

Evaluation of the Basic Sanitation Legislative System in Manaus - Amazonas

Fabricia Gonçalves dos Santos Medeiros

fabriciamarquez1@gmail.com

FAMETRO University Center – Brazil

Fabiana Rocha Pinto

fabiana.floresta@gmail.com

Engineering Coordination at FAMETRO University Center – Brazil

David Barbosa de Alencar

david002870@hotmail.com

Galileo Institute of Technology and Education of the Amazon – ITEGAM

Gisele de Freitas Lopes

gikalps@gmail.com

Galileo Institute of Technology and Education of the Amazon – ITEGAM

Abstract

This study dealt with the legislative system of basic sanitation in the city of Manaus. From this approach we sought to develop the research from the parameters of the Brazilian legislation related to the basic sanitation sector, as well as to identify the important conducts on sustainable development. Understanding the importance of the subject in evidence, it is worth mentioning that Brazil has a considerable volume of freshwater in the world, and likewise, the Amazon has in its watershed much of that water in its rivers. Therefore, the objective of this investigation was to analyze the legislative system of basic sanitation of the city of Manaus - Amazonas, in order to understand the actions developed by this system. For the construction of this study, the methodology adopted was the bibliographic research with a qualitative approach, in order to reach the proposed objectives. Regarding the legislation that deals with basic sanitation, many advances in the sector were obtained. Most of the population does not have access to basic sanitation services, even if provided for by Brazilian law.

Keywords: Basic sanitation; Sustainable development; Basic sanitation legislative system;

1. Introduction

In the last three decades, the debates about the importance of sanitation, as a basic necessity, have taken place urgently, where immediate actions were required to improve this condition, making its notoriety in Brazil expressive. In this scenario, the relevance of the discussions on the theme of basic sanitation stands

out, considering that the lack of it can cause various inconveniences to the population, such as damage to health.

Faced with this theme, [1] in his article 225, when dealing with environmental issues, states that it is the duty of all to protect and ensure the preservation of the environment for future generations, this implies that environmental constitutional responsibility encompassing all sectors of society, however, it is observed that we have made little progress on these issues.

According to studies by [2], it is inherent to basic sanitation, a set of measures aimed at ensuring environmental conservation and disease prevention, which may be linked to social, economic, political and cultural factors. Therefore, it can be seen that when it comes to basic sanitation, in general, it is noted the scope of water supply systems, rainwater drainage, urban cleaning, sewage and other systems.

According to [3], Brazil holds much of the world's fresh water, and Amazonas concentrates much of that water in its rivers. Although the state can count on a vast area of rivers, access to water and especially to basic sanitation services, water through its treatment does not reach all residents of the region. In this scenario, the 2030 agenda for sustainable development describes equal and universal access to clean water as well as basic sanitation as one of the millennium's main goals.

In Brazil, the milestone in the expansion of the sanitation sector is represented by the creation of the National Sanitation Plan (PLANASA) in 1971, characterized by the channeling of FGTS resources, strong increase in the coverage of water supply services, reduced investment in depletion. sanitation, exclusion from other sanitation actions such as urban drainage and solid waste [4]

From the 1988 Constitution come new conceptions about public policies focused on basic sanitation in Brazil. In this sense, [2] emphasizes that, for the new constitution, basic sanitation is a fundamental right of the citizen and an indispensable requirement for the promotion of quality of life. Thus, it is understood that basic sanitation refers to actions directed to the conservation of the environment, in addition to disease prevention, implying combined actions between social, economic, political and cultural factors encompassing these systems.

It is important to add that the regulation of the Federal Basic Sanitation Policy was implemented by means of [5], whose innovation is the possibility of hiring, by the holders, private providers of sanitation services, in addition to the possibilities of institution of collection. for the use of basic services and user penalties.

In this sense, it is found that for the services to have a satisfactory coverage and reach the whole population, it is essential the efforts and participation of the federal, state and municipal spheres, each acting according to the constitution, so that the actions directed to the improvement. sanitation were implemented.

However, some actions are already being used and thought so that the negative impacts generated by economic development are minimized, one of them concerns the sustainable and conscious management of natural resources, such as clean energy, where some countries have invested heavily in basic sanitation, such as reduce the impacts on the health of the population. Unfortunately the reality of these investments is still noticeable only in developed countries.

