE)

National **2010**

DESCRIPTION

The country's main regulatory framework for waste management, it brings together principles, objectives, instruments, guidelines, goals and actions that must be adopted by all actors in the supply chain aiming at an integrated and environmentally sound waste management.

APPROACH GIVEN PLASTIC

It deals with solid waste in general, based on the waste management hierarchy principle, and establishes guidelines for the implementation of shared responsibility for **plastic packaging**.

STRATEGIES TO DEAL WITH THE PROBLEM

- Waste Management Hierarchy;
- Selective collection: collection of solid waste previously segregated according to its constitution or composition;
- Reverse logistics: involving Sectoral Agreements and Terms of Commitment signed between the government and the business sector for plastic packaging and other types of waste.

COMMENTS

Despite bringing instruments and innovations to improve waste management in general, there has been little progress in its implementation. Even after 12 years of approval, formal selective collection system recovery rates remain below 4%, which proves the fragility of current waste management systems, in addition to the absence of structured buyer markets for some recyclable materials in the country (ABRELPE, 2020).

NATIONAL PLAN TO COMBAT MARINE LITTER (PNCLM, IN PORTUGUESE)

National **2019**

DESCRIPTION

The PNCLM aims to establish challenging, pragmatic, and viable actions to combat marine littering in Brazil. It brings a diagnosis of the problem, reference values, desired situation, governance model, implementation axes, guidelines, indicators, action plan and agenda of future activities.

APPROACH GIVEN PLASTIC

The Plan recognizes the environmental, social, cultural, and economic impacts of plastics and microplastics in coastal areas and oceans, mainly their power to disperse by sea currents and waves, and accumulate in waste islands, in other pollutants and in the trophic chain.
It presents several studies on the presence of single-use plastics and their social, economic, and environmental impacts along the entire Brazilian coast. It highlights the danger of microplastics found throughout the ocean, and their impacts on human health and the environment.

STRATEGIES TO DEAL WITH THE PROBLEM

- Develop monitoring, mitigation, and management actions along the entire Brazilian coast;
- Encourage initiatives that promote the reduction, reuse, and recycling of plastic waste;
- Develop more appropriate techniques for controlling sewage treatment;
- Foster new technologies that prevent the arrival of microplastics at sea;
- Promote waste management, especially plastics, through mobilization, engagement and awareness;
- Foster technological innovation projects for the use of plastics;
- Engage the industrial sectors in the disuse of microplastics in cosmetic and personal care products;
- Engage the productive sectors to reduce the use of non-biodegradable, non-recyclable materials, and plastics;
- Collection of additional taxes related to the production of plastics.

COMMENTS

In addition to the inefficiency in the implementation and execution of this Plan, the Brazilian government did not sign the international agreement to combat plastic waste in the 14th United Nations Climate Change Conference (COP-14) (CARRANÇA, 2020), evidencing the dismantling of the environmental policies, and weakening the position of the current government in relation to legislation and environmental governance.

NATIONAL SOLID WASTE PLAN (PLANARES, IN PORTUGUESE)

National **2020**

DESCRIPTION

PLANARES intends to support the structuring and implementation of the PNRS, enabling compliance with the determinations and goals provided for in the Law.
Presented during the pandemic in 2020, it provides a diagnosis of solid waste in Brazil, which includes reverse logistics; future scenarios; goals, guidelines, and strategies for MSW management; also, programs to meet the targets set.

APPROACH GIVEN PLASTIC

It presents an overview of the urban solid waste situation in Brazil. It highlights the generation of plastic urban solid waste - 3rd most consumed recyclable waste, points out the low percentage of recycled plastics in the country (below 20%), and highlights the increased presence of these materials, among others, in rural solid waste.

STRATEGIES TO DEAL WITH THE PROBLEM

- Reduction of Dry Urban Solid Waste disposed in sanitary landfills;
- Resources for implementation of segregation systems (paper, glass, plastics, fabrics, metals, stones, etc.);
- Resources to determine which are the Persistent Organic Pollutants (POPs) and inert (plastics, glass, paper, fabrics, metals, stone and others) present in MSW, and about proper management procedures;
- Expansion and implementation of reverse logistics for waste plastic materials from agricultural and livestock activities;
- Development of technical solutions for environmentally adequate final disposal, at the place of generation, of plastic waste from agricultural and livestock activities.

COMMENTS

Despite seeking advances in the waste management in Brazil, PLANARES does not advance in a structured and systemic agenda, especially in solving the problem of plastic waste and single-use plastics. Examples of this are the alignment with the programs of the Urban Environmental Quality Agenda and the Zero Waste program, instituted by former minister Ricardo Salles (MMA, 2020), and the issue of combating marine litter, which is treated in a summarized manner and linked to the National Plan to Combat Marine Litter and its recent Action Plan.

