



## EVALUATION OF IMPLEMENTATION OF STATE POLICY FOR SOLID WASTE IN ALAGOAS BY BUDGETARY AND FINANCIAL IMPLEMENTATION

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**Abstract:** The article aims to evaluate how the budgetary planning and execution influenced the implementation of the National Policy for Solid Waste in the state of Alagoas, with emphasis on State Law No. 7749/2015, which implemented the policy in the state. An exploratory and descriptive research was carried out focusing on the budgetary and financial execution of this state policy through the analysis of the Multi-Year Plans (PPA) 2008-2011, 2012-2015 and 2016-2019; the Annual Budget Laws (LOA) from 2008 to 2018 and the state government's balance sheets from 2008 to 2017. As a result, it was found that the state government was able to realize one-third of the estimated budget allocations for the period, which is probably reflected in the operationalization of only three of the seven consortia created for the disposal of solid waste in Alagoas. Nevertheless, the objective of eliminating dumps in the municipalities of Alagoas was achieved with three Solid Waste Treatment Centers meeting the demand of the seven regions in the state.

**Key words:** National Policy for Solid Waste; Alagoas; Multi-Year Plan; Annual Budget Law; Budget Balance.

### 1. Introduction

The National Policy for Solid Waste (Portuguese acronym: PNRS) was established pursuant to Law No. 12,305 / 2010 of August 2010. Among the instruments instituted in the policy is the preparation of Solid Waste Plans, a condition for states and municipalities to have access to either Federal Government resources, or resources controlled by it, for undertakings and services related to solid waste management, regarding incentives or financing from federal credit or development entities for this purpose. In addition, the policy prioritizes access to Federal Government resources to states that establish micro-regions to integrate the organization, planning and execution of actions in charge of neighboring municipalities in the management of solid waste.

In the state of Alagoas, the State Policy for Solid Waste (Portuguese acronym: PERS) was instituted by Law No. 7,749 / 2015 in October 2015 and the respective State Plan for Solid Waste (Portuguese acronym: PERS) in January 2016. After two years, in 2018, the state managed to close all open dumps in the municipalities of Alagoas, becoming the first state in the Northeast and the third in the country to eliminate 100% of the dumps. The fact raises several questions about the implementation of the solid waste policy in the Brazilian territory: how did Alagoas

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manage to finish these spaces of concentration of garbage in just two years? What is the background to the policy? Which strategy was used? How did the spending occur and was it concentrated? What are the biggest expenses, current or capital expenditures? And what about the sources, concentrated in ordinary or linked resources?

In this context, the article aims to analyze how budget planning and execution influenced the implementation of the solid waste policy in the state of Alagoas. To achieve this objective, the instruments used by the state government and their budget execution were identified and analyzed through consultation with the State Planning and Budget System: Multi-Year Plan (Portuguese acronym: PPA) – medium term instrument; Budgetary Guidelines Law (Portuguese acronym: LDO)<sup>1</sup> – parameters and events that can affect fiscal variables; and Annual Budget Law (Portuguese acronym: LOA) – allocation of the necessary resources to fulfill the obligations of the federated entities. Finally, the verification of the expenditure of the policy under analysis was verified through the verification of the Budget Balances.

Two research techniques were used: exploratory and descriptive. The use of the first sought to provide an overview of the National Policy for Solid Waste, through a case study, through the analysis of the implementation of that policy in the state of Alagoas. To achieve this, a bibliographic research was carried out on the subject and analysis of secondary data released by the government of Alagoas. In the second technique, we sought to describe the relationship between the fulfillment of the goals of the state plan for solid waste (PERS) and the budgetary and financial execution. For this, the PPAs of 2008-2011, 2012-2015 and 2016-2019 were analyzed; as well as the LOAs from 2008 to 2018 and the Balance Sheets from 2008 to 2017 of the state of Alagoas. The values presented in the paper were inflated for the year 2018, to abstract the variation in the purchasing power of the Real (R \$) and to capture whether the variation is due to a real increase in spending on politics.

The article is divided into six sections including this introduction. The next section presents a brief approach on the theoretical aspects that involve the construction of public policies, planning and budgeting in Brazil and how the federative issue shapes the provision of public services in the country. Section 3 gives an overview of PNRS in Brazil until 2017. In the fourth section, the implementation of PERS in the state of Alagoas in 2015 is presented, its antecedents and subsequent developments. The fifth section presents the analysis of the budget and financial execution of the PERS of Alagoas between 2008 and 2018. And the last section presents the final considerations.

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<sup>1</sup> The LDO of the analyzed period were consulted, however, the text is concentrated on the guidelines for the preparation of the annual budget: structure and organization, guidelines for the execution and presentation of goals and priorities. The state policy for solid waste did not appear as a priority in any LDO in the period.

## 2. Public policies, planning and fiscal federalism

A public policy is any government action aimed at changing a given social reality (TRONCO, 2018). Given the multiplicity of definitions, Souza (2006) believes that there is no single concept for the term, but synthesizes that this field of knowledge seeks to “[...] put the government into action” and / or analyze this action (independent variable) and, when necessary, propose changes in the course or direction of these actions (dependent variable)” (SOUZA, 2006 p. 26). In a more operational perspective, Saravia (2006) defines the term as a public decision, action or omission, preventive or corrective, which intends to maintain or modify the *status quo* of one or several aspects of social life, through objectives and strategies defined by through the allocation of resources to achieve its end. The author introduces an indispensable element in the concept, but that often does not gain as much importance in the design and analysis of a public policy, which are financial resources. In the Brazilian public administration, they are present in the planning and budgeting system.

