

# Water and sanitation sewage management in Divinópolis/MG: the current discourse on urban/rural fragmentation

## *Gestão da água e do esgotamento sanitário em Divinópolis/MG: o discurso vigente acerca da fragmentação urbano/rural*

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**Abstract:** Ensuring access to drinking water and sanitary sewage services must be guaranteed to the population living in Brazil's rural areas. However, the implementation of relevant laws across the country remains inconsistent, leaving many rural areas with precarious access to these resources. The study focuses on management model observed in Divinópolis/MG, where services, primarily provided by Copasa, are predominantly geared towards urban areas. The study presented in this article analyzed the influence of this management approach water and sewage provision in the rural areas. Official documents, reports from managers and community leaders generated in interviews were analyzed, as well discourses from residents of two rural agglomerations in the municipality produced through interactions in focus groups. The theoretical-methodological framework of Critical Discourse Analysis (CDA) enabled the construction of the corpus, description and dialectical-relational interpretation of the textual material. The analysis showed the levels and modes of engagement among municipal public managers in relation rural sanitation and the need for actions that integrate rural and urban demands. The narratives of the actors involved in the research point to a problematizing view of current water and sewage management, since the network of discourses investigated represents hegemonic political practices that act to persist the urban/rural fragmentation.

**Keywords:** rural sanitation, management model, hegemonic practices, social participation.

**Resumo:** Os direitos de acesso à água potável e ao esgotamento sanitário devem ser garantidos à população residente em áreas rurais brasileiras, mas a lei não se efetiva igualmente no país, mantendo precário o acesso em áreas rurais. O modelo de gestão estudado, adotado na cidade de Divinópolis/MG, é representado pela Copasa e ofertado sobretudo em áreas urbanas. O estudo analisou a influência do referido modelo de gestão no atendimento dos serviços de água e esgoto nas áreas rurais. Foram analisados documentos oficiais, relatos de gestores e lideranças comunitárias gerados em entrevistas, assim como discursos de moradores de duas aglomerações rurais do município produzidos mediante interações em grupos focais. O construto teórico-metodológico da Análise de Discurso Crítica (ADC) possibilitou a construção do corpus, a descrição e a interpretação dialético-relacional do material textual coletado e gerado. A análise apontou os níveis e os modos de engajamento de gestores públicos do município em relação ao saneamento rural e a necessidade de ações que integrem as demandas rurais às urbanas. Os relatos de atores envolvidos na pesquisa salientam uma visão problematizadora da atual gestão da água e do esgoto, já que a rede de discursos investigada representa práticas hegemônicas políticas atuando na persistência da fragmentação urbano/rural.

**Palavras-chave:** saneamento rural, modelo de gestão, práticas hegemônicas, participação social.



## 1 Introduction

The primary aim of this article is to broaden the discourse surrounding the water supply and sanitary sewage needs in rural areas, particularly focusing on the provision of publicly managed services, either directly by the municipal entities or through collaborative efforts with community associations. Specifically, our study discusses the impacts of the management model adopted at a municipal level on water supply and sanitary sewage services in its rural areas. To this end, we chose the municipality of Divinópolis, boasting a population of 242,505 as of 2021 and located 73 miles from the state capital. Despite being recognized as an industrial hub of the state with significant economic development, a large portion of the over 6,000 inhabitants in its rural areas face deficiencies in sanitation services, according to 2021 data from the National Sanitation Information System (Sistema Nacional de Informações sobre Saneamento, 2022).

In the realm of basic sanitation, public typically authorities structure their actions to serve the communities needs. However, in rural areas, most households lack access to public services and do not adhere to universal norms and standards. Instead, individual efforts are frequently undertaken within the private sphere, without the assurance of proper service provision and in accordance with basic human rights principles. This ongoing disparity in rural regions highlights the importance for public policies aimed at reducing inequalities. Therefore, it becomes important to understand how municipal management and sanitation service provision respond to the main demands related to deficits and how these needs are currently being met, or could potentially be addressed, whether at an individual, community, or collective level.

The distinctive characteristics of rural areas, or ruralities, arise from human activities within specific environmental contexts, forming socio-cultural networks (Galizoni, 2021). However, the prevalent technocentric viewpoint, often rooted in engineering, leads to uniform actions that fail to address the persistent sanitation deficit in areas that deviate from those served by traditional public services (Teixeira, 2014; Dias, 2021). From this perspective, understanding how the municipal management operates and fosters conditions for the development of actions in rural areas can unveil key factors for discussing strategies to tackle the persistent lack of sanitation services in Brazil's rural regions.

The achievement of universal access to basic sanitation services for the population stands as a fundamental principle established in the Legal Framework for Basic Sanitation (Brasil, 2007) and advocated in the UN Report A/HRC/42/47, which establishes the human rights to water and sanitary sewage – HRWS (Organization of the United Nations, 2010). Despite these legal and advocacy efforts, the management of sanitation services has not demonstrated a commitment to serving rural areas, neglecting the normative content of the HRWS, which outlines pathways for fulfilling these rights. The full enjoyment of human rights to water and sanitation depends on several factors: availability, which is related to supply, the reliability and continuity of service provision to meet current and future demands; physical accessibility, encompassing the accessibility of services either at home or nearby, essentially referring to a residential connections to sanitation infrastructure; affordability, ensuring that the costs involved do not hinder access to other essential services; acceptability, which influences the adoption of technological solutions that align with specific needs and cultural norms; quality, concerning the potability of water in accordance with national guidelines; and effectiveness in the collection, transportation, and treatment of sewage (Organization of the United Nations, 2019).

This assessment aligns with the prerogatives of the UN Report and underscores and underscores, nations' commitments to global goals, emphasizing the urgent need to effectively address the deficit in rural areas. This deficit encompasses various segments, ranging from priority service in municipal headquarters to areas of particular interest, passing through

household clusters of different compositions and sizes, and isolated households. The deficit is linked to segregated regions within the municipalities, characterized by various ruralities. Such regions are prevalent across the majority of Brazilian municipalities, perpetuating a paradigm that often disengages public authorities from meeting the demands of rural areas, given their limited financial capacity (Brasil, 2019).

To understand the nuances how the management model affects actions related to water supply and sanitary sewage, Critical Discourse Analysis (CDA) was used as a theoretical-methodological tool. This approach included the dimensions of textual analysis, discursive practice, and social practice (Fairclough, 2001).

## **2 Theoretical Foundation**

### **2.1 Rurality, Public Policy, and Sanitation Management in Brazil**

Rural Brazil spans a vast expanse characterized by diverse cultures and a mosaic of ruralities. National Rural Sanitation Program (PNSR) (Brasil, 2019) underscores that populations facing a deficit of water and sanitary sewage management are predominantly found in rural areas, particularly within the Northern and Northeastern macro-regions. Conversely, in most of the southeastern and southern regions of the country, abundant water supplies and strong economic development have led to an increased water supply. However, this prosperity has led to environmental challenges that are hard to address, due to pollution from scattered sources of domestic sewage and other effluents that are not adequately collected and treated. The flow of this waste into the environment has severe negative consequences for the population living in both rural and urban areas, who are located in the path of the sewage that is directed and discharged into urban streams and rivers. These areas, despite their proximity to municipal headquarters, do not always benefit from the services provided. The concept of economy of scale is a key factor in the development of sanitation systems within human clusters. Moreover, the structural organization of management significantly affects the total amount of savings, given its impact on the number of staff hired and the complexity of the technique used.

