

State and Urban Structure: Study of Financing Mechanisms for the Implantation of Sanitary Landfills in Small Municipalities in Brazil

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Abstract—The objective of this study is to identify possible financing sources for the implantation of sanitary landfills in small municipalities in Brazil. It also seeks, through a preliminary study, to verify the extent to which there are financial resources, whether from the state or of private origin, capable of leveraging, in the context of small cities, the works necessary to fulfill the objectives established in the National Plan of Solid Waste, which falls under Law no. 12,305, August 2, 2010. The initial assumption with regard to financing is that while there are suitable alternatives to meet the needs and demands of municipalities, there are inconsistencies between the institutional entities of the Brazilian federation, and efficiency in the implementation of the sanitary landfills that need to be improved in the federative agreement. The research question is situated in a theoretical framework that can be categorized as analysis of public policy. The study is of a qualitative approach. The relevance of the theme lies in the benefits that achieving a landfill would provide to the environment and public health in Brazilian cities. The result of the test indicates possible viable options of official resources for the execution of sanitary landfill implantation carried out by local governments of cities with up to fifty thousand inhabitants.

Keywords—Municipality. Federation. Source of financing. Landfill. Public policy.

I. INTRODUCTION

The issue of landfill implementation in municipalities entered the government agenda upon the enactment of Law No. 12.305, on August 2, 2010, which established the National Policy on Solid Waste (NPSW¹), based on the premise that the absence of daily treatment of solid waste produced by society as a whole constitutes a relevant factor for the public health indicators of the population and undermines the dignity of human beings (BRAZIL, 2010a).

Federal Decree No. 7,404, from December 23, 2010, which regulates Law No. 12.305, from August 2, 2010, establishes in Article 2 that the NPSW portion of the National Environmental Policy is linked to the national guidelines for basic sanitation and the Federal Policy of Basic Sanitation, pursuant to Law No. 11,445, from

January 5, 2007, with Law No. 11,107 from 6 April 2005, and to the National Environmental Education Policy, regulated by Law No. 9795 from April 27, 1999 (BRAZIL, 2010b).

In accordance with Article 30 of the Federal Constitution, each municipality is responsible for designing and delivering, either directly or under concession or permission, the public services of local interest. Thus, the realization of the NPSW is under municipal jurisdiction. Therefore, the Act establishes the obligation of drafting a Municipal Integrated Solid Waste Management Plan - ISWMP. Data from the Ministry of the Environment show that only 33.5% of Brazilian municipalities reported having an ISWMP and that 59% of Brazilian cities still live with dumping grounds, which

means that more than 81,258 tons of waste per day are going to an inappropriate place (BRAZIL, 2015c).

This situation is worse in small towns. A survey by the Brazilian Institute of Geography and Statistics - IBGE points out that 67% of municipalities with up to 50,000 inhabitants maintain final disposal of municipal solid waste (MSW) improperly in dumps or controlled deposits. Brazil has 5,570 municipalities and of those, 4,918 are in the range of up to 50,000 inhabitants, so it can be concluded that there are 3,295 cities without adequate landfills. 32.28% of the population lives in these cities, representing 65,996,669 Brazilians (BRAZIL, 2015e).

The NPSW has four ambitious goals: close urban landfills by the end of 2014; send only non-recyclable wasteⁱⁱ to landfills; invest in selective collection, recycling and reuse, and; implement reverse logisticsⁱⁱⁱ. The objectives have not been achieved in this initial period.

The achievement of the goals set out in the NPSW by municipalities, especially small ones (population less than 50,000), was compromised by the lack of budgetary resources. Statistics produced by the National Confederation of Municipalities (2015) confirm that municipalities have been failing to receive considerable resources as a result of Union Revenue Decoupling (URD^{iv}) and due to the federal tax exemption fiscal policy, adopted by Brazil in 2008.

Grievances of the URD are added to an excessive concentration of financial power in the hands of the Federal Government, identified in Table 1; since the decoupling increases the tax burden of social and economic financial contributions, it only enhances the negative effects to the federal pact and to the necessary distributive balance between resources and obligations of federal entities.

Table 1 - Taxes collected and distributed among federal entities

Members of the Federation	Direct collection ^v	Available collection ^{vi}
Union	66.63%	55.64%
States	26.59%	25.07%
Municipalities	7.78%	19.29%
Brazil	100%	100%

Source: Secretariat National Treasury - STN and IBGE in 2014 (MULTI CITIES, 2016)

The balance of the National Public Sector, in 2014, released by the National Treasury of the Ministry of Finance shows that, of all taxes collected in Brazil,

66.63% go to Union coffers, 26.59% is allocated to the States and only 7.78% belongs to the 5,570 municipalities. After the division of resources among federal entities (the Union for the states and municipalities and the State for their respective municipalities), because of the federal pact, explained below, this picture changes, but not to the point of reversing the percentages significantly. (MULTI CITIES, 2016).

All these data and information explain the difficulties for the municipalities, especially the smaller ones, with regards to their real capacity to sustain obligations and duties compared to the competition of the State, the Union or agents in the private sector.

Thus, the present study seeks to verify to what extent there are financial resources, whether through the state or of private origin, that are able to leverage, in the context of small towns, completion of the work required to fulfill the objectives set out in the National Plan for Solid Waste mentioned in Law No. 12,305 from August 2, 2010. The initial assumption is that there are financial alternatives able to meet the needs and demands of these municipalities. The relevance of the issue is found in the benefits that the realization of a landfill provides for the Brazilian cities' environment and public health.

II. IMPLANTATION OF LANDFILLS IN CITIES: PUBLIC POLICY?

The aim here is to place the issue of landfill implementation in small towns within a theoretical framework that serves as a reference to examine issues related to financial sources and their consequent attachment to the planning and public budgeting processes.

Heidemann (2009) argues that when the economy was in crisis, during the gap between the two world wars, states and governments had to promote the development of societies. In this sense, the political action of governments in the market, identified by liberals as intervention, occurred in two ways: by creating laws that laid out specific directions, from political order to economic initiatives (regulatory action); and direct state involvement in the economy (business function). This is where so-called government policies arise that were later conceptualized as public policy.

The development of a society in political and administrative terms, results from decisions made and implemented by the governments of national, sub-national and supranational states in conjunction with the other forces of society, especially market forces. These decisions and actions of government and other social

actors, as a whole, constitute what is known by the generic name of public policy (HEIDEMANN, 2009).

