The first Brazilian national regulation on the provision of stormwater management services

La première norme brésilienne relative à la gestion des eaux pluviales

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RÉSUMÉ

La Norme de Référence 12/2025, intitulée « Structuration des services publics de drainage et de gestion des eaux pluviales urbaines », a été publiée par l'Agence nationale brésilienne de l'eau et de l'assainissement (ANA) en mars 2025 (ANA, 2025). Cette réglementation vise à organiser les services de drainage et de gestion des eaux pluviales urbaines, à l'instar des autres services d'assainissement qui, au Brésil, comprennent l'approvisionnement en eau potable, l'assainissement des eaux usées et la gestion des déchets solides urbains (BRASIL, 2007). Toutefois, le service de drainage et de gestion des eaux pluviales urbaines au Brésil se caractérise encore par un déficit de normalisation, de fixation précise d'objectifs, de capacité d'innovation et d'évaluation régulière des politiques. Il est assuré principalement par les municipalités, mais sans pratique organisationnelle généralisée ; la norme présente donc les services en deux grands volets : les activités, et les infrastructures et installations opérationnelles. Les activités recouvrent la planification ; l'articulation avec d'autres instruments et politiques ; la conception et l'exécution de projets ; l'exploitation et la maintenance ; ainsi que la gestion et l'administration, tandis que les infrastructures et installations opérationnelles comprennent la collecte ; le transport des eaux ; l'atténuation des débits et des volumes ; le traitement ; et le rejet final. Cette définition permettra des progrès dans la prestation de ce service public à l'échelle nationale, en tenant compte des particularités locales, climatiques, hydrologiques, administratives et d'aménagement urbain, dans un pays aussi vaste que le Brésil.

ABSTRACT

The Regulatory Standard 12/2025, entitled Structuring of Public Services for Urban Stormwater Drainage and Management, was published by the Brazilian National Water and Basic Sanitation Agency (ANA) in March 2025 (ANA, 2025). This regulation aims to organize the urban stormwater drainage and management services, similar to other basic sanitation services, which in Brazil comprise the supply of drinking water, sanitary sewerage, and urban solid waste management and urban cleaning (Brazil, 2007). However, the urban stormwater drainage and management service in Brazil is still characterized by a lack of standards, precise target-setting, innovation capacity, and routine policy evaluation. It is carried out primarily by municipal governments, but without a widespread organizational practice; therefore, the standard presents the services in two major blocks: activities, and infrastructure and operational facilities. The activities encompass planning; coordination with other instruments and policies; project design and execution; operation and maintenance; and management and administration, while the infrastructure and operational facilities comprise collection; water conveyance; flow and volume attenuation; treatment; and final disposal. This definition will enable progress in the provision of this public service on a national scale, considering local, climatic, hydrological, administrative, and urban development particularities in a country as vast as Brazil.

KEYWORDS

Brazilian National Water and Basic Sanitation Agency (ANA), NBS, public service, regulation, sanitation

1 INTRODUCTION

Brazil's National Water and Basic Sanitation Agency (ANA) was assigned the task of drafting the reference standards for the basic sanitation sector by Law 14,026/2020 (BRASIL, 2020). In Brazil, basic sanitation comprises the services of drinking water supply, sanitary sewerage (wastewater collection and treatment), stormwater management, and solid waste management. To that end, the Urban Drainage Regulation Coordination (C*oordenação de Regulação de Drenagem Urbana* in Portuguese) was created with the mission of defining the regulatory roadmap for this sector. Three normative documents are under preparation: i) the Standard for the Structuring of Public Services for Urban Stormwater Drainage and Management - USDM (*DMAPU*, in Portuguese); ii) Quality Indicators for the Provision of the Public Service of Urban Stormwater Drainage and Management; and iii) Charging for the Public Service of Urban Stormwater Drainage and Management.

In this context, the first DMAPU standard, NR 12/2025, was published in March 2025 after a lengthy process of drafting, dialogue, and cooperation. This regulatory standard complies with the required legal criteria, with an emphasis on transparency and broad social participation.

The standard underwent a Public Call for Contributions, the objective of which was to gather input from the target audience (subnational regulatory entities, service authorities and providers of DMAPU, and society at large). This was the expectation-alignment phase, during which stakeholders were asked what they expected from the standard. ANA put forward a proposed content outline, and anyone could submit comments through ANA's public participation system. At this stage, the standard's drafting team prepared preliminary regulatory content, seeking an instrument that was both efficient and concise.

The drafting of the preliminary minimum content was preceded by a detailed diagnostic study of DMAPU service provision in Brazil, identifying its weaknesses, inconsistencies, and gaps. It was found that even the definition of the services themselves, their objectives, and targets were unclear, in addition to shortcomings in financing capacity, technical staffing and technology upgrading, as well as planning and management.

This study aims to analyze the conceptual framework and guidelines for urban stormwater drainage and management activities established in the first Brazilian reference standard for this public service, emphasizing the reasons and justifications for the regulatory provisions and how they can contribute to improving the quality and efficiency of service provision in a more sustainable manner.

2 THE REGULATION STANDARD

The Regulation Standard for the Structuring of Public Urban Stormwater Drainage and Management Services has three main blocks: the definition of DMAPU services as a whole, the establishment of the responsibilities of the main actors involved (the service authority, service providers, subnational regulatory entities, and users), and the verification of compliance with the application of this instrument by subnational regulatory entities. In this article, we will focus on the conceptual part of what the service is, specifically about the activities.