In a study on scenarios for development in Brazil, Ipea institute (2017) chose effective planning as the driving force behind this process and among the main legislation on the subject, the institute highlights the implementation of Multi-Year Plans (PPA) and the Budgetary Guidelines Law (LDO) by the Federal Constitution of 1988. However, according to the study, these instruments made the country's interests very subordinate to short-term planning, four-year terms, in addition, they made planning very bureaucratic, limited to rules and with weak articulation between federated entities. The study by Ipea (2017) also presents the argument about the need for long-term planning instruments, such as the proposal for Constitutional Amendment (PEC) No. 122/2015 of the Federal Senate, which institutes national plans for economic and social development, four-year term, as a guiding mechanism for budget proposals. While proposals like this do not change the planning process of government levels in Brazil, it is necessary to understand through these instruments, how public policies are implemented and what are the principles that guide the provision of public services in the country.

The Federal Constitution of 1988, in its fundamental principles, states that Brazil is a Federative Republic formed by the union of States and Municipalities and the Federal District, organized in an autonomous political and administrative way (BRASIL, [2019]). In this perspective, federalism is an essential element for the analysis of national policies that require political, fiscal coordination and cooperation. Regarding the fiscal aspect, “the monitoring of budget execution brings information, among others, on the effective allocation of resources to the various public policies and their form of financing, being among the indispensable steps for the construction of a public policy evaluation system” (GARSON, 2018, p. 56). For the author, the budget execution phase is decisive for the execution of a given public policy, since the excess of spending in one area can cause losses in another public policy. In relation to the budget, the

Constitution establishes that the guidelines, goals, priorities of the federal public administration, and by constitutional, state, municipal and district mandate, must be contained in the following laws: 1) Multi-Year Plan; 2) Budgetary Guidelines and 3) Annual Budget, thus composing the Brazilian Planning and Budget System.

Regarding the Multi-Year Plan (PPA), Albuquerque, Medeiros and Feijó (2008) compare the instrument to a "flight plan", in which the necessary actions to reach the "destination" are established in a period of four years, conceptually, it is defined by the authors as a legal planning tool with greater temporal reach in establishing priorities and directing government actions. For its formulation, strategic planning is encouraged so that it is not just an operational plan, but an instrument that seeks the development of the State. For that, according to Garson (2018) in the PPA, capital expenditures must be contained and the additional demand for current expenses necessary for the functioning and maintenance of the growth of public assets must be considered, that is, the expenses that result from the capital increase. In addition, the expenses of the programs of continuous duration, which comprise the expenses with the provision of permanent public services, originating from previous administrations and that remain over time, such as, for example, personnel expenses, should also be considered. Although there is no model for preparing the PPA in the country, the model developed by the Federal Government has been used as a model by states and municipalities.

The Budgetary Guidelines Law (LDO) is responsible for bridging the gap between the PPA and the Annual Budget Law (LOA), establishing among the "programs" used in the PPA, which will have priority in the execution of the budget, in addition to disciplining the preparation and execution of budgets (ALBUQUERQUE; MEDEIROS; FEIJÓ, 2008). The Federal Constitution of 1988 (BRASIL, [2019]), Paragraph 2 of art. 165, defines that the LDO must present the goals and priorities, guide the preparation of the LOA, inform changes in tax legislation and establish policies related to the official government financial agencies. According to Garson (2018), in addition, the Fiscal Responsibility Law (Portuguese acronym: LRF) informs that the LDO should provide for the rules on cost control and evaluation of Programs' results. For the author, the LDO operationalizes the PPA, giving the Legislative Power greater participation in the budgetary process and control of public finances, after two decades of authoritarian governments.

The continuity of the operationalization of the PPA is given through the LOA, which, according to the Constitution of 1988 (BRASIL, [2019]), should consist of three budgets: a) Fiscal budget; b) Investment budget of public companies; c) Social security budget. The integration of PPA, medium-term planning, with annual budgets, represented by LOA, happens through the transformation of "Programs" into "Actions", this is how resources are distributed in LOAs. These "Actions" are consolidated in the LOA in "Work Programs" and the identification of the "Programs" and "Actions" of the PPA in the LOA is given through the "Budget Classifications".

With budget classifications, it is possible to make evaluations of fiscal policy and public finances in comparison with other countries, which are used in the PPA, LOA, Balance Sheet and other statements of budget execution (GARSON, 2018).

Thus, it is through these three planning and budgeting instruments that public administration, at its levels, in Brazil presents how public policies will be carried out, what amounts of resources are defined and how they will be applied by governments. In the country, administrative and political responsibilities are divided for each sphere of government, as well as each entity has responsibilities for revenues, expenses and transfers. According to Lima (2015), these are the political and fiscal aspects of federalism. These principles seek a better distribution of public spending within the federations, since decentralization would increase population control. However, in some situations, the provision of services by the central government produces gains of scale, with a given quality standard for the entire national territory, thus characterizing a trade-off between centralization and decentralization. In practice, this dilemma is managed through the principle of subsidiarity, goods and services closer to the population and less complex are left to local governments. In the Brazilian case, the municipalities, for example, were responsible for services such as: health and basic education, urban cleaning, waste collection and management, etc. The expenses that have significant externalities between the units of the federation, on the other hand, remained at the highest levels, thus avoiding the overhead of an entity, such as, for example, the construction and maintenance of referral hospitals in health and universities in education. Residents of several municipalities consume these services, it is more recommended that state and central governments assume responsibility for spending.