BOX 1: Actions for the implementation of Reverse Logistics in Brazil.

2015

The **Packaging Coalition** signed the **Sector Agreement for the Implementation of a Reverse Logistics System for Packaging in General in Brazil** with goals and phases aimed mainly at supporting waste pickers organizations and increasing the number of Voluntary Delivery Points (PEVs, in Portuguese) that receive waste (CEMPRE, 2019).

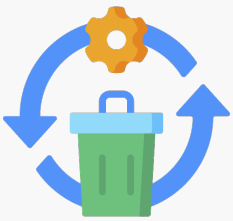
However, the **Sector Agreement** does not bring great contributions with regard to packaging design and material reuse and is related to packaging with already well-structured chains in Brazil, such as PET plastic. As a result, **waste picker organizations** will continue to receive complex packaging that cannot be reused in the Brazilian recycling chain, a scenario that worsened during the Covid-19 pandemic (DEMAJOROVIC, 2021).

2019

A **Technical Cooperation Agreement** was signed by the Brazilian Plastic Association (ABIPLAST, in Portuguese), with the Brazilian Development Agency (ABDI, in Portuguese), in order to encourage the reverse logistics of plastics and generate positive socio-environmental and economic impacts. According to its representatives, the agreement is adjusted to the PNRS. ABDI aims to start a Circular Economy project with a focus on the plastics chains and then expand to other sectors in the future (FIALHO, 2019).

There are also two requests that deal with the Circular Economy of Plastics in the country: **i. Request of the Economic Affairs Commission No. 44, of 2019; ii. Request of the Environment Commission No. 14, of 2019**. Both have a public hearing nature, are closed and have been approved.

2020



Through Ordinance No. 252, former Minister of the Environment, Ricardo Salles, opened the public consultation process of the proposed **"Term of Commitment for the implementation of actions aimed at the circular economy and reverse logistics of packaging in general**". The **Term of Commitment** determines at the federal level the guidelines and actions that will be carried out by the companies that are part of the "ReCircula" initiative for the development of the Circular Economy of packaging in general (MMA, 2020).

Based on the objectives of the PNRS, the **Term of Commitment** established goals related to the use of recyclable materials in the production of packaging, as well as the incorporation of recycled raw material in post-consumption and returnable packaging alternatives (ABRELPE, 2020).

However, the **Brazilian Association of Members of the Public Ministry for the Environment** (ABRAMPA, in Portuguese) published a Technical Note with a contrary position to the Term of Commitment. According to them, it is understood that the "term of commitment in question does not define the measures necessary to ensure the implementation and operation of the reverse logistics system for packaging", thus suggesting that the proposal be rejected as it does not meet legal requirements (ABRAMPA, 2020).

2021-2022

As of Federal Decree No. 10,936/2022, new regulations were determined for the National Solid Waste Policy (PNRS). Regarding reverse logistics in particular, the decree establishes the **National Reverse Logistics Program** that seeks to optimize the implementation and operation of reverse logistics infrastructure; provide an increase in reverse logistics in the country with large-scale adhesion and pay greater attention to the congruence of information provided to the National Information System on Solid Waste Management (*Sinir*, in Portuguese). The availability of updated information on Sinir will be a condition for the States, the Federal District, and the Municipalities to have access to Union resources. This Program is also integrated to the National Solid Waste Plan (PLANARES). Also, rules were established for micro and small companies to also make their solid waste management plans available at Sinir. In addition, it institutes the **Waste Transport Manifest** (MTR) for environmental inspection and the minimum content of **infralegal and contractual acts regulating reverse logistics systems.**

Decree No. 11,044/2022 institutes the Recycling Credit Certificate, *Recicla+* in Portuguese, applying to legal entities under public or private law that develop actions related to reverse logistics and integrated waste management. The certificate consists of a document that proves the return to the production cycle of the equivalent mass of raw material for packaging or products placed on the market and may be used for meeting goals related to reverse logistics. *Recicla+* must be backed by the final destination certificate, issued through the Waste Transport Manifest (MTR), and the fiscal receipts for the commercialization of products or packaging proven to be destined for recycling or energy recovery.

2

LAWS THAT REGULATE PLASTICS IN BRAZIL

It is known that the banning of single-use plastics, such as straws, cups, packaging, responsible for most of the waste that accumulates in nature, is already a reality in 27 nations while regulations that limit the distribution of plastic bags have been sanctioned in 127 countries (XANTHOS; WALKER, 2017). In the Brazilian context it is no different.

AT THE FEDERAL LEVEL

108 bills were identified that aim to somehow restrict, regulate, or ban plastic, especially single-use, disposable articles, the oldest being from 1999.

Most of the projects are attached to other proposals that deal with similar issues and are being processed jointly, of which PL 612/2007 stands out, dealing with the use of biodegradable bags for packaging products and goods and has about 22 attached bills. Still, 12 projects were archived.