The author makes it clear, however, that the safest notion of public policy depends on the meaning and scope of the term "policy". The term policy has several meanings. As a more operational meaning, policy is conceived as actions, practices, frameworks, and guidelines, based on laws and undertaken as state functions through the government, to address general and specific issues of society. In this concept of public policy, the state exercises its more practical and direct presence in society, particularly through planning, which requires policies previously defined either generally or horizontally (economic policy), or those with a sectoral impact (health and sanitation policies, for example).

Other researchers have also contributed to the composition of the definition of public policies. Easton apud Heidemann (2009, p. 29) says that public policy means "the official allocation of values for an entire society." H. Lasswell and A. Kaplan define public policy as "a program designed with goals, values and practices" (cited by HEIDEMANN, 2009, p. 29). Thomas R. Dye, "Public policy is whatever governments choose to do or not to do" as cited by (HEIDEMANN, 2009, p. 30).

Bucci (2006) in the pursuit of building a concept of public policy in the field of law, proposes that public policy is the government program of action that results from a procedure or set of legally regulated procedures – electoral procedures, planning procedures, government proceedings, budget procedures, legislative processes, administrative proceedings, judicial process – to coordinate the means available to the state and private activities, to carry out socially relevant and politically determined goals. As an ideal type, public policy should aim at achieving defined goals, expressing the selection of priorities, the means necessary to achieve it and the period of time after which achieved results are expected.

For Heidemann (2009, p. 31), "a perspective of public policy goes beyond the perspective of government policies, to the extent that the government, with its administrative structure is not the only institution serving the political community, that is, promoting public policy. "Thus, an association of residents, non-governmental organizations (NGOs), concessionaires and other civil society associations are also included among agents of public policy.

Moreover, under the capital's social function, the entrepreneur himself and executives of private companies may be agents of public policy, within their social responsibility. Thus, society, in order to enjoy the public services it needs, can no longer rely on the state

alone in its traditional sense, since other actors can take the initiative to assume governance functions to solve problems of common nature, always under the essential coordination of government in a co-production of public good (HEIDEMANN, 2009).

Public policies are developed, according to Heidemann (2009), from a conceptual cycle comprising at least four steps: policy decision to address previously studied social problems; implementation, because without actions policies are merely good intentions; verification of demand (whether or not the parties initially interested in the policy are satisfied), and; evaluation of policies with regard to their continuation, improvement, redesign or simple discontinuity.

Policy decisions reflect, to a greater or lesser degree, the theory of collective decisions, the core of the modern theory of democracy that Bobbio speaks of (2000), and the public good which gives substance to the majority of decisions is the development of society in its various definitions and socio-political dimensions. The phase of the implementation of public policies has not received due attention by academic studies. According to Kurt D. Cline (cited HEIDEMANN, 2009), the problem of implementing a policy should be conceived as an effort to obtain cooperation between persons required to promote them, and not merely as a management challenge to provide the best conditions for communication between such people.

This means that "cooperation presupposes a decision-making approach of a participatory and dialogic nature, not just a managerial approach of communicative efficiency" (CLINE cited HEIDEMANN, 2009, p. 37).

According to Heidemann (2009), in order to evaluate the degree of satisfaction produced by a particular policy, it is necessary to verify the impact of the program or project on the targeted public because these beneficiaries are the creditors of satisfaction and accountability and thus, they should be the main concern of the managers of the programs/projects undertaken. Quality of service depends largely on the direct and transparent relationship between service providers and their respective beneficiaries.

The formulation of public policy can also be seen from the perspective of the actors involved and their forms of action and interaction. This is the theme of the Inter-American Development Bank Report - IADB, on economic and social progress in Latin America; the 2006 version is the result of joint work of a large group of researchers and practitioners of the Department of Research and the Department of Sustainable Development of this multilateral financial institution in

the Americas. The focus of this report is not the content of public policy, or its effects on important economic and social variables, but the process by which these policies are discussed, approved and implemented, especially the form of interaction between the actors involved (STEIN et al., 2007).

In capitalist, democratic countries with a presidential system of government, as is the case of Brazil, the process of adoption and implementation of public policies occurs in socio-political spaces that include the participation of a variety of actors, such as presidents, his ministers, technicians, voters from small rural communities, going through congressmen, judges, leaders of opinion, businessmen etc. The complex interaction between these actors is influenced by the institutions and each country's political practices, which helps to explain why the reforms are lasting in some countries, why some countries are able to change easily with policies that are not working well and why some adjust better than others when circumstances require. In addition to the political institutions and practices, the report also points to other factors that influence the quality of economic and social policies: history, beliefs, and the attitudes of citizens and leaders (Stein et al., 2007).

The Inter-American Development Bank Report reveals that the effectiveness of public policies depends on how are discussed, approved and executed. So rather than focusing on the substance and direction of certain policies, the report focuses on the critical processes that shape these policies, putting them into practice, from conception to implementation, and how they are supported over time.

This comes from the premise that the processes of discussion, negotiation, approval and implementation of policies can be as important as the specific content of the policies themselves. Adopting a strictly technocratic approach in policy formulation certainly suppresses these stages of discussion, negotiation, approval and implementation, incorporating in its essence the disorderly world of politics. The report considers the political process and policy formulation to be inseparable, and if this reality is not taken into account when promoting any policy change, there is the risk of failure and frustration (STEIN et al., 2007).

This report highlights the idea that the policy-making process is a dynamic game among actors that interact in what can be called arenas. Some actors are official, such as political parties, chiefs of the executive branch, government teams, legislatures, courts and other bureaucratic officials, and their roles in policy

formulation are set forth in the Federal Constitution and subsidiary legislation.

Governors and mayors, as leaders of sub-national (or sub-regional^{vii}) governments, are also domestic policymaking game players, both in their function of implementing policies, and in their political function within parties and the party system. Subnational actors can influence the process of formulating national policies through different channels. In the implementation phase, they can influence the obstruction, delaying or redefining of national policies, or they can also make use of some of their regional or local policies as strategic arms in negotiating with national authorities. Finally, the exact role played by subnational actors in the national policy-making process is dependent on their incentives and the formal and informal rules governing their involvement in this process (PAYNE; ECHEBARRÍA, 2007).

