Water, sewage, waste management and decontamination activities (CNAE E)

BRAZILIAN SUSTAINABLE TAXONOMY

SECRETARIAT OF ECONOMIC POLICY | MINISTRY OF FINANCE

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Water, sewage, waste management and decontamination activities (CNAE E)

Overview — Water supply and sewage disposal services

In Brazil, the management of water resources and basic sanitation services plays a strategic role in several essential areas of society, including agriculture, energy generation, public health, urban development, and environmental conservation. As these services are fundamental to all of society's activities, the sector is directly linked to promoting sustainable development, reducing regional inequalities, and guaranteeing the universal right to access and supply of drinking water and adequate sewage disposal. The use of water resources in Brazil, both in terms of quantity and quality, reflects diverse demands. According to the National Water Agency (ANA, 2024), irrigation accounts for 50.0% of total use, followed by human supply (23.4%), industrial activities (9.2%), and thermoelectric generation (6.4%).

From an economic point of view, the Gross Value Added (GVA) of water supply and sewage disposal activities reached BRL 48.2 billion in 2020, representing 0.7% of the total GVA of the Brazilian economy that year. In the regional scope, the highest shares were registered in the Southeast and South (0.8%), followed by the Central-West (0.7%), Northeast (0.6%), and North (0.3%). These figures highlight significant disparities in access to and infrastructure for basic sanitation services (Agencia IGBE, 2023)

In the social scope, the sanitation sector makes a significant contribution to generating formal employment. According to data from the Brazilian Ministry of Labor and Employment (MTE, 2024), the activities of water collection, treatment and distribution, as well as sewage collection and treatment, and related services, were responsible for the creation of 16,048 formal jobs. This contribution underscores the importance of the sector for national socio-economic development, particularly in advancing universal access to basic sanitation services in line with the targets set in the new legal framework and in planning instruments such as Municipal Basic Sanitation Plans and River Basin Plans.

Although Brazil holds around 12% of the world's available freshwater, its territorial distribution is uneven, which, combined with historical infrastructure deficits and urban planning challenges, leads to regional disparities in access to water and sewage disposal (ICEX, 2023). According to the National Basic Sanitation Information System (SINISA, 2025), 83.1% of the Brazilian population is served by a water supply network and 59.7% of the total population is served by a sewage collection network, while 49.4% of the volume of sewage generated is treated. Regarding urban rainwater drainage and management systems, just 33.5% of public roads in the urban area have underground rainwater networks, for the reference year 2024 (SINISA, 2025)[1]. The deficit in access to water supply and sewage disposal services is distributed unevenly across Brazil, with a greater coverage deficit in the North and Northeast regions[2]. Another challenge is the high rate of water losses, indicating that 40.3% of the volume produced is lost in distribution (SINISA 2025), indicating operational and technical inefficiencies that directly affect the sustainability of water supply systems.

The governance of basic sanitation in Brazil is characterized by its complexity, involving a diversity of service providers with different legal natures and regulatory systems. In 2024, SINISA identified 1,571 water supply providers and 1,477

[1] According to national policies related to the sector (Law No. 11.445/2007 and Law No. 12.305/2010), basic sanitation services include four categories: (i) drinking water supply, (ii) sewage disposal, (iii) urban rainwater drainage and management, and (iv) solid waste management.

[2] In the North, only 64.2% of the population has access to drinking water, the sanitary sewage system covers only 14.7% of the inhabitants, and only 19.8% of sanitary sewage is treated. In the Northeast, these figures are 76.9%, 31.4%, and 34.3%, respectively.

sewage disposal providers in the country, at both local and regional levels, of different legal natures, including direct administration (municipality bodies, such as secretariats, departments, among others), autonomous agencies, public companies, mixed-capital companies, private companies, and private associations. These include municipal departments, autonomous agencies, public companies, mixed-capital companies, private companies, and associations. This institutional diversity poses challenges to regulatory standardization, integrated planning, and the efficient allocation of public and private resources (SINISA, 2025). The concern with the basic sanitation sector is not limited to the provision of services, also involving structural gaps in governance practices, investments and, where applicable, the articulation with water resource management. In terms of sustainability, these factors compromise universal access to sewage disposal, drinking water supply, urban cleaning, solid waste management, and urban drainage. In addition to institutional aspects, external adversities such as climate change, disorderly urbanization, population growth, and the socio-economic effects of the COVID-19 pandemic have further aggravated the challenges faced by the sector (OECD, 2022). In response, Brazil has adopted significant regulatory and institutional measures over the last few decades to integrate water resources management and establish regulatory mechanisms to respond to water security challenges.

