# THE "NEW" LEGAL FRAMEWORK AND THE UNIVERSALIZATION OF BASIC SANITATION IN RURAL AREAS

*Adriano Marcos Marcon*[*]
*Valdemar João Wesz Junior*[*]

[*]Universidade Federal da Integração Latino-Americana, Programa de Pós-Graduação em Políticas Públicas e Desenvolvimento, Foz do Iguaçu, PR, Brazil

Abstract

*Basic sanitation is a fundamental cornerstone of both development and ensuring numerous related fundamental rights. However, the widespread deficiencies in current sanitation services result in the denial of these rights for countless individuals. Analyzing the new institutional framework established by Law No. 14.026/2020, we have questioned its ability to promote the effective universalization of basic sanitation in rural areas, within the legally established timeframe. We undertook a descriptive, explanatory study, with a predominantly qualitative approach, based on the specialized literature and official documents, whose data was interpreted using the content analysis technique. Given the different ruralities that exist and the characteristics of the deficit in basic sanitation services in rural areas, we have concluded that the legislative changes to Law No. 11.445/2007, in the form in which they have been drafted and proposed, on their own, will be unable to achieve the desired universal coverage.*

Keywords

*Basic Sanitation; Service Deficiencies; Legal Framework; Universalization; Ruralities; Rural Development.*

# O "NOVO" MARCO LEGAL E A UNIVERSALIZAÇÃO DO SANEAMENTO BÁSICO NO ESPAÇO RURAL

*Adriano Marcos Marcon*[*]
*Valdemar João Wesz Junior*[*]

[*]Universidade Federal da Integração Latino-Americana, Programa de Pós-Graduação em Políticas Públicas e Desenvolvimento, Foz do Iguaçu, PR, Brasil

Resumo

*O saneamento básico é um componente de suma importância para o desenvolvimento e para a garantia de inúmeros direitos fundamentais correlatos, direitos que são negados diante das significativas deficiências dos serviços atualmente verificadas. Analisando o novo modelo institucional estabelecido pela Lei n. 14.026/2020, problematizamos sua capacidade em promover a efetiva universalização do saneamento básico no meio rural, dentro da meta temporal legalmente estabelecida. Empreendeu-se um estudo descritivo e explicativo, de abordagem predominantemente qualitativa, apoiada em bibliografia especializada e documentos oficiais, cujos dados foram interpretados a partir da técnica de análise de conteúdo. Dadas as diversas ruralidades existentes, o déficit dos serviços e as características do saneamento básico no meio rural, concluímos que as alterações legislativas promovidas na Lei n. 11.445/2007, na forma como foram elaboradas e propostas, não serão capazes, por si só, de concretizar a pretendida universalização da cobertura.*

Palavras-chave

*Saneamento Básico; Deficiências dos Serviços; Marco Legal; Universalização; Ruralidades; Desenvolvimento Rural.*

# THE "NEW" LEGAL FRAMEWORK AND THE UNIVERSALIZATION OF BASIC SANITATION IN RURAL AREAS

*Adriano Marcos Marcon*
*Valdemar João Wesz Junior*

## 1. Introduction

According to the law that establishes Brazil's national guidelines for the sector (Law No. 11.445, of January 5, 2007), basic sanitation is defined as a set of public services, infrastructures, and operational facilities for the supply of drinking water, sewage disposal, urban cleaning, solid waste management, drainage, and urban stormwater management (Brasil, 2007, Article 3). For this study, we have only focused on the services of drinking water and sewage disposal, given that universalization goals have been explicitly established only for these particular items, as provided for in Article 11-B. Furthermore, in Brazil, data and studies on the other components of basic sanitation (urban cleaning, solid waste management, drainage, and urban stormwater management) remain somewhat limited (Moraes, 2014; Rodrigues; Costa, 2023).

Basic sanitation is an element of great importance for local and regional (urban or rural), economic, and social development, in order to improve the population's quality of life, and has a special relationship with the fundamental principle of human dignity, enshrined in Article 1, item III of the Federal Constitution (Brasil, 1988). In addition to its direct relevance, it also provides a guarantee for numerous other correlated rights, such as health, housing, food, and a balanced environment (Ribeiro, 2015; Moreira et al., 2023; OMS, 2024).

In a study by Hiratuka et al. (2013), expanding sanitation services not only increases the number of people being served, but also generates numerous positive externalities through direct and indirect economic impacts generated by investments

in the sanitation sector. Moreover, the World Health Organization (WHO) has reported that the global economic return on sanitation expenditures would be US$ 4.3 for every dollar invested (OMS, 2012) and would be related to reduced health expenditures and increased productivity and income, among others. Basic sanitation services therefore create a veritable "virtuous cycle" of various positive externalities, driving numerous other freedoms towards broader economic and social development, thereby justifying efforts to expand it (Pinheiro; Santos, 2014).

However, the reality of basic sanitation remains a pressing concern. A recent report by the United Nations (UN, 2023) has revealed that 46% of the world's population lacks access to basic sanitation. In Brazil, according to data from the National Basic Sanitation Plan (PLANSAB)[1], for the base year of 2010, 40.7% of the population (approximately 76.970 million people) lacked adequate access to a supply of drinking water, and 60.3% (approximately 114.421 million people) had no access to sewage disposal services (Brasil, 2014). It is important to note that the most significant deficiencies in the basic sanitation coverage are found in small municipalities, rural areas, and urban peripheries, where social inequalities are prevalent and where the economic capacity of the population is lower (Salles, 2009).

The National Rural Sanitation Program (PNSR)[2], launched in December 2019, also presents a sobering assessment of the coverage and deficiencies related to basic sanitation services in rural areas (Brasil, 2019a). With regard to drinking water, only 40.5% of the rural population (approximately 16 million inhabitants) has access to an "adequate service". Thus, the deficit ("poor service" + "non-existent service") affects 59.5% of the total rural population (over 23 million inhabitants). In terms of sewage disposal, only 20.6% (just over 8 million inhabitants) receives an "adequate service". Thus, the deficit ("poor service" + "non-existent service") accounts for 79.4% of the total rural population (more than 31 million inhabitants) (ibid.). When examining the total estimated deficit of Brazil for 2010, as outlined in PLANSAB (id., 2014), it becomes evident that over 30% of the total water supply deficiencies and 27% of the total sewage disposal deficiencies are concentrated in rural areas.

With the stated intention of addressing this situation and ensuring universal access to basic sanitation by December 31, 2033, the Federal Executive Branch, following the approval of Law No. 14.026 on July 15, 2020, brought in profound

1. PLANSAB is the Portuguese acronym for Plano Nacional de Saneamento Básico [National Basic Sanitation Plan], which has been maintained and used throughout this article.

2. PNSR is the Portuguese acronym for the Programa Nacional de Saneamento Rural [National Rural Sanitation Program], which has been maintained and used throughout this article.

changes to the National Basic Sanitation Law (LNSB)[3] – Law No. 11.445/2007, also known as the Legal Framework for Basic Sanitation.

An explanatory statement accompanying the Executive Branch's bill sent to the National Congress (Bill No. 4,162, on August 2, 2019), which later became Law No. 14.026/2020, emphasized a lack of resources on the part of the Federal Government as a primary justification for the proposed changes (Brasil, 2019b). According to the bill, Brazil would need to "invest more than R$ 20 billion per year until 2033 to universalize water and sewerage coverage throughout its territory"[4] (ibid., p. 26). However, within the "context of a severe fiscal crisis with restrictions on public investments, the Federal Government has no choice but to establish solid partnerships with the private sector, with the indispensable support of the States and Municipalities" (ibid.) to meet the goals of universalization. Thus, in addition to setting out clear goals for the expansion of services, the new legislation introduced a series of regulatory reforms designed to attracting private capital.

Therefore, the central objective of this paper is to analyze this new institutional framework established by Law No. 14.026/2020, which notably privileges the participation of the private sector in providing basic sanitation services, questioning its capacity to promote the effective universalization of basic sanitation in rural areas. To this end, it is intended to: (a) explain some relevant characteristics of basic sanitation services and their importance for development; (b) identify the deficiencies of basic sanitation services in Brazil, with an emphasis on the rural reality; and (c) verify the main changes promoted by Law No. 14.026/2020, analyzing the feasibility of the solutions presented for the universalization of basic sanitation services in rural areas.