The studies informing the development of the PNSR have contributed a typology that characterizes various rural areas. Through the aggregation of census tracts, distinct groups have been created to represent four types of ruralities: i) clusters in close proximity to urban areas, wherein sanitation solutions are directly influenced by those implemented in central urbanized regions; ii) more densely populated isolated clusters, featuring by a greater number of economies and the potential for collective actions and organized management models; iii) less dense and isolated household clusters, where sanitation actions are heavily influenced by individual practices or alternative collective solutions, generally with minimal or no support from public authorities; iv) areas devoid of clusters, necessitating solutions tailored to serve a single household units (Brasil, 2019). This study specifically focuses on exploring the realities within the third category (iii) of the PNSR typology.

The National Rural Sanitation Program (PNSR) underscores that the predominant management models for water supply and sanitary sewage are concentrated in municipal headquarters, often not extending to the rural areas within the municipalities. This widespread reality across Brazil, can be traced back to historical contexts. The development of sanitation services management models in country was largely shaped by responses to emergency situations, primarily focused on addressing issues that did not encompass rural sanitation.

According to Rezende & Heller (2008), following the unsuccessful involvement of private entities in public concessions for water and sewage services towards the end of the 19th century. The Brazilian government assumed responsibility for these services and sought to empower local public authorities, recognizing them as the entities best suited to identify and address the community demands. As a result, the management under the direct administration of the municipal government was established in the early decades of the 20th century. However, from its inception, this approach faced criticism for excessive bureaucracy nature, and clientelism tendencies, and financial unsustainability of the systems (Costa, 1994). Since then, although it has been involved in providing sanitation services, primarily in sanitary sewage, it still accounts for a significant portion of the urban deficit and has shown limited progress in consistently serving rural populations.

According to Roedel (1954), a municipal management emerged in the 1940s, characterized by indirect provision through autarchies. The autarchies were established by American engineers in the Steel Valley during World War II, with the primary objective of ensuring the operation and maintenance of the newly installed systems. These systems featured advanced water treatment technology, which involved a series of operations and physical and chemical processes (Rezende & Heller, 2008). Autarchies proved capable of providing water and sewage services within their areas, although they did not, in principle, face the challenge of extending these services beyond urban areas. However, there are examples of systems managed by autarchies that have made significant progress in this direction, such as Uberlândia and Marechal Cândido Rondon (Cavalcante, 2019; Kloss, 2020). They were established in accordance with health and sanitation standards in effect at the time, under the agreement between Brazil and the USA, facilitated through the Special Public Health Service. Over the years, roles of the municipal autarchies have evolved, with challenges stemming from the development policies of the 1960s being particularly notable. These policies established a new paradigm focused on economies of scale and prioritized investments in specific sectors (Rezende & Heller, 2008).

The autarchies found themselves excluded from accessing investments under PLANASA, the country's inaugural sanitation plan, which designated the State Basic Sanitation Companies (CESB) as the primary development agents. The emphasis on scale factor became even more crucial for public authorities meeting the demands for water, sewage, solid waste management, and rainwater management. This characteristic was established in the 1970s as part of national policy, with a strong economic focus and the clear intention of keeping up with the rapid pace of urbanization due to intense industrialization (Rezende & Heller, 2008). The State Basic Sanitation Companies (CESB) played a leading role in PLANASA, entrusted with implementing its principles, including prioritizing water supply and addressing the demands in regions experiencing significant immigration, particularly in metropolitan areas (Rezende & Heller, 2008; Sousa & Costa, 2013). In a nutshell, the plan aimed to rapidly increase household water coverage at the expense of sewage collection and, most importantly, sewage treatment. Funds from the FGTS were used to finance the installation and expansion of networks, with the expectation of achieving self-sustaining tariffs for the services. Sousa & Costa (2013) highlight cross-subsidization as a crucial mechanism established by PLANASA to ensure financial stability for the group of municipalities granting water service concessions to CESB, with surplus systems supporting those in deficit ones. CESBs targeted both large and medium-sized municipalities for water supply projects, collaborating with local authorities. These endeavors sought to address demands for sewage collection and treatment across the municipality, alongside providing water to rural populations (Britto & Rezende, 2017). Research indicates that CESBs are prioritized in more populous cities with the highest number of households (Rossoni, 2015). Additionally,

data from the National Basic Sanitation Survey (Instituto Brasileiro de Geografia e Estatística, 2017) reveal that CESBs provide water supply services in 62% of Brazilian municipalities, while offering sanitary sewage services in fewer than 33% of them.

During the 1990s, municipal cooperatives for water supply and sanitary sewage emerged as a response to the challenges of implementing services in rural communities. This model was developed recognizing the potential capacity of an organization that involves several community associations to address these challenges (Rezende & Heller, 2008). This experience brings together the community and a supra-municipal entity with the technical and managerial expertise required to support small systems effectively. Successful experiences in sanitation management in rural areas, such as the Rural Sanitation System (SISAR) in Ceará, demonstrate that the unique characteristics of territories must be taken into account when defining the management model, positively influencing the provision of water services to rural populations (Cruz, 2019).

The Legal Framework for sanitation in Brazil enacted in 2007 under Law 11.445 (Brasil, 2007), introduced The National Guidelines for Basic Sanitation Law (LDNSB). This framework is based on fundamental principles aimed at achieving universal, equitable, and comprehensive basic sanitation. It also established the Plansab, or National Basic Sanitation Plan, which was approved in 2013 and published in 2019 (Brasil, 2013, 2019). This Plansab lays the foundation for progress in providing the population with water, sanitary sewage, solid waste management, and rainwater services. This is achieved through goals, guidelines, strategies, and actions, including the recommendation to develop a Rural Sanitation Program. In December 2019, the National Rural Sanitation Program (PNSR) shortly before the update, of the Legal Framework and the enactment of Law 14.026/2020. However, law, in its text, appears overlooks the rural realities and their specific needs. It establishes a rigid bidding process that impedes associations from providing water to rural communities. Despite being introduced almost simultaneously, there exists a misalignment between the Law and the PNSR. For example, the setback associated with the repeal of Article 10, Paragraph 1, Item I of the LDNSB is particularly notable. Previously, this article allowed for the provision of sanitation services through agreements or partnerships with cooperatives or associations in small localities where operation and maintenance were too high for users to cover. However, the current form of iteration of the law stipulates that the provision of basic sanitation public services is contingent upon the signing of an exclusive concession contract (Federal Law No. 14.026/2020, Art. 10). Thus, while the National Rural Sanitation Plan (PNSR) advocates for multi-scale management, adaptable to existing rural conditions, the law suggests demobilization of various actors essential for the sustainability and continuity of the services, contradicting the PNSR's principles.

## 2.2 Critical Discourse Analysis (CDA)

Norman Fairclough's Critical Discourse Analysis (CDA) represents a theoretical-methodological approach to discourse research that focuses on power differentials and their impacts on social practices. Fairclough (2001) posits that social issues are partly discursive, emphasizing discourse's role as both an action and interaction among social agents in the world. He conceptualizes discourse in a three-dimensional manner, encompassing social practice, discursive practice, and text. Each of these three dimensions is characterized by its own categories, which intersect and dialectically meanings. Fairclough (2001), in proposing his three-dimensional methodological framework for textually oriented discourse analysis, further explains that his proposal is part of a Social Theory of Discourse (STD), given the connection between language, ideology, and power.