Thus, what is concluded is that the analysis of the implementation of a public policy through budgetary and financial execution can reveal how national policies, such as the National Policy for Solid Waste, are carried out in their temporal, spatial and environmental aspects. strategic, revealing the way in which the articulation between the federated entities occurs. It is in the face of this theoretical contribution that the study seeks to analyze the State Policy for Solid Waste in the state of Alagoas.

### **3. Overview of the national policy for solid waste**

The PNRS has been in force in the country for almost a decade, despite that, still about 48%<sup>2</sup> of Brazilian municipalities used dumps as a final disposal of solid waste (CONFEDERAÇÃO NACIONAL DE MUNICÍPIOS, 2017). The PNRS set a four-year deadline for all municipalities to have an environmentally appropriate destination for waste produced locally, but linked the preparation of the Municipal Plan for Integrated Management of Solid

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<sup>2</sup> The research was done by spontaneous manifestation. 5.568 Brazilian municipalities were consulted, of which 4.224 municipalities (75.6%) responded to the survey (CNM, 2017).

Waste (Portuguese acronym: PMGIRS) to the release of federal resources (NASCIMENTO *et al.*, 2015). As many municipalities did not present their Plans, they were left without resources for the management of solid waste, which partially explains the precarious situation of the final disposal of waste, despite the legislation in force. This fact demonstrates the importance of obtaining budgetary resources and planning their execution to comply with the law.

The objective of the national policy is to dispose of solid waste in landfills, subject to specific operational rules, thus avoiding damage to human health and the environment. However, the policy faces problems for its effectiveness, such as low budget availability, unskilled personnel, damaged and obsolete equipment and the weak institutional capacity of several municipalities, in which the competitive logic prevails over cooperative purposes (MARCHI, 2015; MAIELLO; BRITTO; VALLE, 2018). In addition, in relation to the generation of this waste, in Brazil, there is no prospect of decreasing its quantity per capita, increasing each year (NASCIMENTO *et al.*, 2015), further aggravating the situation of municipalities that do not have a PMGIRS.

To overcome these challenges, the PNRS provided important instruments for the proper management of solid waste, with significant impacts on the environmental, social and economic problems generated by the dumps (BRASIL, 2017). In addition, the sharing of responsibilities, materialized by the need to prepare solid waste management plans, is a major highlight for meeting the goals of the plan aimed at the:

1. Reduction of wet urban solid waste (USW);
2. Reduction of USW generation;
3. Environmentally appropriate final disposition;
  - i. Eliminate controlled dumps and landfills;
  - ii. Recover controlled dumps and landfills;
  - iii. Develop technologies to reduce final disposal in landfills;
  - iv. Create the national landfill quality index;
4. Reduction of dry MSW in landfills and inclusion of waste collectors.

In Brazil (2017), we sought to evaluate the PNRS in relation to goal 3.i. (Eliminate dumps and controlled landfills) with an emphasis on the participation of the Federal Government (Ministry of the Environment, Ministry of Cities and National Health Foundation – Funasa) in the process of preparing state and municipal plans. Regarding the former, according to the National Confederation of Municipalities (CONFEDERAÇÃO NACIONAL DE MUNICÍPIOS, 2019), 14 states had finalized the State Plan for Solid Waste (AC, AL, AM, CE, GO, MA, PA, PE, RJ, RS, SC, SE, SP, TO), eight states had not finished (AP, BA, ES, MG, MT, MS, PB, RO), four had not started (PI, PR, RN, RR) and the Federal District should not elaborate the referred plan. In relation to the Municipal Plans for Integrated Management of Solid Waste (PGIRS), in

2017, 38.2% of the municipalities had finalized the plan, 38.7% were working on it, 20.4% had not started and 2.7% did not know or did not answer (CNM, 2017).

Regarding the situation of Municipal Plans for Integrated Management of Solid Waste, Table 1 presents the diagnosis at the end of 2017.

**Table 1.** Diagnosis of the National Policy for Solid Waste in the municipalities in 2017

ANO	Diagnosis of municipal management of solid waste in Brazil					
	Dumps / controlled landfill	Landfill	PGIRS finished	Selective collection	Composting	Solid waste consortia
2017	48.0%	47.5%	38.2%	48.3%	12.2%	29.5%

Source: CNM (2017).

Table 1 shows that 48% of the municipalities analyzed still dispose of their solid waste in controlled dumps or landfills. In addition, less than 40% of city halls have completed the PGIRS, which prevents access to Federal Government resources for the implementation of actions aimed at solid waste management. The absence of planning is also reflected in the indicators of selective collection services present in 48% of the municipalities and composting in only 12.2%. In relation to consortia, the tool is essential for the scale of solid waste management, since it reduces the costs of final disposal in landfills, but for this it is essential to support public management in its constitution. According to CNM (2017), the vast majority of active consortia in the country are still looking for resources to build their landfills.

O The audit report (BRASIL, 2017) also points out that despite Law No. 12305/2010 is in force, the Federal Government has not yet published the National Plan for Solid Waste. Completed in 2012, the plan should have already been updated, since the PNRS determines its review every four years. Even so, the plan has been used by the Federal Government, in a way that is not fully valid and outdated, so the Federal Government does not have a legitimate instrument to serve as a guide for states and municipalities in the process of preparing their plans (BRASIL, 2017, p. 10). However, the scenario is positive, as with the PNRS, the Federal Government has structured support and incentive actions for the proper management of solid waste in the country with a greater participation of the states in the transfer of resources to the municipalities, highlighting the consortium actions (MANNARINO; FERREIRA; GANDOLLA, 2016). In Alagoas, the regionalization of state policy allowed the construction of seven consortia and the construction of three more Waste Treatment Centers to end the disposal of solid waste in dumps.