It is assumed that, given the characteristics of the deficit faced by rural areas in terms of low population density, geographical dispersion, limited financial resources, and a lack of adequate economic scale (Brasil, 2019a), combined with the sanitation services such as large infrastructure requirements, high investment costs, natural monopoly, and economies of scale (Justen Filho, 2005), it is widely believed that solely relying on the expansion of private sector participation would not be sufficient to achieve the desired universal coverage of sanitation services (Carvalho, 2010).

Based on the literature and printed documentary sources, a descriptive and explanatory study was conducted, as conceptualized by Gil (2002), beginning

3. LNSB is the Portuguese acronym for the Lei Nacional do Saneamento Básico [National Basic Sanitation Law], which has been maintained and used throughout this article.

4. This and all other non-English citations hereafter have been translated by the authors.

with an analysis and description of some of the characteristics of basic sanitation services. Given the lack of uniform concepts in the literature and considering the established objectives, the definition of basic sanitation, its legal ownership and the regionalized form of providing services were based on the provisions of the 1988 Federal Constitution and the Legal Framework for Basic Sanitation (Law No. 11.445/2007), and the changes brought about by Law No. 14.026/2020.

In order to facilitate the analysis of regulatory changes, it was also necessary to point out other structural and economic characteristics of basic sanitation services. Thus, it became evident that, as a rule, the provision of these services in Brazil occurs in the form of a natural monopoly and aims for economies of scale. Despite the predominance of the mercantile model, the understanding that basic sanitation should be considered a social right has led the explicit recognition of its aspect as a fundamental right, as well as its nature as an essential public service, whose public policy – to be obligatorily formulated and implemented by the State – is crucial for promoting development.

With the objective of shedding light on the coverage levels and the deficiencies of basic sanitation services in Brazil, official data and information presented in PLANSAB and PNSR have also been used. Notwithstanding the lack of a unified information system on basic sanitation in Brazil, the various available databases exhibit varying concepts, methodologies, and periodicities, which ultimately hinder an accurate assessment of service deficiencies (Marcon; Wesz Junior, 2024). In addition to the inaccuracy of the quantitative data, there is a dearth of information on various qualitative aspects of services, commencing with what can genuinely be regarded as "adequate service" in basic sanitation. Thus, the preference for the approach used in PLANSAB and PNSR to characterize the deficiencies of basic sanitation services is due to the fact that these documents use a definition that encompasses, in addition to the existing infrastructures, socioeconomic, cultural, and quality aspects of the services offered (Brazil, 2014, p. 41), based on a combination of data from various sources, such as the Demographic Censuses and the National Basic Sanitation Surveys (PNSBs), both carried out by the Brazilian Institute of Geography and Statistics (IBGE).

Subsequently, considering the treatment given by the governing legislation, we explain the reasons why recent normative changes will or will not be able to adequately address the phenomenon of the existing deficit in rural areas. For this purpose, a predominantly qualitative research was conducted. This signifies that, despite the use of quantitative data to demonstrate the situation of basic sanitation services in Brazil, the study adopts a qualitative approach, consisting of an investigation "capable of describing the complexity [of the problem]", as well

as “analyzing the interaction of certain intervening variables” (Richardson, 2012, p. 80). In turn, the data is analyzed and interpreted through the use of content analysis technique (Bardin, 2016), adopting the following categories: (a) appropriate technologies; (b) structural measures; and (c) service delivery models.”

## 2. Basic sanitation and development

In Article 3, item I, of Law No. 11.445/2007, basic sanitation is defined as the set of public services, infrastructures, and operational facilities for: (a) supplying drinking water; (b) sewage disposal; (c) urban cleaning and solid waste management; and (d) drainage and urban stormwater management (Brasil, 2007). As previously mentioned, this study will only focus on the supply of drinking water and sewage disposal, since these are the services for which clear universalization goals have been established, as provided for in Article 11-B of Law No. 11.445/2007. This particular focus is also necessary since studies that have been conducted in Brazil on the deficit in basic sanitation have been limited to assessing water supply and sewage disposal, whereby few have expanded the scope of analysis to urban cleaning and waste collection (Moraes, 2014, p. 65).

Article 30, item V of the Brazilian Federal Constitution (1988) and Law No. 11.445/2007 stipulate that municipalities and the Federal District have the primary ownership for sanitation services. This includes the authority to formulate and implement the relevant public policy, either directly or through third parties. This responsibility applies to cases of local interest, where sanitation services are organized to serve only the respective federative unit. However, the ownership of basic sanitation services shall be shared between the State and municipalities that “effectively share operational facilities that are part of metropolitan regions, urban agglomerations, and microregions, established by state complementary law, in the case of common interest” (ibid., Article 8, item II). To enable this new shared ownership, the law emphasizes the regionalized provision of basic sanitation services, making it a “fundamental principle” of the system (ibid., Article 2, item XIV).

Article 30, item V, of the Federal Constitution also states that basic sanitation services may be provided directly either by whoever has the ownership or may be outsourced under a concession regime, “always through a bidding process” (ibid., 1988, Article 175). Indeed, one of the main changes introduced by Law No. 14.026/2020 was the prohibition of entering into new program contracts, which transferred the execution of services to another federative entity without a bidding process. Thus, according to Article 10 of Law No. 11.445/2007, the “provision of basic sanitation services by an entity that is not part of the ownership administration requires a concession contract, awarded through a prior bidding process in

accordance with Article 175 of the Federal Constitution. The use of a program contract, accord, partnership agreement, or any other precarious instrument is thereby prohibited" (ibid., 2007).

However, it must be emphasized that, in the case of delegation, competition, that is to say, the competition of potential service providers, only occurs at the time of their selection (ibid., art. 2, item XV). The actual execution of the services is carried out by a single company/entity, which leads us to highlight two of its characteristics: natural monopoly and economies of scale. Thus, when the execution of basic sanitation services is delegated, they are usually provided in the form of a natural monopoly, which is "a type of monopoly that arises because a single firm can supply a good or service to an entire market at a lower cost than could two or more firms"[5] (Mankiw, 2019, p. 237). Especially in view of the high fixed costs involved, in economic terms, it becomes practically unfeasible to duplicate the infrastructure necessary to serve the same locality. In these cases, the "duplication of operators" would produce a "duplication" of costs, "with a practical result so high that it would be impossible for both competitors to make a profit or offer any greater advantages to users" (Justen Filho, 2005, p. 29).

Intrinsically linked to the monopoly of services is the economy of scale, whereby "the long-run average total cost falls as the quantity of output increases"[6] (Mankiw, 2019, p. 210). The "scale factor [...] results in savings in the installation of sanitation infrastructure and its operation" (Brasil, 2019a, p.51), in addition to being essential for maintaining the profitability of the services provided. In other words, given the high fixed costs and low marginal cost, the service provider tends, preferentially, to seek markets that guarantee a significant number of users. Thus, we perceive that the insufficiency of services can be caused not only by the lack of resources for the high investments required in operating infrastructures, but also by an "inadequate" (reduced) scale, which may be observed, for example, in smaller municipalities and rural areas. However, regardless of how basic sanitation services are provided, they do not lose their characteristic as a fundamental right.

Despite its significance, basic sanitation is not explicitly enumerated as a social right in Chapter II (Articles 6 to 11) of Title II ("Of rights and fundamental guarantees") in the Federal Constitution (Brasil, 1988). However, this omission does not diminish its status as a fundamental right, given its intimate connection

5. N.B. For direct citations, the English version was used of MANKIW, N.G. *Principles of Economics*: a Guided Tour. Boston: Cengage Learning Inc. 2019, p. 290.

6. N.B. For direct citations, the English version was used of MANKIW, N.G. *Principles of Economics*: a Guided Tour. Boston: Cengage Learning Inc. 2019, p. 273.

with other rights of the same nature (such as the rights to health and a balanced environment) and its undeniable link to the fundamental principle of human dignity (Brasil, 1988, Article 1, item III).

According to Article 5, paragraph 2, of the Federal Constitution, the rights and guarantees expressed in Title II, Articles 5 to 17, do not exclude others arising from the regime and principles adopted by the Constitution or from international treaties to which the Federative Republic of Brazil is a party (Brasil, 1988). In other words, the list is not exhaustive. Thus, in addition to the rights provided for in the aforementioned "catalog", it is possible to come across fundamental rights practically throughout the entire text of the Federal Constitution, as well as others arising from international treaties ratified by Brazil, such as the fundamental right to basic sanitation, a materially constitutional norm.