Critical Discourse Analysis (CDA) stands as a field of research deeply committed to social responsibility. That is, it examines language with a focus on hegemonic struggles, actively engaging in discussions revolving around asymmetric power relations, such as those experienced by rural communities concerning access to water and sanitary sewage, the focal point of this study. CDA delves into how official documents mirror the solutions offered for sanitation demands at the local level, alongside analyzing how the linguistic narratives of rural community members depict inequality in water supply and sanitary sewage. Therefore, discussions on access to water and sanitation in rural communities often serve as reflection of entrenched relations of domination within the political sphere. Through CDA, both the institutions and the residents of these regions can undergo critical examination, paving the way for suggestions on achieving social change through discourse (Resende & Ramalho, 2006).

Through CDA, both institutions and residents of these regions can undergo critical examination, paving the way for suggestions on achieving social change through discourse (Resende & Ramalho, 2006).

Fairclough (2001) adopted Systemic Functional Linguistics (SFL) primarily for its emphasis on the text as a unit of meaning within this functional perspective of language (Halliday & Matthiessen, 2004). This affiliation leads to textually oriented critical discourse analyses following Fairclough's approach, starting from the examination of the semiotic realization of discourses, including lexicogrammatical choices, and moving towards interpretation and critical explanation. Moreover, the alignment with the SFL is driven by the shared interest between of both fields in understanding the relationship between language and social context. According to Fairclough (2001), discourse goes beyond mere semiotic materialization; it emerges within a specific ideological and hegemonic conjuncture, representing a linguistic product of particular social practices situated in time and space, and aimed at specific objectives.

Social practices are understood through linguistic description (textual analysis), primarily mediated by discourses imbued with ideologies and hegemonies. Ideologies represent constructs of reality, the physical world, and of social relations. When entrenched within discursive practices, ideologies become effective as they solidify and achieve the status of common sense or status quo (Fairclough, 2001). Ideologies typically manifest through language in texts, but they can also be implicit in discursive and social practices. This is why the descriptive and interpretive aspects of analysis hold significant importance. In social realms, conflicting and active ideological currents prevail, guiding negotiations capable of intensifying, articulating, rearticulating, and disarticulating power relations. Thus, hegemonies also have ideological dimensions, yet they primarily focus on the domination of ideological power across various social spheres, including political, cultural, and educational domains. Fairclough (2001, p. 122) posits that "hegemony is the power over society [...] of economically defined classes seen as fundamental, in alliance with other social forces." Indeed, power is never fully attained, but rather partially and temporarily; it is contingent.

In this study, we revisit the concepts of ideology and hegemony during our analysis to discern the dynamics at play in managing water supply and sanitary sewage for the rural population of Divinópolis/MG. Our objective is to present evidence of how public and private authorities, including state companies like Copasa, and society engage in discourse concerning the provision and delivery of these vital services.

### **3 Methodology**

The study employed a qualitative, interpretative, and explanatory methodology drawn from Critical Discourse Analysis (CDA) by Norman Fairclough (2001). The analysis of systematized semiotic

data was conducted utilizing a collection of official documents regulating water management and sanitary sewage in Divinópolis/Minas Gerais, supplemented by data generated from interviews and focus groups. These techniques were selected in accordance with the guidelines outlined by Bauer & Gaskell (2007), taking into consideration the productive dialectical relationship that can emerge between data collected from the public sector and data generated with members of a specific rural community, which is typically less dominant and is more vulnerable.

Specifically, the interviews involved managers and community leaders, while rural community members participated in the focus groups. Full audio recordings were transcribed entirely for linguistic-discursive analysis. This semiotic material, or corpus, was further organized for a thematic-categorical analysis in line with the research objectives. According to Fairclough's (2001) transdisciplinary theoretical-methodological approach to CDA, the work of the critical discourse analyst must adhere to a textually oriented method of analysis: linguistic description, interpretation, and critical explanation. To accomplish this, the linguistic-discursive categories used in the analysis were selected from the collected and generated texts, aligning with the study's objectives. These categories include vocabulary (vocabulary selection/linguistic choices), modality, intertextuality, ideology, and hegemony. These categories are practically explained when analyzing the listed excerpts.

The textual analysis examined the mechanisms governing the relationships between social structures and actions aimed at benefiting the rural population in the municipality under study. Data were gathered from the service provision contract of the Regulatory Agency for Water Supply and Sanitary Sewage Services of the State of Minas Gerais (Agência Reguladora de Serviços de Abastecimento de Água e Esgotamento Sanitário do Estado de Minas Gerais, 2011), as well as from the Municipal Basic Sanitation Plan (Divinópolis, 2010) and the Participatory Master Plan (Divinópolis, 2013). These documents were accessed digitally via the official websites of ARSAE and the Divinópolis City Hall. The search for data in the service provision contract primarily focused on two main themes: i) scope of operation; and ii) obligations and goals concerning rural areas. Aspects related to the planning of actions for rural areas and the situational diagnosis of rural sanitation were obtained from the Municipal Basic Sanitation Plan and the Participatory Master Plan. This was facilitated through the PDF reader's search system, using the keywords such as "rural" and "rurais". This feature enabled the selection and organization of excerpts for linguistic-discursive analysis. Data collection took place between July and December 2021.

The official documents were scrutinized to identify and analyze terms and statements that revealed the municipality's commitment to rural sanitation. This included an analysis of how obligations were represented concerning the actions of service providers and the short, medium, and long-term service provision goals for rural areas. Additionally, aspects such as the current state of water supply and sanitary sewage in rural areas, the coverage and quality of services, areas yet to be served, and potential obstacles to service provision were observed. This included an assessment of the organization and management of these services within the municipality of Divinópolis/MG.

In the dimension of discursive practice, the analysis encompassed the network of discourses produced by institutional and local actors striving to provide water and sanitary sewage to the rural population. Discourses within the official documents were examined and synthesized with insights from interviews and focus groups. This holistic approach enabled a dialectical interpretation and explanation of texts produced by community members, who are influenced by various levels of power, including hegemony.

The research commenced with an initial contact made to the Mayor of the Municipality to obtain authorization for the research. Subsequently, interviews were conducted with a manager

working in rural sanitation for the City Hall, and a sanitation manager from the Minas Gerais Sanitation Company (Copasa). This initial strategy guided the selection and logistical organization of the research in the rural clusters under study, namely Buritis and Costas, where interviews were conducted with community leaders, followed by focus groups with the local residents. These two less dense and isolated clusters, which are part of the municipality of Divinópolis, were selected due to their poor sanitation conditions and because they fall outside the scope of services provided in the municipal headquarters. Data for discursive analysis were collected from February 2022 to April 2022, subsequent to the project's approval from the Ethics Committee for Research Involving Human Subjects, COEP.

In the final stage of critical discourse analysis (social practice), the objective was to examine the impacts of the relationships between institutional and local actors on the organization of sanitation management and the intertextualities that influence the discursive practices analyzed. It is also worth emphasizing that the analysis of social practices is primarily interpretative, and that these interpretations are guided by the lexicogrammatical choices made in texts, as well as by linguistic and thematic exclusions identified by the analyst. Hence, ideologies and hegemonies embedded in texts are scrutinized through the linguistic material and the nuanced interpretation of the analyst, given that ideologies and hegemonies are often implicit in texts (Fairclough, 2001).

The excerpts presented in the results and discussion section relate to individual narratives obtained from interviews with managers or they involve broader discussions featuring the discourse of two or more participants in a focus group.

## **4 Results and discussion**

### **4.1 Description of the study object**

To serve its urban population, the municipality of Divinópolis has had a water supply contract with Copasa since 1973. Initially established under the business name of Minas Gerais Water and Sewage Company (Comag), the contract was entered into for a duration of 30 years. In 2003, the Extension Contract for the Water Supply Concession Contract was signed; in 2011, the Program Contract for water supply and sanitary sewage was signed (Agência Reguladora de Serviços de Abastecimento de Água e Esgotamento Sanitário do Estado de Minas Gerais, 2011). However, the responsibility for providing these services to the rural population lies with municipality, as delineated in the Municipal Basic Sanitation Plan (Divinópolis, 2010) and the Divinópolis Participatory Master Plan (Divinópolis, 2013).