Judiciary power is becoming more important, both in public policies and the political landscape of Latin America, particularly in Brazil. Similarly, the relevance of the role of civil society actors in the formulation and implementation of public policies is notable, including: companies, the media, trade unions, social movements, academic scholars and experts (actors of knowledge); this can also be seen in the research findings of Payne and Echebarría (2007).

Thus, since the installation of sanitary landfills in small towns in Brazil, as required by law, presented as a public policy at the local level, it is necessary to examine how this connects with the process of public planning and budgeting and which financial sources can be identified in order to make it viable.

III. PUBLIC POLICY AND GOVERNMENT BUDGET

Public spending in Brazil follows a system of planning established by the Constitution of 1988. It is an integrated system based on the Multi-Year Plan - PPA, Budget Guidelines Law - LDO and Annual Budget Law - LOA, including legislation applicable to the Federal, State, Federal District and Municipality levels, which organizes state financial activity and instrumentalizes the achievement of government actions.

Government action is made possible by financial activity developed by each federal entity, understood as the process of acquisition, management and use of financial resources. The rationalization of this financial activity with regards to revenue, expenses, budget and public credit, are present in the planning and budget tools established by the Constitution.

This process leading to the programming of government actions is complex and involves a set of tools and factors that are not always directly controllable by the Government. On the one hand, there is the fact that public needs to be addressed by government action are endless, taking into account the complexity and diversity of the goals set out. On the other, the financial means available to the State are scarce. Given this extreme situation, unlimited needs versus limited resources, defining the actions needed to be reflected in public policy requires intense creative elaboration by governmental entities. Creative elaboration involves adapting and/or developing new ways to solve problems and how to overcome challenges in order to achieve positive results for the whole of society (individuals, households and businesses).

From the perspective seen in Complementary Law Nº. 101, of May 4, 2000 (Fiscal Responsibility Law), which introduced into Brazil the responsibility of the institute in public management, government action requires planning, transparency, compliance to limits, fiscal balance, achievement of goals, cost control and evaluation of results.

Three forms of state planning are identified in Brazil, each with a specific focus: urban planning, whose goal is to organize the development of cities; planning as a tool to direct (or promote) the economic activity of the state, and; planning and budgeting techniques intended to regulate the financial activity of the state.

The ordination of the development of cities is the highlighted purpose for government planning. The urban development policy in Brazil is seen in Articles 182 and 183 of the Federal Constitution. This policy, which is performed by Municipalities in accordance with the general guidelines set out by the union, has as its objective the full development of the social functions of the city and to ensure the well-being of its inhabitants.

Each city's Master Plan, prepared by the municipal executive and approved by the local legislature, is the basic instrument of policy development and urban expansion. Law No. 10,257, from July 10, 2001, known as the City Statute, regulates articles 182 and 183 of the Federal Constitution.

Among the basic guidelines contained in the City Statute for the achievement of urban policy are: democratic management through participation of the population and organizations representing various segments of the community in the formulation, implementation and monitoring of plans, programs and urban development projects; planning the development of cities, the spatial population distribution and economic

activities of the municipality and the territory under its area of influence, in order to avoid and correct the distortions of urban growth and its negative effects on the environment; integration and complementarity between urban and rural activities, in view of the socio-economic development of the municipality and the territory under its area of influence.

Law No. 10,257, from July 10, 2001, also established the main tools that can be used to achieve the Foundation's goals. They are: national, regional and state planning of land use and economic and social development; planning of metropolitan regions, urban agglomerations and micro-regions; municipal planning, in particular the master plan, guidelines for land use and environmental zoning, a multi-year plan, budget guidelines and the annual budget; participative budget management; sectoral plans, programs and projects; plans for economic and social development; legal and political instruments; prior environmental impact assessment - EIA and prior neighborhood impact assessment - NIA. According to Mukai:

The master plan is an integral part of the municipal planning process, as long as the multi-year plan, the budget guidelines and the annual budget incorporate the guidelines and priorities contained therein "viii (2005, p. 19)

On January 1, 2003, the Ministry of Cities was created with the hope of combatting social inequalities, making cities more humanized spaces and increasing the population's access to housing, sanitation and transport. For this purpose, the Ministry encourages municipalities to create new practices of territorial planning and democratic management by releasing funds and providing technical support to cities.

The second approach reveals the planning focused on modeling the economic development of the country and is provided for in art. 174 of the Federal Constitution. The state should exercise fiscalization, incentive and planning, which is binding for the public sector and indicative for the private sector. To achieve this function, the State, using specific regulatory framework, should establish the guidelines and basis for planning balanced national development, which embody and make compatible the national, regional and sectoral development plans.

The three branches of state planning - urban planning, economic planning and control of the financial activity of the state - are integrated through the multi-annual plan - MAP, the Budget Guidelines Law - BGL

and Annual Budget Law - ABL^{ix}. In other words, based on the Federal Constitution and Complementary Law No. 101 from May 4, 2000, it follows that these three instruments of government planning in an integrated and cyclical manner, express the economic, financial and urban policies of the federative entity, though each has a specific function in the government's planning system. The Charter Policy and Fiscal Responsibility Act establish the need for integration and compatibility between them, both vertically (MAP conditions BGL, which conditions ABL), and horizontally (MAP conditions BGL and ABL over the four years of its term), in all of the federal entities.^x

There is a key concept in this government planning and budget system, which is the program, considered the only integrating module between plan and budget. In terms of structure, the multi-annual plan ends in the program and the annual budget starts in the program, which integrates these documents from the outset, without the need, therefore, to seek reconciliation between diverse modules (BRAZIL, 2014th).

The program is the organizational tool of government action that articulates a set of actions that contribute to the achievement of a common predetermined goal, measured by indicators established in the plan, aimed at solving a problem or answering particular needs or demands of society. Organization of Government actions in the form of programs aimed at providing greater rationality and efficiency in public administration and increasing the visibility of the results and benefits generated for society, as well as increasing transparency in the use of public funds (BRAZIL, 2014a).

The process of implementation of landfills in Brazilian municipalities (including small ones), since it is considered a public policy, is set as a mandatory item of each City's Master Plan and the formulation and implementation of this project must take place in coordination with the cycle of these three government planning and budget tools.