#### **4. State policy for solid waste in Alagoas**

Law No. 7749 of October 13, 2015 instituted PERS in Alagoas with its objectives, principles, instruments and focus on the integrated management of solid waste, in line with state environmental policies, water resources, basic sanitation and the promotion of social inclusion. Among the instruments foreseen to achieve the policy objectives, the main ones are:

- State Policy for Solid Waste;
- Municipal and Inter-municipal Plans for Integrated Management of Solid Waste;
- Solid Waste Management Plans;
- State Information System for Solid Waste;
- Technical and financial cooperation;
- Alagoas Collector Program;
- Structuring of a selective collection system and reverse logistics.

According to Floram Engenharia e Meio Ambiente (2016), even before the policy was instituted, three plans were developed by the state of Alagoas:

1. State plan for regionalization of solid waste in the state of Alagoas

This plan was developed in 2010 and its main objective was to create regions to share the management of urban solid waste, having as criteria: logistical ease, regional development, and type of waste. Thus, seven regions were defined for planning and creating public consortia in the state of Alagoas.

2. Plan for Integrated Management of Solid Waste for Alagoas municipalities in the São Francisco river basin

The plan, elaborated in 2011, contemplated the integrated management of solid waste in the São Francisco River basin divided into four regions: Sertão, Leiteira Basin, Agreste and Southl, in which a preliminary diagnosis of solid waste in the region was made, through arrangements to consider projection of economic scenarios and integrated management.

3. State Plan for Solid Waste of Alagoas

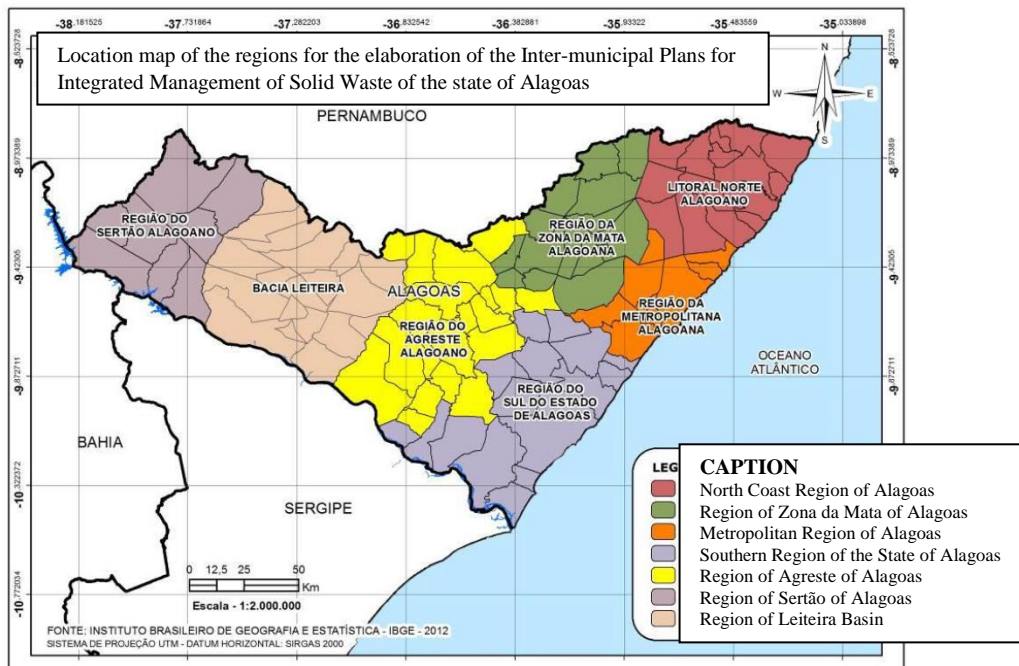
The plan had already been discussed before the policy was instituted in 2015 and training with technicians from the municipalities in each region of the regionalization plan was carried out in 2014.

Thus, considering the socioeconomic and environmental aspects of the state of Alagoas, the seven regions (figure 1) for solid waste management were defined as:



1. **Region of Agreste of Alagoas** - Arapiraca, Traipu, Girau do Ponciano, Lagoa da Canoa, Feira Grande, Campo Grande, São Sebastião, Limoeiro de Anadia, Craíbas, Igaci, Coité do Nóia, Taquarana, Maribondo, Belém, Tanque d'Arca, Palmeira dos Índios, Olho d'Água Grande, Minador do Negrão, Quebrangulo and Estrela de Alagoas;
2. **Region of Leiteira Basin** - Olho d'Água das Flores, Santana do Ipanema, Ouro Branco, Maravilha, Poço das Trincheiras, Senador Rui Palmeira, Carneiros, São José da Tapera, Pão de Açúcar, Belo Monte, Palestina, Jacaré dos Homens, Monteirópolis, Olivença, Major Isidoro, Dois Riachos, Cacimbinhas, Jaramataia and Batalha;
3. **North Coast Region of Alagoas** - Maragogi, Japaratinga, Porto de Pedra, São Miguel dos Milagres, Passo de Camaragibe, São Luiz do Quitunde, Flexeiras, Joaquim Gomes, Matriz de Camaragibe, Porto Calvo, Jundiá, Novo Lino, Colônia Leopoldina, Campestre and Jacuípe;
4. **Metropolitan Region of Alagoas** - Rio Largo, Messias, Barra de Santo Antônio, Coqueiro Seco, Satuba, Santa Luzia do Norte, Pilar, Paripueira, Marechal Deodoro and Maceió;
5. **Region of Sertão of Alagoas** - Delmiro Gouveia, Pariconha, Água Branca, Mata Grande, Canapi, Inhapi, Olho d'Água do Casado and Piranhas;
6. **Southern Region of the State of Alagoas** - Coruripe, Jequiá da Praia, Anadia, Boca da Mata, Campo Alegre, São Miguel dos Campos, Roteiro, Piaçabuçu, Igreja Nova, Porto Real do Colégio, Teotônio Vilela, Barra de São Miguel, Feliz Deserto, Penedo and two more (02) Municipalities that migrated from the Agreste Region (Junqueiro and São Brás
7. **Region of Zona da Mata of Alagoas** - União dos Palmares, Ibateguara, São José da Laje, Santana do Mundaú, Branquinha, Murici, Capela, Cajueiro, Atalaia, Pindoba, Mar Vermelho, Paulo Jacinto, Viçosa, Chã Preta.