The realization of social rights – including basic sanitation – by the State is achieved through public policies (Ribeiro, 2015). Therefore, the fact that the right exists implies that the State has the obligation to institute a public policy and provide the corresponding public service. Thus, while its execution by the private sector is possible, basic sanitation remains a public service exclusively provided by the State (Brazil, 1988, Article 21, item XX, and Article 23, item IX).

The relevance of the right to basic sanitation is also evident from its direct relationship with the promotion of development, taken from a broader perspective, as a process of expanding the real freedoms that people enjoy"[7] (Sen, 2010, p. 16).

In this context, we may consider that basic sanitation – notably the supply of drinking water and sewage disposal services – has an intrinsic importance, and is one of the objectives of development. It is also an essential public service and, therefore, is connected to several others, intervening in numerous other freedoms, which thereby demands special attention from public policies.

In an analysis of the possible positive impacts (social, environmental and economic) that the use of a biodigester septic tank could provide in the treatment of sewage in rural areas, Costa and Guilhoto (2014, p. 56-7) highlighted, for example, that implementing the aforementioned individual alternative solution for "the entire rural population with no adequate sewage collection or treatment" (in 2009, a little over 23 million people), could not only prevent the pollution of watercourses, but in Brazil, could also avert around "2,592 deaths and 5.5 million cases of diarrheal diseases annually". This would result in an annual saving on public health spending of R$ 130 million. Furthermore, by reducing time lost to

7. N.B. For direct citations, the English version was used of SEN, A. *Development as Freedom.* New York: Alfred A. Knopf, Inc. 1999, p. 3.

work due to diarrheal diseases, there would be an annual saving of R$ 637.28 million (ibid., p. 57). In conclusion, this study estimated that "for every R$ 1.00 invested in the construction of septic tanks in rural areas", considering their "linkages in the economy", the economic return would be R$ 3.75 (ibid., p. 58).

Ultimately, regular access to treated water guarantees the freedom to quench thirst, prepare food, and maintain personal hygiene. The freedom to live in a healthy environment, free from disease, is ensured by the removal and treatment of wastewater (sewage). It is undeniable, therefore, that basic sanitation has significant intrinsic importance and is an integral part of development.

However, despite its immense relevance in promoting development and the investments made over the years, the reality of basic sanitation in Brazil points to a large deficit, especially in sewage disposal services, which notably affects rural populations, small municipalities, and the peripheries of large cities.

## 3. The deficiencies of basic sanitation services

To characterize the coverage and deficits of basic sanitation services, we have used the already systematized data available in PLANSAB and PNSR.

PLANSAB, approved in 2013, uses a concept of deficit in basic sanitation that encompasses, "not only the implemented infrastructure, socioeconomic and cultural aspects, but also the quality of the services offered or the solution employed", thereby enabling "a more realistic view" of the deficiencies encountered throughout the coverage of the services (Brasil, 2014, p. 41-2).

Based on the definitions used in PLANSAB, for each component of basic sanitation, the encountered situations are classified as "adequate service" or "deficit", with the latter encompassing cases of "poor service" and "non-existent service".

Therefore, with regard to the **supply of drinking water**: (a) "adequate service" is considered to be those situations where the service is provided by a "'distribution network or by a well, spring, or cistern, with internal piping, in any case not intermittently (stoppages or interruptions)"; (b) a "precarious" ("deficient") service is considered to be a service (b1) provided by a distribution network, a well, or spring for homes that have no internal piping, which receive water that does not meet the drinking water standards and whose distribution presents prolonged interruptions or rationing, (b2) provided through a rainwater cistern which, nevertheless, offers either no or insufficient sanitary safety for the protection of health, and (b3) that consists of the use of a reservatory supplied exclusively by a water truck; (c) those situations not included in the definitions of service (adequate or precarious) and which therefore constitute inadequate practices, such as collecting water from watercourses or distant wells, are considered as being a "non-existent service" (therefore, also 'deficient') (Brasil, 2014, p. 43).

In terms of **sewage disposal**, PLANSAB considers that (a) there is an "adequate service" when sewage collection exists, followed by treatment, or when a septic tank is used; (b) there is a "precarious service" (therefore "deficient") in cases where sewage collection exists although with no subsequent treatment, or a rudimentary septic tank is used; and (c) there is a "non-existent service" (also "deficient"), which refers to all situations not included in the definitions of service (adequate or precarious) and that constitute, therefore, of practices considered inadequate, such as the discharge of sewage directly into ditches, rivers, lakes or seas (ibid.).

Based on the characterization presented above and considering an estimated population for Brazil of 190,732 million inhabitants, in terms of the **supply of drinking water** in 2010, only 59.4% of the population (approximately 113,295 million people) were reported to be receiving an adequate service. This signifies that, in 2010, 40.6% of the Brazilian population (approximately 77,437 million people) was subject to either a precarious or even non-existent service (deficient situations) (ibid., p. 44).

In relation to **sewage disposal**, in the same year (2010), only 39.7% of the population (approximately 75,720 million people) received an adequate service, resulting in 60.3% of the Brazilian population (approximately 115,011 million people) subject to either a precarious or non-existent service (deficient situations) (ibid.).

PLANSAB also reports that the greatest deficiencies in basic sanitation services are found among the population strata "with the lowest income and the lowest level of education, and [in] places where the rural population and the urban periphery predominate – that is to say, those who are most lacking in other essential services such as education, health and housing" (ibid., p. 66). This is confirmed by Rezende and Heller (2008) in an analysis of the national scenario during the periods from 1991 to 2003 (regarding the coverage of drinking water supply services) and from 1991 to 2002 (regarding the coverage of sewage disposal services). The authors also point out that, despite the expanded coverage during the periods mentioned, the deficiencies are more significant when the rural population is observed (ibid.).

Launched in 2019, the PNSR presents a broad overview of the coverage and shortcomings related to basic sanitation services in rural areas, taking as a reference the guidelines established by PLANSAB) with data provided by the 2010 Demographic Census/IBGE, the 2008 National Basic Sanitation Survey/IBGE, and the 2007 Information System for Monitoring the Quality of Drinking Water for Human Consumption (SISAGUA/MS) (Brazil, 2019a). However, the definition of rural used by the PNSR differs from that employed by the IBGE, which certainly has a significant impact on the implementation of the corresponding public policy.

According to PNSR (ibid., p. 56), the IBGE considers a rural area of any municipality as being that which is completely outside its urban perimeter – which is normally defined by municipal tax laws – using eight census sectors. Employing its own methodology[8] for defining what is "rural," these census sectors were redistributed, so that these urban groupings received the code 1a, and the other groupings, all considered rural, received the codes 1b to 8, subdivided as follows: agglomerations close to the urban area (codes 1b, 2 and 4), more densely populated isolated agglomerations (code 3), less densely populated isolated agglomerations (codes 5, 6 and 7) and with no agglomerations, with relatively close or isolated households (code 8) (Brasil, 2019a)."

Therefore, while the 2010 Demographic Census estimated the rural population residing in permanent private households in Brazil as 29.54 million inhabitants (15.57% of the total), PNSR, in 2010, for Brazil's typically rural areas and based on the aforementioned methodology, considered 39.914 million inhabitants (21% of the total) (ibid., p. 61).

Regarding the methodology and concepts used to characterize an "adequate service" and "deficit" in basic sanitation in rural areas of Brazil, it should be noted that PNSR uses the same premises as PLANSAB (ibid., p. 65). Given this characterization and the data provided by the 2010 Demographic Census, the 2008 PNSR, and the 2007 SISAGUA, with regard to the **supply of drinking water** in the different rural areas of the country, it may be stated only 40.5% of the population (more than 16 million inhabitants) has "adequate service". Hence, the deficit ("precarious service" + "non-existent service") represents 59.5% of the total (more than 23 million inhabitants) (ibid., p. 68). In relation to **sewage disposal** in rural areas, the numbers are even worse and far more discouraging. According to the PNSR (ibid.), only 20.6% of the population (just over 8 million inhabitants) has an "adequate service". Thus, the deficit ("precarious service" + "non-existent service") represents 79.4% of the total (more than 31 million inhabitants).