Only 20 bills are in progress with their own processing. Despite the existence of more than 100 bills, none of the identified projects have been approved so far.

These bills range from the production process of plastic material, passing through its commercialization, use and import, to understanding the moment of its disposal, waste management, and its recycling. The focus on the recycling process is highlighted. It was also verified the existence of a set of bills that aim to implement a specific reverse logistics for plastics and propose guidelines for the proper management of this waste. A categorization of the bills that deal with single-use plastics is presented in Figure 1.

It is possible to identify the prominence and prevalence of bills related to the first of the R: Reduction, regarding production, import, commercialization and use of single-use plastics and their varieties, in addition to many of them establishing the banning of material.

These projects aim to encourage and implement reverse plastic logistics systems, which may occur through recycling or reuse of the material, in order to return the plastic material to the production chain.

FIGURE 1: Status of the processing of legislative bills . Source: Authors (2022).

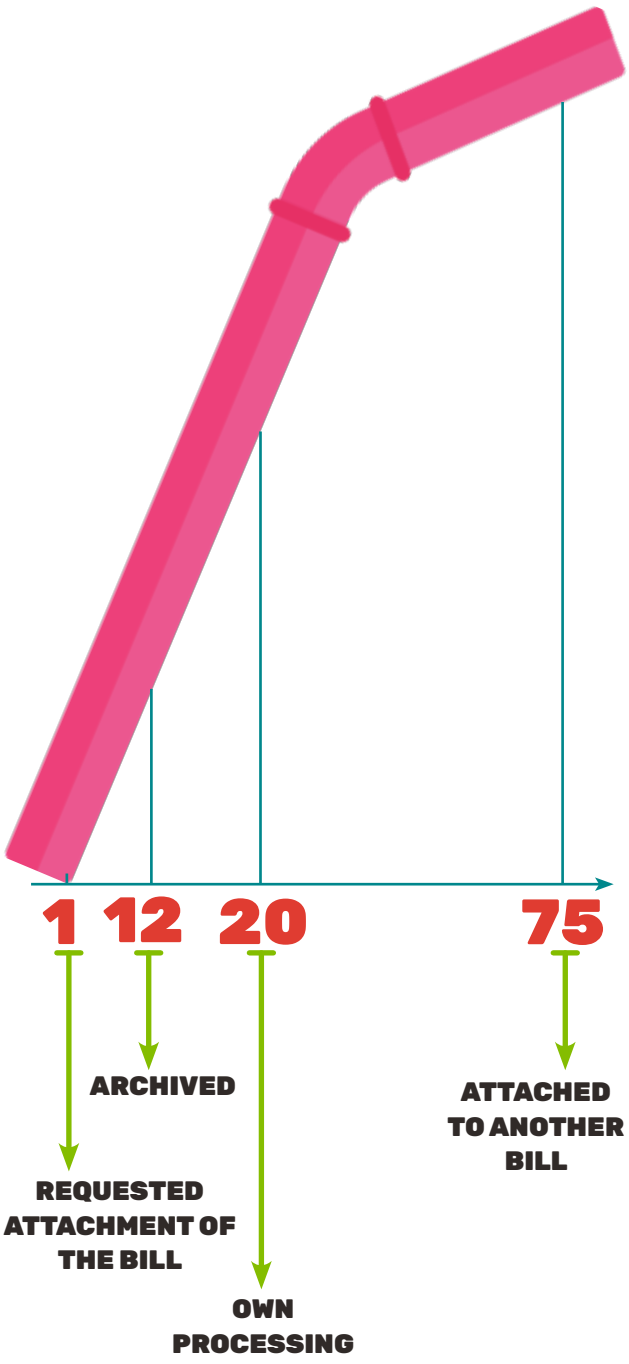


FIGURE 2: Topics covered by the bills. Source: Authors (2022).