**Figure 1** – Microregions of solid waste management in the state of Alagoas.



**Source:** Floram Engenharia e Meio Ambiente (2016) adapted from SEMARH/AL (2010).

The division of the state into regions aiming at the integrated management of solid waste is essential, as it allows the proposition of systems for treating solid waste with a reduction in management and control costs, reducing environmental liabilities. Thus, seven public consortia were formed, which at the time of the elaboration of the state plan, were in the structuring phase (FLORAM ENGENHARIA E MEIO AMBIENTE, 2016). Table 1 shows the consortia formed with date of creation and waste treatment center (Portuguese acronym: CTR) used by each one.

**Table 1** – Regional and central for solid waste treatment consortia in Alagoas

Region / Municipality	Consortium	Year of creation	Waste Treatment Center (CTR)
Agreste	CONAGRESTE – Regional Consortium of Solid Waste of Agreste Alagoano	2013	CTR Agreste
Leiteira Basin	CIGRES – Inter-municipal Consortium for Solid Waste Management	2006	CIGRES Landfill – Olho D’Água das Flores
North Coast*	CONORTE – Inter-municipal Consortium for Development of the Northern Region of Alagoas	2011	CTR Metropolitana
Metropolitan**	Metropolitan Regional Consortium of Solid Waste of Alagoas	2011	CTR Metropolitana
Sertão	CRERSSAL - Regional Consortium of Solid Waste of Sertão of Alagoas	2013	CIGRES Landfill – Olho D’Água das Flores
South***	CONISUL – Inter-municipal Consortium of the South of the State of Alagoas	2013	CTR Agreste
Zona da Mata	CORSZAM - Regional Consortium of Solid Waste of Zona da Mata of Alagoas	2011	CTR Metropolitana
Observation:			
*Maragogi and Japaratinga	-	-	Aterro Consórcio Portal Sul (Rio Formoso – PE)
**Maceió	-	-	CTR de Maceió
***São Brás	-	-	Aterro Ambiental Rosário (SE)

Source: Floram Engenharia e Meio Ambiente (2016) and Alagoas (2018).

After analyzing the information in Table 1, it is possible to notice that although there are seven consortia formed for each region of solid waste management, there are only three CTR to serve the seven regions. The destination of solid waste to other regions was the alternative found by consortia in the regions of the North Coast, Sertão and South of the state, to meet the goal of closing the dumps. According to the mayor of Porto Calvo, North Coast region, David Pedrosa (2017),

[...] . the installation of the transshipment station<sup>3</sup> was the most economical way to comply with the law, since creating a landfill would be much more expensive and would cost approximately R \$ 20 million, in addition to taking about three to four years to operate, after completing all the bureaucratic procedures to obtain environmental licensing. (LUNA, 2017). (LUNA, 2017).

In addition, four municipalities do not participate in any of the consortia created, Maceió has a landfill since 2010, Maragogi and Japaratinga – municipalities on the North Coast – send their waste to the Rio Formoso CTR in the state of Pernambuco and the city of São Brás, in the South region, send their solid waste to the Rosário do Catete CTR in the state of Sergipe (ALAGOAS, 2018a). In effect, the state government of Alagoas managed to close on May 25, 2018 all the dumps present in the municipalities.

<sup>3</sup> The transshipment station is a place that serves to transfer the waste collected in the consortium municipalities to trucks that take the garbage to the CTR of another region.

It is important to highlight that the state plan provided scenarios for each region and consortium, according to the respective socioeconomic characteristics. This means that each CTR was planned to absorb the demand of the constituent municipalities, that is, by absorbing the demand from other regions, the three CTRs (Aterro Cigres, Metropolitana and Agreste) in operation may have their service life impaired.

The plan also consolidated the estimated resources for investments “in physical works, acquisition and installation of equipment, operational and management costs of the system in addition to the resources to be applied in the political and social mobilization programs, and standardization of future relations between the agents involved.” (FLORAM ENGENHARIA E MEIO AMBIENTE, 2016, p. 983). The estimated investments and costs were directly associated with the implementation of the five programs proposed in the State Plan for Solid Waste (PERS). Table 2 shows the annual cost.

**Table 2** - Financial resources needed to implement the programs of the PERS-AL (R \$ in 2018).

<b>Projects and actions</b>	<b>Cost (R \$)</b>
1. Program for the Development of Knowledge and Training in Solid Waste	385.669,00
2. Computerization Program of Solid Waste Management	503.825,80
3. Program for Integrated Inspection and Regularization of Solid Waste Management	27.010,50
4. Social and Environmental Development Program for Solid Waste	760.072,53
5. Structuring Program for Solid Waste Management	3.034.922,46
<b>Total Estimated Annual Value</b>	<b>4.711.501,54</b>

Source: Floram Engenharia e Meio Ambiente (2016).