If we consider the total deficit of the country in 2010, as presented by PLANSAB 2014 – 40.7%, or more than 76.970 million inhabitants, in terms of water supply and 60.3%, or more than 114.421 million inhabitants, regarding sewage disposal, it may be deduced that the situation of basic sanitation in rural areas is extremely serious. Thus, more than 30% of the total deficit in water supply and 27% of the deficit in sewage disposal services in Brazil is encountered in rural areas.

8. According to PNSR, to define rural areas, both population density and neighborhood characteristics were considered. Thus, 'rural sectors must not only have a low population density but also have, as neighboring sectors, at least one other rural sector' (Brasil, 2019a, p. 59).

Considering the data from the 2000 and 2010 demographic censuses, PNSR further reports that the greatest deficiencies in basic sanitation services are found in rural households where the heads of household can neither read nor write, and where the total income is less than one minimum salary (ibid., 2019a).

Therefore, as noted in the final considerations of PLANSAB, in Brazil, it is the lowest income and least educated population strata, the peripheries of cities, small municipalities, and especially places where the rural population predominates that "make up the largest share of the basic sanitation deficit" (Brasil, 2014, p. 66).

In addition to the fact that population density helps to identify non-urban spaces, attention must be paid to a number of other particularities that evidence the existence of various "rural" areas, and which are relevant for understanding (and eventually overcoming) the current situation of deficit in the provision of basic sanitation services to the populations that live there.

Addressing the definitions of what is "rural" and its implications for formulating and implementing public policies, Favareto and Wanderley (2013, p. 413) confirmed the existence of a "significant heterogeneity" of Brazilian rurality, which is "manifested on different scales". This "diversity and heterogeneity of rural spaces" consequently demands equally different public policy strategies (ibid., p. 456-458).

The significant dimensions of the national territory and the numerous forms of its original occupation, the existence of diverse biomes (Atlantic Forest, Caatinga, Cerrado, Pampas, Pantanal, and Amazon), and the different ways of relating to nature, the multiple levels of social and community organization, and the various dynamics of economic development, among other aspects, give rise to numerous rural contexts, each with its own unique demands. These particularities necessitate the adoption of tailored techniques for the provision of basic sanitation services that are suited to these specific circumstances (Freitas, 2013).

This heterogeneity (environmental, political, economic, social, and cultural) in territories, responsible for multiple "rural identities or ruralities" (Brasil, 2019a, p. 51), is also highlighted by PNSR, which indicates the need to recognize and consider this diversity in both the organization and for the very success of public policies regarding basic sanitation.

According to Roland *et al.* (2019, p. 16), the concept of "rurality" is broader than that of "rural" and encompasses "a set of factors that shape the way of life of individuals", which varies in each locality. Recognizing these specificities is crucial for defining appropriate technologies (individual or collective) for each context, as well as for ensuring the appropriation of solutions by the population and their long-term sustainability (Brasil, 2019a, p. 51). Indeed, given this diversity, adopting

appropriate technologies, education, and social participation were already guiding principles of the PNSR, developed in the 1980s.

Low population density and sparse spatial distribution often make centralized collective solutions for water supply and sewage disposal impractical. In regions with either limited or no water availability, sewage collection and removal via networks is unfeasible. Additionally, places prone to flooding or with high water tables are unsuitable for septic tank use. Other factors influencing sanitary practices, as identified by Roland *et al.* (2019, p. 33), include "community organization, the quality of available drinking water, resistance to sodium hypochlorite treatment, and the prevalence of open defecation".

Therefore, in addition to the characteristics "that require an approach, which is different and distinct from that conventionally adopted in urban areas, both in terms of technology and management and the relationship with communities" (Brazil, 2014, p. 195), rural areas have, in their universe, significant complexity, demanding equally differentiated and appropriate actions.

Therefore, in addition to the characteristics "that require a particular approach, distinct from that conventionally adopted in urban areas, both in terms of technology and management and the relationship with communities" (Brazil, 2014, p. 195), in their universe, rural areas have significant complexity, demanding equally differentiated and appropriate actions.

Thus, it may be stated that, given the characteristics of the deficit in basic sanitation services, particularly in rural areas, the universalization of these services necessarily signifies serving the people with the least economic capacity, the very "poorest" (Andreu, 2020), residing in smaller, more remote and significantly heterogeneous localities, diversified, with low population density and lacking an adequate economic scale.

## 4. The "new" Legal Framework for Basic Sanitation

### 4.1. Main legislative changes undertaken

With the explicit goal of achieving universal basic sanitation services for the supply of drinking water and sewage disposal by December 31, 2033, Law No. 14.026/2020 introduced substantial modifications to the "Legal Framework for Basic Sanitation" Law No. 11.445/2007. These changes are particularly notable with regard to the establishment of clear service expansion targets (universalization targets), service ownership, regionalized provision, regulatory uniformity, and a competitive selection of service providers. It should be noted that, despite the numerous amendments (some of which are analyzed below) in the 2007 text, Law No. 14.026/2020 may not be legally considered as a "new" regulatory framework

for the sector. It neither revokes nor fully replaces Law No. 11.445/2007.[9] Instead, in its summary it is possible to observe that Law 14.026 merely "updates to the basic sanitation legal framework [...]" (Brasil, 2020).

When addressing sanitation in rural areas, in its original wording, Law No. 11.445, when referring specifically to the Federal Basic Sanitation Policy (PFSB), states that as one of its guidelines, the Union would "guarantee adequate means to serve the dispersed rural population, including through the use of solutions compatible with its particular economic and social characteristics" (Brasil, 2007, article 48, item VII). Article 49, item IV, of that same law, as one of the objectives of the PFSB, also included "to provide adequate environmental health conditions for rural populations and small isolated urban centers" (ibid., 2007).

The changes brought in by Law No. 14.026/2020 to the Legal Framework for Basic Sanitation partially modified the content of the aforementioned precepts (Article 48, item VII, and Article 49, item IV) and also included four new specific provisions: paragraph 4 of Article 11-B (which allows the regulatory entity to foresee cases in which the provider may use alternative and decentralized methods for services in rural areas); item IX of Article 48 (which places rural areas as a criterion for eligibility and priority for the PFSB; item I of paragraph 10 of Article 50 (which exempts compliance with regulatory reference standards for access to federal public resources when providing services in rural areas) and item III of paragraph 1 of Article 52 (which, within the scope of PLANSAB, provides a specific program for basic sanitation actions in rural areas) (Brasil, 2007).

Although it does not specifically refer to rural areas, the provisions of Article 5 and paragraph 6 of Article 11-B of Law No. 11.445/2007 directly interfere with the provision of basic sanitation services in that environment and will also be the subject of analysis below.

### 4.2. Appropriate technologies for basic sanitation in rural areas

Introduced in Chapter II ("On the exercise of ownership") of Law No. 11.445, Article 11-B, in its *caput*, defines the universalization goals, aiming to guarantee service to 99% of the population with drinking water and 90% with sewage collection and treatment by December 31, 2033 (Brazil, 2007). Paragraph 4 of this article stipulates that it is possible for the regulatory entity of this sector to establish hypotheses in which the service provider uses alternative and decentralized methods for water supply and sewage collection and treatment services in rural

9. Since it fails to match any of the scenarios outlined in Article 2, paragraph 1, of Decree-Law 4,657 of 1942 (LINDB), it is not possible for Law No. 14.026 of 2020 to be considered as a "new" Legal Framework for Basic Sanitation, replacing Law No. 11.445/2007.

or remote areas or in consolidated informal urban nuclei. This provision is in line with the provisions of item VII in Article 48 of Law No. 11.445, which, now amended, states as one of the PFSB guidelines "to ensure sufficient resources to serve the rural population, employing solutions tailored to their specific economic and social conditions" (ibid.).

In principle, these two devices reflect the conclusions reached in the PNSR regarding the specificities and differences between rural and urban areas, the heterogeneity, and the consequent need to employ solutions for sanitation that are adequate and compatible with the its distinct realities of each.

The detailed study carried out for the elaboration of the PNSR demonstrated that, in addition to low population density and geographical dispersion, the rural environment in Brazil presents significant cultural, economic, environmental, and social diversity (Brasil, 2019a). As previously seen, these diverse "rural" areas require "adequate", "compatible" structural measures for each reality (ibid., 2007, Article 48, item XII), which, in most cases, should be "decentralized" and "alternatives" (ibid., Article 11-B, paragraph 4) to the solutions commonly used in urban areas, where there is a predominance of collective technologies (sewage collection networks and water distribution, with centralized treatment stations, for example).

