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**ANALYSIS OF EXTENDED  
PRODUCER RESPONSIBILITY IN  
LAC AS A TOOL TO CONTRIBUTE  
TO ODS 12**

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The CODS documents address sustainable development issues in Latin America and the Caribbean. They are addressed to both academics and decision-makers in the public and private sector. There is no single emphasis. The papers can be conceptual, empirical or contain general reflections on sustainable development. They aim to promote a multidisciplinary approach and contribute ideas to the achievement of the Sustainable Development Goals in the region.

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# 1. Introduction

The 2030 Agenda for Sustainable Development, adopted by the United Nations General Assembly in 2015, sets out a plan of action for people, planet and prosperity, through 17 goals and 169 targets for action, covering the economic, social and environmental spheres. Within this framework, Sustainable Development Goal (SDG) 12 "Responsible production and consumption" aims to increase efficiency in the use of resources by reducing the impact on ecosystems, and in improve people's quality of life through access to basic services and the generation of green jobs, among others. This requires the promotion of public policies and regulations that promote and accompany the development and implementation of such strategies, with extended producer responsibility being a clear example.

The term Extended Producer Responsibility (EPR) was introduced in 1990 by Thomas Lindqvist, Swedish Minister of the Environment, in the report "Models for Extended Producer Responsibility". Later, in framework of the Organisation for Economic Co-operation and Development (OECD), the concept was revised and defined as an environmental principle. The OECD defines EPR as "an environmental policy approach in which a producer's responsibility towards a product is extended to the post-consumption stage of a product's life cycle". An EPR policy is characterised by: 1) the shift of responsibility (physical and/or economic; full or partial) from municipalities to producers, and 2) the provision of incentives to producers to take environmental considerations into account when designing their products (e.g. regarding choice of materials, reduction of size, weight and energy consumption) and their systems (e.g. technologies, energy efficiency, energy efficiency).

recycling, reverse logistics, market strategies, among others).

There are now many countries, especially in Europe, that have moved forward with successful EPR laws and policies, which involve producers taking responsibility for collecting, sorting and treating products at the end of their useful life, following the polluter pays principle (OECD, 2016). SRP is becoming a crucial mechanism for improving resource use along the value chain and promoting the circular economy, mechanisms of increasing importance in the 2030 Agenda for Sustainable Development (Stephenson and Faucher, 2018), contributing especially to achieving targets 12.2<sup>1</sup>, 12.4<sup>2</sup> and 12.5<sup>3</sup> which are part of SDG 12.

The development and implementation of CSR in Latin America is heterogeneous and complex, given the coexistence in the region of diverse national realities and initiatives with varying degrees of progress. The objectives of this study are as follows:

1) compare the different SRP initiatives, with a special focus on the existing body of legislation, of

1. SDG 12. Target 12.2: by 2030, achieve sustainable management and efficient use of natural resources. Source: United Nations. Sustainable Development Goals. Targets under SDG Goal 12.

2. SDG 12. Target 12.4: By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and land in order to minimise their adverse effects on human health and the environment. Source: United Nations. Sustainable Development Goals. Targets under SDG Goal 12.

3. SDG 12. Target 12.5: By 2030, significantly reduce waste generation through prevention, reduction, recycling and reuse. Source: United Nations. Sustainable Development Goals. Targets under SDG Target 12.



five countries in the region -Argentina, Brazil, Chile, Colombia and Mexico-; 2) identify the challenges and opportunities generated, highlighting successful cases and experiences in the countries analysed; 3) outline a series of recommendations in order to guide regional public policy and analyse the contribution of CSR to SDG 12.

For the development of the study, a survey of the legislation and regulations in force in each country was carried out, as well as an exhaustive bibliographic review, both of scientific dissemination and journalistic articles. In addition, semi-structured interviews were conducted with nine key informants, who were key figures in the field in the countries covered by the study, with the aim of giving an account of the application of the regulations in force and the repercussions on the different sectors and actors involved<sup>4</sup>.

Based on the information gathered from both primary and secondary sources, key aspects of the development and functioning of the implementation of SRP policies were identified. In the first instance, a comparative analysis was carried out, with a special focus on the body of regulations in force between countries. Secondly, the main challenges and opportunities were identified, as well as success stories and experiences in the countries analysed. This process allowed us to outline a series of final recommendations that we hope will be useful to guide regional public policy, understanding CSR as a tool to contribute to SDG 12.

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4. The heterogeneity in the quantity and quality of published information available for the five countries covered by the study, together with the difficulty in establishing contact with some of the Latin American references for the development of the interviews, in a global context affected by the COVID-19 pandemic, constituted some of the study's limitations.

## 2. REPs in Latin America

Latin America has at least 11 countries with legislation that mentions or decrees the implementation of EPR (Quispe, 2017). However, the development of its regulation and effective implementation in the region is still incipient in many cases.

A central aspect where EPR schemes are starting to be implemented is in waste management systems. According to the report "Perspective of waste management in Latin America and the Caribbean" (2018) prepared by the United Nations Environment Programme (UNEP), proper waste management is one of the greatest challenges for sustainability in the region. The constant increase in waste generation is affected by some global phenomena such as population growth, the increasing trend towards urbanisation and economic growth accompanied by unsustainable production and consumption patterns. In quantitative terms, the study shows that in 2014 the generation of urban waste in Latin America and the Caribbean was 541,000 t/day, with an estimated increase of at least 25% by 2050. Also, according to the low recycling rates reported in the region (between 1-20%), it is inferred that approximately 90% of this municipal waste is destined for final disposal. Furthermore, while some progress has been made in the adoption of modern waste-to-energy practices in large cities in the LAC region, such as in Mexico City, Buenos Aires, São Paulo and Bogotá, urban waste management is still poor in many cities. It is estimated that approximately 55% of municipal solid waste generated in the region is adequately managed in landfills, while 45% of municipal solid waste generated in the region is managed in landfills.

remaining in landfills and open dumps (Graziani, 2018).

Although the regulations governing waste management in the region have made considerable efforts to achieve greater efficiency in integrated waste management, it is clear that these efforts are insufficient to minimise the impact of production and consumption (Fernández and Eberz, 2016). In this framework, REP is a very attractive economic instrument, capable of providing the necessary resources to establish an infrastructure for recycling and recovery of products and materials, as well as to promote changes in design and production that waste reduction in the initial stages of production processes (Valdivia, 2018). In other words, this is not only a shift of responsibility from the state to the producer, but also an opportunity to drive more sustainable production.

In Latin America and the Caribbean, there are differences in the implementation of the legal framework for EPR. In the case of the five countries analysed in this study -Argentina, Brazil, Chile, Colombia and Mexico-, there are some that have specific regulations by type of waste/flow, as is the case in Argentina, and some others that have both a framework law that structures and defines the EPR approach, and specific regulations that regulate the management of products/materials considered a priority, as is the case in Chile, Colombia, Brazil and Mexico (Figure 1). This regulatory development, together with the endogenous characteristics of each country, has repercussions on the process of adopting and implementing EPR, the degree of institutionalisation achieved, the impact on the territory and the participation of different actors involved in some stage of the product life cycle.



**Figure 1.** Summary of the regulatory development of EPR in Latin American countries: Argentina, Brazil, Chile, Colombia and Mexico.

## 2.1 Argentina

Legal framework achieved in the country: specific regulations by waste type/stream Legislation

analysed

- Tyres. Sustainable tyre management. Resolution SAyDS 523 of 2013
- Phytosanitary packaging. Minimum requirements for the environmental protection of empty phytosanitary containers. Law 27 279 and its Regulatory Decree 134 of 2018.