The estimated annual cost in R \$, of 2018, was approximately R \$ 4.71 million, per year of execution and for a period of four years, totaling R \$ 18.85 million. In this perspective, with the formation of the seven consortia, the elaboration of the PERS and Inter-municipal Plans for Integrated Management of Solid Waste (PIGIRS) the state of Alagoas obtained access to the resources of the Federal Government for the implementation of actions aimed at the management of solid waste in the state.

## **5. Analysis of the budgetary and financial implementation of the PERS of Alagoas**

In terms of planning and budget, the State Policy for Solid Waste has been developed based on the Multi-Year Plan (PPA) 2008-2011 of the state of Alagoas, with the Program “Revitalization of the São Francisco River” and Action “Environmental Diagnosis of Solid Waste”, The Action had as its Goal the environmental diagnosis carried out in each region of the state: Agreste, North, South, Metropolitan of Maceió, Sertão, Leiteira Basin and Valleys of Paraíba and Mundaú.

**Table 3** – Action of the state policy for solid waste and respective budget of the 2008-2011 PPA of the state of Alagoas, constant values (R \$ in 2018).

<b>Program: Revitalization of the São Francisco River</b>	
<b>Action: Environmental Diagnosis of Solid Waste</b>	
<b>Purpose: To develop the state policy for solid waste</b>	4.010.573
<b>Ordinary Resources<sup>4</sup></b>	
Current expenses <sup>5</sup>	601.586
Capital expenditure	0
<b>Covenants</b>	
Current expenses	3.408.986
Capital expenditure	0

Source: Alagoas (2008).

In Table 3, it is possible to see that a large part of the resources allocated to the Action, approximately R \$ 4 million, came from “covenants”, as well as allocated to current expenses. When analyzing the Annual Budget Laws (LOA) for the period 2008-2011 and their respective balance sheets, it is identified how this Action / Project was carried out, table 4 gathers the information.

**Table 4** – Resources allocated and calculation of expenditures in Actions and Projects around the solid waste policy in Alagoas, according to LOAs and Balance Sheets between 2008 and 2011, in constant values (R \$ in 2018)

Action / Project	YEAR	LOA (R\$)	Balance Sheet	
			Ordinary	Linked
Environmental diagnosis of solid waste.	2008	117.584,25	359,29	0
	2009	615.624,92	6.133,69	38.894,61
<b>Total (2008 + 2009)</b>		<b>733.209,16</b>	<b>6.492,98</b>	<b>38.894,61</b>
Preparation of the regionalization plan for solid waste management.	2010	1.149.246,25	55.284,07	235.276,53
	2011	1.038.387,91	20.001,39	164.497,50
<b>Total (2010 + 2011)</b>		<b>2.187.634,16</b>	<b>75.285,45</b>	<b>399.774,03</b>
<b>Total (2008 a 2011)</b>		<b>2.920.843,33</b>	<b>81.778,43</b>	<b>438.668,64</b>
			<b>520.447,06</b>	
<b>LOAs menos Balanços 2008 a 2011</b>			<b>2.400.396,26</b>	

Source: Alagoas (2008;2009;2010;2011).

In 2008 and 2009, the Action "Environmental diagnosis of solid waste" was planned and in the LOAs of 2010 and 2011 the Action became a Project with the objective of elaborating the regionalization plan for solid waste management and was included in the “Revitalization of Hydrographic Basins” Program. The initial budget foreseen for the Action and Project around the state policy for solid waste was approximately R \$ 4 million. After analyzing the LOAs 2008, 2009, 2010 and 2011, approximately R \$ 520 thousand were executed, representing about 17.80% of what was planned for the period. Of this volume of resources executed, around 84%, R \$ 438

<sup>4</sup> Ordinary resources are tax and transfer resources that are not tied to the resource at the time of revenue collection. Linked resources. Source: <http://www.tesouro.fazenda.gov.br/>. Access: July, 22 2019.

<sup>5</sup> Current expenses are related to the maintenance of public services during the fiscal year, while capital expenditures are investments made, which may or may not start operating in the year of the expense (GARSON, 2018).

thousand, had as their source linked resources, that is, resources that are not from the state of Alagoas' own source. It is also important to highlight the difference between what was planned in terms of resources in the 2008-2011 PPA, R \$ 4 million (table 3), the values planned in the LOAs, around R \$ 3 million and what was actually executed, R \$ 520 thousand (table 4)).

In PPA 2012/2015, the policy entered as Action in three Programs: "Integrated management of the environment and water resources"; "Financial Administration" and "Productivity and added value of family farming, livestock, aquaculture and the milk production chain", see table 5.

**Table 5** – Actions of the state policy for solid waste and respective budgets of the PPA 2012-2015 of the state of Alagoas, constant values (R \$ in 2018).

<b>Program: Integrated management of the environment and water resources</b>	384.912,17
<b>Action: Implementation of the state policy for solid waste</b>	
<b>Purpose: To develop the solid waste policy in the state</b>	
<b>Ordinary Resources</b>	
Current expenses	384.912,17
<b>Program: Financial Administration</b>	950.904,68
<b>Action: Implementation of the integrated management system of solid waste</b>	
<b>Purpose: To provide basic infrastructure, public management system of solid waste, through the preparation of studies and projects, for the implementation of landfills.</b>	
<b>Ordinary Resources</b>	
Capital expenditure	59.830,41
Financial compensation for oil shale and gas	
Capital expenditure	19.943,47
Share of oil shale and gas	
Capital expenditure	79.773,88
<b>Covenants</b>	
Capital expenditure	791.356,91
<b>Program: Productivity and added value of family farming, livestock, aquaculture and the milk production chain</b>	565.832,96
<b>Action: Construction of a collection post for empty agro-toxins packaging and related products</b>	
<b>Purpose: Development of actions for the reduction of agro-toxins waste in commercialized foods, the reduction of environmental damages that may cause accidents and health problems in the population</b>	
<b>Ordinary Resources</b>	
Current expenses	159.547,77
Capital expenditure	159.547,77
<b>Indirect Administration Resources</b>	
Current expenses	123.368,71
Capital expenditure	123.368,71
<b>Total</b>	<b>1.901.649,81</b>

Source: Alagoas (2012).