Despite this finding, paragraph 4 of Article 11-B of Law No. 11.445 states that it is only "optional" for subnational regulatory entities to provide for hypotheses for the use of "alternative and decentralized methods" in the provision of services in rural or remote areas and in informal urban nuclei (Brazil, 2007). Hence, although traditional solutions (notably collectives) cannot be used in a large part of the rural environment, service providers may not be compelled by their respective regulatory agencies to use adequate alternative means of technologies. In addition, the characteristics of occupation in rural areas create specific needs that must predominantly be met in an individual manner (the use of wells for water supply and the use of septic tanks for sewage, for example) (ibid., 2019a, p. 60).

In the regrouping of rural households promoted by the PNSR based on the IBGE census sectors, collective sanitation solutions are considered most suitable only for agglomerations with codes 1b, 2, and 4, due to their closer proximity to urban centers (id., 2019a). In turn, "more densely populated isolated agglomerations" (code 3) "may have [...] greater economies of scale and the possibility of collective actions" (ibid., p. 60). However, for households located in "isolated less densely populated agglomerations" (codes 5, 6, and 7) and in places "with no agglomerations, with households relatively close to agglomerations or isolated" (code 8), individual sanitation solutions "will predominate" (ibid.). In these sectors where individual solutions are considered most suitable (codes 5, 6, 7, and 8), most of the rural population is concentrated – approximately 28 million

inhabitants, or 71.9% of the total (ibid., p. 61) – as well as the largest deficits in water supply and sewerage services.

Therefore, as indicated in the PNSR, a significant portion "of the communities classified as rural [have] individual solutions as the most technologically appropriate" (Rezende; Heller, 2008, p. 302). However, despite being adequate and effective, such solutions are not admitted as a public sanitation service. This is contained in Article 5 of Law No. 11.445 when it states that "a sanitation initiative carried out through individual solutions does not constitute a public service, as long as the user does not depend on third parties to operate the services" (Brasil, 2007).

Thus, as Pinho, Zanon, and D'Avignon observe (2021, p. 41), the legal framework governing sanitation segregates individual solutions, "when they do not rely on third parties to operate the services, from the concept of providing a public sanitation service, which is of interest to private initiative".

### 4.3. Structural measures in the provision of services

Beyond "adequate", "compatible", and "appropriate" infrastructures, the PNSR also demonstrates the imperative of investing in structural measures to ensure the effectiveness of such infrastructures. Structural measures are "those that provide political and managerial support for the sustainability of delivering services. They are found both in the sphere of improving management, in all its dimensions, and in the sphere of the daily, routine improvement of physical infrastructure" (Brasil, 2019a, p. 22).

In the PNSR (ibid., p. 112), structural measures are related to the strategic "Technology" axis, while structural measures are associated with the strategic "Service Management" and "Education and Social Participation" axes. These axes are considered inseparable. Thus, for the measures "to consolidate as an adequate solution, the techniques need the support of management, at local, regional, and national levels, and of education and social participation actions" (ibid., p. 113).

Given the heterogeneity of rural areas and their distinct demands, user participation is essential, both in the choice of appropriate technical solutions and in their implementation and subsequent management, enabling them to be integrated into the daily lives of their populations and become permanent (Roland *et al.*, 2019, p. 19) and, consequently, effective (Pinho; Zanon; D'Avignon, 2021, p. 139). A study conducted by Batista and Neu (2024) on the use of social technologies in rural Amazonian communities as alternatives to those commonly used in urban areas – in this case, the Rainwater Harvesting System (SAAC) and the Riverbank Ecological Toilet (BER) – exemplifies the importance of using appropriate measures, combined with user participation in their implementation, for the effectiveness of public policies aimed at universalizing basic sanitation.

It should be emphasized that, beyond the social control provided for in Law No. 11.445 (Brazil, 2007, Article 2, item X, and Article 3, item IV), the structural measures related to the education and social participation of users permeate all "implementation phases of sanitation actions" (id., 2019a, p. 125), from policy planning through to identifying the technological solutions to be employed.

However, the aforementioned forecasts of "alternative, decentralized methods" (Brasil, 2007, Article 11-B, paragraph 4) and of "the adequate means for serving the rural population" (ibid., Article 48, item VII) are related only to the adaptation of structural measures, to say nothing of the structuring measures, which are, as seen, indispensable for the "sustainability and permanence" (id., 2019a, p. 199) of structural measures in a reality where the user is also an active subject in the management of services.

### 4.4. Public policy and frameworks for providing sanitation services

Despite the crucial role of "alternative and decentralized methods" in ensuring the success of actions in rural areas, their implementation must occur, as per paragraph 4 of Article 11-B of Law No. 11.445, "without hampering charges, in order to guarantee the economic efficiency of providing basic sanitation services" (Brazil, 2007). However, it is essential to remember that what the majority of rural users are "able to pay is not compatible with the [desired] economic and financial self-sustainability of the services" (id., 2019a, p. 210). Consequently, this does not create a "favorable environment" for attracting private capital. Thus, the full amortization of investments through user tariffs can pose significant challenges, if not outright impossibilities, for these rural populations to adhere to the services, given their low economic capacity. Therefore, considering that the sanitation deficit in rural areas "is also directly related to the concentration of poverty, the implementation of these individual solutions must be primarily financed with government resources" (Pinho; Zanon; D'Avignon, 2021, p. 153).

By establishing the universalization goals (serving 99% of the population with drinking water and 90% of the population with sewage collection and treatment by December 31, 2033), paragraph 6 of Article 11-B of Law No. 11.445 provides that they "must be observed at the municipal level, when the title is exercised independently, or at the level of regionalized provision, when applicable" (Brazil, 2007). Thus, the law ultimately creates a margin making it possible for the universalization goals not to be met in rural areas, as long as they have been met at the municipal level (i.e., the urban area). Likewise, the smaller, economically unviable municipalities may be left aside as long as universalized provision has been achieved on a regional level. This conclusion is reinforced by the fact that the law does not, at any time, impose the establishment of specific universalization coverage goals for

rural areas (or for other spaces of exclusion). That said, the alleged advantages of regionalized provision (economies of scale and the promotion of technical and economic-financial viability) will not guarantee that equitable universalization of services occurs, to the obvious detriment of rural populations.

Given these issues, and the need to employ appropriate means, when analyzing the different models commonly employed for providing a water supply service (municipal management, state company, private companies, public consortia, shared management and social organization), a study undertaken by Raid *et al.* (2022) demonstrated that the most appropriate models for serving rural populations are shared management and municipal management. Even in different local contexts, considering the criteria of quality and safety of the water supplied, financial accessibility and sustainability, "decentralized service delivery models are the most appropriate, as they enable greater participation and social control, more affordable tariffs and better knowledge of the local reality" (ibid., p. 801).

Regarding the formulation of the federal sanitation policy, item IX of Article 48 of Law No. 11.445 now includes rural areas as an eligibility and priority criterion (Brazil, 2007). While this is a significant step, it does not guarantee that special – and *necessary* – attention will be afforded to rural sanitation, since it is listed among several other relevant criteria provided for in the item, such as the level of income, existing coverage, the degree of urbanization, the population concentration, the municipal population size, water availability and sanitary, epidemiological and environmental risks. Indeed, even without the specific mention of rural areas in this provision, their priority service could very well be justified in view of the population's low "level of income", and the reduced "level of coverage" prevalent in these regions.

Still within the context of the PFSB, item IV of Article 49, in Law No. 11.445, as amended, guarantees "adequate environmental health conditions for rural populations and small communities" (ibid.). However, this provision merely states a right that is already guaranteed under the Federal Constitution (id., 1988, Article 225) to all Brazilian citizens, not just those residing in rural areas. Moreover, unfortunately, merely stating this right has proven ineffective if unaccompanied by imperative, adequate normative instruments capable of promoting the implementation of the underlying public policy, thereby allowing for its social efficacy (effectiveness).