65 BANNING OR RESTRICTION OF PLASTIC ITEMS (STRAWS, BAGS, CUPS, OR SINGLE-USE PLASTICS IN GENERAL AND MICRO PLASTICS)

18 MANDATORY DISTRIBUTION OF BIODEGRADABLE OR REUSABLE ARTICLES

16 REVERSE LOGISTIC SYSTEM OR WASTE MANAGEMENT AND DISPOSAL

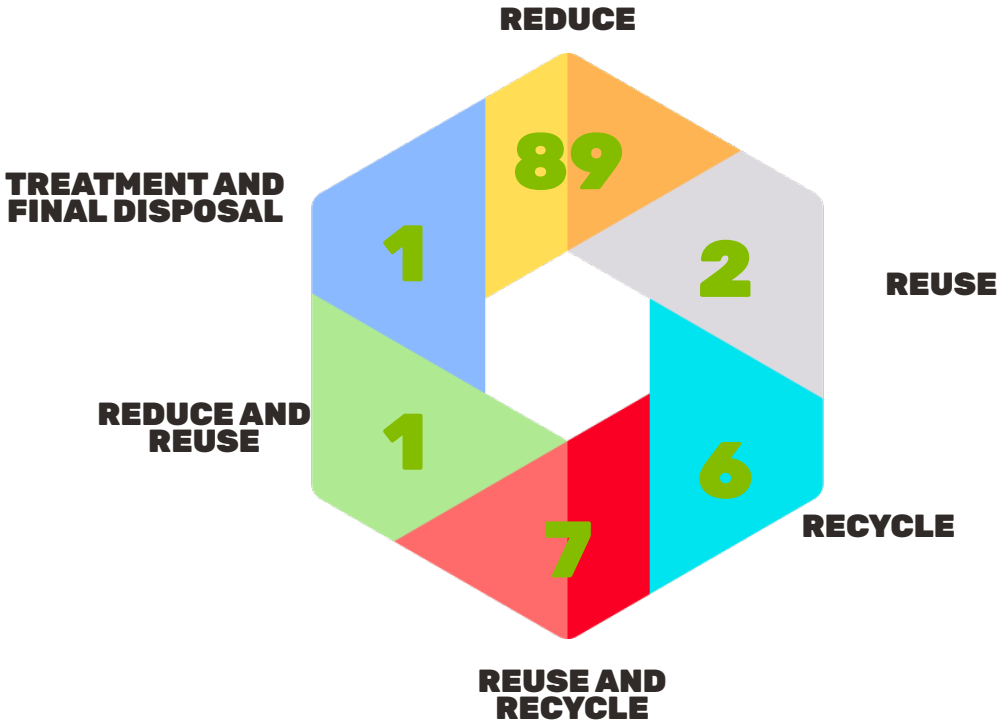
3 TAX CREDIT OR EVASION FOR COMPANIES THAT USE OR PRODUCE BIODEGRADABLE PRODUCTS, RECYCLED OR FROM RENEWABLE SOURCES

3 MARINE PLASTIC POLLUTION

2 CHARGING FOR PLASTIC BAGS

1 SPECIFIC FEATURES PLASTIC BAGS

FIGURE 3: Number of bills classified according to the Waste Management Hierarchy. Source: Authors (2022).



BOX 3: Proper Management of Disposable Masks.

With the advancement and worsening of the Covid-19 pandemic in 2020, governments began to impose measures in order to stop the spread of the virus, one of which was the mandatory use of disposable masks. Despite the Brazilian Government's recommendation at the beginning of the pandemic for the general population to use fabric or reusable masks, the exponential increase in the use of disposable masks and other PPE has aggravated the inappropriate disposal and caused the accumulation of these materials in the environment (see Bulletin 1 of this series).

In this context, congressman Célio Studart, from the Green Party (PV, in Portuguese) from the State of Ceará, launched in the National Congress the Bill No. PL No. 4134/2020, s.p.). The bill is based on an argument by a Professor of the Institute of Biology at UFRJ, the oceanologist Paulo Salomona, who stated:

> *"Many masks are made from mixed plastics such as high-density polyethylene, polyester, and polypropylene. This created a huge problem for the oceans. In addition, the distribution of accessories without proper disposal guidelines goes against various environmental actions" (exert from Bill No. 4134/2020, s.p.).*

In addition, the PNRS itself states that for materials with a high risk of contamination, their producers are responsible for structuring the reverse logistics of these materials, corroborating the relevance of this bill. The bill was presented at the National Congress on August 10th, 2020 and on February 23rd, 2021 it was attached to Bill No. 5.020/2020, which amends Article No. 33 of the PNRS, to include disposable masks among the products subject to reverse logistics.

AT STATE AND CITY LEVEL

The discussion around the issue of plastics in Brazil has a clear European influence, especially in three sequential resolutions, presented by Santos (2012):

1. The process, still in progress, and the existence itself of a Bill of the Chamber of Deputies, Bill No. 612/2007, which promotes the replacement of conventional bags by biodegradable ones in all commercial establishments in the Brazilian territory;

2. The series of joint actions carried out by the Ministry of the Environment, the Government of the State of São Paulo and a combination of associations to raise awareness of the consumption of packaging and reduce the use of plastic bags, which resulted in the creation of the Program for Quality and Responsible Consumption of Plastic Bags currently implemented in five capital cities (São Paulo, Salvador, Porto Alegre, Goiânia and Brasília);

3. The emergence of isolated initiatives in states and municipalities, with emphasis on Rio de Janeiro and São Paulo, with the ban on the total use or use of conventional bags, being replaced by biodegradable ones, in 2009 and 2011 respectively.

Although there is no national legislation in force, Brazil has 214 regulations, strategies and policies aimed at reducing or banning single-use plastics at state and municipal levels (Figure 5).