Among the most important frameworks in the institutional and regulatory strengthening of water resources management and basic sanitation in Brazil are the National Water Resources Policy, established by Law No. 9433/1997[3]; the creation of the National Water Agency (*Agência Nacional de Águas*, ANA) in 2000, later transformed into the National Water and Basic Sanitation Agency, as provided for in Law No. 14026/2020; the creation of the National Sanitation Information System (*Sistema Nacional de Informações sobre Saneamento*, SNIS), currently called SINISA[4] (Governo Federal do Brasil, 1997) the National Basic Sanitation Policy, established by Law No. 11445/2007; the National Solid Waste Policy, provided for in Law No. 12305/2010; as well as national planning instruments such as the National Basic Sanitation Plan (*Plano Nacional de Saneamento Básico*, PLANSAB)[5] and the National Water Security Plan (*Plano Nacional de Segurança Hídrica*, PNSH), the latter defining 114 priority actions to be implemented by 2035. Among these mechanisms, the New Legal Framework for Basic Sanitation (Law No. 14026/2020) stands out, which established universalization targets by 2033, with 99% of the population served with drinking water and 90% with sewage collection and treatment. The new legislation promotes greater participation by the private sector, strengthens the role of regulatory agencies, and supports the regionalization of service provision, with the aim of expanding coverage, reducing inequalities, and increasing operational efficiency, especially in less developed regions.

In terms of climate change mitigation, the sanitation sector has a significant impact. In 2020, domestic wastewater treatment and disposal activities accounted for 31.5% of emissions from the waste sector, which represents 3.5% of total Greenhouse Gas (GHG) emissions in Brazil, with a predominance of methane (CH_4) emissions from the decomposition of organic matter in effluents (MCTI, 2022) In addition, the average energy consumption intensity of water supply and sewage systems was 0.96 kWh/m³, according to the SNIS (2022), highlighting opportunities for energy efficiency gains (ANA, 2024).

In terms of climate adaptation, Brazil has structured the National Climate Change Plan (*Plano Clima*) with one of its main objectives being to reduce vulnerability to the climate change impacts, with sectoral guidelines and guidance for states and municipalities. The National Adaptation Strategy will include 16 sectoral plans, including Water Resources, and an adaptation plan with structural actions, adaptation measures, and targets for the periods 2024–2031 and 2032–2035 (Ministério do Meio Ambiente e Mudança do Clima, 2025). In addition, Decree No. 12082/2024 established the National Circular Economy Strategy, aimed at promoting sustainability in production and consumption processes.

[3] Law No. 9433 establishes a comprehensive framework for water management in Brazil, regulating the use, management, and conservation of water resources through the National Water Resources Management System (*Sistema Nacional de Gerenciamento de Recursos Hídricos*, SINGREH).

[4] The national system provides information on the main aspects of the service provision performance of water and sanitation providers.

[5] It established targets and strategies to achieve the target of universal access to sanitation services in 20 years, by 2033.

Given this context, climate investments in sanitation and water resource management should prioritize structuring and integrated actions that contribute to the sector's sustainable transition. These actions include: expanding the coverage of water supply and sewage disposal services; reducing GHG emissions associated with operations and increasing the energy efficiency of systems; minimizing losses in distribution networks; improving the efficiency of effluent and waste treatment processes; encouraging the recycling and reuse of solid urban waste; promoting practices aimed at the circular economy; and strengthening urban drainage infrastructure, with a view to adapting to the impacts resulting from the greater frequency of extreme weather events.