Considering the arguments of [6] about environmental practices, it is clear that in defining the concept of sustainable development, they consider the economic, environmental and social aspects, delineating the impacts of human actions on the planet, and although it is Following a constant agenda in such debates, it is observed that some positive changes towards the generation of methods that articulate this process,

resulting in environmental policies backed by robust and efficient legislation.

Regarding the role of organizations towards sustainable development, they are also governed by guidelines for the preparation of sustainability reports. Such reports determine the principles and performance indicators used to measure and report economic as well as environmental and social performance. Accordingly, a number of agencies that set environmental performance indicators are considered: The Ethos Institute [7], the Dow Jones Sustainability World Indexes [8] and the Global Reporting Initiative [9]. In the last decades the urban network of the whole country, has undergone expressive changes, that is, the growth of the urban area is an irreversible factor, however, what is observed today, is a disorderly growth deprived of any planning.

According to [10], rapid urban growth is expected to continue in the coming years. In this sense, approximately 54% of the world's population lives in urban areas, with the urgency of planning more sustainable cities.

Given this, the objective of this study seeks to analyze the legislative system of basic sanitation in the city of Manaus, seeking the Brazilian legislation as a reference regarding the basic sanitation sector, identifying relevant actions on sustainable development.

2. Materials and Methods

According to [11], the technical procedures adopted in scientific research, refers to which technique to use to obtain the expected and unforeseen results in the project, among the most commonly used techniques can be highlighted: the bibliographic research in which technically seeks the results. based on material already published, such as the careful and systematic evaluation of books, journals, documents, texts, maps, photos, manuscripts and even material available on the Internet, etc.

For this, the classification and ordering of the information contained in the bibliographic sources was followed, so that they would allow the construction of ideas and the construction of specific objectives. Initially, an exploratory reading of all bibliographically collected material was performed, from a quick reading, in order to judge if it was interesting for the pre-project such information. Following, there was a selective process of these sources through a deeper reading of the sessions that met the inclusion criteria defined in this methodology.

The research aimed to promote an analysis about the legislative system of basic sanitation focusing on the city of Manaus / AM, seeking to describe the significant benefits achieved over time. Highlighting the importance of implementing public sanitation policies, understanding that this way we can guarantee health and quality of life to the population.

3. Results and Discussion

The environment has a direct influence on the daily life of society, so it is essential that the current rules of the country are respected, thus, it is possible to combine social and economic development with sustainable development.

Another important factor is directly reflected in the individual's life, that is, the benefits generated by sustainable urban planning for people's quality of life are innumerable, considering that the greater the

reach of basic sanitation to the population, the better the quality of life. life is offered to this population.

In the case of the city of Manaus, it has a territorial area of 11,401,092 km², and with an estimated population of 2,094,391 inhabitants, according to data from [12].

In this scenario, according to studies of [3], data on water supply in the city of Manaus, from 2005 to 2014 show that the percentage of people served had significant growth, as well as the extension of the network that is currently above 3,000 km to serve the population.

Recently a study published by [13] with the 100 largest cities in Brazil shows that Manaus occupies the 97th position among the 100 largest cities in the country ", being among the 20 worst according to the published ranking, the study is based on information generated by SNIS and show that Manaus has evolved little in terms of investment in infrastructure.

According to the Manaus Municipal Sanitation Plan Elaboration Advisory Report, the water supply in the city of Manaus comprised about 98.6%, and this is due to the set that covers the Manaus city supply system, is based on in four surface abstractions, on the Rio Negro, which accounts for 87% of the city's raw water abstraction, the water distribution system had a total network length of 3,537.33km and in 2013 the municipal distribution system served 275,421 active connections. , equivalent to 336,515 active savings.

From this context:

Manaus water supply systems from surface sources comprise the following systems: - Ponta do Ismael System (Water Treatment Plant - ETA I and ETA II); Mauzinho System (ETA Mauzinho); Ponta das Lajes System (PROAMA). Completing this system, there are a series of deep tubular wells that capture water in the Manaus underground aquifer, the Alter do Chão aquifer, called (Well System).

With regard to the management of supply services, this is the responsibility of each municipality, where each chooses how to manage the services. Some municipalities choose to grant their management to the private sector, as there are those who prefer to pass to the public power, which are classified as autonomous systems, for example, SABESP, COPASA, Manaus Waters.

Considering the state of Amazonas, 12 of the 62 municipalities have their water supply, sewage collection and treatment services under the management of COSAMA and in the city of Manaus these services are in charge of the Manaus Ambiental company that owns the concession of the supply systems. , sewage collection and treatment [3].