FIGURE 5: Map with states and municipalities that regulate plastic items. Source: Authors (2022).

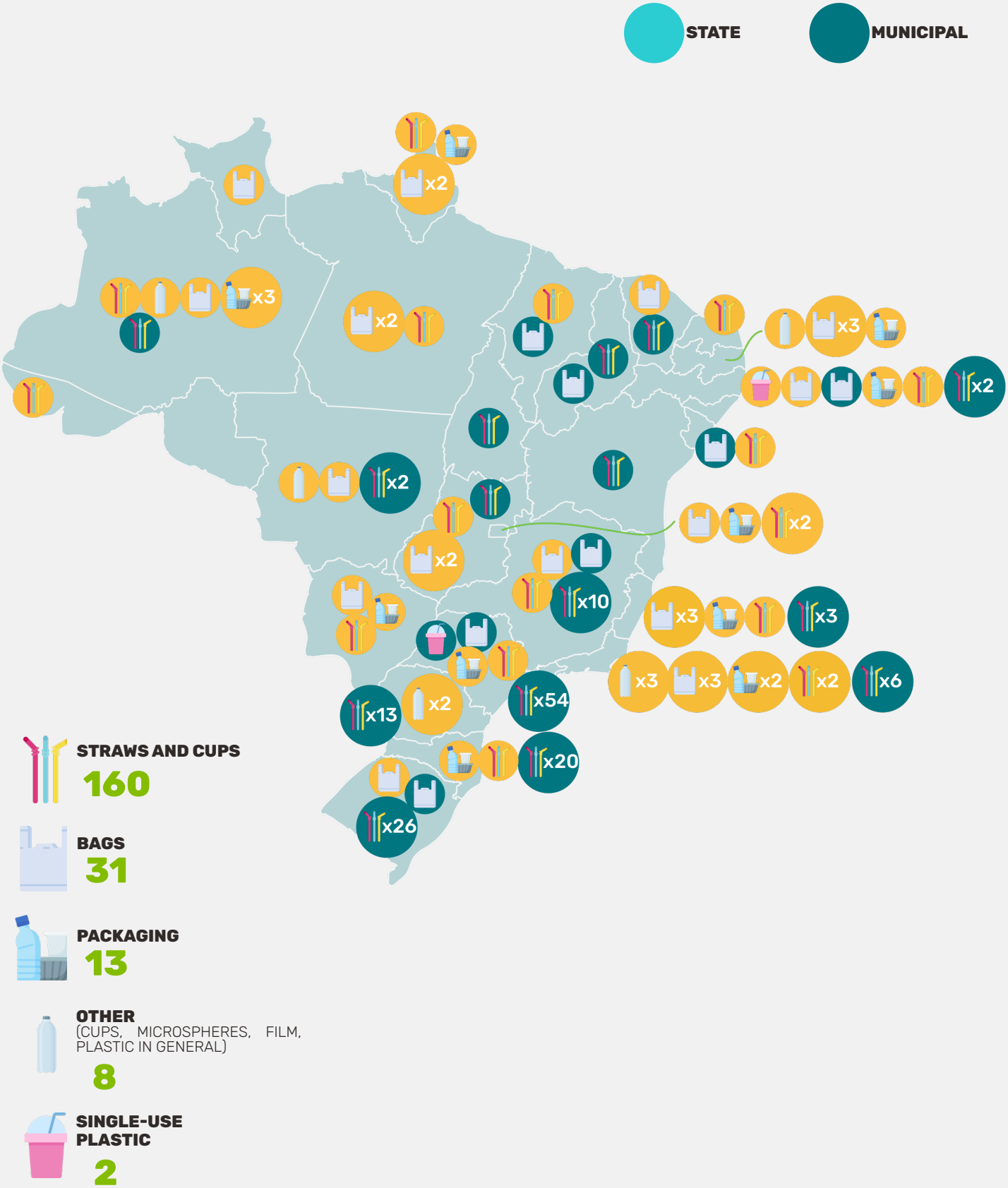
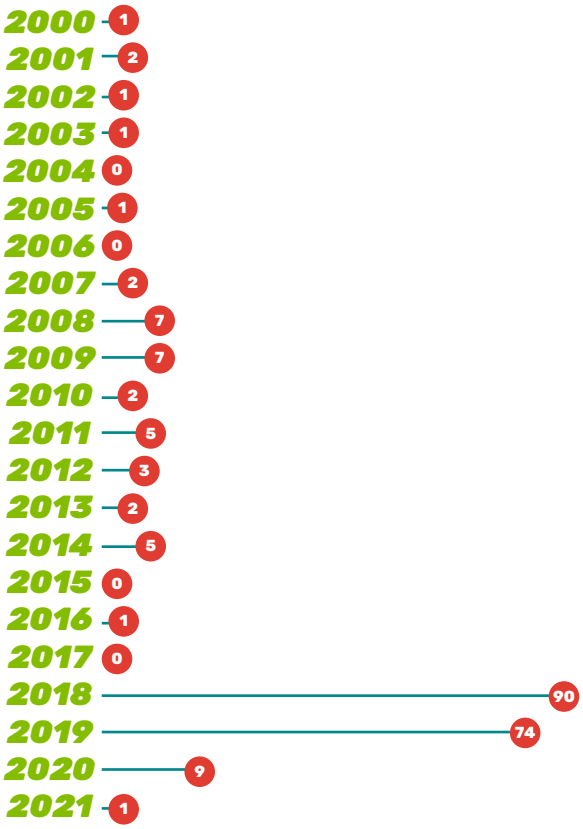