In the 2012-2015 PPA, approximately R \$ 2 million were allocated, R \$ 1,901,649.81, the three Actions aimed at developing the policy and implementing the integrated management system of solid waste, in addition to building a agro-toxin waste collection point in the state of Alagoas. The resources were allocated to current and capital expenditures.

In the LOAs for the period 2012 - 2015 the Actions were inserted as Projects, table 6 shows the allocation of annual resources and the respective calculation of the expense through the Balance Sheets.

**Table 6** – Resources allocated and calculation of expenditures on Projects around the solid waste policy in Alagoas, according to LOAs and Balance Sheets between 2012 and 2015, in constant values (R \$ in 2018).

Project	YEA R	LOA		Balance Sheet	
		Current	Capital	Ordinary	Linked
Implementation of an integrated management system of solid waste.		0	223.217,06	0	0
Implementation of the state policy for solid waste	2012	29.962,02	0	16.166,67	0
Construction of a collection post for empty agro-toxins packaging and related products		265.649,28	265.649,28	105.935,81	163.969,17
<b>Total</b>		<b>295.611,30</b>	<b>488.866,34</b>	<b>122.102,47</b>	<b>163.969,17</b>
Implementation of an integrated management system of solid waste		7.077,87	1.423.572,57	0	0
Implementation of the state policy for solid waste	2013	1.561.276,69	0	180.329,07	1.236.931,33
<b>Total</b>		<b>1.568.354,56</b>	<b>1.423.572,57</b>	<b>180.329,07</b>	<b>1.236.931,33</b>
Implementation of an integrated management system of solid waste		0	3.970.958,73	0	0
Implementation of the state policy for solid waste	2014	5.896.996,32	0	8.494,67	423.592,61
<b>Total</b>		<b>5.896.996,32</b>	<b>3.970.958,73</b>	<b>8.494,67</b>	<b>423.592,61</b>
Implementation of an integrated management system of solid waste		0	1.758.659,49	0	0
Implementation of the state policy for solid waste	2015	5.485.569,24	0	185.076,16	2.773.541,98
<b>Total</b>		<b>5.485.569,24</b>	<b>1.758.659,49</b>	<b>185.076,16</b>	<b>2.773.541,98</b>
<b>Total LOAs and Balance Sheets 2012/2015</b>		<b>13.246.531,41</b>	<b>7.642.057,13</b>	<b>496.002,38</b>	<b>4.598.035,08</b>
			<b>20.888.588,54</b>		<b>5.094.037,46</b>
<b>LOAs - Balance Sheets 2012/2015</b>					<b>15.794.551,08</b>

Source: Alagoas (2012; 2013; 2014; 2015; 2016).

Between 2012 and 2015, according to the LOAs, the budget allocation for the state policy for solid waste in the state of Alagoas was around R \$ 21 million. Of this total, about ¼, R \$ 5 million were actually spent on politics, with 90% of these resources coming from linked resources, probably from the Federal Government, since the state government managed to prepare its state plan in 2015, a requirement to have access to the resources of the federal government and

public financial institutions for the solid waste policy. Not by coincidence, in 2015, the state government manages to have access to about R \$ 3 million of linked resources, which represents 55% of the total spent for the period 2012 - 2015, see table 6.

The last PPA analyzed 2016-2019 contains one more Action around the state policy, in this case the Action aims at “Implementation of the state policy for solid waste” for the referred period, table 7 presents the information with current and capital expenses.

**Table 7** – Action to implement the state policy for solid waste and respective budgets for the PPA 2016-2019 in the state of Alagoas, constant values (R \$ in 2018).

<b>Program: Water Resources and Environment</b>	5.147.847,57
<b>Action: Implementation of the state policy for solid waste</b>	
<b>Purpose: To develop the solid waste policy in the state, to implement the policy in the municipalities of Alagoas.</b>	
<b>Ordinary Resources</b>	
Current expenses	281.385,52
Capital expenditure	30.148,45
<b>Share of oil shale and gas</b>	
Current expenses	753.711,21
Capital expenditure	0
Covenants	
<b>Current expenses</b>	4.082.602,39
<b>Capital expenditure</b>	0

Source: Alagoas (2015).

This PPA had a budget allocation of approximately R \$ 5 million, again a large part of the resources came from linked resources, as well as most of the expenditure forecast were allocated to current expenses. In relation to budgetary and financial execution, the analysis of LOAs shows an allocation of approximately R \$ 6.5 million, concentrated in current expenses, and an expenditure calculated until the year 2017 of just over R \$ 2 million, having as the main source of linked resources, see table 8.

**Table 8** – Allocated resources and calculation of the costs of the Action “Implementation of the solid waste policy in Alagoas, according to LOAs and Balance Sheets between 2016 and 2018, in constant values (R \$ in 2018).