In Argentina, the legislative development of SRW arose from the approval of two pieces of legislation that address specific waste streams: tyres and phytosanitary packaging. Argentina does not yet have a general framework law, but there are draft laws that seek to provide such a framework.

In 2013, Resolution 523 of 2013 was approved, which defines the general guidelines for the development of a strategy for the "Sustainable management of tyres in their life cycle", with a scope focused on waste tyres. Among the stated guidelines is the REP, understood as the allocation of the burden of environmental management to producers, throughout the entire life cycle of the product including the post-consumer stage.

In 2016, and with a higher level of development, Law 27 279 on Minimum Requirements for the Environmental Protection of Empty Phytosanitary Containers was passed, which aims to regulate the management of empty phytosanitary product containers<sup>5</sup> generated in the national territory.

5. Phytosanitary: any substance or mixture of substances intended to prevent, control or destroy any harmful organism, including unwanted species of plants or animals, which causes damage to or negative interference with the production, processing or storage of plants and plant products.

The term includes adjuvants, phyto regulators, desiccants and substances applied to the plants before or after the harvesting to protect them against deterioration storage and transport.

This is governed by the principle of "extended and shared responsibility", understood as the duty of those who place certain products on the market to be objectively responsible for their integral management and financing. In turn, this responsibility is shared with the remaining links in the management chain according to their different obligations. Likewise, interjurisdictionality<sup>6</sup> and the simplification of procedures for registrations and authorisations derived from the present law constitute two fundamental principles for its effective functioning. In this sense, the law creates the Single Traceability System, which aims to allow the permanent monitoring of the management systems for the handling of empty phytosanitary containers.

Currently, Argentina has several parallel lines of development of legislative projects related to extended responsibility, which present different approaches. One of them is from 2015 and proposes to amend Law 25 916 on Integrated Household Waste Management by incorporating the principle of extended and shared responsibility, as in the aforementioned Law on the Management of Phytosanitary Product Containers. In 2018, the Draft Law on Minimum Environmental Protection Budgets for the Management of Packaging and Post-consumer Packaging was presented, which

6. For the purposes of this Act, interjurisdictional transit may not be prohibited by the provinces, but may be reasonably regulated.



has a specific scope, focusing on a waste stream under the EPR principle. On the other hand, the Draft Law Minimum Requirements for Integrated Waste Management through Extended Producer Responsibility, which proposes the development of a framework law, was presented in 2019,

whose scope includes the management of more than 10 types of waste, including used oils and their packaging, electrical and electronic equipment, expired medicines, tyres and luminaires, among others. There has not yet been significant progress in the approval of these projects.

## 2.2 Brazil

Legal framework achieved in the country: framework law and specific regulations by type/stream of waste

Legislation analysed

- Framework. National Solid Waste Policy (PNRS). Law 12305 of 2010.
  - ~ Regulation. Regulation of the PNRS. Decree 7404 of 2010.
- Agrochemical packaging. Research, experimentation, production, packaging and labelling, transport, storage, marketing, commercial advertising, use, import, export, final destination of residues and containers, registration, classification, control and inspection of agrochemicals, their components and similar. Law 7802 of 1989 and its Decree 4072 of 2002.
- Lubricating oils. Collection and final disposal of used or contaminated lubricating oil. Resolution 362 of 2005 and its amendment 540 of 2012.
- Cells and batteries. Establishes the maximum limits of lead, cadmium and mercury for batteries sold in the national territory and the criteria and standards for their environmentally sound management. Resolution 401 of 2008.
- Tyres. Prevention of environmental degradation caused by waste tyres and their environmentally sound disposal. Resolution 416 of 2009.

In Brazil, the implementation of shared responsibility systems was promoted with the enactment of the National Solid Waste Policy. Although there were some specific regulations by waste stream, approved prior to the framework law, it was from the general regulation that instruments were defined to implement these systems, encouraging the development of sectoral agreements.

One of the principles of the Brazilian National Solid Waste Policy, defined in Law 12305 of 2010 and updated in 2012, and its regulation (Decree 7404 of 2010), is that of "Shared Responsibility for the Product Life Cycle". In this case, shared responsibility is understood as that which is implemented individually and chained by manufacturers, importers, distributors and traders, consumers and owners of public services of urban cleaning and solid waste management. Some of its instruments are selective collection and reverse logistics systems<sup>7</sup>. Its scope includes: tyres, agrochemical packaging, batteries, lubricating oils, fluorescent lamps, electronic devices and their components, plastic, metal and glass packaging.

The legislation indicates that producers, manufacturers, importers, distributors and traders are obliged to structure and reverse logistics systems, explicitly assigning responsibility for investing in the redesign of their products (their packaging) to make them more suitable for such systems. The regulation empowers these actors to implement procedures to purchase used products or packaging, provide drop-off points, and act in partnership with

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7. Law 12 305 defines reverse logistics as: "... an instrument of economic and social development characterised by a set of actions, procedures and means aimed at making viable the collection and restitution of solid waste to the business sector for its reuse, in its cycle or in other productive cycles, or in another environmentally appropriate destination".

cooperatives, other forms of partnership with recyclables collectors or the public service to then dispose their waste in an environmentally sound manner. The holder of the public urban cleaning and solid waste management service can carry out activities that are the responsibility of the producer through remunerated agreements with the business sector. It is the responsibility of the public sanitation and waste service to articulate with economic and social agents to make it feasible to return the material to the productive cycle, establish differentiated collection and provide an environmentally sound final disposal.

Brazil also has specific regulations by waste stream, some of which predate the enactment of the general framework, including: agrochemical packaging (Decree 4074 of 2002), lubricating oils (Resolution 362 of 2005, amended in 2012), batteries (Resolution 401 of 2008), and tyres (Resolution 416 of 2009). Subsequently, the general regulation of the National Waste Policy defined three possible instruments to implement these systems. These are: *regulations* with the endorsement of a steering committee, *sectoral agreements* of a contractual nature between the public authority and producers, and/or *terms of commitment* to be determined by the public authority. The first instrument implemented under the terms of the framework law was the Sectoral Agreement for the Implementation of the Reverse Logistics System for Plastic Lubricant Packaging, established in 2013, which sets out specific obligations, an implementation plan and targets agreed by the Ministry of the Environment and various trade unions and federations in the sector. It was followed by other agreements and terms of commitment on fluorescent lamps, general and steel packaging, and electronics (2019).

The implementation of these regulations combines a multi-level articulation of commitments and obligations regarding the management of waste, materials and by-products. In the first instance,



the central actor for waste management is the local government, which must establish its own waste management system, as it will be responsible for providing the necessary resources for its operation. However, there is a modality that involves complying with the parameters, terms and conditions set by the national public authority in reference to waste management, which is developed when the local government requests

economic-financial resources for the management of the system to the national public authorities. For their part, the state governments conglomerate most of the articulations with producers and transformers (understood as those actors who valorise the product or waste material) for the development of specific agreements in favour of the particular management of waste, based on the aforementioned sectoral agreements.

## 23 Chile

Legal framework achieved in the country: framework law and specific regulations by type/stream of waste

Legislation analysed

- Framework. Framework Law for Waste Management, Extended Producer Responsibility and Promotion of Recycling. Law 20 920 of 2016.
  - ~ Funding. Regulation of the Recycling Fund. Decree 7 of 2017.
  - ~ Procedures. Regulation that regulates the procedure for the elaboration of the supreme decrees established in Law 20 920. Decree 8 of 2017.
- Tyres. Collection and recovery targets and other associated obligations for tyres. Supreme Decree 8 of 2019.
- Containers and packaging. Preliminary draft supreme decree that establishes collection and recovery targets and associated obligations for containers and packaging. Exempt Resolution 544 of 2019.