FIGURE 6: Quantity of approved legislation over the years. Source: Authors (2022).

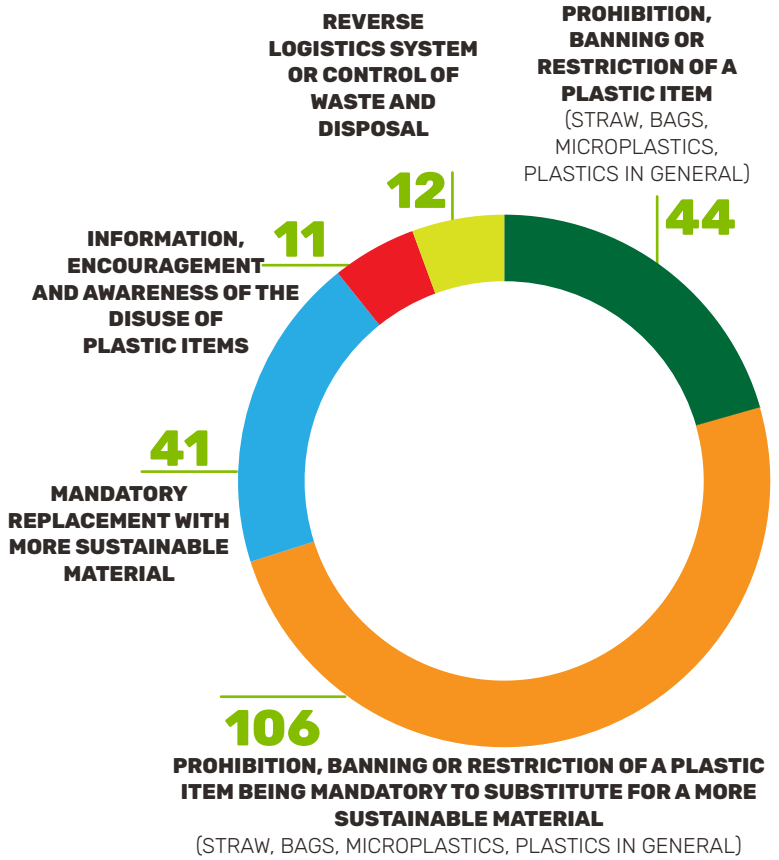


In 2019, Brazil was the American country with the highest number of municipal public policies that regulate the use of plastic straws (152), with the state of São Paulo being the region with the highest concentration of them (52) (MAILES NETO, 2019). It is noted that plastic straws are still the most regulated items in the country, followed by plastic bags and plastic packaging.

The legislations mapped are part of a relatively recent movement and resemble European guidelines from the 2000s, following successful examples of taxation systems and voluntary reduction campaigns for plastic items such as bags and straws from countries such as Ireland, New Zealand, and Australia (SANTOS, 2012).

Despite being considered advances, these regulations, strategies, and policies are not accompanied by an effective budget to promote public policies in environmental education, collection and recycling, improvement of the working conditions of waste pickers and accessible proposals for the replacement of conventional plastics (HEINRICH BÖLL BRASIL FOUNDATION, 2020). In general, legislation proposals are related to changing individual behavior and specific products, since most of them are related to banning, restriction or prohibition of consumption.

FIGURA 7: Classification of legislation by theme. Source: Authors (2022).



In addition, the replacement patterns of these items are often restricted to *greenwashing*, with the use of plastics considered "green", which perpetuate the linear logic and the accumulation of waste generated. It is noted that Brazilian laws do not provide the scope and discipline necessary to contain the impacts generated by the category of single-use plastics (FUNDAÇÃO HEINRICH BÖLL BRASIL, 2020).

BOX 4: Brazilian laws that prohibit single-use plastics, including those classified as oxo-degradable.