In terms of the aforementioned normative precepts, it should also be noted that the "guarantee of adequate means to serve the rural population" (id., 2007, Article 48, item VII) and the provision of rural areas as one of the "objective criteria for eligibility and priority" (ibid., art. 48, item IX) are PFSB guidelines and that the guarantee of "adequate environmental health conditions for rural populations"

(ibid., art. 49, item IV) is an objective of this very same policy. While the PFSB may be implemented in cooperation with other federative entities (municipalities and states) that have the ownership of basic services, it does not bind them to its provisions (i.e., it is not a national policy) when formulating their own respective public policies for the sector. Consequently, these provisions are not part of the national guidelines for basic sanitation, and are linked only to the federal basic sanitation policy.

Subsequently, Article 50 of Law No. 11.445 states that, for the allocation of federal public resources, financing with Union funds or with resources managed or operated by Union departments or entities will be conditioned on the observance, by the interested parties, of "the reference standards for the regulation of the provision of basic sanitation services issued by ANA" (ibid., Article 50, item III). The general standards established by the Agência Nacional de Águas [National Water Agency] (ANA) aim primarily at establishing standards for the adequate provision of services and the expansion of their quality, as well as ensuring compliance with the conditions and targets established in service provision contracts and basic sanitation plans. However, in its paragraph 10, item I, the Article exempts operators from complying with the reference standards issued by ANA when it comes to basic sanitation iniatives in rural areas (ibid., 2007). In other words, access to federal public resources for basic sanitation actions in rural areas is not conditioned to complying with the reference standards issued by ANA, as imposed by item III of the *caput* of the article. Therefore, all the benefits sought by the widely advocated regulatory uniformity (ibid., Article 22) are not taken advantage of in the provision of basic sanitation services in rural areas, which remains outside the guarantee of an adequate provision and expansion of the quality of services.

Lastly, the existence of a "specific program for basic sanitation actions in rural areas" (ibid., 2007), as expressly stated in Article 52, paragraph 1, item III, of Law No. 11.445, was already foreseen in the initial formulation of PLANSAB (ibid., 2014, p. 195). The PNSR, enacted in 2019 (therefore, prior to the promulgation Law No. 14.026) underscores the need for "basic sanitation solutions tailored to the different rural realities of Brazil" (Roland *et al.*, 2019, p. 19). Nevertheless, as previously observed regarding the provisions of item IV in Article 49 of Law No. 11.445/2007, while pertinent, the PNSR in itself, does not alter the reality. Its effectiveness hinges on appropriate regulatory frameworks and concrete public initiatives.

### 4.5. Feasibility of universalizing sanitation services in rural areas

The original wording of Law No. 11.445/2007 indicates that the normative changes introduced by Law No. 14.026/2020 have brought a more comprehensive regulation to rural sanitation. However, given its inherent complexities, the distinct

"ruralities" (Favareto; Wanderley, 2013; Roland *et al.*, 2019; Freitas, 2013), and the significant level of deficit in the service, the approach of the new law toward rural sanitation is ultimately superficial.

As observed, in addition to being mostly limited and restricted to the PFSB, the aforementioned normative provisions do not engage with the results of the work carried out in PLANSAB and, particularly, in PNSR, notably by failing to consider the multiple socio-environmental, economic and cultural dynamics existing in rural areas and their distinct needs. Furthermore, in the new normative discipline we have not observed the provision of structural measures of management, education, and social participation, which, in addition to being inseparable from technological solutions compatible with local realities, are fundamental components in the process of building effective public policies for access to water and sanitation in rural areas (Rosa; Teixeira; Hora, 2023).

The characteristics of land occupation and of both user participation and decentralized, alternative, and predominantly individual solutions place the provision of services in rural areas at odds with the desired adequate economic scale and the consequent economic-financial sustainability of the services, and therefore cannot translate into "attractive business opportunities for private investment" (Favareto, 2020).

The provision of services in rural areas faces significant challenges due to the characteristics of land occupation and the vital need for user participation, plus decentralized, alternative, and predominantly individual solutions. These factors often conflict with achieving the desired economic scale and subsequent economic-financial sustainability of the services, ultimately hindering their attractiveness as "business opportunities for private investment" (Favareto, 2020). The economic unfeasibility of "expanding services in areas of irregular occupation, [with] a low population density, [...] where people with low family income or a spatially dispersed population are concentrated" underscores the inadequacy of service delivery models based on a traditional business form of management. (Raid *et al.*, 2022, p. 7). It seems clear that, in regions lacking adequate scale, and therefore without economic viability, and where people do not have financial resources, relying primarily on private providers to expand service coverage is unlikely to yield the desired outcomes.

We emphasize that PLANSAB, in its 2014 version, projected a necessary investment of R$ 508.5 billion in structural and structuring measures to achieve its 2033 goals across all four components of basic sanitation (namely, drinking water supply; sewage disposal; urban cleaning and solid waste management; and urban drainage and stormwater management) (Brasil, 2014). Of this total, PLANSAB estimated that 59% would come from "federal agents", with the remaining 41%

contributed by “international agencies, service providers, state and municipal budgets, and the private sector through direct investments or counterparts” (ibid., p. 170). In the revised 2019 version, PLANSAB increased the stated investments to R$ 597.9 billion during the period from 2019 to 2033 for structural and structuring measures, whereby 40% of the amount would come from resources from “federal agents”, notably the Union General Budget (OGU) (id., 2019c, p. 174-5). Despite the forecast of “less participation of federal resources”, the 2019 version of PLANSAB underscores that they are essential “in order to achieve the goals [...] and, mainly, to overcome regional and social inequalities, as well as differences between urban and rural areas” (ibid.).

Given the foregoing, it is important to bear in mind that both the development of normative instruments and the formulation of public programs and policies, even with limitations (financial resources, qualified personnel, etc.), always represent a choice, and are the result of a political decision (Menicucci; D’Albuquerque, 2018), which is invariably guided by values and ideologies that in each case, express “a certain political project for society” (Borja, 2014, p. 12). Thus, other solutions (including legal solutions), with the construction of a public policy that effectively includes sanitation as a social right, and not merely as a commodity (Heller, 2018), are not only possible but also necessary, if the objective is in fact the universalization of this right.

Therefore, with regard to the normative provisions studied, we corroborate the impressions of Santos, Morais and Arruda (2021, p. 215) that “the legislator [...] has not fully understood the real conditions [of sanitation] in rural areas and the challenges and peculiarities that exist in each region, which leads us to believe that [the goal of universalizing services] will be unattainable by the year 2033”.

## 5. Conclusion

The deficiencies in basic sanitation services, including the supply of drinking water and sewage disposal, are undeniably significant in Brazil. The shortages are more pronounced in small municipalities, on the peripheries of cities, and most notably in rural areas, particularly among those population groups with lower levels of education and income, who also lack other essential public services such as health, education, and housing. In addition to being significant, the deficiencies of these services in rural areas in Brazil (which account for almost a third of the total deficit) still have some specific characteristics, resulting from the low population density, the geographical dispersion, and a great diversity of cultural, economic, environmental, and social aspects. These characteristics necessitate a differentiated approach compared to the provision of services in urban areas,

where large structures, collection and distribution networks, and treatment plants predominate, for example. In addition to using appropriate technologies, adapted to multiple realities, which require decentralized and, in many cases, individual solutions, the provision of services in rural areas also demands investments in structural measures.

To address this deficit and aiming at the universalized coverage of drinking water and sewage disposal by December 31, 2033, the changes introduced by Law No. 14.026/2020 to the Legal Framework for Basic Sanitation rely primarily on a greater participation of the private sector in the provision of services. However, we have observed that most of the normative devices introduced related to rural sanitation (art. 48, items VII and IX; art. 49, item IV; art. 50, paragraph 10, item I; and art. 52, paragraph 1, item III of Law No. 11.445/2007) are restricted to the discipline of the PFSB which, although it may be executed in cooperation with the other federative entities (municipalities and states) – which are the effective owners of the services – does not oblige them (i.e., does not bind them) when elaborating their respective public policies for the sector. In general, the amendments introduced by Law No. 14.026/2020, contradictorily, do not dialogue with the results of the work carried out in PLANSAB and PNSR, and do not appear to be adequate for the reality and the different needs of rural areas.