IV. SOURCES OF FUNDING FOR SMALL MUNICIPALITIES

Based on the Country's Political Charter (the Federal Constitution), Complementary Law No. 101, from May 4, 2000 (Fiscal Responsibility Law - FRL) and Law No. 4320 from March 17, 1964 (Statute of Financial Law), it is possible to demarcate three normative axes from which can be identified some alternative funding to carry out public works and services in small municipalities in Brazil. Firstly, there are intergovernmental transfers

(from the Union to the states, Federal District and municipalities; from the state to the municipalities located in their territory). Secondly, there are loans that can be made through national and international financial organization fundraising. Thirdly, there are partnerships that can be implemented between the Public Administration and the private sector

Intergovernmental transfers have their nature and content delimited according to the conceptual framework of the Federative Republic of Brazil, the name assigned to the country, which is formed by the indissoluble union of the states, the Federal District and the municipalities, according to Article 1 of the Constitution.

The political and administrative organization of the Federative Republic of Brazil, comprising the union, the states, the Federal District and the municipalities, all autonomous, under the Federal Constitution, determines how public expenditures are financed and the distribution of costs between these federal entities, i.e. establishes the jurisdiction that each federal entity has to institute tributes (taxes, fees and contributions), to generate their own revenues as well as the duty of each one in terms of public policy.

The Brazilian federal system is cooperative in nature. The meaning of this statement is as follows: the Union establishes and collects taxes within their jurisdiction; some of this revenue stays with her and the rest is distributed among the states, Federal District and municipalities, according to legal and constitutional determination. Each state, in turn, establishes and collects taxes within its jurisdiction; a portion remains with the state and the rest is shared between the municipalities situated in its territory. Therefore, the municipality establishes its own taxes, but the revenue remains fully within the municipality. Such division among each of these federal agencies is intended to take care of expenses which are also distributed among them, according to the Federal Constitution.

There are two types of union fiscal transfers: compulsory transfers which are subdivided into Constitutional^{xi} and Legal^{xii}, and Discretionary Transfers^{xiii}, subdivided into four: voluntary transfers, those through civil society organizations, those by delegation and specific transfers. For the analysis of our study we will limit ourselves to the discretionary voluntary type of transfers - which are those that carry out the delivery of resources to Federative Entities for cooperation, assistance or financial aid, that are not based on constitutional or legal requirements. In other words, voluntary transfers are thus called because they depend

on the decision or will of the grantor, and aim towards common interest works or provision of services. The legal instruments for the implementation of voluntary transfers are transfer agreements and term agreements which pass between Federative entities and public agencies. (BRAZIL / STN, 2016).

As shown above, the constitutional and legal transfers, plus each city's own revenues are insufficient to support the implementation of landfills in the municipality, which make voluntary transfers important and relevant to meet this demand.

Within the latter kind of transfers, appropriations in the general budget of the Union are allocated to the Ministry of Cities (BRAZIL, 2015a) and to the National Health Foundation (BRAZIL, 2015f). This financial aid consists of specific programs^{xiv} that are also intended for small municipalities, with specific landfill deployment goals in their respective constituencies. In this sphere, there are still funds from the parliamentary amendments, which are the amounts included in the general budget of the union by the Federal Deputies and/or the Senators to benefit projects and actions in their territorial origins in accordance with Amendment No. 86 to the Federal Constitution from March 17, 2015.

Procedures for access to those resources by municipalities are in Federal Decree No. 6,170, from July 25, 2007, which provides for the norms on transfers of federal funds through transfer agreements, Ministerial Decree No. 127 from May 29, 2008 and Ministerial Decree No. 507 from November 28, 2011, governing the implementation of that Presidential Decree (BRAZIL, 2007).

With regard to loans, the National Bank for Economic and Social Development - BNDES supports and provides to municipalities, through the Integrated Multi-Sectoral Urban Project - IMUP, credit lines aimed, among other purposes, towards environmental sanitation, consisting of projects that have as their target water supply, sewage, solid waste and/or urban drainage (BRAZIL, 2015d).

With credit loans open to the public sector, in addition to compliance with the internal norms of the BNDES, the access to financing is established in Resolution No. 43 from December 21, 2001, from the Federal Senate, which regulates the carrying out of domestic and foreign loans, by the states, Federal District and municipalities, including the granting of guarantees, their limits and conditions of authorization.

With regard to partnerships between the public administration and the private sector, Di Pietro (2015) presents a set of technical and legal solutions based on

Brazilian law that enable the execution of works and the provision of public services through competition of companies and/or non-state sector organizations.

The modalities of partnerships vary depending on the type of administrative activity to be developed by the Government. The author points out, in accordance with specific administrative laws, instruments of partnership, such as concession of public services, concession of public works, sponsored concession, administrative concession, the management agreement, the partnership agreement, etc. It is up to each municipality, according to their local peculiarities, to verify the suitability of any of these instruments according to their needs.

As a summary of the alternatives available, with which small municipalities can expect to enable their investments in urban infrastructure (including the installation of landfills), the following can be enumerated:

- (1) voluntary transfers originating from the Union or its respective state, which can be made through agreements and transfer agreements and require minimal (modest) financial contribution from the municipality;
- (2) public sector loans, long-term and subsidized financial trusts, offered by the main fostering state agency in the country, BNDES;
- (3) partnerships that can be made with companies and/or private sector organizations. It seems of fundamental importance the active force of actors participating in the cycle of public policies, utilizing their capabilities of articulation to make some of these public affairs become a reality, as is evidenced by the IDB report (STEIN et al., 2007).

V. LAW 10,305/2010 AND THE REALITY OF SMALL MUNICIPALITIES

Law 10,305/2010 is an opportunity for change in the model of Brazilian society; a new proposal for civic and collective behavior towards human sustainability. From Art. 1:

The National Policy on Solid Waste is established, providing for its principles, objectives and instruments as well as on the guidelines for integrated management and the management of solid, including hazardous, waste, for the responsibilities of generators and the public authorities and the applicable economic instruments. § 1st Public or private individuals or legal entities who are responsible, directly or indirectly, for the generation of solid waste shall be subject to compliance with this Act and to develop actions

related to integrated management or solid waste management (BRAZIL, 2010a).

Scheduling and implementing all the challenges of the law with the reality of Brazilian cities is not a simple task, rather it is complex, challenging and necessary.