The first, more restrictive and progressive, is District Decree nº 002 of November 12th, 2018, in the district of Fernando de Noronha, Pernambuco. Decree nº 92,755 creating the Environmental Protection Area of Fernando de Noronha - Rocas, São Pedro and São Paulo in 1986, which covers 30% of the land part of the Archipelago and its marine surroundings, the surroundings of the Biological Reserve of Atol das Rocas and the Archipelago of São Pedro and São Paulo (PARNANORONHA, 2021). The rule therefore prohibits the entry, sale, and use of plastic bottles with a capacity of less than 500 ml, plastic straws, disposable cups, plates and cutlery, plastic bags, disposable expanded polystyrene (EPS) and extruded polystyrene packaging - popularly known as styrofoam - and other disposable products composed of polyethylene, polypropylene and/or similar throughout the archipelago. As a main point, it is important to emphasize that the rule is not restricted to commercial establishments, but also to residents and visitors and that it served as a stimulus for the creation of the Noronha Zero Plastics Project, which seeks to make Fernando de Noronha the most sustainable territory in Brazil (FERNANDO DE NORONHA, 2018; NORONHA PLASTICO ZERO, 2021).

The second is Municipal Law No. 17,261 of January 13, 2020, of the city of São Paulo. The proposal by Xexéu Tripoli from PV, prohibits the supply of cups, plates, cutlery, stirrers for drinks and sticks for disposable plastic balloons to customers of hotels, restaurants, bars and bakeries, spaces for children's parties, night clubs, dance halls, cultural and sporting events of any kind, among other commercial establishments (SÃO PAULO, 2020; MIGALHAS, 2020). In the same year, SINDPLAST-SP, the union of plastics industry in the state of São Paulo, filed a lawsuit in the judicial court (TJ-SP), alleging unconstitutionality and supervening facts such as the outbreak of the Covid-19 virus, considering the use of plastics as a necessary measure to combat the disease (MIGALHAS, 2020). SINDPLAST-SP cited that plastics are more efficient to contain the proliferation of the virus, unlike reusable items, and are therefore considered an important measure to combat the Covid-19 pandemic (MIGALHAS, 2020). However, the claim has no scientific basis; in fact, plastic waste is known to provide a relatively stable habitat for pathogenic bacteria and/or viruses, such as the SARS type (FRÈRE et al., 2018), and thus increase their propagation (PRATA et al., 2020).

Initially, the tutelary anticipation had been denied, but with the worsening of the epidemiological scenario in Brazil in 2020, **Judge Soares Levada** granted the request with the justification that the scenario has changed and that it would be unthinkable for food deliveries and so many others to be made with the use of reusable ones, either because of the cost or because of the much more dubious or even precarious hygiene (MIGALHAS, 2020). After a few months, in August 2020, the special body of the TJ-SP judged the constitutional law and it came into force in January 2021 in the municipality (TJ-SP, 2020; ROCHA E MOUTA, 2021).

REFERENCES

ABRAMPA - Associação Brasileira dos Membros do Ministério Público de Meio Ambiente. NOTA TÉCNICA DA ABRAMPA: Sobre a proposta de Termo de Compromisso de grupo de empresas a ser celebrado com a União para fomento à Economia Circular e Logística Reversa de Embalagens em Geral. ABRAMPA, Belo Horizonte, 2020. Disponível em: https://abrampa.org.br/abrampa/uploads/images/conteudo/Nota%20Te%CC%81cnica%20da%20Abrampa%20-%20Recircula%20-%2002.07.2020-rev.pdf. Acesso em: 28 mar. 2021.

ABRELPE. Panorama dos resíduos sólidos no Brasil 2020. ABRELPE, 2020. Disponível em: https://abrelpe.org.br/panorama-2020/. Acesso em: 28 mar. 2021.

ALMEIDA, Alexandra Ozório. Plásticos demais. Revista Pesquisa Fapesp, [São Paulo], 2019 Disponível em: https://revistapesquisa.fapesp.br/plasticos-demais/. Acesso em: 8 jul. 2021.

CEMPRE. CEMPRE Review. São Paulo, 2019. Disponível em: https://cempre.org.br/wp-content/uploads/2020/11/CEMPRE-Review2019.pdf. Acesso em: 28 mar. 2021.

DEMAJOROVIC, J. Pandemia, embalagens e a economia circular. Página22, 2021. Disponível em: https://pagina22.com.br/2021/03/19/pandemia-embalagens-e-a-economia-circular. Acesso em: 28 mar. 2021.

FERNANDO DE NORONHA (Cidade). Decreto Distrital n° 003, de 12 de dezembro de 2018. Fernando de Noronha, PE. Disponível em: http://www.noronha.pe.gov.br/instLegislacao.php?cat=3. Acesso em 08 abr. 2021.

FIALHO, G. ABDI inicia projeto em economia circular com a cadeia do plástico. Agência Brasileira de Desenvolvimento Industrial, Brasília, 2019. Disponível em: https://www.abdi.com.br/postagem/abdi-inicia-projeto-em-economia-circular-com-a-cadeia-do-plastico. Acesso em: 28 mar. 2021.