Thus, the expansion of regionalization for the provision of services, aiming at an adequate scale, with economic and financial sustainability for the undertakings (Law No. 11.445/2007, art. 2, item XIV), is ineffective in the face of a population that lives predominantly dispersed and that demands individual basic sanitation technologies for its service. Individual solutions that, even if they do not depend on third parties to be operated, are not considered, by law, a public basic sanitation service (Brazil, 2007, art. 5). Furthermore, without a mandatory normative provision for the specific service of rural areas, regionalization may not prevent its exclusion, in the face of eventual economic unfeasibility and the possibility of meeting the universalization targets in more profitable spaces (ibid., art. 11-B, paragraph 6).

Furthermore, recognizing the need for adequate, alternative, and decentralized means to serve the rural population (ibid., art. 11-B, paragraph 4; art. 48, item VII) is ineffective if the law itself does not oblige subnational regulatory entities to develop regulations on their use by service providers. Similarly, since the reality in most rural areas demands the active participation of the beneficiary and the community, both in the choice and in the operation and maintenance of the implemented solution, it becomes fruitless to provide for adequate structural measures. Given that the user, in the rural environment, is normally not a

"mere recipient of services" (ibid., 2019a, p. 117), to guarantee the effectiveness and constancy of the solutions employed, it is necessary to invest, equally, in structural measures for the management of services, for education, and for social participation. Even though regulatory uniformity is essential, its benefits are partially lost when the law itself establishes that access to federal public resources for sanitation actions in rural areas is not conditioned to compliance with the reference standards issued by ANA (ibid., 2007, art. 50, paragraph 10, item I).

Lastly, if the universalization of sanitation implies, in relation to rural populations, serving those who are most needy, residing in smaller and more remote localities, the predominantly mercantile logic proves inadequate without a satisfactory economic scale (and, therefore, essential to the profitability of the services). Even if it were possible to use the same technologies uniformly employed in urban areas (collection and distribution networks, treatment plants, etc.) at an equivalent cost, the finding of an inadequate and reduced scale, combined with the low payment capacity of a large portion of the rural population, does not prove attractive to the intended participation of private companies, requiring the State's action for the effective expansion of services. In addition, in the reality of multiple deficiencies in which most rural communities find themselves, with deficiencies in the supply of drinking water and sewage disposal, basic sanitation initiatives must be implemented in conjunction with other public policies (housing, poverty reduction, education, health promotion, etc.), as provided for, moreover, by the Legal Framework for Basic Sanitation (Law No. 11.445/2007, Article 2, item VI), which goes beyond the mere concession for the provision of services by a private company.

Therefore, confirming the initial hypothesis, given the characteristics of the deficit in basic sanitation services in rural areas (low population density, geographical dispersion, lower payment capacity of its inhabitants, and significant cultural, economic, environmental, and social diversity), of the technologies appropriate to these needs (decentralized solutions and alternatives to those commonly used in urban areas), of the indispensability of investment in structural measures, and the consequent lack of economic-financial sustainability for a large part of the projects, it is concluded that the "new" institutional framework implemented by Law No. 14.026/2020, in the way it was formulated and proposed (with emphasis on the participation of the private sector), will be unable to guarantee the universalization of services within the legally established time frame.

Delegating the provision of services does not alter the nature of the fundamental social right of basic sanitation, requiring positive and active initiatives on the part of the State, which cannot allow the sector's policy to be conducted solely by private interests. State participation is crucial, especially because it is a public

policy that can promote numerous positive externalities. Given its connection with numerous other fundamental rights, basic sanitation is instrumental and constitutive (Sen, 2010) of broader economic and social development. Therefore, considering that the direction given to all public policy is a choice, an option, it is expected that the State will adopt other solutions that actually dialogue with the profile of the deficiencies of the services in rural areas and that prioritize the nature of the fundamental social right of basic sanitation.

Given the size and specificities of the deficit in rural areas, it would be necessary to establish specific, imperative normative measures, endowed with concrete mechanisms of action by the federative entities, in addition to prioritizing public resources to address it, which is not achieved with the enactment of Law No. 14.026/2020. Thus, the normative changes promoted in Law No. 11.445/2007, most notably by casting the private sector into a leading role for providing basic sanitation services with the consequent distancing of the State, in addition to not meeting the intended universalization goals, may further widen the inequalities of access.

## References


ANDREU, V. Pandemônio no saneamento. *Le Monde Diplomatique Brasil*, 17 jul. 2020. Available at: https://diplomatique.org.br/pandemonio-no-novo-marco-legal-do-saneamento/. Accessed on: March 16, 2022.

BARDIN, L. *Análise de conteúdo*. Trad. Luis Antero Reto. São Paulo: Edições 70, 2016.

BATISTA, L. M.; NEU, V. Olhares para o sanear: as percepções de ribeirinhos sobre uma experiência com tecnologias sociais na Amazônia Oriental. *Revista Brasileira de Estudos Urbanos e Regionais*, v. 26, p. 1-26, 2024.

BORJA, P. C. Política pública de saneamento básico: uma análise da recente experiência brasileira. *Saúde e Sociedade*, v. 23, n. 2, p. 432-47, abr. 2014.

BRASIL. [Constituição (1988)]. *Constituição da República Federativa do Brasil*. Brasília, DF: Diário Oficial da União, 5 out. 1988. p. 1. Available at: http://www.planalto.gov.br/ccivil_03/constituicao/constituicao.htm. Accessed on: January 27, 2022.

_____. Lei n. 11.445, de 5 de janeiro de 2007. Estabelece diretrizes nacionais para o saneamento básico. Brasília, DF: *Diário Oficial da União*, 8 jan. 2007. p. 3. Available at: https://legislacao.presidencia.gov.br/atos/?tipo=LEI&numero=11445&ano=2007&ato=9bacXWU90MRpWTad7. Accessed on: July 22, 2022.

_____. Ministério das Cidades. Secretaria Nacional de Saneamento Ambiental. *Plansab*: Plano Nacional de Saneamento Básico – mais saúde com qualidade de vida e cidadania. Brasília: Ministério das Cidades, 2014. Available at: https://antigo.mdr.gov.br/images/stories/ArquivosSNSA/PlanSaB/plansab_texto_editado_para_download.pdf. Accessed on: Jun 14, 2022.

BRASIL. Ministério da Saúde. Fundação Nacional de Saúde. *Programa Nacional de Saneamento Rural (PNSR)*. Brasília, DF: Ministério da Saúde, 2019a. Available at: http://www.funasa.gov.br/documents/20182/38564/MNL_PNSR_2019.pdf. Accessed on: May 16, 2022.

_____. Câmara dos Deputados. *Projeto de Lei n. 4.162, de 2 de agosto de 2019*. Atualiza o marco legal do saneamento básico. Brasília, DF: Câmara dos Deputados, 2019b. Available at: https://www.camara.leg.br/proposicoesWeb/prop_mostrarintegra?codteor=1787462&filename=Tramitacao-PL+4162/2019. Accessed on: July 23, 2021.

_____. Ministério do Desenvolvimento Regional. Secretaria Nacional de Saneamento. *Plansab*: Plano Nacional de Saneamento Básico – mais saúde com qualidade de vida e cidadania. Documento em revisão submetido à apreciação dos Conselhos Nacionais de Saúde, Recursos Hídricos e Meio Ambiente. Brasília: Ministério do Desenvolvimento Regional, 2019c. Available at: https://antigo.mdr.gov.br/images/stories/ArquivosSDRU/ArquivosPDF/Versao_Conselhos_Resolu%C3%A7%C3%A3o_Alta_-_Capa_Atualizada.pdf. Accessed on: May 13, 2022.

_____. Lei n. 14.026, de 15 de julho de 2020. Atualiza o marco legal do saneamento básico. Brasília, DF: *Diário Oficial da União*, 16 jul. 2020. p. 1. Available at: http://www.planalto.gov.br/ccivil_03/_Ato2019-2022/2020/Lei/L14026.htm. Accessed on: May 16, 2022.

CARVALHO, V. M. de. *O direito do saneamento básico*. Coleção Direito Econômico e Desenvolvimento. v. 1. São Paulo: Quartier Latin, 2010.

COSTA, C. C. da; GUILHOTO, J. J. M. Saneamento rural no Brasil: impacto da fossa séptica biodigestora. *Engenharia Sanitária e Ambiental*, v. 19 (especial), p. 51-60, 2014.

FAVARETO, A. O Brasil na contramão, de novo. *Le Monde Diplomatique Brasil*, 14 ago. 2020. Available at: https://diplomatique.org.br/lei-do-saneamento-e-as-desigualdades/. Accessed on: January 27, 2022.