For Municipalities two obligations with specific deadlines were determined as a result of the enactment of the National Policy on Solid Waste (NPSW). The first, with a deadline of August 2, 2012 was as follows:

Art. 18. The preparation of a municipal plan for the integrated management of solid waste, as provided by this Law, is a prerequisite for the municipalities to have access to or control over the resources of the Union for the projects and services related to urban sanitation and solid waste management, or to be benefited by incentives or funding by federal agencies for this purpose (BRAZIL / NPSW/ 2010a).

The second deadline was August 2, 2014 for all municipalities meet "Art. 54 - The final environmentally sound disposal of non-recyclable waste". Or rather, the implementation and building of landfills in all Brazilian municipalities was expected to occur in a period of just four (4) years.

Few small cities managed to meet these deadlines, when the mayors of the country, along with the National Confederation of Municipalities - CNM - requested an extension deadline. The request of municipal officials was met through Senate Bill. - PLS 425/2014, which was approved and has already been sent to the House of Representatives for deliberation, extending incrementally, the deadline for municipalities to adapt to the project proposed by the Law. The project proposed:

Capital and metropolitan municipalities will have until July 31, 2018 to end the use of dumping

grounds. Border municipalities and those with over 100 000 inhabitants, based on the 2010 Census, can have the deadline extended until 2019. Cities with between 50 and 100 thousand inhabitants will have until July 31, 2020 and *those with under 50 thousand inhabitants, have until July 31, 2021*. The Union will need to issue supplementary rules on access to federal funds for this kind of work (BRAZIL, 2014th, emphasis added).

All inconsistencies with regard to expenses and revenues determined by the Union to the Municipalities expose the lack of diagnosis of the Union, with its members of the federation, because the municipalities do not have today nor will in 2021, in this case, small municipalities, funds to cover the construction, installation, implementation and maintenance of landfills. Investment costs necessary for this project include, a priori, collection and transportation of waste, land acquisition, project design, environmental licensing and finally construction of the landfill.

Installation costs of landfills according to GVF - Getúlio Vargas Foundation and ABETRE - Brazilian Association of Waste and Wastewater Treatment Companies/2007 - corrected by the National Index of Construction Cost - INCC through 06/2014^{xv}, are divided into three phases: for installation - 5% of the total investments in the landfill, for operation and maintenance - 85% of investment (with an expected life of 20 years) and for the closure and post-closure - 10% of investment. The estimated value for the implementation of a small Sanitary Landfill (100 t/day) is 5.2 million.

To contextualize the cost of implementation of a landfill in small municipalities, it is necessary to quantify these municipalities in Brazil and especially in the state of Rondônia, which is the subject of the proposed article, in Tables I and II.

Table 1 - Distribution of municipalities by population group in Brazil

Group Number	1	2	3	4	Total
City Size	Small	Medium/Small	Medium/Large	Large	
Number of Inhabitants	up to 50,000	50,001 to 100,000	100,001 to 500,000	Over 500,000	
Numbers of municipalities per Population Group	4910	351	267	42	5570
Percent of municipalities by population group	88.15%	6.30%	4.79%	0.75%	100.00%
Total municipal population by population group	66,156,815	24,365,691	54,513,413	62,625,010	207660929

Municipal Population Percentage by population group	31.86%	11.73%	26.25%	30.16%	100.00%
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Source: Fabiano; Barbosa; Uchôa - IBGE adaptation - June 1, 2017.

Table 2 - Distribution of municipalities by population group in the state of Rondônia

Group Number	1	2	3	4	Total
City Size	Small	Medium/Small	Medium/Large	Large	
Number of Inhabitants	up to 50,000	50,001 to 100,000	100,001 to 500,000	Over 500,000	
Numbers of municipalities per Population group	45	4	2	1	52
Percent of municipalities by population group	86.55	7.69	3.84	1.92	100.00%
Total municipal population by population group	749 258	297 082	240 012	519 436	1805788
Municipal Population Percentage by population group	42.49	16,45	13.29	28.76	100.00%

Source: Fabiano; Barbosa; Uchôa - IBGE adaptation - June 1, 2017.

The small municipalities with up to 50,000 inhabitants, identified in Tables I and II make up most of the municipalities in Brazil (88.15%) and in the state of Rondônia (86.55%). Of the total population, 31.86% of Brazilians and 42.49% of Rondonians live in these municipalities. That being said, it is clear that the Solid Waste Public Policies aimed at the implementation of sanitary landfills in Brazil must necessarily go through these municipalities.

Therefore, it is important to consider the financial reality of these municipalities - would they have the necessary budgetary allocation in order to invest in the integrated management plan of municipal solid waste and the implementation of the landfills? Law No. 12,305/2010

establishing the National Policy on Solid Waste in Brazil did not consider this hypothesis, but forced all municipalities to implement Articles 18 and 54 of that legislation.

The financial scenario of the municipalities in general does not support this requirement, especially small municipalities. In Rondônia, the state with the second best per capita income in the Northern region of Brazil^{xvi} also finds it difficult to perform NPSW as demonstrated in Table III, with the municipality Nova Mamore/RO and the description of its Available Revenue as an example^{xvii}.

Table 3 - Description of Available Revenue for the Municipality Nova Mamore/RO for executing the NPSW

REVENUE	VALUE
Gross revenue	61,885,196.33
Capital revenue	- 2,667,281.19
Intra-budgetary revenue Chains (employers' social contributions)	- 2,694,008.18
Current revenue	56,523,906.96
FUNDEB deductions and Social Security Contributions	- 6,804,026.32
Net Revenue Stream - RCL	49,719,880.64
RELATED REVENUE^{xviii}	VALUE
Cost contribution to the Public Lighting Service (COSIP)	- 474,563.03
Financial revenue	- 2,747,584.20
Resource transfers from the National Health System - SUS - Transfers Fund to Fund.	- 3,248,726.87
Resource transfers from the National Social Assistance Fund - FNAS.	- 536,326.71
Resource transfers from the National Education Development Fund - FNDE.	- 1,079,906.20

Share of the Intervention Contribution in the Economic Domain - CIDE.	- 77988.68
State Resource transfers to Health Programs - Fund to Fund Transfers.	- 59525.08
Covenant transfers	- 3,296,227.23
Total Related Receipts	11,520,848.00
EXPENSES	VALUE
Municipal Legislative Expenses (City Council) ^{xix}	- 1,792,967.34
Payroll Expenses ^{xx}	- 25,100,080.86
Total expenditures	26,893,048.20
Sum of Related Revenues and Expenses	- 38,413,896.20
Total revenue available	11,305,984.44
% of disposable income on gross revenue	18.26%

Source: Budget Execution Report Summary - RREO, Fiscal Management Report - RGF and annual balance sheet, Municipality of Nova Mamore - RO (Executive Branch), 2016 SICONFI - System of Accounting and Fiscal Information from the Public Brazilian Sector /STN.