The regulation and implementation of EPR in Chile was based on the enactment of a framework law that served as the starting point for an orderly and gradual legislative process on EPR. This process led to the development of two specific regulations per waste stream - tyres and packaging - complementary to this general framework.

In Chile, REP is a special waste management regime whose general framework is specified in Law 20 920 of 2016, the framework for waste management, extended producer responsibility and recycling promotion. Under the "polluter pays" and waste management hierarchy principles, among others, this framework establishes that the organisation and financing of waste management of priority products marketed in the country is the responsibility of their producers. The obligations established in the framework of extended producer responsibility must be fulfilled through an Integrated Management System, whether individual or collective. Management includes storage, transport and treatment. In this sense, the products covered are: lubricating oils, electrical and electronic equipment, packaging, tyres, batteries and accumulators.

In 2017, after the enactment of the framework law and before starting the regulation by product, the appropriate procedures were decreed to develop the projects and define the goals and obligations of the producers (Decree 8 of 2017). This decree, in , determined the guidelines for the process to be participatory. The Recycling Fund was also regulated (Decree 7 of 2017), whose functions include total or partial financing of projects, programmes and actions to prevent the generation of waste, promote waste separation at source, selective collection, reuse, recycling and other types of recovery.

In 2019 progress was made towards specific regulations by waste stream, with Supreme Decree 8 of 2019 setting out the

"Collection and recovery targets and other associated obligations for tyres". The "Preliminary draft supreme decree establishing collection and recovery targets and associated obligations for containers and packaging" (Exempt Resolution 544 of 2019) is also under discussion. These regulations or supreme decrees were designed in a uniform manner and indicate that the management systems must be authorised by the national Ministry of the Environment and contemplate, among other things, strategies to meet the imposed gradual goals, work schedules, costs, financing to be used, etc. In turn, the registration of the systems in a pre-existing emissions and pollutants registry is indicated. In this way, it can be seen that, although each priority product has or will have its own regulation, the establishment of common factors in the different products or streams facilitates and will facilitate implementation and monitoring.

For the implementation of Integrated Management Systems (IMS), producers may fulfil their obligations through individual management systems, and may directly contract authorised and registered managers, or through a collective system, through the constitution or incorporation of a legal entity, made up exclusively of producers. Producers must finance the costs incurred by the aforementioned legal entity in the fulfilment of its function and, in the event of non-compliance, each producer will be liable to the collective system that it integrates, in proportion to the targets that apply to it. The contracting of waste managers must be carried out through an open bidding process, which may be carried out by municipalities, grassroots recyclers or authorised collection and recycling companies.



To implement such projects, municipalities can access funding from the Recycling Fund. At the same time, the certification of the

competence of grassroots (informal) waste pickers and their inclusion in management systems, prioritising them from funding to these schemes.

## 24 Colombia

Legal framework achieved in the country: framework law and specific regulations by type/stream of waste

Legislation analysed

- Framework. Sole Regulatory Decree of the Environment and Sustainable Development Sector. Decree 1076 of 2015 which compiles Decree 2811 of 1974 and Decree 4741 of 2005.
- Computers. Selective collection systems and environmental management computer and/or peripheral waste. Resolution 1512 of 2010.
- Electronics. Guidelines for the public policy for the integrated management of waste electrical and electronic equipment (WEEE) generated in the national territory. Law 1672 of 2013.
- Pesticides. Pesticide post-consumer product return management plans. Resolution 1675 of 2013.
- Tyres. Selective collection systems and environmental management of used tyres. Resolution 1326 of 2017.
- Packaging. Environmental management of paper, cardboard, plastic, glass and metal packaging waste. Resolution 1407 of 2018.
- Pharmaceuticals. Elements to be considered in the management plans for the return of post-consumer products of expired drugs or medicines. Resolution 371 of 2009.
- Batteries. Elements to be contained in the post-consumer product return management plans for used lead-acid batteries. Resolution 372 of 2009.
- Batteries. Selective collection systems and environmental management of waste batteries and/or accumulators. Resolution 1291 of 2010.
- Light bulbs. Selective collection systems and environmental management of light bulb waste. Resolution 1511 of 2010.

In Colombia, the development and implementation of EPR regulations was initially linked to the regulation of integrated hazardous waste management. This process evolved steadily through the approval of specific regulations for the management of different priority product streams, and the development of a framework decree regulating waste management from an EPR approach. In comparison with the rest of the countries analysed in this study, it represents the most advanced case in terms of the development of specific regulations by type of waste, covering nine priority products.

Under the general environmental protection framework of Decree 1076 of 2015, post-consumer waste based on extended producer responsibility is developed. This obliges producers to assume the costs of selective collection and environmental management of waste, and to develop and finance the public information campaigns required to achieve disclosure. They must also internalise the costs of the system to ensure its operation. The wastes covered by framework law are: hazardous waste and its containers and packaging (including pesticides and their containers, expired drugs or medicines, waste batteries and/or accumulators and used lead-acid batteries), and waste electrical and electronic equipment (WEEE).

The specific regulations for each type of waste have a similar structure and all of them determine the guidelines of the post-consumer product return management plans, including: the obligations of the actors in the chain, the collection targets and the evaluation, updating, follow-up and monitoring procedures that will facilitate the return and collection of post-consumer products in order to be sent to post-consumer facilities.

in which they will be subjected to processes that will allow their use and/or recovery, treatment and/or controlled final disposal. There are currently nine specific resolutions approved with their respective management plans, which include the following priority products : expired drugs or medicines, batteries, batteries and/or accumulators, light bulbs, computers, WEEE, pesticides, tyres and waste paper, cardboard, plastic, glass and metal containers and packaging.

In terms of implementation, the management system works collectively. The responsible companies finance and form a non-profit organisation, Grupo Retorna, which is organised into six post-consumer programmes for the management of each material stream. On the other hand, municipalities play the role of promoters of separation and recovery, with a special emphasis on communication. However, it is the responsibility of the producers to develop and finance the mechanisms of communication to the public to achieve the dissemination of the systems and procedures for the return of waste.



## 2.5 Mexico

Legal framework achieved in the country: framework law and specific regulations by type/stream of waste Legislation analysed

- Framework. General Law for the Prevention and Integral Management of Waste. Framework Law 2003- 2018 and its Regulation 2006-2014.
- Hazardous waste. Norm that establishes characteristics, identification procedures, classification and lists of hazardous waste. Mexican Official Standard NOM-052- Semarnat-2005.
- Special management waste. Standard that establishes the criteria to classify special handling and determine which are subject to a management plan; the list, the procedure for inclusion or exclusion to such list, as well as the elements and procedures for the formulation of management plans. Mexican Official Standard PROY-NOM-160-Semarnat-2011.

Since 2003, Mexico has had a framework law that comprehensively regulates waste management under the shared responsibility approach. The country has also made progress in the approval of two specific standards hazardous waste and special handling waste.

Mexico's General Law for the Prevention and Integral Management of Waste, published in 2003 and reformed in 2018, first introduces the principles of "valorisation, shared responsibility and integrated waste management". In this case, it is understood that the integrated management of municipal solid waste and special waste is a social co-responsibility and requires the joint, coordinated and differentiated participation of producers, distributors, consumers, users of by-products, and the three levels of government as appropriate, under a scheme of market feasibility and environmental and technological efficiency,

economic and social. In order to create a system of information on the generation and integrated management of waste and to guide decision-making based on risk criteria and waste management, the law establishes a classification of waste into three categories: hazardous, solid urban and special management waste. In this sense, the products covered by this framework law are: plastic packaging, used tyres, batteries and electric batteries and fifteen other hazardous wastes, whose lists would later be specified, modified or completed by the respective Mexican standards.