According to the PDP (Divinópolis, 2013), the municipality comprises 44 rural communities, of which 20 have access to water collection, reservoir, and distribution systems. Among the 20 communities, nine benefit from water collection through artesian wells: Amadeu Lacerda, Buritis, Lower Cacoco, Choro, Paiol Stream, Lava-pés, Iron Bridge, Quilombo, and Tamboril. The other 11 locations use Amazon wells for water extraction: Branquinhos, Cachoeirinha, Córrego Falso, Costas, Djalma Dutra, Lages, Lagoa, Lajinha, Lopes, Mata dos Coqueiros e Perobas. These water supply systems have 935 connections, over 61 kilometers of network, and house 703 m<sup>3</sup> of water in reservoirs, serving approximately 3,000 individuals. Regarding sanitary sewage, only the rural community of Buritis has a collection network followed by treatment.

The communities under study are Buritis and Costas. Buritis benefits from water supply and sanitary sewage systems; however, it lacks compliance with water quality monitoring protocols. The community relies on two artesian wells whose water is sent to two reservoirs,

from which it is distributed throughout the network. Part of the community's population lives in households that are connected to a sewage collection network, which is then treated. Located 12 km south of the municipality's headquarters in Divinópolis, MG, Buritis is home to approximately 390 inhabitants, distributed across 160 families. Its name is derived from the abundant presence of the palm species, *Mauritia flexuosa*, popularly known as the buriti palm (Divinópolis, 2013).

On the other hand, the rural community of Costas was selected due to its considerable distance from the municipal center and the precarious structure of its water supply system. Located in the northwest of the municipality, approximately 25 km from its headquarters. It features an Amazon well water collection system, from which the water is transported to a reservoir and then distributed to approximately 55 households, serving a total of 120 residents. The community emerged around the church after the Costas family donated the land for its construction, hence the named (Divinópolis, 2013).

#### 4.2 Textual Analysis: Municipal obligation and the necessity for service provision

In this initial phase of critical discourse analysis, we examined the lexical choices, sentence structures, and modalities found in the texts (Fairclough, 2001, 2003). These elements unveil the level of commitment of government actors towards rural sanitation. Through the analysis of verbs choices (processes, in terms of Systemic Functional Linguistics, SFL), modal adverbs, and adjectives (evaluative lexicon) used in the collected and generated texts, the obligation and necessity for sanitation in official documents were identified. Following a chronological order, we analyze excerpts from the Municipal Basic Sanitation Plan (Divinópolis, 2010), the contract for service renewal with Copasa (Agência Reguladora de Serviços de Abastecimento de Água e Esgotamento Sanitário do Estado de Minas Gerais, 2011), and the Participatory Master Plan (Divinópolis, 2013) are analyzed.

The first official document under scrutiny is the Municipal Basic Sanitation Plan, issued in 2010, crafted by City Hall technicians sans public involvement. According to Silva (2012), most municipalities lack specialized human resources to develop their PMSBs, thus being significantly affected by political influences. However, Pereira & Heller (2015), on the other hand, argue that the PMSBs most likely to positively impact the organization and quality of basic sanitation, thereby enhancing the population's quality of life, are those that adopt planning methods and social participation for their definitions. The planning section of Divinópolis' PMSB outlines the following proposals for medium-term actions:

- (1) **Implement projects** to expand the supply system units in the municipal area and extend them to rural areas, **aiming to make** services **universally available** and **ensure their quality** (Divinópolis, 2010).

The expression "implement projects" signifies the municipality's dedication to ensuring water supply for the population, including those in rural areas. This commitment is reflected in the goals of universal access and quality assurance, as indicated by the use of gerunds (aiming/guaranteeing), implying that in 2010, these demands were not addressed by the municipal administration. When it mentions the commitment to universal access to water, the official document highlights the need for continuous and gradual expansion of access for all occupied households, aiming to supply the population with drinking water that meets safety standards. However, the attainment of this quality hinges on the quality of the service provided, which requires adequate physical infrastructure and well-planned maintenance, operation, and monitoring routines.

The proposal seeks to universalize water supply services throughout the municipality, including in rural areas. However, the Plan fails to outline any measures encompassing sanitary sewage services for the rural population, which contradicts the principle of comprehensiveness.

However, (1) unmistakably indicates that the proposal aims to ensure the quality of the water supply. Quality is considered a requirement for fulfilling the human rights to water and sanitary sewage, as well as for ensuring availability, accessibility, and acceptability. Availability, which refers to the supply and continuity of services, is also implicit in excerpt 1, alongside the quality of water supply systems. However, these requisites were only partially included in excerpt (1) because, while the document advocates for expanding access to water towards universal coverage and maintaining water quality to ensure its potability, it does not explicitly mention the continuity of access. This oversight creates a lacuna in the document's discourse, potentially allowing public authorities to overlook the precariousness of these services in rural communities.

The second document under review is the service renewal contract signed with Copasa in 2011. This document delineates the scope of services provided, as evidenced by the following excerpt:

- (2) The purpose of this contract is to provide water supply and sanitary sewage services at the municipal headquarters, as authorized by Municipal Law No. 6589/2007 (Agência Reguladora de Serviços de Abastecimento de Água e Esgotamento Sanitário do Estado de Minas Gerais, 2011).

The categorical statement in excerpt (2), utilizing the verb “to be” in the present tense (indicating a relational process in LSF), underscores the objectives of the contract with the State Company, specifically the provision of water supply and sanitary sewage services. However, concerning the local conditions under which these services are provided, there appears to be a geographical restriction (municipal headquarters). Consequently, the rural areas of the municipality of Divinópolis are excluded from access to water supply and sanitary sewage.

The scope of this contract encompasses a comprehensive range of water supply and sanitary sewage, aligning with the principles of the basic sanitation policy and Plansab. However, it omits the rural areas of the municipality from receiving services from the State Company.

The Participatory Master Plan (PDP) for the municipality of Divinópolis was unveiled in 2013. According to Santos & Ranieri (2018), municipalities play a role in guiding the development of their territories through planning. However, there is a lack of attention to territorial planning in rural areas. Factors such as the lack of detailed or accessible information and the absence of studies that consider the connections between these areas and the urban environment are factors considered to be obstacles to planning. The PDP of Divinópolis incorporates, among other topics, a situational diagnosis of water supply and sanitary sewage in rural areas:

- (3) The water for supply is chlorinated in most reservoirs, but it is not regularly analyzed by a specialized team in none of them, often leading to changes in water quality. Regarding sanitary sewage in these communities, only Buritis has a sewage system equipped with an anaerobic filter; however, the WWTP is inoperative (Divinópolis, 2013).

In the excerpt “none of them is analyzed by a specialized team,” the verb “is” and the modal adverb of negation “none” reveal a categorical negation, indicating that no analysis of water quality is conducted in rural communities. In “frequently causing changes in water quality,” the official document highlights the effect of the lack of analysis, acknowledging the high risk of fluctuations in water quality, which can impact the health of the rural population. What produces this sense is the use of the modal lexicon “frequently,” which portrays the vulnerability of water quality as a normalized routine. In the statement “only Buritis has a sewage system with an

anaerobic filter, but the wastewater treatment facility is inoperative,” the adverb “only” implies that sewage treatment is absent in other rural communities (except in Buritis). In this location, even though there is a wastewater treatment, it is not operational. This is underscored by the use of the adversative conjunction “but,” which underscores the lack of service availability in that location.