FAVARETO, A; WANDERLEY, M. N. B. A singularidade do rural brasileiro: implicações para as tipologias territoriais e a elaboração de políticas públicas. In: MIRANDA, C.; SILVA, H. (Orgs.). *Concepções da ruralidade contemporânea*: as singularidades brasileiras. Brasília: IICA, 2013, Série Desenvolvimento Sustentável, v. 21. p. 413-72.

FREITAS, E. de S. M. Reflexões sobre o conceito de rural e ruralidade para o contexto do Programa Nacional de Saneamento Rural. In: MIRANDA, C.; SILVA, H. (Orgs.). *Concepções da ruralidade contemporânea*: as singularidades brasileiras. Brasília: IICA, 2013, Série Desenvolvimento Sustentável, v. 21. p. 101-17.

GIL, A. C. *Como elaborar projetos de pesquisa*. 4. ed. São Paulo: Atlas, 2002.

HELLER, L. Saneamento no Brasil: outro mundo é possível e desejável. *Saneamento como política pública*: um olhar a partir dos desafios do SUS. Rio de Janeiro: Fiocruz, 2018.

HIRATUKA, C. *et al.* Impactos econômicos dos investimentos em saneamento básico no Brasil. *Revista DAE*, n. 180, Sabesp, 2013.

JUSTEN FILHO, M. Parecer ao PL 5296 02/2005. *Revista Jurídica Virtual*. Brasília, DF: Presidência da República, v. 7, maio 2005.

MANKIW, N. G. *Introdução à economia*. Trad. Priscila Rodrigues da Silva Lopes. São Paulo: Cengage, 2019.

MARCON, A. M.; WESZ JUNIOR, V. J. Informações sobre os serviços de saneamento básico: a realidade do déficit no Brasil. *Rama – Revista em Agronegócio e Meio Ambiente*, v. 17, p. e11521, 2024.

MENICUCCI, T.; D'ALBUQUERQUE, R. Política de saneamento *vis-à-vis* à política de saúde: encontros, desencontros e seus efeitos. In: HELLER, L. (Org.). *Saneamento como política pública*: um olhar a partir dos desafios do SUS. Rio de Janeiro: Fiocruz, 2018.

MORAES, L. R. S. (Coord.). *Panorama do saneamento básico no Brasil* – análise situacional do déficit em saneamento básico. Brasília: Ministério das Cidades, 2014. v. 2.

MOREIRA, F. D. et al. O espaço público e o público que o frequenta: dilemas dos direitos humanos à água e ao saneamento. *Revista Brasileira de Estudos Urbanos e Regionais*, v. 25, e202316pt, 2023.

OMS. Organização Mundial da Saúde. *Global Costs and Benefits of Drinking-Water Supply and Sanitation Interventions to Reach the MDG Target and Universal Coverage*. World Health Organization, 2012. Available at: https://iris.who.int/handle/10665/75140. Accessed on: January 27, 2022.

_____. *Water and Sanitation Interventions to Prevent and Control Mosquito Borne Disease*: Focus on Emergencies. World Health Organization, 2024. Available at: https://iris.who.int/handle/10665/376497. Accessed on: July 26, 2024.

ONU. Organização das Nações Unidas. *The United Nations World Water Development Report 2023*. United Nations, 2023. Available at: https://unesdoc.unesco.org/ark:/48223/pf0000384655. Accessed on: June 26, 2024.

PINHEIRO, M. M. S.; SANTOS, A. H. O. Políticas públicas em direitos humanos e desenvolvimento no Brasil. *Boletim de Análise Político-Institucional (Bapi)*, n. 5, Brasília-DF: IPEA, p. 77-81, maio 2014.

PINHO, M. J. A. de; ZANON, R. S.; D'AVIGNON, A. Desafios para a expansão do acesso ao esgotamento sanitário em áreas rurais isoladas: o uso de tecnologias sociais e a experiência do Programa Cisternas. *Revista do BNDES*, Rio de Janeiro, v. 28, n. 55, p. 113-60, jun. 2021.

RAID, M. A. *et al.* Modelos de prestação de serviços de abastecimento de água para comunidades rurais do Brasil: uma avaliação comparativa pelo método Analytic Hierarchy Process. *Engenharia Sanitária e Ambiental*, v. 27, n. 4, jul. 2022.

REZENDE, S. C.; HELLER, L. *O saneamento no Brasil*: políticas e interfaces. 2. ed. Belo Horizonte: Editora UFMG, 2008.

RIBEIRO, W. A. O saneamento básico como um direito social. *Revista de Direito Público da Economia (RDPE)*, Belo Horizonte, v. 52, p. 229-51, out./dez. 2015.

RICHARDSON, R. J. *Pesquisa social*: métodos e técnicas. 3. ed. São Paulo: Atlas, 2012.

RODRIGUES, C. M. S.; COSTA, L. R. F. Considerações para a compreensão do saneamento básico no Brasil. *Revista Verde Grande: Geografia e Interdisciplinaridade*, v. 5, n. 1, p. 186-204, 2023.

ROLAND, N.; HELLER, L.; REZENDE, S. O Projeto Nacional de Saneamento Rural (1985-1989) no Brasil: limites e potencialidades. *Revista Brasileira de Estudos Urbanos e Regionais*, v. 24, e202217pt, 2022.

ROLAND, N. *et al.* A ruralidade como condicionante da adoção de soluções de saneamento básico. *Revista DAE*, São Paulo, v. 67, n. 220, p. 15-35, nov. 2019.

ROSA, M. N.; TEIXEIRA, D.; HORA, K. E. R. Ações participativas em saneamento rural: bases conceituais e diretrizes metodológicas. *Saúde e Sociedade*, v. 32, n. 2, p. e201040pt, 2023.

SÁ, M. M.; ROBERTO, J. C. A.; SOUTO, S. P. Análise dos impactos do novo marco legal do saneamento na prestação de serviços de saneamento básico no Brasil. *Observatório de la Economía Latinoamericana*, v. 21, n. 6, p. 3833-54, 2023.

SALLES, M. J. *Política nacional de saneamento*: percorrendo caminhos em busca da universalização. 2009. Tese (Doutorado em Saúde Pública) – Escola Nacional de Saúde Pública Sergio Arouca, Fundação Oswaldo Cruz, Rio de Janeiro, 2009.

SANTOS, S. M. da C. dos; MORAIS, J. S. D. de; ARRUDA, L. V. de. Desafios para universalizar o saneamento básico na zona rural do Brasil. *Revista Inclusiones*, v. 8, p. 192-227, 2021.

SEN, A. *Desenvolvimento como liberdade*. Trad. Laura Teixeira Motta. São Paulo: Companhia das Letras, 2010.

**Adriano Marcos Marcon**

Graduated in Law from the Universidade Estadual de Maringá (UEM) with a master's degree from the Postgraduate Program in Public Policies and Development at the Universidade Federal da Integração Latino-Americana (PPGPPD/UNILA). Currently works as a lawyer for the Companhia de Saneamento do Paraná (SANEPAR).

**Email:** adrianommarcon@gmail.com

**ORCID:** 0000-0003-3132-9012

**Authorship contribution:** Conception; Data Curation; Formal Analysis; Investigation; Methodology; Writing – Original Draft.

**Valdemar João Wesz Junior**

Graduated in Rural Development and Agroindustrial Management from the Universidade Estadual do Rio Grande do Sul (UERGS), with a doctorate and master's degree from the Postgraduate Program in Social Sciences in Development, Agriculture, and Society at the Universidade Federal Rural do Rio de Janeiro (CPDA/UFRRJ). Currently, he is a professor at the Universidade Federal da Integração Latino-Americana (UNILA).

**Email:** valdemar.junior@unila.edu.br

**ORCID:** 0000-0002-8154-7088

**Authorship contribution:** Conception; Supervision; Writing – Review and Editing.

**Submitted:** February 24, 2024.

**Approved:** August 8, 2024.

**How to cite:** MARCON, A. M.; WESZ JUNIOR, V. J. The "New" Legal Framework and the Universalization of Basic Sanitation in Rural Areas. *Revista brasileira de estudos urbanos e regionais*. V. 26, E202441en, 2024. https://doi.org/10.22296/2317-1529.rbeur.202441en.

Article licensed under the Creative Commons License (CC-BY)
https://creativecommons.org/licenses/by/4.0/