In terms of specific standards, in 2005 the Official Mexican Standard NOM-052- Semarnat-2005 was published, which establishes characteristics, identification procedures, classification and lists of hazardous waste, including used lubricating oils, used organic solvents, batteries and batteries, pesticides and their containers.

On the other hand, in 2011 the Mexican Official Standard PROY-NOM-160-Semarnat-2011 was published, which established the criteria for the classification of special handling waste, the list of these and the elements and procedures for the formulation of management , among others. Special handling waste includes metal, paper and cardboard, glass and plastic packaging from various sources, as well as waste tyres, WEEE, used vegetable oils and textile waste. In addition to being comprehensive, the list of waste susceptible to a management plan in the Basic Diagnosis for Integrated Waste Management is dynamic, i.e. it varies according to requests for inclusion or exclusion depending on the magnitude of generation, the infrastructure for management, the possibilities for use, recovery, etc. The parties obliged to formulate plans are both producers of special waste and large generators of municipal solid waste. After this regulation, there were no new legislative advances that regulate each waste stream separately.

Regarding the effective implementation of EPR initiatives in Mexico, there is a diversity of views and proposals. Parties obliged to develop waste management plans can develop their own plans or implement them by subscribing to or adhering to legal instruments already established by municipalities. In addition, the Ministry of Environment and Natural Resources can promote and sign agreements, individually or collectively between the private sector, municipal authorities and others (such as social organisations, media, academic institutions, etc.). The scale of the plans can be local, regional or national. Although the types of possible management plans are categorised, no concrete information on the dynamics of the scheme is available, as is the case in most of the

the countries analysed in this study. With regard to the waste recovery and utilisation stage, it is possible to transfer ownership of the waste to be used as an input in another production process.



# 3. Challenges and opportunities for CSR

Based on the comparative analysis of the REP regulatory schemes in the countries indicated, the information survey and interviews with local referents, information was analysed regarding the context, development and implementation of these, and ten key aspects were identified that determine and/or present challenges and opportunities for the development of these policies in national and sub-national territories:

1. Participatory process: mechanisms and degree of participation of the different actors involved in the process of elaboration, implementation and revision of the standard.
2. Framework law: existence of an umbrella regulation that spells out the general guidelines of the SRP, on which specific complementary regulations per stream or type of material can then be developed.
3. Treaties and international cooperation: existence of agreements and/or formal links with international bodies that may have an impact on the development of a REP law.
4. Socio-economic context: social and economic conditions in the country that may influence the process and development of a REP law.
5. Inclusive system: integration of the actors involved and affected by the standard into the functioning scheme of the REP, especially grassroots recyclers who play a crucial role in the recovery of materials at the end of their life cycle.
6. Actors: different organisations involved in the material life cycle chain and affected by the standard.
7. Financial scheme: mechanisms for the provision of financial resources to finance the REP scheme.
8. Decentralisation: organisation and local implementation of the standard within the national territory.
9. Awareness and communication: degree of communication and awareness of the standard and its implications.
10. Transparency and monitoring systems: systems for measuring, recording and publishing data and information related to the implementation of the standard.

The challenges and opportunities for each of these aspects will be detailed below, along some examples from the countries analysed.

## 3.1 Participatory process

Having mechanisms that ensure the participation of the different actors involved is a key aspect for the effective functioning of SRP regulations. The analysis of Latin American experiences shows that these processes can be present at different stages: drafting of regulations, implementation and review. Although the case studies demonstrate the importance of ensuring a high level of participation at all stages, as instances are considered fundamental,

It is during the rule-making stage that the participation of all stakeholders is essential, e.g. when setting goals and obligations through regulation.

Some examples of participatory processes contemplated from the outset during the development of regulations are: Chile and Brazil through public consultation<sup>(8)</sup> (Framework Law 20920 and Decree 7404 of 2010), Colombia through the Technical Advisory Council on Environmental Policy and Regulations<sup>(9)</sup> (Framework Decree 1076 of 2015) and Mexico through the formation of Subcommittee IV on Environmental, Urban and Tourism Development and the National Consultative Committee on Environmental and Natural Resources Standardisation (Mexican Official Standard NOM-161-Semarnat-2011). Examples of the participation contemplated during the implementation or enforcement stage are the case of Argentina, whose Law 27279 (phytosanitary packaging) establishes the formation of a Consultative Council as a participatory tool<sup>10</sup>, and Colombia, whose Framework Decree 1076 of 2015 proposes the holding of public hearings as a mechanism for the participation of the public.

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8. During the Public Consultation, any person, natural or legal, may make comments on the content of the preliminary draft.

9. The Technical Advisory Council for Environmental Policy and Regulations is made up of representatives from academia and the productive sector. This body is responsible for advising the Ministry of Environment and Sustainable Development on the formulation and issuance of regulations.

10. The purpose of the Advisory Council shall be to advise and propose initiatives on issues related to this Act. It shall be composed of a representative and an alternate representative of the Secretariat of Agriculture, Livestock and Fisheries of the Ministry of Agriculture, Livestock and Fisheries, the Secretariat of Environment and Sustainable Development of the Cabinet of Ministers, the Federal Phytosanitary Commission (CFF), the National Institute of Agricultural Technology (INTA), the National Institute of Industrial Technology (INTI), the National Agri-Food Health and Quality Service (Senasa), the Ministry of Health, the Federal Agricultural Council (CFA) and the Federal Environmental Council (COFEMA).

citizens, organisations and entities<sup>11</sup>. Finally, mechanisms for participation during the regulatory review stage can be observed in the case of Chile, where Decree 8 of 2017 establishes the possibility of requesting a review of any supreme decree that establishes targets and other associated obligations<sup>12</sup>.

Establishing dialogue with all the actors involved and creating a space for joint construction is a valuable strategy to minimise the possibility negative repercussions from the fundamental links in the chain. It is necessary to identify and specify how the proposed participation mechanisms will be carried out, who will be the actors promoting them, who they will reach, and what the deadlines will be for exercising it. It is also necessary to determine the scope of participation. In the case of non-binding consultations, it should be clarified how the authorities will have to justify their decisions when they deviate from the observations proposed by the consulted sectors.

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11. According to the Framework Decree 1076 of 2015, the public hearing is intended to be a participatory mechanism for the application for environmental licences, permits or concessions, necessary to approve specific management systems.

12. The request for revision of a regulation, according to Decree 8 of 2017, establishes that any person, natural or legal, public or private, may request the revision of a supreme decree, accompanying the background information that justifies the need for its revision.



## Mechanisms and experiences of participation in the design and implementation of CSR in Chile

The case of Chile is a clear example of success in terms of the design of participation procedures, through Decree 8 of 2017, which establishes, on the one hand, the appropriate procedures to develop projects and define the goals and obligations of producers, and determines, in turn, the guidelines for the process to be participatory. These include (1) the public nature of the dossier, (2) the creation of an Expanded Operational Committee (constituted in a representative manner by ministers and natural and legal persons representing producers, waste managers, grassroots recyclers, consumer associations, non-governmental organisations and academia) and (3) the inclusion of instances of consultation with competent public and private bodies, public consultation and the Council of Ministers for Sustainability, with their corresponding deadlines.

Access to participatory processes and articulation between actors related to REP in Chile can be seen in testimonies such as that of Fundación Avina and in spaces such as the Forum on the Law to Promote Recycling and Extended Producer Responsibility, organised in 2016 by the Chilean Packaging Centre (CENEM), in which members of the public, private, academic and social sectors debated the challenges and opportunities that Law 20 920 represents for the Chilean industry.