Excerpt (3) sheds light on inefficiencies in monitoring the water supplied to the municipality’s rural communities and operational failures in the sole existing sanitary sewage system (Buritis). Ensuring the continuity of services as critical as implementing sanitation systems, as per the availability requirement. This necessitates both the initial provision and continuing support of services once they are implemented (Bos et al., 2017). Achieving this, entails efficient operation, monitoring, and maintenance of the systems are characteristics of structured management models engaged in the dynamics of service delivery. However, from the discourse of the PDP (Divinópolis, 2013), it is evident that the management of sanitation in Divinópolis’s rural areas is not aligned with a model that prioritizes effectiveness in service delivery.

#### **4.3 Analysis of discursive practices: Relationship between textual analysis and actors’ discourse**

In this second stage of ADC, the meanings analyzed in the previous stage are expanded upon in the analysis of discursive practice. The excerpts from the official documents analyzed above are connected to other discourses generated using various methodological tools. They are: discourses of sanitation managers (semi-structured interviews) and discourses of residents of rural communities (interviews and focus groups). This intertextual analysis is significant as it provides a critical perspective on addressing the challenges surrounding water supply and sanitary sewage in the rural regions of Divinópolis.

Expanding upon excerpt (2), delineates the parameters of water supply and sanitary sewage while confining Copasa’s contractual obligations to urban areas only, excerpt (4) has been added, including an account of an employee of the state company:

- (4) Two communities managed by Copasa are not truly rural communities. Within the jurisdiction of the Divinópolis City Hall, they are recognized as neighborhoods: Ferrador, which is Chácara Belo Horizonte, and Lago das Roseiras. Just these two. They are operated by Copasa solely in terms of the water supply system. These two communities were transferred to Copasa in the concession renewal agreement between the municipality and Copasa (Manager, Copasa).

While the criteria of economies of scale and proximity to the headquarters are crucial for serving rural communities, the service provision contract restricts the State Company’s services only the municipal headquarters. Interestingly, two localities that the municipal government considers as part of the headquarters (“neighborhoods”) still receive service. However, according to the Brazilian Institute of Geography and Statistics (Instituto Brasileiro de Geografia e Estatística, 2011), and following the reclassification of rural areas by the PNSR, the community of Ferrador, located 10 km from the headquarters, and the community of Lago das Roseiras, located 23 km away, fall under different census sectors than the urban ones. These areas are identified as having less dense household clusters. Strikingly, the reasons for serving these communities are not outlined in the contract between the City Hall and the State Company, nor in the situational diagnosis.

Expanding upon excerpt (1), which shows that the services in the municipality are not comprehensive, excerpt (4) follows the same premise by setting targets solely for water supply in rural areas, excluding sanitary sewage services. The State Company provides water

to the communities of Ferrador and Lago das Roseiras. However, sanitary sewage in these two communities is not their responsibility, nor is it under the jurisdiction of the municipal government. This mirrors the situation of the other 44 rural communities, according to the account of a municipal official:

- (5) There are not sanitary sewage services in the City Hall. It doesn't provide this service, only water supply. There are plans to introduce sewage treatment in the future. Implementing a wastewater treatment facility for these communities is necessary, but that remains a future prospect (Manager, City Hall).

In excerpt (3) from the PDP, the situational diagnosis mentions an inoperative sanitary sewage system in Buritis. However, rural sanitation management does not acknowledge the provision of this service in the municipality, as stated in excerpt (5). This inconsistency highlights the misalignment between the discourses of the PDP and the Manager, further illustrating the socio-discursive issue previously identified: the inadequate attention paid to sanitation demands in rural areas. Fairclough (2001, p. 171) states that “the concept of coherence is central to many explanations of interpretation, an activity carried out by the reader/analyst”, who must integrate ideas from different texts (intertextuality) to also identify the ideological effects produced by an incoherence. In this ideological perspective of discourse (Thompson, 2009), by categorically stating that all localities lack wastewater treatment facilities, the manager standardizes the reality of rural communities in terms of sanitation. This occurs through the unification and discursive construction of the collective identity of a group (rural communities lacking sanitation infrastructure), rendering any other clarification for the fact that the Buritis community has sewage infrastructure less clear.

Building on excerpt (1) concerning the integration failure between water and sewage services, excerpt (5) highlights that the municipality provides only water supply services. Regarding sanitary sewage, the planning for this service is outlined in the future prospects plan.

Even the existence of a wastewater treatment facility, as noted in excerpt (3) from the PDP, the residents of Buritis is experiencing an inoperative sewage treatment system, as reported by the community leader in excerpt (6):

- (6) The maintenance of the treatment must not have been carried out for almost 10 years, and when it was, it was done half-heartedly. So there is maintenance. There is but there isn't. It doesn't just stop water from running down the street; what it aims to achieve isn't fully accomplished (Leader, Buritis).

Despite the presence of sewer networks and wastewater treatment facilities, their availability is unsatisfactory. Excerpts (3) and (6) converge on the same point: the existence of treatment in Buritis. However, there are no procedures in place for maintaining and operating this system. The paradox situation of “there is but there isn't” highlights the neglect experienced by this community at a high level of engagement.

When assessing the situation of the Costas community, participants in the focus groups considered that the absence of sanitary sewage services, citing worries about soil contamination and potential alterations in water quality:

- (7) The sewage system here relies on septic tanks. This involves digging a hole in the ground where the sewage is disposed of right in each house's backyard. I'm not sure if the potential contamination of the water table was considered. The septic tanks were placed in such a way that they could lead to future contamination of the water table because this Amazon well draws water from a shallower water table. As of now, this water is already contaminated and it goes untreated (Leader, Costas).

Excerpt (7) underscores concerns among of Costas community residents about the quality of the water supplied, a situation related to the criterion of acceptability. Excerpts (3), (5), (6),

and (7) all highlight the lack of actions related to sanitary sewage in the rural areas of the municipality, thus undermining the comprehensive nature of water and sewage services.

Furthermore, excerpt (6) indicates that efforts were made approximately a decade ago to maintain sewage treatment in the Buritis community, potentially under a different municipal administration. This history of changing administrations every four or eight years reveals signs of changes in the approach of public managers towards rural sanitation. This interpretation gains further credence through the analysis of the narrative in excerpt (8), which reveals that there was a partnership between Copasa and the City Hall to conduct water analysis in the Costas community. Unlike excerpt (6), however, there is no indication of when this activity was last conducted:

- (8) I believe that Copasa has already conducted some analyses on the issue of water and contamination. The level of fecal coliform contamination was already higher than allowed. It's a partnership that Copasa has with the City Hall. I'm not sure if this partnership is still ongoing. However, there was a partnership where the community provided the water and Copasa oversaw its monitoring. But, I no longer see this monitoring being carried out by Copasa or the City Hall (Leader, Costas).

Depending on the socio-political ideals of the municipal administration, certain specific actions can be observed from the municipality and/or in partnerships, as depicted from excerpt (8) and the subsequent excerpt:

- (9) We always questioned the water shortage issue. And so, the request was fulfilled by the congressman who facilitated the drilling of the well. However, he told us that while he would take care of the drilling, the responsibility of connecting it to the overhead tank would fall to the city wall. But the city hall stated that they haven't made the connection due to a lack of funds (Community Member, Costas).