According to research by [15], the city of Manaus is among the cities with the best structure when it comes to water supply and sewage system. However, [14] states that this does not mean that this structure is adequate, and that these services need to improve in order to prioritize the service to the population with more efficiency and quality. In the case of adequate service, with water supply, in the case of individual solutions, the supply of drinking water per well, spring or cistern, with internal piping, in any case without intermittences (stoppages or interruptions).

In this scenario, it is important to highlight the data from the Brazilian Association of State Sanitation Companies [16], which shows that in Manaus, between 2002 and 2016, the water supply index rose to the population, in this case the index rose from 81% to 88%. It is understood that it was a great advance in this system, however many challenges need to be overcome for the coverage area to be expanded and reach its fullness, and this service must be offered as efficiency and quality, as these are prime factors for the health of the population.

From this perspective, [14] as one of its main goals for the northern region, predicts that by the year 2033, 94% of urban homes will benefit from water supply. Regarding the sewage system, the projection for the same year is 87%. Given these data, [3] defends the idea that although there is a trend of growth in these service networks, regarding the sewerage, it is observed that does not walk at the same speed as the water supply network, ie , exhaustion interconnection is much smaller.

Finally, it is added that the supply of treated water and sewage is a major problem for the country's development. Given that, according to the Diagnosis of Water and Sewage Services, published in 2014 by [13], it pointed out that the treated water supply in Brazil reached 82.5% of the population in 2013 and only 48.6% had access to sewage [17].

Within a general analysis according to data from [18], when it comes to Municipal Sanitation Policy, it is observed that it is present mainly in more populous municipalities, for example among the 42 municipalities with more than 5000.000 inhabitants in the In 2017, only 29 confirmed that there is a concern in the municipality with these issues.

Thus, municipalities count on [14], which aims to promote the expansion of this service to the entire municipality. What is observed is a small advance, since in 2011, 22 municipalities presented their basic sanitation plan. And considering the national scenario, a percentage of 2,126 municipalities stated that they had elaborated their policy for the development of basic sanitation services, that is, 38.2%. The data reveal the need for investments in basic sanitation policies for the population in order to remedy and / or prevent damage to public health.

According to information from [13], Brazil is still one of the countries that has evolved least in the area of basic sanitation. This implies in concluding that there have been no major advances in these issues, since both the supply of treated water and the collection and treatment of sewage are far from universal access, which can lead to serious damage to the health and quality of life of the population.

4. Conclusion

The present study made important considerations about the basic sanitation legislation of the city of Manaus. In this sense, it was possible to draw an overview of the situation of this service with the population. Given the relevance of this theme, it is known that the issues associated with basic sanitation in Brazil, have been constantly debated mainly in recent decades for understanding that this is public health.

Thus, with regard to legislation that covers the rights of the population to access basic sanitation, research has shown that since the 1988 Constitution the debates on this theme have gained increasing prominence in expanding to all areas of society. , size is its importance. The Constitution also reiterates that basic sanitation services are fundamental rights of the citizen, and the State must guarantee their access to all.

In this scenario, the study also highlights the role of public sanitation policies for cities, in this context it is worth highlighting the importance of the planning already carried out, seeking to promote the expansion of these services. In fact, public policies, but to understand the process of generating plans, should be in charge of implementing them.

Another highlighted issue, in this study, points out that the city of Manaus has undergone a process of very rapid urban growth in recent decades, unfortunately sanitation policies have not accompanied the

development of the city, a fact that contributes to the problem faced today by much of the city. Although the population has the right of access to basic sanitation services provided by law, it does not have the same, which has generated numerous problems for the population, especially those of public health, because basic sanitation services are considered essential. , since from this we can promote the minimum conditions of social development.