### 3.2 Framework law

From the survey it can be seen that, in general, when the starting point for the development of an EPR policy is the enactment of a framework law, the rest of the process is more orderly, clearer and more likely to produce better and faster results. In this type of legislative development, general frameworks usually establish the principle of SRP, the main definitions, the subjects and wastes covered and, in some cases, the outline of systems, reporting, monitoring and control, among others. In , they function as a guide that determines the general guidelines for the development of regulations for specific streams.

Complementary regulations regulate for each waste type or group of waste types, mainly specific targets and obligations. Determining the details of the schemes per stream has several advantages. On the one hand, it allows targets to be set and revised separately, taking into account possible particularities or requirements (e.g. the subjects covered for the formation of an advisory council, the way of calculating the fee, the stages of implementation, the content of the management systems, etc.). On the other hand, it facilitates later stages such as the implementation and monitoring of the systems, as the volume of resources and work required will gradually increase.

## Regulatory process developed from a Framework Law: the cases of Chile and Colombia

The development of a Framework Law as a kick-start for the implementation of the SRR was the modality implemented by Chile and Colombia. However, these constitute two different variants, apparently equally effective. Chile, with Law 20 920 of 2016 (Framework for Waste Management, Extended Producer Responsibility and Promotion of Recycling) and Decree 8 of 2017 on common procedures to regulate each priority product, had already largely detailed what the management systems and associated obligations would look like.

Colombia, for its part, in the general environmental protection framework of Decree 1076 of 2015, indicates which wastes are eligible for post-consumer take-back plans and the main responsibilities, but does not go further. It is the specific regulations for each type of waste, which are very similar to each other, that determine the details of the management plans. From this it can be inferred that general REP frameworks may have different levels of specificity, but the subsequent progress through product-specific regulations contributes to a more favourable implementation.

### 3.3 Treaties and international cooperation

Active participation or intention to participate in treaties frameworks have proven to be a This is the case of those countries that joined as members of the Organisation for Economic Cooperation and Development (OECD), such as Mexico and Chile, or that have expressed a strong interest in adopting REP initiatives by countries in the region, as well facilitating their legislative support. This is the case of those countries that joined the Organisation for Economic Co-operation and (OECD) as members, such as Mexico and Chile, or that have expressed a strong interest in joining it, such as Colombia.

Co-operation within the OECD, as well as with countries that have strong and proven REP management strategies, could bring a number of improvements to the region's proposals and policies. Exchange and technical advisory mechanisms could provide solidity and facilitate access to lines of non-refundable contributions or credits from cooperation agencies to solidly develop the processes. Taking advantage of regional or bilateral instances of linkages between countries would also imply innovative mechanisms to promote comprehensive and effective policies.

strengthen the instruments that countries have or could have to deal with the SRP. The articulation between countries in the region through the Southern Common Market (MERCOSUR), the Forum for the Progress of South America (PROSUR) or the Organisation of American States (OAS) could constitute some examples to be implemented.

In this sense, cooperation can take place from both public and private perspectives, with the state as the facilitator and companies or entrepreneurs as the executor. It is important to highlight that there is still a lack of greater commitment from national or multinational companies, which in some cases already have REP experiences in other countries or regions.

### 3.4 Socio-economic context

Considering the socio-economic context when developing and applying REP regulations is an obvious but essential factor, as the design of tools to accompany and facilitate the transition to new management models has been shown to contribute to a successful implementation more . ,



Considering this dimension is very useful for prioritising material flows and determining implementation timelines, among others. On the other hand, if these factors are not taken into account, the regulation and implementation of EPR policies can be undermined by a hostile socio-economic context, marked, for example, by conflicts of interest among stakeholders, social opposition, lack of consensus, lack of budgets designated for the transition of management models, among others.

Based on the regulations surveyed, some tools are highlighted that facilitate the contextualisation of the development and implementation of the SRP. (1) Mechanisms for participation in the drafting of regulations so that what is required is possible to comply with, taking into account the economic reality of the country and the economic reality of the sector at which the measure is aimed. (2) Consideration of the micro, small or medium-sized enterprise status of the producer when establishing obligations (more or less burdensome depending on the scale) and deferring the entry into force of the obligations established in terms of compliance with targets and associated obligations (as for example in the Chilean regulation Law 20 920 of 2016, or the Regulation of the General Law for the Prevention and Integral Management of Waste in Mexico). (3) The prioritisation of funding for projects, many of them implemented by municipalities (as in the cases of Brazil and Chile<sup>13</sup>), that promote associative work with cooperatives, the promotion of municipal and grassroots waste pickers' technical knowledge, public awareness and infrastructure projects to promote reuse, recycling and recovery.

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13. Chilean legislation includes the regulation of a Recycling Fund through Decree 7 of 2017, the objective of which is to finance all or part of projects implemented by municipalities in the areas described above.

In turn, both the actors interviewed for this study and the journalistic material analysed agree that the local context will determine which waste stream will be prioritised for management. Finally, considering management capacity and infrastructure is a determining factor in the implementation of regulations.

### 3.5 Inclusive system

The inclusion of all actors, especially grassroots waste pickers, both those who are part of formal systems associated in cooperatives and/or providing their services to municipalities, as well as those who develop the activity informally, is essential for the functioning of the REP regulations. This is particularly important in Latin American countries, where it is estimated that there are around 4 million people who earn their livelihoods from the recovery and commercialisation of recyclable materials (IRR, 2014).

The lack of a culture of waste sorting by the population has been accompanied by the development of this activity by, generally, informal workers from vulnerable social contexts, who have become, in most cases, the main responsible for the recycling of some material streams. In general, they work in unhealthy or dangerous conditions, with inadequate equipment. Because of the informal nature of their work, waste pickers face risks such as lack of access to waste, unstable incomes and social exclusion (EIU, 2017). The REP has the potential to provide a regulatory and policy framework to harness the potential of grassroots waste pickers and improve their socio-economic status (EIU, 2017).

The emergence of waste picker co-operatives as actors demanding formalised inclusion in the process, along with the increased level of political activism seen in countries such as Argentina, has provided a greater impact and

recognition of the work of these workers. In the case of Chile, more than 60,000 informal waste pickers, many of them organised in the National Movement of Waste Pickers of Chile, have filed a petition for legal recognition of their work, which was finally included in Law 20 920 of 2016, which promotes the certification of the competence of grassroots (hitherto informal) waste pickers.

According to the survey carried out, in all cases the REP regulations analysed do

The integration of waste pickers into the management system, many of them focusing on training, certification and inclusion within formal systems, providing benefits and priority access to funding for those systems that prioritise their inclusion under safe and dignified working conditions. Depending on how the responsibilities are implemented and distributed in the REP scheme, grassroots waste pickers may benefit more or less.

### Training programme for informal waste pickers in Colombia

In Colombia, WEEE cannot be collected by *scrap dealers* because of possible damage to their health. The Retorna Group proposed to the National Apprenticeship Service (SENA) a standard for the evaluation and certification of labour competencies for informal recyclers, so that they can study and train as technicians. In this way, they can be integrated into the labour market and can even set up a waste technology recycling company themselves, complying with technical protocols to acquire an environmental licence.

### 3.6 Actors

The survey identified different actors involved in the SRP and the specific obligations generally assigned to each of them (table 1).

The comparative analysis shows that, although the current EPR regulations place the responsibility for financing the management system on the producer (in some including importers, distributors and traders), all of them contemplate the responsibilities of the other actors in the chain, whose participation, compliance and commitment are necessary for the proper functioning of the EPR. In this sense,

National and sub-national governments have a key role to play, being responsible for regulating and implementing Urban Solid Waste Management (USWM) systems, which require coherent and effective governance models, which then allow for the implementation of an EPR policy.

It should be noted that the actors mentioned may vary from country to country, with several roles being merged into one figure. This is important to understand the possible additional complexity that needs to be considered in the following section.