Finally, building resilience in water management also requires ecosystem-based measures. These include conserving, restoring, and sustainably managing watershed ecosystems, adopting Nature-Based Solutions (NbS) such as rainwater drainage systems, riverbank stabilization, and drought and flood mitigation. Expanding green areas and integrating NbS into urban infrastructure also contribute to annual GHG removals, through soil carbon sequestration and sink functions. This approach reinforces the interconnection between environmental, climate, and sanitation policies in Brazil.

Prioritization of activities

Objective 1 — Climate change mitigation The prioritization of economic activities in the Brazilian Sustainable Taxonomy (TSB) Action Plan sectors was carried out through a quantitative and qualitative analysis, taking into account available data. The indicators used for this assessment were drawn from a five-year historical series and included: 1) GDP, employment and the Economic Complexity Index, which measure the social and economic relevance of activities; 2) GHG emissions and other climate indicators based on scenarios from the Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA), which assess the potential for climate change mitigation; 3) the existence of economic activities in other taxonomies, which supports interoperability; and 4) an expert assessment, which considers climate priorities and sector regulations, reflecting their relevance in the Brazilian context. The data were normalized and scored, with different weights according to the importance of each sector, to rank activities by priority within a standardized system.

Objective 2 — Adaptation to climate change: The methodology for selecting activities and measures is based on three main steps: identifying environmental and climate impacts by sector, proposing specific activities and investments that address these impacts, and classifying them based on established eligibility criteria. This process is guided by alignment with the goals and priorities of the National Adaptation Plan, supported by scientific evidence that demonstrates its positive contribution to climate adaptation, by the ambition to strengthen the resilience of sectors and activities to climate change impacts and by interoperability with other international and regional taxonomies. The taxonomy includes adapted and enabling activities and measures. The metrics for determining the eligibility of adaptation activities or measures across all sectors included the following options: quantitative/verifiable metrics to demonstrate impact, a list of qualitative criteria and checks, a list of qualified activities and measures, and vulnerability assessments.

Public consultation updates and considerations for future editions

The preliminary proposals for the first edition of the TSB were submitted for public consultation between November 16, 2024 and March 31, 2025, and were structured in two disclosure stages. The first stage of the consultation included introductory taxonomy documents, while the second stage provided technical and thematic chapters, with technical criteria for mitigation and adaptation, minimum safeguards and adjustments to economic activities. Civil society was able to contribute freely throughout the process.

This technical chapter incorporates the contributions received and the adjustments made during the public consultation. Below are specific considerations for future updates:

- The consideration of standardized energy consumption parameters based on the total manometric head of hydraulic systems;
- The inclusion of traceability mechanisms for the energy sources used in the water collection, intake, and treatment stages, with a focus on quantifying CO_2 emissions per kWh consumed;
- The definition of minimum thresholds for volumes of reuse water that can be recognized as substantial contributions;
- The development of specific technical criteria for desalination processes, focusing on their energy efficiency and production capacity.

Other changes have also been incorporated based on the contributions received in the public consultation, such as:

- The creation of a new activity aimed at reusing water for non-potable purposes;
- Adjustment of leakage loss limits in water distribution systems, considering the technical and operational reality of the sector in the Brazilian context;
- Improvements to the texts on desalination, the use of rainwater, the use of biogas, and the anaerobic digestion of sludge and sewage;
- Revisions to the criteria for existing activities, such as activity E3, in order to improve clarity and technical alignment.

Objective 1 — Climate change mitigation

Categories of eligible activities

- E1: Construction, expansion, and operation of raw water collection, intake, pumping, and treatment systems (both new and existing systems)
- E2: Construction, extension, and operation of treated water distribution and reservoir networks (both new and existing systems)
- E3: Construction, expansion, and operation of sanitary sewage and sludge treatment systems (both new and existing systems)
- E4: Construction, extension, and operation of sanitary sewage collection systems (both new and existing systems)
- E5: Production and distribution of reuse water for non-potable purposes
- E6: Anaerobic digestion of sludge and sewage

Sector-specific activities

E1: Construction, expansion, and operation of raw water collection, intake, pumping, and treatment systems (both new and existing systems)

National Classification of Economic Activities (*Classificação Nacional de Atividades Econômicas* - CNAEs):

- 36.0: Water collection, treatment, and distribution
- 42.2: Infrastructure works for electricity, telecommunications, water, sewage and pipeline transportation [6]

Description:

The activities involve the collection of surface water such as rivers, lakes, springs, or directly from rain, and groundwater, as well as its treatment and purification for public supply.