Table 4 - Available Revenue from Municipalities by population range of the state of Rondônia

Group Number	1	2	3	4	Total
City Size	Small	Medium/Small	Medium/Large	Large	
Number of Inhabitants	up to 50,000	50,001 to 100,000	100,001 to 500,000	Over 500,000	
Number of municipalities per Population group	45	4	2	1	52
Average value of Available Revenue by population group	6,614,372.33	30,112,343.10	31,825,713.21	334,721,540.04	-
Percentage of Available Revenue per population group based on gross revenue	17.26%	16.06%	12.97%	24.59%	-

Source: Budget Execution Report Summary - RREO, Fiscal Management Report - RGF and annual balance sheet, SICONFI - System of Accounting and Fiscal Information from the Public Brazilian Sector /STN, 2016.

The reality described in Table III in the city of Nova Mamore/RO, is not an exception but the rule, because of the 45 municipalities with up to 50,000 inhabitants in the state of Rondônia identified and analyzed in Table IV, only an average of 17.26% of its "left over" revenue is available for implementation of the NPSW. It is noteworthy that of this small percentage of Available Revenue that is "left", the mayors have to apply at least 15% in stocks and public health services^{xxi} and 25% of revenues from taxes on Education^{xxii} on the RCL, as well as a huge list of other mandatory and fixed monthly expenses that the municipal fiscal officials have to pay.

This table shows the budget constraint on investments by municipalities, especially small ones, not to mention the fact that the vast majority of municipalities invest much more than their constitutional obligation into public health and education.

In the state of Rondônia, with the exception of the Municipality of Porto Velho (capital city), the 51 remaining municipalities do not have financial autonomy to implement their priority agendas. Nelson Nery Costa

conceptualizes financial autonomy as "the allocation of income and the freedom to act" (2012, p. 59). According to Regina Ferrari, "it is the ability to have one's own revenue to pay for a necessary expense" (2005, p 92.). For Jose Mauricio Conti, Financial Autonomy has three essential features in obtaining resources, which are:

Independence - In obtaining resources, this must exist so that one federal entity need not be subject to another in order to get the funds that it needs.

Sufficiency - Of the funds raised, a sufficient amount is essential for government officials to be able to meet public needs under their responsibility. After all, if the Constitution dictates the purpose, it must also provide the means.

Efficiency - Efficient collection of funds in terms of practicality, convenience and economic viability in order for each beneficiary to receive the most appropriate tax amount for their scopes. (2011, p. 189)

The current president of the Federal Supreme Court - STF, Minister Carmen Lúcia Rocha says that political autonomy is linked to financial autonomy: "There is no political independence without financial independence and this is not achieved without foresight and the constitutional guarantee of one's own sufficient resources for autonomous political action for the benefit of each one of the federated people " (ROCK, 1996, p. 254). In this sense, Régis Fernandes Oliveira (2014, p 111) states: "Today the fiscal pact is askew. There is a clear imbalance in favor of the Union. "

Therefore, Rondonian Municipalities without financial autonomy are not free to set their own policies, or even public policies imposed by the federal government, as is the case with the NPSW. In this sense, local governments are unable to effectively govern.

VI. FINAL CONSIDERATIONS

Based on everything that has been herein explained, it is challenging to achieve all the objectives and guidelines of the National Policy on Solid Waste. Based on the numbers presented, current solid waste management by the government is not consistent with environmental sustainability and public health.

The NPSW lacks investments and funding for its implementation and maintenance, respectively. Even with serious operational difficulties in the short-, medium- and long-term, this sector policy, as it's called in its legal framework, offers the opportunity for the city and its population to evolve together in the manner in which they deal with the solid waste produced in their urban space.

Brazil is mostly a country formed by many small municipalities. This is shown through the data from IBGE in 2015, cited in the introduction. Of the total number of Brazilian municipalities, 88.30% have less than fifty thousand inhabitants. In this part of the country live 65,996,669 Brazilians, which is equivalent to 32.28% of the entire country's population. The leaders of these municipalities have practically the same difficulties managing their solid waste policies, particularly with regard to the lack of technical and financial resources. Supporting the NPSW in these cities is urgently needed by the States and the Union.

Among the various obstacles that arise in conducting this process, we conclude that four of them, if overcome, can greatly contribute to the success of the NPSW:

(1) The first would be the final approval of the Senate Bill (PLS 425/2014) extending the deadlines of Law No. 12,305, from August 2, 2010, in stages, so that cities can become suited to the NPSW, and the Proposed

Amendment to the Constitution (PEC 172/2012), which forbids federal law from assigning charges or providing services to the states, the Federal District or the municipalities without the corresponding financial support for their implementation.

(2) to make the rules of procedure that operationalize the access of municipalities to federal funds more flexible, as described in Federal Decree No. 6,170, from July 25, 2007, Ministerial Decree No. 127 from May 29, 2008, and Interministerial Ordinance No. 507 from November 28, 2011.

(3) funds derived from agreements through the parliamentary amendments, with their high levels of corruption, often impose on the municipal government, since through direct union spending through amendments, parliamentarians may favor companies that financed their campaigns, practicing cronyism, carrying out electioneering, among many ethical, political and legal delinquencies, all while the main role, the institutional responsibility of the Parliament is not to spend, but supervise the government and approve the budget; it characterizes a double-dose dilapidation of the parliamentary function.

(4) hold units accountable for noncompliance with the deadline for environmentally sound disposal of solid waste; the obligations of solid waste management in Brazil are above all: the Federal, State and Municipal governments, the Corporate sector and society. Thus, municipal officials are only penalized by administrative improbability; hence, they are compelled to sign the so-called Terms of Conduct Adjustment (TCA) with the State Prosecutor.

Finally, this study indicates the possibility of viable options of public resources for the execution of projects to implement landfills carried out by the governments of municipalities with up to fifty thousand inhabitants.