Table 1. Actors involved in the SRP in the region and their corresponding obligations

Actors	Definition	Obligations
Producer, manufacturer, registrar	A natural or legal person, public or private, that manufactures or imports the product entering the market for the first time.	Organise and finance the waste management system. Investing in the redesign of the product, its packaging. Provide information to the State on the fulfilment of the and obligations set out in current legislation and to consumers with regard to the management and control systems. the procedures for the return of waste.
Distributor, transportista	Person who distributes/ transporting the products.	Transport and logistics for the distribution of the products. In some , managing collection centres, returning collected or returned products and packaging to manufacturers or importers, and communicating with the manufacturers or importers about the products and packaging. buyers all information concerning the management system.
Trader, supplier, dispenser	Person selling the product to the consumer.	Providing information to the consumer at the time of sale and receiving the product or its packaging free of charge from the consumer. packaging once it has been used. In the same way that distributors/transporters can act as administrators of collection centres.
Consumer, industrial consumer, end user	Person who uses and generates end-of-life and waste products.	Separate and return products and packaging after use to retailers, distributors, collection and cleaning services, or authorised centres. In some , they are required to wash and temporarily store the waste.
, receiver, operator	Person implementing the management system and/or operating it the waste (disposal or recycling/recovery).	Manage waste in an environmentally sound manner, applying the best available techniques and best practices. environmental practices.
Recycler	A person who, by means of the The company uses artisanal and semi-industrial technology for the selective collection of household waste and the management of waste disposal facilities. reception and storage of such waste, including sorting and pre-treatment.	The following may participate in waste management for the compliance with the targets set. In some In such cases, they must , join cooperatives and/or certify their knowledge in order to integrate into formal management systems.
Public cleaning service urban and waste management solid, collection and recycling companies authorised	Entity in charge of urban cleaning and waste collection. Operates the waste (sending to final disposal or recycling/recovery) and in some cases cases, implements the management system.	Articulate with economic and social agents to make feasible to return the material to the production cycle, establish differentiated collection and provide for the disposal of the material. environmentally sound final disposal. It can carry out activities that are the responsibility of the producer by means of agreements The latter may be at national, regional, state or municipal level.
Enforcement authority, authorities competent, municipalities, public sector	Implementing authority, competent authority, local authority, public sector bodies.	Develop the body of regulations (documentation), approve the management systems proposed by the , carry out monitoring and control, publish information, and establish and implement economic, fiscal, financial and market incentives to producers/management systems. Also, to bring awareness-raising and environmental education actions. In some countries and/or systems, the municipalities may act as managers and/or The following are responsible for selective collection, the establishment and/or operation of reception and collection facilities. storage, projects, training and/or certification of grassroots recyclers.

Source: own elaboration

### 3.7 Financial scheme

There are different mechanisms for the operation of the SRP. According to the OECD, schemes vary in the exercise of producer responsibility from the provision of resources to finance the system, to taking over the operational and organisational management of different aspects of the process. It can be done individually or collectively, and implemented through a variety of instruments such as product take-back requirements, economic instruments (e.g. deposit-refund systems or early disposal fees), or a combination of these (OECD, 2016).

In general terms, the modalities identified in the five Latin American countries surveyed seem to be more in line with consortium mechanisms where each producer pays the manager according to the volume or quantity placed on the market. The development of the financial structure and its flows (mainly how and through which instrument or type of organisation resources are transferred from producers to managers) is a key factor to be considered when designing regulations and establishing the goals and responsibilities of the actors involved for their compliance and implementation. The definition of the amounts and criteria for establishing material fees, together with the designation of those responsible for their establishment and updating periods, are important aspects related to the participatory process and the consideration of the socio-economic context.

However, it is difficult to find clear and detailed information on the financial mechanisms adopted for the management of the SRP in each country. The details of these schemes are not found in the regulations and are generally left to the respective implementing agencies, but neither are they presented in a clear and transparent manner. Some particular regulations present in lesser or greater detail some definitions relating to these mechanisms

This is the case of the Chilean Recycling Promotion Law, which is mainly aimed at supporting local governments to promote education and awareness-raising policies, as well as specific projects that contribute the management of specific waste, some of are covered by their own REP legislation.



### REP Implementation in Colombia: Grupo Retorna

The Retorna Group Association is a non-profit organisation, formed with the collaboration of more than 150 companies that account for half of the country's GDP, belonging to the special Post-consumption project of the National Association of Colombian Businessmen (ANDI). ANDI is made up of six corporations: Cierra el Ciclo, EcoCómputo, Pilas con el Ambiente, Red Verde, Recoenergy and Rueda Verde. These operate under the Collective Management Systems scheme, and are made up of companies that import and/or market related products and are responsible for financing the management system.

Of the collected budget, the Retorna Group allocates 18% of the total for resource management, 14% for communication and 68% for the operations of each corporation. The corporations must tender and pay for the collection and responsible management and/or recovery of the waste generated to the various authorised waste managers. The managers must acquire environmental licences from the respective territorial environmental authorities, such the regional autonomous corporations and/or environmental secretariats. Likewise, each corporation is responsible for placing the waste deposit containers and is obliged to submit individual result reports to the National Environmental Licensing Authority (ANLA), to ensure compliance with the established goals.

### 3.8 Decentralisation

There are many differences between the countries analysed in terms of territorial organisation, which means that each country needs to adapt its regulations to these particularities. Demographic, geographic and connectivity considerations, as well as the form taken by the political system in each country, among others, have a great impact on the design and, mainly, on the implementation of regulations related to EPR and waste management. The success or failure of compliance depends to a large extent on these.

One of the great challenges facing Latin American countries is the vastness of the territory. The planning and financing of infrastructure and logistics require strategies to understand the costs of this management in more remote places with lower population density. In this sense, one strategy to reduce the costs and difficulties involved in connectivity limits is the regionalisation of the

service, where economies of scale in waste management can be achieved through partnerships. The adoption of such strategies, which prioritise the local or sub-national scale, are effective and accessible solutions, especially for those countries that already have a decentralised federal logic.

From the survey carried out, it is important that the framework regulations differentiate those aspects that are uniform throughout the territory (among them, general principles, definitions and subjects covered) from those that may vary from one jurisdiction to another. An example of this can be found in Argentina, where the minimum budget laws are mandatory throughout the national territory (they provide the minimum requirements that must be fulfilled) and then the provinces can dictate the necessary rules to complement them (linked to their status as a federal state). Another example is the case of Chile where, through Decree 8 of 2017,

states that differences in collection and recovery targets may be determined based on demographic, geographic and connectivity considerations. In Brazil, this is the case

Similarly, when considering regional criteria for differential target setting, e.g. in Resolution 362 of 2005 on lubricating oils.

### Decentralisation of tyre collection targets in Chile

Supreme Decree 8 of 2019 establishes collection and recovery targets for tyre waste and other associated obligations, proposing differentiated minimum collection targets per region, with respect to the total number of tyres nationwide. In total, 16 regions are distinguished, and in each of them the aim is to boost collection, encouraging decentralisation. To meet the differentiated targets, producers and/or importers can opt for individual or collective management systems, and sign agreements with municipalities and other authorised managers.

Each producer and/or importer that is part of a collective management system must finance the costs of the system according to the quantity and type of tyre placed on the market in the previous year. The decree also establishes minimum recovery percentages for the tyres collected, thus encouraging a transition towards a circular economy.

### 3.9 Awareness raising and communication

As mentioned, while the primary responsibility for the post-consumer management of products and materials lies with the producer/manufacturer, the involvement of the state is essential to promote the commitment and responsibility of all actors. In most cases the role of the state is associated with awareness raising and communication tasks, which are of utmost importance in order to increase the commitment of consumers and the general public.