FRÈRE L., MAIGNIEN L., CHAPOLIN M., HUVET A., RINNERT E., MORRISON H., KERNINON S., CASSONE A. L., LAMBERT C., REVEILLAND J., PAUL-PONT. 2018. Microplastic bacterial communities in the Bay of Brest: influence of polymer type and size. Environment Pollution, 242: 614–625.

FUNDAÇÃO HEINRICH BÖLL BRASIL. Atlas do Plástico: Fatos e números sobre o mundo dos polímeros sintéticos. 1. ed. Rio de Janeiro: Fundação Heirich Böll, 2020. Disponível em: https://br.boell.org/pt-br/2020/11/29/atlas-do-plastico. Acesso em: 28 mar. 2021.

MAILES NETO, Arnaldo. Os Canudos Plásticose suas políticas públicas de regulamentação nos países americanos. Trabalho de Conclusão de Curso (Graduação em Engenharia Ambiental) - Escola Politécnica, Universidade Federal do Rio de Janeiro, 2019, 101p.

MIGALHAS. Justiça de São Paulo suspende lei que proíbe fornecimento de descartáveis. 2020. Disponível em: https://www.migalhas.com.br/quentes/323545/justica-de-sp-suspende-lei-que-proibe-fornecimento-de-descartaveis. Acesso em: 15 mar. 2021.

MMA - Ministério do Meio Ambiente. Termo de Compromisso para implementação de ações voltadas à economia circular e logística reversa de embalagens em geral. Ministério do Meio Ambiente, Brasília, 2020. Disponível em: http://consultaspublicas.mma.gov.br/tcembalagensemgeral/wp-content/uploads/2020/05/RECIRCULA-Minuta-de-Termo-de-Compromisso-27.05.2020-vers%C3%A3o-limpa.pdf. Acesso em: 28 mar. 2021.

NORONHA PLÁSTICO ZERO. Noronha Plástico Zero. 2021. Disponível em: http://www.noronhaplastico-zero.com.br/. Acesso em: 08 abr. 2021.

PARNANORONHA. APA - Área de Proteção Ambiental de Fernando de Noronha - Rocas, São Pedro e São Paulo. 2021. Disponível em: https://www.parnanoronha.com.br/apa. Acesso em: 12 abr. 2021.

PRATA. JC, SILVA. ALP, WALKER TR, DUARTE AC, ROCHA-SANTOS T. COVID-19 Pandemic Repercussions on the Use and Management of Plastics. Cite This: Environ Sci Technol. 2020;54:7765. doi:10.1021/acs.est.0c02178

BRASIL. Congresso Nacional. Projeto de Lei n° 4134/2020.Determina que os fornecedores de máscaras de proteção individual ofereçam opção de descarte adequado para os produtos e determina outras providências. Brasília, DF: Congresso Nacional, 2020. Disponível em: https://www.camara.leg.br/proposicoesWeb/fichadetramitacao?idProposicao=2259769. Acesso em: 04 mai 2021.

SANCIONADA A LEI QUE PROÍBE USO DE DESCARTÁVEIS EM COMÉRCIO DE SÃO PAULO. Rocha & Mouta Sociedade de Advogados, São Paulo, 16 de fev. 2021. Notícias. Disponível em: https://rochaemouta.com.br/sancionada-a-lei-que-proibe-uso-de-descartaveis-em-comercio-de-sao-paulo/. Acesso: 22 de jul. 2022.

SÃO PAULO (Cidade). Lei Municipal n° 17.261 de 13 de janeiro de 2020. São Paulo, SP. Disponível em: https://www.sinesp.org.br/quem-somos/legis/78-leis/9367-lei-n-17-261-de-13-01-2020-dispoe-sobre-a-proibicao-de-fornecimento-de-produtos-de-plastico-de-uso-unico-nos-locais-que-especifica. Acesso em: 05 abr. 2021.

SANTOS, A. S. F. et al. Sacolas plásticas: destinações sustentáveis e alternativas de substituição. Polímeros, v. 22, n. 3, p. 228-237, 2012.

Lei que veda fornecimento de produtos de plástico de uso único na Capital é constitucional, decide OE. Comunicação Social TJSP. São Paulo, 1 de set. 2022, NOTÍCIAS. Disponível em: https://www.tjsp.jus.br/Noticias/Noticia?codigoNoticia=62084&pagina=1. Acesso: 22 de jul. 2022

XANTHOS, Dirk; WALKER, Tony R. International policies to reduce plastic marine pollution from single-use plastics (plastic bags and microbeads): A review. Marine Pollution Bulletin, [S. l.], v. 118, n. 1–2, maio 2017, p. 17–26. DOI:10.1016/j.marpolbul.2017.02.048.

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