REFERENCES

- [1] Bobbio, Norbert; Matteucci, Nicola; Pasquino, Gianfranco. Political dictionary. Translation Varriale C. Carmen et al. 5. ed. Brasília: Publisher University of Brasília; São Paulo: Official Press of the State, 2000, vol. 1 (AJ).
- [2] BRAZIL. National Bank for Economic and Social Development (BNDES). Multi-sectoral Integrated Urban Projects - PMI. Rio de Janeiro: BNDES, 2015d. Available at: <http://www.bndes.gov.br/Site_BNDES/bndes/bndes_pt/Institucional/Apoio_Financeiro/Produtos/FINEM/pmi.html>. Access on 20 nov 2015.
- [3] _____. National Congress. Law No. 12.305, of August 2, 2010. Establishing the national solid waste policy (PNRS). Official Gazette of [the] Federal Republic of Brazil, the Executive Branch, Brasília, DF, Aug. 3. 2010a. Available at: <http://www.planalto.gov.br/ccivil_03/

- _ato2007-2010 / 2010 / Law / 112305.htm> Access on Nov 29. 2015.
- [4] _____. National Health Foundation (FUNASA). Solid waste program. Brasília, DF, 2015f. <<http://www.funasa.gov.br/site/engenharia-de-saude-publica-2/solidswaste->> Access on 15 October. 2016.
- [5] _____. Brazilian Institute of Geography and Statistics (IBGE). Technical note, population estimates of Brazilian municipalities with reference date on July 1, 2015. Rio de Janeiro: IBGE, 2015e. <http://www.ibge.gov.br/home/statistics/population/projecao_da_populacao/2013/default.shtm> Access on Nov 30. 2015.
- [6] _____. Ministry of Finance. National Treasury. Balance of the national public sector: year 2014. Brasília - DF, 2015b. Available at: <<https://www.tesouro.fazenda.gov.br/pt/balanco-dose-tor-public-Nationalbspn>> Access on Nov 29. 2015.
- [7] _____. The Ministry of Cities. National Secretariat of Environmental Sanitation (SNSA). Brasília - DF, 2015th. Available at: <<http://www.mma.gov.br/mma-in-numbers/waste-solids>> Access on Nov 30. 2015.
- [8] _____. Ministry of the Environment. national solid waste policy. Brasília - DF, 2015c. Available at: <<http://www.mma.gov.br/mma-em-numeros/residuos-solidos>> Access on Nov 30. 2015.
- [9] _____. Ministry of Planning, Budget and Management. Federal Budget Secretariat. MTO budget Technical Manual - 2015 version. Brasília - DF, 2014th. Available at: http://www.orcamento.federal.gov.br/informacoes-orcamentarias/manual-tecnico/mt0_2015_1aedition150514.Pdf. Access on Aug 4. 2015.
- [10] _____. Executive power. Federal Decree No. 6170 of 25 July 2007. Provides for the rules on transfers of federal funds through agreements and transfer agreements. Official Gazette of [the] Federal Republic of Brazil, the Executive Branch, Brasília, DF, July 26. 2007. Available at: http://www.planalto.gov.br/ccivil_03/_ato2007-2010/2007/decreto/d6170.htm. Access on Nov 29. 2015.
- [11] _____. Executive power. Federal Decree No. 7404 of 23 December 2010. Regulates Law No. 12.305 of 2 August 2010. Official Gazette of [the] Federal Republic of Brazil, the Executive Branch, Brasília, DF, 23 Dec. 2010b. Available at: http://www.planalto.gov.br/ccivil_03/_ato2007-2010/2010/decreto/d7404.htm Access on Nov 29. 2015.
- [12] _____. Secretary Treasury - STN. What you need to know about legal and constitutional transfers, Brasília: STN / MF, February / 2016.
- [13] _____. Court of Audit (TCU). Agreements and other transfers. 5. ed. Brasília / DF: TCU, the General Secretariat of External Control, 2014b.
- [14] BUCCI, Maria Paula Dallari. The concept of public policy law. In: BUCCI, Maria Paula Dallari (ed.). Public policies: reflections on the legal concept. São Paulo: Saraiva, 2006, p. 1-49.
- [15] NATIONAL CONFEDERATION OF MUNICIPALITIES. national solid waste policy: obligations of federal agencies, business sector and society. - Brasília / DF: CNM, 2015.
- [16] CONTI, José Maurício. fiscal federalism and the distribution of tax revenues. In: MARTINS, Ives Gandra da Silva; BIRTH, Carlos Valder's; Martins, Gandra da Silva Roger (Ed.). Treaty of Tax Law. São Paulo: Saraiva, 2011, p. 189.
- [17] COSTA, Nelson Nery. Brazilian municipal law. 5. ed. Rio de Janeiro: Forensic, 2012.
- [18] DI PIETRO, Maria Sylvia Zanella. Partnerships in public administration: concession, permit, franchise, outsourcing, public-private partnerships and other forms. 10. ed. São Paulo: Atlas, 2015.
- [19] FERRARI, Regina Maria Macedo Nery. municipal law. 2 ed. São Paulo: Editora Revista dos Tribunais, 2005.
- [20] HEIDEMANN, Francisco G. The dream of progress for development policies. In: HEIDEMANN, Francis G.; SALMON, Jose Francisco (Eds.). public policies and development: epistemological foundations and analysis models. Brasília / DF: Publisher University of Brasília, 2009, p. 23-39.
- [21] MENDES JUNIOR, Antonio Sérgio da Silva. Linking budget revenues and their impact on levels of basic education. Court of Audit (TCU) Senate (SF) Federal Budget Secretariat (SOF) Comptroller General of the Union (CGU). Brasília-DF, 2010.
- [22] MENDES, José Marcos Brazilian budget. System: planning, fiscal balance and quality of public spending. Brasília, 2009.
- [23] MUKAI, Toshio. municipal planning: the Master Plan and the City Statute. Journal of Municipal Administration, Rio de Janeiro, v. 50, no. 251, p. 17-26, Jan./Feb. 2005. Available at: <http://www2.ibam.org.br/teleibam/revista_detalhe.asp?idr=498> Access: 20 November 2015.
- [24] OLIVEIRA, Regis Fernandes. Financial Law Course. 6. ed. São Paulo: Journal of Justice, 2014.
- [25] PAYNE, Mark; Echebarría, Koldo. Actors and arenas in the policy process: government teams, the bureaucracy, the sub-regional governments and the judiciary. In Stein, Ernesto et al. (Ed.). The policy of public policies: economic and social progress in Latin America. Report 2006. 2. ed. Rio de Janeiro: Elsevier; Washington, DC: IDB 2007.
- [26] ROCK, Carmen Lucia Antunes. Republic and Federation in Brazil: constitutional traits of Brazilian political organization. Belo Horizonte: Del Rey, 1996.
- [27] Stein, Ernesto et al. (Ed.). The policy of public policies: economic and social progress in Latin America. Report 2006. 2. ed. Rio de Janeiro: Elsevier; Washington, DC: IDB 2007.
- [28] VILLÇA, Flávio. The illusions of the master plan. São Paulo, 2005. Available at: <http://www.planosdiretores.com.br/downloads/ilusaopd.pdf>. Access on Nov 30. 2015.