In the case of the Costas community, an artesian well was drilled to access higher quality water. However, the well currently remains non-operational as it lacks connection to the reservoir. This situation diverges from the commitment made in 2010, during the preparation of the PMSB, to execute implementation projects for rural areas aimed at achieving universal access to services, as evidenced in excerpt (1).

While the measures outlined in excerpts (8) and (9) involve collaborative efforts, they do not constitute planned and structured actions to serve these populations effectively. To achieve this sanitation service management must be consolidated through planned expansions and by establishing a routine of maintenance, operation, and monitoring to ensure that actions are continuous. Excerpt (10) further elucidates this through the account of the Copasa manager regarding the services rendered to the communities of Ferrador and Lago das Roseiras:

- (10) Both are supplied by artesian wells that undergo disinfection and fluoridation (...). In the Ferrador system, we have a prefabricated WTP, and then the water is recirculated through the reservoir and distributed. Copasa operates the water supply system, and all maintenance is performed by the Divinópolis system. Thus, the system functions like a standard Copasa water supply system. We have maintenance teams, and all necessary maintenance is conducted by our own teams. We also have a production team responsible for treating the water for the two communities. This team visits the site three times a week to dose the chemical products and conduct periodic analyses. The system's operation is controlled. It's a small-scale, manageable system. We carry out these operations and maintenance activities daily with the Copasa teams (Manager, Copasa).

Excerpt (10) reveals presence of an administrative and technical framework for the two rural communities served Copasa operates, focusing on routine maintenance, operation, and monitoring of the systems. This ensures that the population receives an adequate supply of water, with quality standards compatible with potability and continuity of service, thus meeting requirements of the HRWS. In these two communities, the consistent and high-quality service provision is emphasized in the 2013 PDP diagnosis (excerpt 3). However, it's essential to note

that the management of these services in these communities is efficient because it is carried out by Copasa.

Conversely, the management of services in other communities falls under the jurisdiction of the City Hall, characterized by conditions opposite to those described in excerpt (10), and similar to those analyzed in excerpt (3). Here is an account provided by a City Hall employee:

- (11) There isn't an established operation and maintenance routine. There isn't a routine in the sense that there isn't a team dedicated solely to this task. What exists today are the field teams from the department, who travel through all the communities in response to their demands. It's about meeting the demands, rather than following a set routine. So, it's a team that's currently under a lot of pressure due to the overwhelming demand. This team occasionally includes some community residents who work as pump operators. The technical staff is lean and insufficient to meet today's demands. (Manager, City Hall).

In the same municipality, contrasting approaches in rural areas offer contrasting services, as illustrated in excerpts (10) and (11). While the State Company provides the entire structure for the two privileged communities, while Divinópolis City Hall lacks the necessary infrastructure to serve the other 44 rural communities. The segregation of service provision, as mentioned in excerpt (2), which separates management based on whether areas are urban or rural, is the main cause of service inequality. This disparity is highlighted in the accounts of community leaders in Buritis and Costas, who denounce the municipality's failure to ensure the continuity of service, as evident in excerpts (12) and (13):

- (12) There's a regional manager whom we contact for maintenance issues. He then explains that we need to schedule an appointment because there isn't any equipment available at the moment; sometimes, the equipment is broken and can't be used right away. The maintenance workforce is not properly qualified; they are just random employees who one day might be working in the sewer, the next day in water services, and then in another department of the City Hall (Leader, Buritis).
- (13) The maintenance team includes an employee from the City Hall. He is responsible for turning on the pump. He lives in the community. In the community, he is responsible for its cleanliness. When there's a need, he performs maintenance on these water pipes because they are very old. Some of them are even made of iron, and whenever there's a problem, he always has to identify its source and try to fix it... (Leader, Costas).

The speeches in excerpts (11), (12), and (13) share a mutual theme regarding the public sector's inefficiency in rural communities of Divinópolis, regarding the maintenance, operation, and monitoring of water supply and sanitary sewage. These accounts confirm the managerial deficiency discussed in the official 2013 document, excerpt (3). This inefficiency is also observed in the discourses of study communities:

- (14) It turns into a game of hot potato. They tell you to call one person, then another... It's always someone else's responsibility... Until, out of sheer exhaustion... And then they come and leave a huge pothole in the street; and it remains... That's how I see it: if it's in Buritis, then let those people suffer a bit longer. We'll address it later... (Community Member, Buritis).

The account in excerpt (14) unveils systemic flaws in the operation of the systems stemming from inadequate programming and organization structure. This absence of standardized procedures for customer service and routine, a reality that aligns with excerpt (11). Moreover, there is a widespread feeling of neglect towards the community, which hinders social participation in sanitation issues. In the case of the Costas community, which relies on a resident/employee model, there are also operational failures:

- (15) The maintenance is handled by the "resident/employee"... I activate the pump and open the valves, and then it runs all day. Some days, I leave it running until the evening, even when I'm not around, when I'm traveling. However, as soon as I get back, around 6 or 6:30, I go there and shut it off.... There are [chlorine] tablets, which

are like stones, and then you break them into four pieces. Then, I add a piece every other day. "It's not much, it really isn't," [the local operator said, referring to their own dedication]... But he [spoken by another community member] is also paying to work, since he purchases his own materials to supply to the community (Community Member, Costas).

Excerpt (15) captures a dialogue among participants in the focus group, including a City Hall employee who resides in the community. This individual is responsible for operating the pump on and off, which transports water from the Amazon well to the local reservoir. Nevertheless, the absence of standardized operating procedures in the system can lead to intermittent service or overflowing reservoirs. Another concerning aspect is the water treatment; there is no indication that the chlorine level is sufficient, either for the treatment process or for producing potable water. Additionally, it was found that the materials used for maintaining the water network, including glue and pipes, are purchased by the local operator using its own financial resources. The reports accounts presented in excerpts (11) through o (15) underscore the managerial inefficiencies within rural water and sewage systems in rural areas, which fail to ensure the quality and continuity of services, reinforcing the findings of excerpt (3).

Excerpt (10) underscores the competence of the State Company. The following account refers to its plans to extend service provision to other communities through comprehensive and equitable actions:

**(16)** So I'm not sure about the company's current policy regarding the operation of rural systems. Rural areas have many deficiencies, and Copasa is open to discussions and conducting surveys. In fact, we don't even know the communities. I don't know the communities, their deficiencies, what needs to be done, or whether there are any water or sewage systems that are sufficient and suitable for the community's well-being. Therefore, we need to conduct a survey, perform a technical diagnosis, prepare reports, and technically assess what can be done with the resources we have. It's not as simple as just showing up and doing it. You need competence, financial resources, and availability, including water availability at the location (Manager, Copasa).

In excerpt (16), the manager of the state company claims to be unaware of the deficiencies and needs of part of the population of Divinópolis regarding water supply and sanitary sewage. Once again, the influence reported in excerpt (2) on contractual boundaries can be observed, resulting in a lack of commitment to rural sanitation. Given that the company responsible for sanitation in the municipality does not serve a portion of the population, it would be appropriate to plan municipal interventions in these areas. However, this is not the case:

**(17)** Today, rural sanitation lacks proper planning. What exists in terms of planning is still so rudimentary that it's almost a dream. One action that needs to be taken in the short to medium term, by the end of this year, is the establishment of SAAE Rural and the Municipal Regulatory Agency, a public services regulatory agency. This would function as an autarchy with its own structure and funding, dedicated exclusively to rural sanitation: water and sewage. It's not just about pricing to sustain the service, but more importantly, about valuing water and the service provided. One of the key aspects of our rural sanitation intervention proposal is the water pricing strategy. This is urgent. Today, people pay a ridiculously low annual fee. This scarce resource is not given its due value, and water is used abusively and improperly (Manager, City Hall).