The construction, expansion, and operation of raw water collection, intake, pumping, and treatment systems (new and existing systems) must actively contribute to achieving the goal of providing 99% of the population with access to drinking water by 2033, in line with the Federal Basic Sanitation Policy (Law No. 11445/2007, and its updates), in both urban and rural areas, and must guarantee continuity and reliability of water supply for the population. This includes individual or collective solutions for water supply in rural areas, whose technology must comply with the guidelines for water supply of the National Rural Sanitation Program.[7]

Examples of activities:

- Collection of raw surface water (rivers, lakes, reservoirs, rainwater) or groundwater.
- Raw water intake systems.
- Simple, conventional, or advanced raw water treatment systems to meet drinking water standards, including processes such as coagulation, flocculation, sedimentation, filtration, disinfection, and fluoridation, among others, guaranteeing safe compliance with drinking water standards.

[6] For companies falling under CNAE 42, it is recommended to consult the CNAE F — Construction technical chapter, which describes the specific criteria for infrastructure work activities, aligned with the objectives of the TSB.

[7] See item 5.3.1 — Guidelines for Water Supply of the National Rural Sanitation Program — PNSR, published by the National Health Foundation (FUNASA, 2019).

Out-of-scope activities:

- Construction, extension, and operation of treated water distribution and reservoir networks (included in activity E2)

Substantial contribution to Objective 1 — Climate change mitigation

New systems (collection and treatment)

To qualify as a substantial contribution, new water collection and treatment systems must meet at least one of the following criteria:

A. Energy efficiency: The average net energy consumption for water collection, intake, and treatment must be equal to or less than 0.5 kWh per cubic meter of water produced. The water treatment design must also demonstrate processes aimed at minimizing the waste generated.

B. Use of renewable energy: The electricity used must come from power plants that use energy generation sources and technologies included in the CNAE — Electricity and Gas chapter, through self-generation, Power Purchase Agreements in the Free Contracting Environment (ACL), in the short-term market of the National Interconnected System (*Sistema Interligado Nacional*, SIN), or through the purchase of energy in the regulated market, directly from distributors[8].

C. Decentralized systems: Investments in decentralized, individualized, or alternative rainwater collection and treatment systems should be considered qualified, especially in rural areas, and should guarantee a safe water supply, in compliance with the drinking water standards defined by current legislation and technical standards.[9]

D. Expansion of coverage: The new systems must expand the provision of treated water to the population served, when they serve the region with coverage and service of less than 99% of the population with access to drinking water,[10] whether through centralized, decentralized, or individualized solutions, aiming at inclusion and adequate service even in areas of difficult access.

Existing systems (collection and treatment)

To qualify as a substantial contribution, new water collection and treatment systems must meet at least one of the following criteria:

A. Improvement of energy efficiency: The system must demonstrate a reduction of at least 20% in the average energy consumption of the first water supply system (including collection, intake, and treatment) stages, compared to the average baseline performance of the previous three years, measured in kWh per cubic meter of water supplied.

B. Optimization of treatment processes: Investments in existing systems must promote the expansion of the treatment capacity and/or improvement of treatment processes, provided that they are linked to the proportional increase of water distribution, including the implementation of actions to increase recirculation and reuse of water in the treatment system stages. Furthermore, the water treatment process must demonstrate a reduction in the amount of waste generated.

C. Expansion of coverage: Investments in existing systems must expand the provision of treated water to the population served, when they serve the region with coverage and service of less than 99% of the population with access to drinking water,[11] whether through centralized, decentralized, or individualized solutions, aiming at inclusion and adequate service even in areas of difficult access.