5. Bibliographical References

- [1] BRASIL. Presidência da República. Casa Civil. Subchefia para Assuntos Jurídicos. Constituição da República Federativa do Brasil de 1988. Brasília, 1988. Disponível em: <http://www.planalto.gov.br/ccivil_03/constituicao/constituicaocompilado.htm>. Acesso em: 25/08/2019.
- [2] SOUZA, C.S.S. Diretrizes normativas para o saneamento básico no Brasil. Caderno de Geografia, v.25, n.43, 2015.
- [3] ARAGÃO, J. S. O acesso ao saneamento urbano: os desafios da universalização no abastecimento de água e esgotamento sanitário. Um estudo de caso em Manaus – Am. Dissertação (Mestrado em Ciência do Ambiente). Universidade Federal do Amazonas – UFAM, 2017.
- [4] ALVES, S.; COSTA, B.; MOY, H. L. Indicadores em Saneamento: Análise da Prestação dos Serviços de Água e de Esgoto no Brasil. ABES - Revista da Associação Brasileira de Saneamento, n. 1, p. 1–15, 2014.
- [5] BRASIL. Decreto nº 7.217, de 21 de junho de 2010. Regulamenta a Lei nº 11.445, de 5 de janeiro de 2007, que estabelece diretrizes nacionais para o saneamento básico, e dá outras providências. Diário Oficial da União, Brasília, DF, 21 jun. 2010a. Disponível em: <http://www2.camara.leg.br/legin/fed/decret/2010/decreto-7217-21-junho-2010-606813-norma-atualizada-pe.html>>. Acesso em: 24/09/2019.
- [6] SEVERO, E. A.; GUIMARÃES, J. C. Desenvolvimento sustentável: premissas, realidade e novas perspectivas. Encontro Internacional sobre Gestão Empresarial e Meio Ambiente 2014.
- [7] INSTITUTO ETHOS. Indicadores para negócios sustentáveis e responsáveis. 2011. Disponível em: <https://www3.ethos.org.br/wp-content/uploads/2013/08/IndicadoresEthos v10.pdf>. Acesso em: 31/08/2019.
- [8] ÍNDICE DOW JONES SUSTAINABILITY INDEXES (DJSI). 2011. A cooperation of Dow Jones Indexes and SAM, 2011. Disponível em: https://www.robecosam.com/media/d/b/2/db26149cb7bb7b5c950017d5c07c67d6_review-presentation-2011_tcm1016-14672.pdf. Acesso em: 29/09/2019.
- [9] GLOBAL REPORTING INITIATIVE – GRI. Relatório de sustentabilidade entra em uma nova fase. 2011. Disponível em <https://www.globalreporting.org/information/news-and-press-center/newsarchive/Pages/2011.aspx>. Acesso em: 21/08/2019.
- [10] GOMES, P. C. C. Quadros Geográficos: uma forma de ver, uma forma de pensar. Rio de Janeiro: Bertrand Brasil, 2017.
- [11] FONTELLES, M. J. Scientific research methodology: Guidelines for elaboration of a research protocol. Revista Paraense de Medicina, 23 (3), 2009.
- [12] IBGE. Instituto Brasileiro de Geografia e Estatística. Perfil cidade de Manaus Amazonas 2016.

Disponível: <http://cidades.ibge.gov.br/xtras/perfil.php?lang=&codmun=130260&search=||infogr%E1ficos:-informa%E7%F5es-completas>. Acesso em: 31/09/2019.

[13] INSTITUTO TRATA BRASIL. Ranking do saneamento, 2016. Disponível em: <http://portaldoamazonas.com/wp-content/uploads/2016/04/relatorio-completo.pdf>. Acesso em 08/10/2019.

[14] PLANSAB - Plano Nacional de Saneamento Básico. Plano consolidado 2014 Disponível em: http://www.cidades.gov.br/images/stories/ArquivosSNSA/PlanSaB/plansab_texto_editado_para_download.pdf. Acesso em: 03/10/2019.

[15] ARAGÃO, J. S.; BORGES, J. T. O acesso ao abastecimento de água e esgotamento sanitário: um estudo de caso na região metropolitana de Manaus. IV Seminário Internacional de Ciências do Ambiente e Sustentabilidade na Amazônia. 2016.

[16] AESBE – Associação Brasileira das Empresas Estaduais de Saneamento. 2018. Disponível em: <https://aesbe.org.br/>. Acesso em: 14/10/2019.

[17] BRASIL, Plano de Aceleração do Crescimento (PAC). PAC atendeu ‘uma Inglaterra’ com saneamento básico em oito anos. Publicado por Portal Brasil em 11 de fevereiro de 2016. Disponível em: <http://www.brasil.gov.br/infraestrutura/2016/02/brasil-atendeu-018umainglaterra2019-com-saneamento-basico-entre-2007-e-2015>. Acesso em 26/10/2019.

[18] IBGE – INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA. Indicadores de desenvolvimento sustentável - Brasil 2008. Brasília: IBGE, 2017. Disponível em: <http://www.ibge.gov.br/home/geociencias/recursosnaturais/ids/default.shtm>. Acesso em: 15 mai. 2019.