Action	YEA R	LOA (R\$)		Balance Sheet	
		Current	Capital	Ordinary	Linked
Implementation of the state policy for solid waste.	2016	4.426.784,92	13.620,88	54.583,89	2.122.285,04
	2017	2.189.405,13	8.544,02	33.683,73	0
	2018	35.000,00	0	-	-
<b>Total LOAs and Balance Sheets* 2016/2018</b>		<b>6.651.190,05</b>	<b>22.164,90</b>	<b>88.267,62</b>	<b>2.122.285,04</b>
		<b>6.673.354,94</b>		<b>2.210.552,66</b>	
<b>LOAs - Balance Sheets 2016/2018</b>				<b>4.462.802,28</b>	

Source: Alagoas (2015; 2016; 2017; 2018).



Thus, after analyzing the budgetary and financial execution of the state policy for solid waste in Alagoas, it is possible to identify the total volume of resources allocated in the 2008-2011 PPA; 2012-2015 and 2016-2015. In addition, when examining the LOAs from 2008 to 2018, it was possible to see how the planning around the policy was implemented annually, as well as to identify the budget allocation. Finally, by analyzing the Balance Sheets for each year in the period, it was possible to determine the effective expenditure of the policy over these 10 years. Table 9 summarizes the information.

**Table 9** – Budgetary and financial execution of the solid waste policy in Alagoas, according to PPA, LOAs and Balance Sheets between 2008 and 2018, in constant values (R \$ in 2018).

Period	PPA	Total of LOAs	Total of Balance Sheets
	Values in R \$		
2008 – 2011	4.010.573,00	2.920.843,33	520.447,06
2012 – 2015	1.901.649,81	20.888.588,54	5.094.037,46
2016 – 2019 <sup>6</sup>	5.147.847,57	6.673.354,94	2.210.552,66
<b>Grand total</b>	<b>11.060.070,38</b>	<b>30.482.786,81</b>	<b>7.825.037,18</b>

Source: elaborated by the author.

The analysis of the last three PPAs informs that the government of the state of Alagoas planned about R \$ 11 million for the actions and projects that involve the state policy for solid waste. The analysis of the last three PPAs informs that the government of the state of Alagoas planned about R \$ 11 million for the actions and projects that involve the state policy for solid waste. In relation to the budgetary allocation for the period, approximately R \$ 30.5 million was made available in current and capital expenditures, much of which was concentrated in the first expense. Regarding what was actually spent on this policy in the state, the state government spent about R \$ 8 million in approximately 10 years, volume much lower than that presented in the state plan for solid waste, PERS, which predicted a necessary expenditure of approximately R \$ 19 million in 4 years for the implementation of the five proposed programs, see table 2. However, there is a notable increase in spending on the 2012-2015 PPA, which managed to drop from a volume of R \$ 520 thousand in the previous period to R \$ 5 million and which apparently has been maintained in the subsequent period, with around R \$ 2 million spent until 2017.

## 6. Final considerations

The national policy for solid waste has Law No. 12,305 / 2010 as its legal framework, and almost a decade after its establishment, the country still has 48% of its municipalities using open dumps, with serious damage to public health and the environment. The state of Alagoas

<sup>6</sup> For the 2016-2019 period, it includes the sum of the LOAs up to 2018 and the Balance Sheet up to the year 2017.

manages to close all municipal dumps in May 2018, just three years after the institution of the state policy for solid waste, Law No. 7749/2015. After analyzing the planning and budgeting instruments (PPA, LOA and Balance Sheets), it was found that the state government has been developing actions around this policy since 2008. After analyzing the 2008-2011 PPA and LOAs for the period, it was possible to identify an Action and a Project that aimed to carry out the environmental diagnosis and elaborate the regionalization plan for solid waste management in the state, where approximately R \$ 520 thousand were spent.

However, it is from the 2012-2015 PPA that actions have intensified and the implementation of the policy is highlighted in the LOAs of the period and approximately R \$ 5 million was spent on the implementation of the state policy for solid waste. Despite having a budget allocation, the Action "implementation of the integrated management system of solid waste" was not carried out. In the subsequent PPA, 2016-2019, the focus continues on the implementation of the policy and until 2017 approximately R \$ 2 million were spent. In ten years of planning and budgetary execution of actions for the management of solid waste, even when the state policy was not yet instituted in part of this period, the state government of Alagoas spent about R \$ 8 million, however, it only managed to make one third of the expenses foreseen in the budgetary allocations for the period, which is probably reflected in the operationalization of only three of the seven consortia created for the destination of solid waste in Alagoas. Even so, the objective of eliminating dumps in the municipalities of Alagoas was achieved with three Solid Waste Treatment Centers, meeting the demand from the seven regions of the state.

It is worth mentioning that a large part of the resources actually spent come from linked resources, that is, they did not come from the state itself. These resources probably came from the federal government, derived from PNRS, which were well allocated by the state of Alagoas. Thus, linking the release of federal funds to the presentation of Municipal Plans for Integrated Management of Solid Waste was an instrument to force municipalities to seek solutions to the environmental problem of disposing of their waste. This highlights the importance of planning and budgeting instruments in evaluating the effectiveness of the solid waste policy in Brazil.

It is evident, therefore, the importance of national public policies, which together with state policies, end up having a positive impact on the well-being of the population, contributing to the reduction of the precarious conditions of sanitation in urban centers. As many Brazilian states have not yet managed to eliminate their dumps, future work could make a comparative analysis of the strategies used by the states that met their goals, or even use a regional perspective to analyze financial and budgetary execution. In addition, the analysis of a public policy through budget execution allows consolidating its construction period, because sometimes we believe that its success is credited to a single term.

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