The discourse in excerpt (17) reveals an inconsistency regarding rural sanitation planning, including the establishment of a Rural Autonomous Water and Sewage Service (SAAE), its regulation, and the implementation of tariffs for water supply services for the rural population. Therefore, it is necessary to pursue a path informed by research that identifies mechanisms capable of upholding the principle of economic sustainability. The call for immediate action concerning tariff imposition and the establishment of a SAAE within just a few months are aspects that reveal hasty decisions, reflecting a lack of planning. The precarious management of water and sanitary sewage heightens the vulnerability of rural populations, who suffer from

the neglect of public authorities. This situation gives rise to discursive tensions, which are evident in attempts to negotiate:

- (18) We even attempted to negotiate with the City Hall the possibility of establishing a rural SAAE, which could potentially offer a solution that would allow us to structure it in a way that involves the councils of rural communities, even generating a source of income for the council itself; and these councils would undertake the maintenance, as an autarchy or something of that sort, something worth exploring. But unfortunately, as of today, no proposal has been presented (Leader, Buritis).
- (19) Establishing this autarchy... how does this autarchy function? It's a matter of having to submit a study, right? We need to understand how it will operate, how it will impact our finances. Will this autarchy be established so we can consider the aspect of profitability? (Community Member, Buritis).

The accounts in excerpts (18) and (19) reveal an interest from the population in solving the local problem, but they also highlight a lack of social participation in this process, with no proposals presented. According to the PNSR, education and social participation are key strategic components for organizing rural sanitation (Brasil, 2019). Beyond the lack of social participation, the rural population is excluded from the care and attention of public authorities compared to the urban population, indicating geographical inequality:

- (20) Before, managers were closer to the community, holding meetings to explain the issue of drainage, and how water collection was handled. The City Hall focus more on the urban sector when it comes to water issues, water supply. It seems that the public authorities are more concerned with urban roads, and the rural areas are being neglected. Because if you think about it, it's both an account and a venting (Leader, Costas).

The account in excerpt (20) reveals the frustration of not being able to rely on public authorities to meet basic needs. The involvement of public authorities and community participation, which are essential for the continuity of sanitation services, are deficiencies in the rural areas of this municipality, as established by the following accounts:

- (21) We don't have the opportunity to take part in anything. Whenever there's a technical or administrative visit to the community, it's not communicated, and almost no one gets to know about it. If a manager is coming, we don't know; if someone comes and checks the water, we don't know what they saw; if someone comes to do something with the pipe, we don't even know who came... Oh! Did you encounter a problem? Oh! Did someone come to take a look? Oh! Did they? Oh! Alright then. But what exactly did they do? No one is informed about anything (Community Member, Buritis).
- (22) We need to have access to information, to know what levels our water is at. And why shouldn't we? Why isn't the city hall involved in this maintenance? Where is the final report confirming that our water is safe to drink? (Community Member, Costas). We don't know how much water it takes and how much it consumes... I don't even understand how this sewage system works. That information should be shared with us. What happens to the waste that goes down? I'm aware there's a box over there, but whether it's headed to the stream or somewhere else, I really couldn't say (Community Member, Buritis).

Just as the accounts of the Buritis community (21) and (22) indicated, the Costas community (22) emphasized the importance of the opportunity to engage in operational matters, dialogue, and getting closer to public authorities. For Piccoli et al. (2016), social participation in sanitation needs an empowered population that is mobilized by the importance of water and other sanitation components. Therefore, sanitation actions would result from collective learning, involving the exchange of diverse perspectives on challenges and potential solutions (Aguar & Melo, 2016).

In both communities, the rural residents are aware of their needs and consistently seeks solutions from the government that are viable to meet their demands. This is clearly stated in the narratives of the leaders of the two communities:

- (23) It's a system that's expensive for the municipality; it's not cheap. The municipality fails to generate the expected revenue from it, leading to a deficit in the system. Funds are not raised to enable reinvestment, nor is there another source of income to facilitate improvements. Since there's no water meter, there's no charge for water usage or for any excess water consumed, so the situation remains quite unregulated. Because when you pay, you have the right to demand service quality. If you don't pay, what are you going to demand? And from whom? (Leader, Buritis).
- (24) An annual fee is charged for each house registered with the City Hall. I pay for water an amount that is considered quite low for water treatment. This value is increased, instilling in the public's mind that: "Oh! It's increasing because not only are we getting water, but we're also getting quality water." The public authorities can't absorb all these costs, having to bear all these expenses. If I provide you with quality water and treat your sewage, why not pay for it? Not to pay an amount that is excessive, but to pay an amount that fits within that family's budget. And it's also a way of providing quality water and treating sewage (Leader, Costas).

Excerpt (23) reveals that operating the systems in rural communities is not financially sustainable. Both leaders from Buritis and Costas advocate for paying for services to address this deficiency, provided the charges for drinking water and sewage treatment are reasonable. In this context, excerpt (24) indicates that the annual fee paid to the City Hall is insufficient for maintaining the services. This interventionist measure contributes to the criterion of financial accessibility for service provision. In both excerpts, the population acknowledges some of the municipality's challenges, including the lack of resources to offer services to the rural population. These challenges become even more complex when the sector responsible for the services lacks a centralized fund to manage its resources and receives no external incentives, as reported:

- (25) Currently, this financial dynamic involves public investments through budget lines allocated to the Department. There are no other sources of funding besides the public investment from the Municipality. There is still not enough funding specifically to train and expand the team and to create routines, action plans, and planning to address rural sanitation issues (Manager, City Hall).

Excerpt (25) emphasizes the critical need for constant financial support in rural sanitation actions. Achieving financial accessibility can only be achieved with these resources, as the amounts collected in these communities fall short of the systems' operating costs. Consequently, the influence of the scale factor, as well as the distance of communities from the headquarters, frequently dictate whether rural areas are served or not. Management models that prioritize goals beyond generating economic profit are more effective in serving rural communities, ultimately advancing towards universal access and equity.

From the discursive analysis of this stage, combined with the textual analysis of the previous stage, it is evident that the City Hall's discourse (excerpt 3) from 2013 remains relevant in 2022, as it highlights the operational inconsistencies in the existing systems. Regarding excerpt (1), the commitment made in the 2010 PMSB was not fulfilled. No systems were implemented in rural areas, except for the communities of Ferrador and Lagos das Roseiras. Universal access remains unattainable in the other communities managed the City Hall. In this regard, the linguistic-discursive analysis of excerpt (2), which pertains to the renewal of the service provision contract (Agência Reguladora de Serviços de Abastecimento de Água e Esgotamento Sanitário do Estado de Minas Gerais, 2011), indicated a causal influence on the discourses in excerpts (1 and 3), given that the limitation of supply to the headquarters (urban area) outlined in this contract negatively affects service provision to rural areas.

#### **4.4 Analysis of Social Practice: Hegemonic Identification and the Consent of the Population**

In this final stage, critical discourse analysis is conducted within the framework of social practice analysis. The dialectical relationship between official documents and the discourses

produced from interviews and focus groups with the actors involved in the study helps identify hegemonic practices in the management model adopted by the municipal headquarters. This identification emphasizes the influence of undemocratic management.