One of the biggest difficulties of any EPR law arises from the obligations of consumers: the delivery of the waste to the respective management system so that it can be revalued in the corresponding waste stream. This requires a proper coordination of all actors involved and the definition of a strategy, mechanisms and instruments clear.

communication regarding the functioning of the management system. The effectiveness of these measures will be reflected in the ease with which consumers will be able to identify key issues for the separation at source, proper disposal or delivery of materials, such as the correct marking of waste bins according to the material or the dates and places scheduled for waste disposal. In this sense, Chile has made progress in terms of the measures implemented in terms of awareness and communication, through the incorporation and regulation of eco-labelling. In this way, the consumer has indications on what to do with the waste material, once the use of the product is over, and if it is recyclable.

In Colombia, although municipalities only take on the role of promoters of the separation and valorisation,



with special emphasis on communication, it is the responsibility of the producers to develop and finance the mechanisms of communication to the public in order to achieve the dissemination waste return systems and procedures. In this country, the Retorna Group, which brings together six waste streams, centralises communication on source separation, unifies messages and creates efficient awareness raising systems.

Finally, it should be noted that in order to encourage recycling, the consumption of recycled products, not only recyclable ones, must also be encouraged. The job is also to give the consumer confidence in the traceability of the waste, through technology, confirming the recycling of products put on the market for which the consumer is also paying to have them recycled.

### 3.10 Transparency and monitoring systems

The success of the implementation of the EPR principle depends to a large extent on the existence of control and monitoring of the established obligations and targets, as well as on the transparency with which management systems and product traceability are carried out. This is essential in order to (1) sanction those who do not comply the regulations; (2) encourage those who exceed the proposed goals or use more friendly materials; (3) make the necessary adjustments to regulations for their effective application; (4) measure the environmental, social and economic impact of implemented measure; and (5) ensure the correct functioning of the system and that the responsibility for its financing is not passed on to other actors, as happens in some cases with consumers, by increasing the price of the product. The latter is a particularly complex aspect, given the dramatic fluctuations suffered by many Latin American countries' economies.

following measurement, monitoring and control tools and mechanisms were identified from the survey:

- The creation of specific bodies as the competent authority for the control and monitoring of compliance with waste (e.g. the National Environmental Licensing Authority in Colombia).
- The establishment within the obligations of the Management System, of the submission of progress and annual reports on the fulfilment of goals and other associated obligations, which accredits the management of each material flow implemented in their respective jurisdictions, as well as quantitative data to assess compliance with the law, according to the specificities indicated in each regulation. In some cases, reports may be required to be certified by an external auditor. An example of this instrument is the Annual Bulletin on Post-consumer Waste Management prepared by the Ministry of Environment and Sustainable Development of Colombia, with the data collected by the different management systems.
- The development of specific information systems that contain and enable the management of information on the local situation, inventories of waste generated, the infrastructure available for its management, the legal provisions applicable to its regulation and control, and other relevant data presented in the management reports to the competent authorities. The Information System on Integrated Waste Management in Mexico, the Annual Waste Declaration System and the National Information System on Solid Waste Management (SINIR) in Brazil and the Pollutant Release and Transfer Register in Chile are clear examples of this mechanism.

- The mandatory requirement to have an insurance or performance bond (as established by Chilean regulations for collective management systems).

Furthermore, these tools are essential to solve a major problem of integrated waste management in Latin America, namely the lack of sector information, translated into accurate and reliable data, which is necessary for efficient planning and evidence-based policy development. The lack of common indicators and official figures on, for example, waste recovery quantities, waste management and waste management in Latin America is a major problem.

of materials in each country, are indicative of this problem. It should be noted that, of the countries studied, data on material recovery was only found for Colombia. The lack of information on management results makes it impossible to study the impact of the initiatives analysed. On the other hand, technology and different monitoring and control tools that can be implemented at different scales are necessary to support education and awareness-raising actions, as they give consumers confidence in traceability of waste.

### Ongoing monitoring of the reverse logistics system for lubricating oils in Brazil

Resolution 362 of 2005 (amended in 2012), which regulates the disposal, collection and final destination of used or contaminated lubricating oils in , creates in its article 11 a Permanent Monitoring Group (GMP) that must meet at least every three months. The objective of this group is to accompany and monitor the application and implementation of the reverse oil logistics systems ordered in the aforementioned resolution. The composition of this group is very heterogeneous and integrates the whole heat chain, and aims at an inclusive and consensual implementation approach.

The website of the Brazilian Ministry of Environment and the National Information System on Solid Waste Management provides documentation and data on the current state of implementation of the systems and the Monitoring Group, providing transparency. Some of the documents available on these platforms are: annual reports presented by the ministry with results of compliance with regional and national targets, number of municipalities, collection and treatment companies, and active reception points; data up to 2018 can be viewed and manipulated in the Power BI dashboard; and minutes of the quarterly meetings of the Monitoring Group up to 2017.



## 4. Contribution of CSR to the SDGs

### 4.1 Contribution to SDG 12

While there is still a long way to go to consolidate the functioning of CSR as a strategy to contribute to SDG 12 in the region, it has great potential especially with regard to the following targets:

- Target 12.2: By 2030, achieve sustainable management and efficient use of natural resources.
- Target 12.4: By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and land in order to minimise their adverse effects on human health and the environment.
- Target 12.5: by 2030, significantly reduce waste generation through prevention, reduction, recycling and reuse (United Nations. Sustainable Development Goals. Targets under SDG Target 12).

A properly implemented EPR policy will have a significant impact on the efficiency of management and resource use in production systems, which significantly affects the reduction of air, water and soil pollution. Although this work did not aim obtain data on waste generation and recycling rates, it is recognised that the REP scheme encourages waste reduction and recycling.

increase in recycling rates. , in the light of the analysis in this paper, it is the latter two aspects that are most evident in the reality of the region, EPR initiatives also encourage producer intervention in the first links of the chain of a product or material, such as eco-design and efficiency and waste reduction in production operations, associated with the need to reduce costs and achieve economies of scale. Indeed, beyond the immediate and visible objective, which is the producer's responsibility to manage the waste it introduces into , there is also an ultimate goal, which is for the producer to apply its own resources to reduce the amount of waste generated, facilitate its recycling and tend eliminate its hazardousness (UN Environment, 2018).

The REP scheme facilitates a management system towards the circularity of materials, where the resource seeks to maintain its value throughout the life of the product. Likewise, by making the producer or generator responsible, the incentives to redesign products and systems to facilitate their management at a later date are aligned. However, the degree of involvement of the different actors the chain is fundamental to achieve a good functioning of the REP and thus contribute to the aforementioned goals (12.2, 12.4, 12.5) of SDG 12.

### 4.2 Contribution to other SDGs

The design and implementation of an SRP policy also brings with it a host of benefits that are directly and indirectly associated with the achievement of other Sustainable Development Goals (SDGs).

The 2030 Agenda for Sustainable Development implies a comprehensive and indivisible view of its goals and targets. In this context, promoting actions, legislation and executive projects framed in the SRP implies a concrete contribution to various objectives, which even go beyond those that are fundamentally environmental (SDGs 6, 12, 14 and 15). They are related to goals linked to progress (SDGs 8, 9, 10 and 11), people (SDGs 1 and 3), peace (SDG 16) and partnerships (SDG 17), also highlighting a framework of management and innovation as it is an emerging issue in the continent (Figure 2).