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[8] Brazil's electricity matrix has a high level of renewability, with more than 90% of its electricity coming from renewable sources. See General Overview of the Sector in the CNAE D — Electricity and Gas technical chapter.

[9] As established by Brazilian Association of Technical Standards (*Associação Brasileira de Normas Técnicas*, ABNT) Brazilian Regulatory Standards (*Normas Brasileiras Regulamentadoras*, NBR) 16783:2019, ABNT 15527:2019 and their updates.

[10] As defined in Law No. 11445/2007 and its updates.

[11] As defined in Law No. 11445/2007 and its updates.

Water desalination

D. For water desalination systems, electricity used must come from power plants that use energy generation sources and technologies included in the CNAE D — Electricity and Gas technical chapter, through self-generation, Power Purchase Agreements in the Free Contracting Environment (ACL) or in the short-term market of the National Interconnected System (SIN), or through the purchase of energy in the regulated market, directly from distributors, throughout the operational period of the infrastructure.

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):	
Climate change adaptation	• Resilience of drinking water and sewage infrastructure (BRASIL. MMA, 2016).
Protection and restoration of biodiversity and ecosystems	• Collection activities for raw water, whether surface or underground, must guarantee ecological[12] and/or environmental[13] flow, in order to meet the minimum criteria for aquatic ecosystems and the multiple uses of the watershed areas. They must also comply with current environmental legislation and the right of use permit for water resources, avoiding over-extraction or ecological damage.
Conservation and sustainable management and use of soil and forests	• Only projects whose implementation is appropriate to the uses permitted in Conservation Units, Permanent Preservation Area (PPA), or other legally protected areas will be allowed, provided that the use of alternatives that minimize environmental impacts is proven.
Sustainable use and protection of water and marine resources	• The activities must be in line with the principles and guidelines of the National Water Resources Policy (Law No. 9433/1997), in order to guarantee the rational and integrated use of water resources, and to ensure that current and future generations have the necessary availability of water, at quality standards appropriate to the respective uses of the water (BRASIL, 1997). • National Environmental Policy (*Política Nacional de Meio Ambiente*, PNMA) (Law No. 6938/1981), National Environmental Council (*Conselho Nacional do Meio Ambiente*, CONAMA) Resolutions 357/2005, 274/2000, and 430/2011.
Transition to a circular economy	• All activities must be aligned with the guidelines and objectives of the National Circular Economy Strategy, according to Decree No. 12082/2024 (BRASIL, 2024).

[12] The ecological flow is the amount of water that must remain in the riverbed to meet the demands of the aquatic ecosystem, for the preservation of flora and fauna related to the water body (Cruz, 2005).

[13] The environmental flow is the result of negotiations with the various actors involved, taking the ecological flow as a starting point and considering the multiple uses of water.

Do no significant harm (to any of the following objectives):	
Pollution prevention and control	• Activities must be aligned with the National Solid Waste Policy (12305/2010), so that the management of waste generated follows the following order of priority: non-generation, reduction, reuse, recycling, treatment of solid waste, and environmentally appropriate final disposal of waste. • All systems must meet the minimum criteria of the technical standards for the design and construction of water supply systems, and water treatment activities must meet the drinking water standards for human consumption (Ordinance GM/MS No. 888/2021) or the applicable regulations in force.
Reduction of socio-economic inequalities, including racial and gender disparities	• Annex A1: Do no significant harm criteria for social-economic Objective 9.

Source: Own elaboration.

E2: Construction, extension, and operation of treated water distribution and reservoir networks (new and existing systems)

CNAEs:

- 36.0: Water collection, treatment, and distribution
- 42.2: Infrastructure works for electricity, telecommunications, water, sewage and pipeline transportation [14]

Description:

The aim of this activity is to ensure the efficient supply of treated water from reservoirs to end users through the construction, expansion, and operation of water distribution networks. This includes maintaining the infrastructure to reliably supply clean water to homes, businesses, public facilities, and rural areas.