In the previous stages, we analyzed the municipality of Divinópolis's commitment levels (discursive modality) to rural sanitation, the actual services offered to rural communities, the availability of services, and the operational conditions of existing systems. We analyzed the planning prospects, social participation, service charges, and the financial challenges of maintaining operational continuity. The latter highlights the lack of financial viability small communities face in maintaining their systems. There is no balance between local revenue and operational expenses. In contrast, the State Company operates in two communities (Ferrador and Lago das Roseiras) and manages to serve their residents with quality and continuity, despite the lack of financial viability:

**(26)** In these communities, there are few connections, making it impossible for a system with just over 200 connections to be self-sustaining. Consequently, it's a financially unsustainable system. It cannot survive on revenue alone. So, it's a system that incurs significant financial expenses and would not be viable based solely on its revenue. Lago das Roseiras has just over 60 connections. So, it's significantly unprofitable because, beyond the operation and maintenance of the system, there are expenses for electricity, chemicals, personnel, vehicles, and fuel, since these are located outside the city (Manager, Copasa).

In this section (26), the State Company posits that the two communities (Ferrador and Lago das Roseiras) are financially untenable systems, with revenues too low to cover the high operational costs, and are identified as areas isolated from the headquarters. However, they are serviced by Copasa's water supply services, as mentioned in excerpts (4) and (10). Economy of scale and distance from the headquarters did not affect this service, representative the company's capability to operate in other communities should there be an agreement between the Concessionaire and the municipality. In other words, Copasa positions itself as an institution with greater power than the Municipality, meaning there is a power imbalance between the state and municipal levels. After all, when there is interest, services are provided beyond the scope of the contract. The contract stipulates the following:

**(27)** Copasa holds a concession to operate the municipal systems within the urban network. However, it does not have a concession to operate the 44 rural communities present in the city. Therefore, we work and operate solely within the urban network, which is the municipality of Divinópolis (Manager, Copasa).

The impact of the State Company in Divinópolis extends to municipal planning and rural sanitation, as the municipality is dedicated to ensuring universal access to water for all residents. There is a commitment to universal service without any economic barriers, yet the Company's discrimination against 44 rural communities, with the Government's consent, impedes the rural population's access to these services. This definition of services reflects a management approach characterized by territorial fragmentation (urban and rural), a reality that complicates the response to social development challenges. This is due to the outsourcing of water and sewage services to the population without establishing coordinated guidelines with the City Hall. By preventing fragmentation and adopting strategies that enable the integration of rural and urban water and sewage demands, conditions will be established to reduce the service deficit, as outlined in the municipality's Municipal Basic Sanitation Plan and in Plansab.

Copasa's power is explicit not only in the speech of the public authority agent, but also in the speech of the rural population:

**(28)** Copasa won't want to involve the community. It's a loss for it. It'll never want to. It has the option to refuse. How can you impose that? (Community Member, Buritis).

The result of Copasa's reported hegemony in its dealings with the municipality is shown in excerpt (3) and further discussed in the second stage. In excerpt (3), the deficits in service provision are presented, and in the second stage, the criteria for fulfilling the human rights to water and sanitary sewage are pointed out. The availability of water is directly related to its quality and, consequently, to its acceptability by the population. In summary, members of rural communities are aware that the financial interests of the Company are a reason for their exclusion from access to water and sanitation. The municipality of Divinópolis, despite providing water supply services to a significant portion of the rural population, has inadequate facilities and lacks effective management. These issues lead to non-compliance with the standards of the HRWS, specifically in terms of availability, accessibility, acceptability, and quality. Moreover, granting service provision rights exclusively to Copasa in urban areas renders service to rural regions unfeasible, perpetuating a trend of failing to meet established criteria, with repercussions for future generations. This exclusionary management dynamic has prevailed in the Municipality of Divinópolis since 1973.

This segregationist contract outlines the privileges of certain communities and the municipal headquarters, thereby hindering the provision of services to rural areas. It is evident that the surplus generated from tariff revenues has not been used to expand and enhance the system at the municipal headquarters. Thus, the maintenance and operation of rural systems are not undertaken by Copasa, leaving the management of these services to the residents themselves. This heterogeneity in service delivery perpetuates unequal access to water and sanitation among less privileged populations, who, despite their efforts for enhancement, cannot see the changes they need being made:

**(29)** I don't expect any kind of improvement. Nor have we noticed any planning on the part of the municipal managers regarding this type of preventive or corrective maintenance. But as for the community's hopes for improvement, there are none. Not even water, and not even sewage, which often goes unnoticed. Nowadays, you sometimes even forget there's a sewage system there (Community Leader, Buritis).

**(30)** For humans, hope is the last to die. And we always hope for improvements in our community. Because, well, if we're there, we persist. I've lived there for 43 years. And many people who have been there much longer than I have, who live there, believe that things will get better thanks to the efforts of the responsible authorities to make improvements for that community (Community Leader, Costas).

**(31)** Year in and year out; and as long as I can remember, it's been the same story; and it will continue until I die, I suppose. And then another generation will come, and it will be the same old song and dance (Community Member, Buritis).

In both the Buritis and Costas communities, as explained in excerpts (29), (30), and (31), uncertainties about services still persist. The speeches of both community leaders and the residents of Buritis reveal an acceptance of Copasa's hegemony in the municipality. Despite the hope for improvements in rural areas expressed by the leaders of the Costas community, accounts of the Buritis community reveal disbelief at the lack of commitment from public authorities. Instead, the City Manager's speech highlighted a trend towards social participation for future advancements when asked about potential solutions for sanitation in rural areas:

**(32)** Encouraging the formation of community associations that could be engaged not only in water issues but also in solid waste, sewage, and other issues. However, this only works with the empowerment of community members. It's necessary to have a constant presence there, and it's a path we want to explore (Manager, City Hall).

In the same vein, the Costa community is open to the possibility of more active social participation in the daily provision of services:

(33) I think gathering, discussing problems, and analyzing what could be done. Seeing what each person could contribute. The community needed to reach a consensus and see what each person could afford. A water supply of quality that is readily available and consistently reliable and whose cost is affordable for everyone (Community Member, Costas).

The account in excerpt (33) unveils the possibility of the population coming together to contribute to effective solutions for ensuring the continuity of services. Furthermore, the municipal manager's account, excerpt (32), expands this possibility to the entire rural area, including other services and the necessary managerial and technical support for this engagement. These accounts may align with the National Rural Sanitation Program's proposal for multi-scale management, which in this case should still be coordinated with other levels (state and federal) to ensure effective and satisfactory management (Brasil, 2019).

## 5 Conclusions

In Divinópolis, Minas Gerais, the dominant influence of the City Hall and Copasa has perpetuated urban/rural fragmentation, hindering the realization of universal access to water and sanitary sewage for all residents. The segregationist contract between the State Company and the Municipal Government, eager to rely on its services, have agreed to a segregationist contract for the provision of services, which maintains barriers to establishing a management system capable of serving the rural areas of this municipality effectively and equitably. The current municipal management lacks initiatives to align the needs of rural areas with the operations of the existing water and sewage service provider. However, it is amenable to the fragmentation of rural areas, as it already serves two communities based on agreements with the municipal authorities and Copasa.

Achieving the first step towards universal access to water and sanitary sewage requires proactive management capable of developing and implementing projects that meet users' needs. This necessitates the promotion of maintenance, operation, and monitoring routines, alongside providing subsidies to ensure the economic sustainability of the systems, and engaging the population in these decision-making processes. Such a dynamic can only be possible with the active participation of society, including significant contributions from rural communities.

Moreover, ongoing dialogue among all stakeholders involved in rural sanitation is imperative. This includes institutional managers, technicians, and members of rural communities, ensuring the sharing of insights into the implemented technologies and their daily maintenance and operation. Considering these potential interventions, the satisfaction of the rural population and the continuity of the services could be promising if aligned with the National Rural Sanitation Plan's proposal for multi-scale management in rural areas.

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