Firstly, the articulation between different sectors and actors and the mechanisms of participation

Institutional - both executive and legislative - contribute to the strengthening of institutions, transparency, consensus and partnership building (SDG 16 and SDG 17). On the other hand, it provides opportunities for innovation, infrastructure development (SDG 9), employment (green jobs) and formalisation of the informal sector (SDG 8), and offers opportunities for inclusion and work for the most vulnerable sectors of society, also contributing to the reduction of inequalities (SDG 10) and the end of poverty (SDG 1). Finally, the development and strengthening of the above-mentioned aspects and SDGs enable progress in the transition towards more sustainable communities and cities (SDG 11), environmentally, socially and economically.



**Figure 1.** Sustainable Development Goals linked to ex ante producer responsibility Source: own elaboration based on the 17 SDGs of the United Nations, 2020.



## 5. Recommendations

This study highlights the differences in the state of play, the key aspects to consider and the importance of extended producer responsibility schemes in Latin America for the contribution to SDG 12. The five countries considered - Argentina, Brazil, Chile, Colombia and Mexico - present different strategies and degree of progress in the design and implementation of EPR regulations, but in all cases they demonstrate a development of this type regulation, especially in the last 15 years.

Analysing the material collected together with the interviews conducted, we identified ten key aspects to take into account, which have challenges and opportunities in the development of SRP policies. We summarise these aspects in the following recommendations:

- There is no single correct legal path or concept of liability. Successful schemes with different legal developments could be observed. However, it is worth noting that the establishment of a framework law that lays the foundation for the intended goals and obligations facilitates the development of subsequent steps such as the implementation and monitoring of the systems.
- Demographic, geographic and connectivity considerations, as well as the form of the political system in each country, among others, have a major impact on the design and, mainly, the implementation of regulations related to EPR and waste management. It is important that the framework regulation differentiates between those aspects that are uniform throughout the territory (including general principles, definitions and subjects covered) and those that may vary from one jurisdiction to another.
- The active participation, or intention to participate, in international treaties and cooperation frameworks has proven to be a great motivation for the adoption of REP initiatives by countries in the region, as well as facilitating their legislative support. Cooperation in this sense can take place from both public and private perspectives, mainly considering that the state facilitates and companies or entrepreneurship executes.
- The speed and ease with which legal progress generates visible changes in production and the generation of waste depends on the robustness, clarity and coherence of the regulations, as well as the involvement of the entire network of actors in the production chain and the real and potential operational capacities.
- In addition to targets for waste collection and recovery by producers, there should be complementary legislation that encourages participation and commitment by all actors involved. Examples of this could be incentive policies or specific legislation to promote the circular economy (avoid, reduce, separate, redesign, etc.) in municipalities and regions.
- The role of each of the actors in the SRP scheme is important for its proper functioning. In this sense, national and sub-national governments have a fundamental role to play in integrating and encouraging the participation, compliance and commitment of the actors involved.
- Inclusion of the informal sector, linked especially to grassroots waste pickers,

is undoubtedly one of the great challenges facing the implementation of REP initiatives in the region. Achieving an inclusive scheme implies a positive impact both on the functioning of the system and on the generation of employment, the formalisation of work, and the inclusion of actors from the most vulnerable social sectors.

- It is important to consider some factors of the local context in order to achieve a successful implementation. These include: management and infrastructure capacity, the existing dynamics of each of the streams (generation, management, actors involved, etc.), the micro, small or medium enterprise status of the producer at the time of establishing obligations (more or less burdensome according to scale), and the prioritisation of pre-existing funding. This will also make it possible to decide which waste stream will be given priority in management.
  - The development of the financial structure and its flows (mainly how and through which instrument or type of organisation resources are transferred from producers to managers) is a key factor to consider when designing regulations and establishing the goals and responsibilities of the actors involved for their compliance and implementation. The definition of the amounts and criteria for establishing material fees, together with the designation of those responsible for their establishment and updating periods, are important aspects related to the participatory process and the consideration of the socio-economic context.
  - Awareness-raising, communication and transparency in the development and implementation of a REP scheme are vital factors in creating a collective climate that invites and encourages consumers to commit to responsible consumption.
- and to encourage others to do the same. Awareness programmes should reflect the reality of waste management systems, providing accurate and quality information, and making consumers aware of their role as active participants on the road to sustainable development, from their small or large contributions.
- The success of the implementation of the EPR principle depends to a large extent on the existence of control and monitoring of the established obligations and targets, as well as on the transparency with which management systems and product traceability are carried out. The lack of information on management results makes it impossible to analyse the impact of the regulation on its implementation.



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# Actors interviewed

- Edgar Erazo, Executive Director of Ecocomputo and Grupo Retorna, Colombia.
- Yeison Montenegro, Education and Partnerships, Retorna Group, Colombia.
- Marie Chauloux, founder of TodosReciclamos, Chile and Marketing and Communication at Eu Reciclo, Brazil.
- Francisco Maciel, Co Chairman SNIG WG, LEDS GP, Brazil.
- Sérgio Almeida Pacca, Associate Professor and Researcher at the University of São Paulo, Brazil.
- Rodolfo Poblete, corporate commercial manager and CEO of TriCiclos, Chile.
- María Eugenia Testa, Executive Director of Círculo de Políticas Ambientales, Argentina.
- Martin Vallese, Argentina, Director of Government Affairs Latam at Retorna.org and Founding Partner of Liveslow Bottles Argentina.
- Atilio Savino, President of the International Solid Waste Association, Argentina/Latam.
- Luis Miguel Artieda, Manager of Regional Recycling and Sustainable Cities Programmes, Peru/Latam.
- Florencia Benedicto, coFounder of Gea Sustentable, Argentina.
- Catalina Romano Castañeda, Circular Economy consultant at the Colombian Ministry of Environment.
- Linda Breukers, Packaging Waste Consultant, Ministry of Environment, Colombia.

## **AGUSTINA BESADA**

Industrial Designer with a Master in Sustainability and an Executive Program in Business at Columbia University. She is a Sustainability specialist with a focus on Resource Efficiency and Circular Economy with +10 years of experience in Latin America and the United States. Executive Director of Asociación Sustentar and Co-founder of Unplastify.

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## **AGUSTINA WALSH**

Degree in Environmental Sciences from the University of Buenos Aires, Argentina. She has developed and managed projects related to sustainable development, natural resource management, resource efficiency, circular economy and waste management. General Coordinator of Asociación Sustentar.

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## **JOAQUÍN SUAREZ**

Degree in Public and Institutional Relations (UADE) with a Master's Degree in Socio-Environmental Intervention and Management (University of Barcelona). He has 5 years of experience in national and international projects and research, related to Sustainable Development Goals, circular economy, innovation and virtual education.

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## **ARIANA CAMARDELLI**

Degree in Environmental Sciences from the University of Buenos Aires, Argentina. She works as a consultant and coordinator of sustainability projects including environmental footprints, waste management and urban hygiene. Project Coordinator of the Urban Hygiene Observatory of CABA, in Asociación Sustentar.

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## **AGUSTINA MARTÍNEZ MARQUIEGUI**

Lawyer specialising in environmental law. She has experience in both the private and public in environmental issues. She is currently working as an independent consultant and coordinator of Technical Assistance at Asociación Sustentar.

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## **CARLOS AMANQUEZ**

Rural Tourism Technician. Founder and Secretary General of the International Network of Promoters for Development Goals. Sustainable. Secretary of the Cátedra Libre de Municipios Sustentables at the Universidad Nacional de La Plata; Advisor to Governments, Parliaments and Civil Society Organisations.

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## **MUFFIN OF LUCCA**

Degree in Tourism (UNS), specialising in Planning and Environment. She has coordinated the Partnership for Market Readiness (PMR) Argentina programme, as well as numerous projects on sustainable development, climate change, transport and waste. She is currently an advisor in international cooperation at the National Ministry of Environment and Sustainable Development of Argentina.





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