ⁱ The National Solid Waste Policy will henceforth be called only PNRS.

ⁱⁱ Solid waste that, after having exhausted all the possibilities for treatment and recovery for available and economically viable technological processes, show no other possibility than the final disposal environmentally appropriate. (Law No. 10,305 / 2010).

ⁱⁱⁱ Economic and social development tool characterized by a set of actions, procedures and means to enable the collection and recovery of solid waste to the business sector, for reuse in its cycle or other production cycles, or other disposal environmentally appropriate. (Law No. 10,305 / 2010).

^{iv} The Discharge of Union Revenues (DRU) is a mechanism that allows the federal government freely use 20% of all federal taxes linked by law to funds or expenses.

^v Volume of resources earned by each level of government for the collection of own taxes.

^{vi} Volume of resources earned by each sphere of government after direct more intergovernmental transfers storage.

^{vii} In Brazil, sub-regional governments the states, the Federal District and the municipalities, and the Union is the national State as established the caput of Article 18 of the Constitution: "The political and administrative organization of the Federative Republic of Brazil comprises the Union, the states, the Federal District and the municipalities."

^{viii} To Villaça (2005, p. 10), the idea of Master Plan has spread among us with great intensity and speed going to be adopted, defended and honored by the elite of Brazilian society, especially by architects and engineers linked to urban problems, political, several university courses, entrepreneurs (mainly real estate) and the press. Our society is soaked the widespread idea that the Master Plan (in the broad conception) is a powerful tool for the solution of four urban problems, the essential fact, and largely, if such problems persist because our cities do not have achieved and apply this miraculous Plan. It is amazing how an instrument that almost never existed in practice, may have acquired prestige size by the elite of the country.

^{ix} Multiyear plan - PPA establishes, for the period of four years, by region, guidelines, objectives and goals of government for capital expenditures and other resulting therefrom and for those regarding continuous programs; (2) the budget guidelines law (LDO), understand the goals and priorities of public administration, including capital expenditures for the following financial year, guide the drafting of the annual budget law provides for changes in tax laws and establishes enforcement policy of the official financial and development agencies; (3) the annual budget law (LOA) comprises the fiscal budget regarding the Powers of the federated entity, its funds, agencies and entities of direct and indirect administration,

^x The timetable for the achievement of the planning and budget cycle, within the Union, set out in paragraph 2 of Article 35 of the Act Constitutional Provisions (Federal Constitution): the PPA project, to be effective until the end of the first year in office subsequent presidential, will be forwarded up to four months before the end of the first year and returned for sanction until the end of the legislative session; the LDO project will be forwarded up to eight and a half months before they are ended and returned for sanction until the end of the first period of the legislative session; the LOA of the project will be forwarded up to four months before the end of the fiscal year and returned for sanction before the end of the legislative session.

^{xi} They are those arising from constitutional law, are regulated by law and carried out automatically, taking place between federal entities. (BRAZIL / STN, 2016).

^{xii} Are those whose obligation arises from specific law and specific regulations, occurring between Federative and private non-profit entities. (BRAZIL / STN, 2016).

^{xiii} Discretionary transfers were created because of the scope, complexity, diversity and geographical extent of the demands of the population for utilities, which made the government formulated decentralizing instruments of publications, directed to programs or well-defined priority initiatives. Thus, this category of transfers is performed based on clear objectives, often explained through implementation projects, which leads to the need to enter into a legal instrument between the parties, and granting one another beneficiary. (BRAZIL / STN, 2016).

^{xiv} The Ministry of Cities, Municipal Solid Waste Program. The National Health Foundation (FUNASA), environmental sanitation program for municipalities with up to 50,000 inhabitants.

^{xv} Available at: <<http://www.mma.gov.br/mma-em-numeros/residuos-solidos>> Access on Oct 15. 2016.

^{xvi} IBGE - PNAD, 2016

^{xvii} Free or unlinked revenue.

^{xviii} Linked recipe is one from whose tax or contribution amounts collected are directed by law or by the Constitution, to a certain expense. All contributions are by definition linked to some sort of expense. However, although the Constitution determine the taxes of affectation in item IV of art. 167, also effective tax binding in several of its devices (MENDES, 2009) and (MENDES JR, 2010, p. 10).

^{xix} SC / 1988 - Art 29a.. The total expenditure of the Municipal Legislative Branch, including subsidies of Councilors and excluding expenses inactive, may not exceed the following percentages, relative to the sum of tax revenue and transfers provided for in § 5 of article. 153 and in arts. 158 and 159, effectively realized in the previous year: I - 7% (seven percent) for municipalities with population of up to 100,000 (one hundred thousand) inhabitants.

^{xx}The total personnel expenditures in each calculation period and in each municipality of the federation, may not exceed 54% percentage of net current revenue. (Art. 20, item III, b. Of Law No. 101/2000).

^{xxi} CF / 1988 - Art 198 - § 2 (...) Municipalities apply annually spend on public health care resources minimum of 15% derived from the application of calculated percentage of: III - in the case of municipalities, the product the collection of taxes referred to in art. 156 and of the resources in arts. 158 and 159, section I, paragraph b § 3.

^{xxii} CF / 1988 - Art. 212. (...) The municipalities apply annually, never less than twenty-five percent, at least, the resulting tax revenues, understood from transfers, in the maintenance and development of education.