For the definition of DMAPU services, it must be understood that, in Brazil, this service is part of basic sanitation, alongside three other services, as mentioned: drinking water supply, sanitary sewerage, and solid waste management and urban cleaning (Brazil, 2007). It is noted that, in Brazil, the universalization targets for the services, in accordance with the SDGs, were established only for the first two, namely 99% of the Brazilian population served with drinking water and 90% with treated sewage.

The urban stormwater drainage and management service, although institutionalized since 2007, did not show significant advances up to 2025. Legally, it encompasses the activities, infrastructure, and operational facilities for stormwater drainage, conveyance, detention or retention for the attenuation of flood peaks, treatment, and final disposal of drained stormwater, including the cleaning and preventive inspection of the networks. Despite being a modern definition, it did not encompass technological developments such as nature-based solutions, a paradigm shift consistent with sustainable urban drainage (Adem Esmail & Suleiman, 2020). This has been addressed only by this national regulatory standard.

NR 12/2025 presents urban stormwater drainage and management services divided into two major groups: activities; and infrastructure and operational facilities (Figure 01).

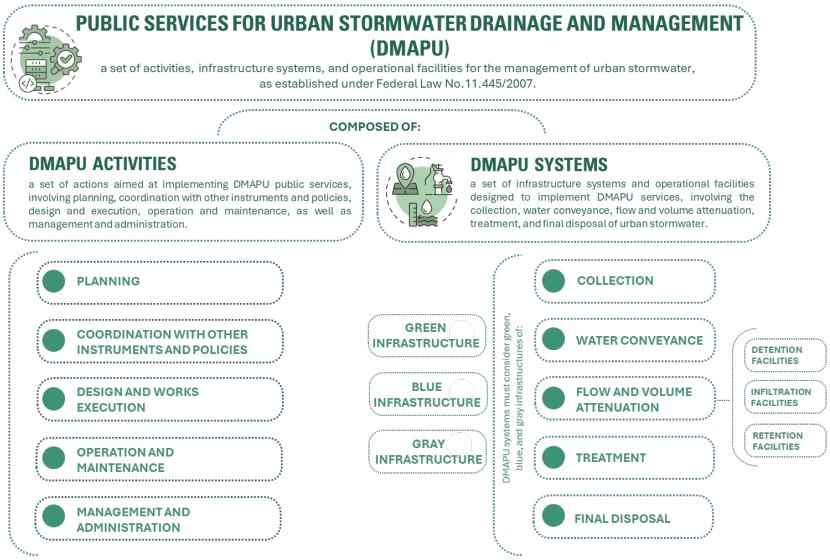

Figure 01 - DMAPU services structuring overview according to NR 12/2025

The activities were inspired by the principles of good governance and are divided into five chapters, described below.

Planning has both a broad and a targeted character, involving the need to prepare and periodically update an Urban Stormwater Drainage and Management Master Plan, including, in particular, determining restriction flows or volumes, or both, consistent with the pre-development conditions of the drainage basins. The standard emphasizes and promotes the use of green and blue infrastructure and its integration with pre-existing grey infrastructure. It also seeks to promote integrated urban water management, water supply and sanitation services, as well as action across multiple territorial scales, including basin-level management and coordination with River Basin Committees, the entities responsible for water resources management in the country.

Coordination with other instruments and policies confirms the need for DMAPU services to be aligned with a range of existing legislation at the municipal, state, and federal levels. For example, with urban planning and land-use policies, they have an interrelationship with stormwater management, as well as environmental, water resources, and climate change regulations.

Design and works execution in DMAPU need to be modernized, and this will only be possible by incorporating green and blue infrastructure while minimizing grey infrastructure; that is, it is explicitly requested that nature-based solutions be prioritized, so as to maximize the ecosystem benefits of this approach.

Operation and maintenance prioritize continuous monitoring in order to avoid failures and losses in system performance, highlighting in particular a guideline for identifying illicit sewage contributions into DMAPU systems, which is the greatest problem affecting separated sewer systems in Brazil. Another major emphasis is the need for efficient solid waste management and urban cleaning services, since litter can obstruct DMAPU systems and contaminate receiving waters.

Management and administration underscore the need to maintain an up-to-date, georeferenced technical asset register of the elements that comprise the DMAPU system, given that only 42.5% of Brazilian cities have a register covering at least part of the system (BRASIL, 2023). In addition, DMAPU services are responsible for rainfall, streamflow, and water quality monitoring in urban and peri-urban environments. Another highlight is support for the implementation, maintenance, and operation of warning systems for pluvial flooding, overland flow, and flash floods, in collaboration with Civil Defense agencies, particularly with respect to communication and data exchange, forecasting and warning of extreme events, in the face of emergency actions and disaster risk.

For a long time in Brazil, DMAPU was not envisaged as a service, but only as infrastructure and its operation. The 2007 law recognizes the expansion of structural functions beyond conveyance, such as attenuation and the control of diffuse pollution of pluvial origin. The service provision standard seeks to establish procedures and targets to achieve these objectives defining specific goals and deadlines, expanding them primarily by emphasizing the use of nature-based solutions and adaptation to climate change.

3 CONCLUSIONS

NR 12/2025, published through ANA Resolution No. 245 of March 17, 2025, introduced, for the first time in Brazil's sanitation sector, a clear definition of the urban stormwater drainage and management service. It brings together important concepts for structuring a service that is still inadequately provided today and that has been becoming increasingly important due to climate change and the urbanization process.

The standard is a fundamental regulatory milestone for improving the provision of urban stormwater drainage and management services, aiming to guide providers in composing these services through activities, infrastructure, and operational facilities. It adopts an innovative approach, moving away from 'hygienist' notions of drainage and requiring modernization through the use of nature-based solutions. It is through this standard that cities are expected to become more resilient, making urban water management more harmonious with Brazilian cities.

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