The improvements focus on optimizing pressure, reducing water loss and integrating renewable energy and smart technologies to increase sustainability and efficiency, and at the same time should actively contribute to achieving the goal of 99% of drinking water by 2033, in line with the Federal Basic Sanitation Policy (Law No. 11445/2007, and its updates), in both urban and rural areas, as well as guaranteeing the regularity and continuity of the water supply for the population.[15]

Examples of activities:

- Implementation of water distribution infrastructure through pipelines, water mains, treated water pumping stations, reservoirs, valves, registers, and other complementary equipment.
- Construction, expansion, and operation of drinking water distribution and reservoirs.

[14] For companies falling under CNAE 42, it is recommended to consult the CNAE F — Construction technical chapter, which describes the specific criteria for infrastructure work activities, aligned with the objectives of the TSB.

[15] See item 5.3.1 — Guidelines for Water Supply of the National Rural Sanitation Program — PNSR, published by the National Health Foundation (FUNASA, 2019).

- Implementation of measures to control and reduce water losses in distribution, such as active control of leakage, pressure management of the distribution network, proper management of infrastructure and assets, including efficient preventive and corrective maintenance routines, among other measures.
- Individual or collective solutions for water supply in rural areas, whose technology must comply with the guidelines for water supply of the National Rural Sanitation Program.

Out-of-scope activities:

- Distribution of untreated water
- Construction, expansion, and operation of raw water collection, intake, pumping, and treatment systems (new and existing systems) (included in activity E1)

Substantial contribution to Objective 1 — Climate change mitigation

New systems (distribution networks)

To qualify as a substantial contribution, new water distribution systems must meet at least one of the following criteria:

A. The water losses in the water distribution system must be managed, with a leakage limit equal to or less than 2.0, as measured by the Infrastructure Leakage Index (ILI), designed in compliance with the current technical standards; long-term sustainability must be ensured.[16]

B. The distribution water loss index must have values less than or equal to:[17]
- 35% and 303.0 liters/connection/day by 2025;
- 30% and 263.0 liters/connection/day for the years 2026 to 2032; and
- 25% and 216.0 liters/connection/day as of 2033

C. The new systems must expand the provision of treated water to the population served, when they serve the region with coverage and service of less than 99%,[18] whether through centralized, decentralized, or individualized solutions, aiming at inclusion and adequate service even in areas of difficult access.

Existing systems (distribution networks)

To qualify as a substantial contribution, the existing water distribution systems must meet at least one of the following criteria:

A. The system must reduce water losses by at least 20% in the distribution system as a whole or in a metering and control district.[19] This reduction is based on a comparison with the system's own baseline results, calculated from the average of the previous three years.

B. The distribution water loss index must have values less than or equal to:
- 35% and 303.0 liters/connection/day by 2025;
- 30% and 263.0 liters/connection/day for the years 2026 to 2032; and
- 25% and 216.0 liters/connection/day as of 2033

[16] After December 31, 2033, the limit value of 1.5 must be adopted.

[17] As recommended by Ministry of Cities (*Ministério das Cidades*, MCID) Ordinance No. 788 of August 1st, 2024.

[18] As defined in Law No. 11445/2007 and its updates.

[19] Metering and control district refers to the part of the distribution network that is perfectly delimited and isolable, with the purpose of monitoring the evolution of consumption and assessing water losses in the network, according to NBR 12218/2017.

C. If the water supply system or metering and control district has reached the final targets set by MCID Ordinance No. 788/2024 (BRASIL. MCIDADES, 2024) or regulation that replaces it, i.e., less than 25% in relation to the total volume of water supplied or less than 216 liters/connection/day, the system will be able to reduce water losses by at least 15% in the system as a whole or in a metering and control district, based on a comparison with the system's own baseline results, calculated from the average of the previous three years.

Do no significant harm (DNSH)

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):	
Climate change adaptation	• Resilience of drinking water and sewage infrastructure (BRASIL. MMA, 2016).
Protection and restoration of biodiversity and ecosystems	• Collection activities for raw water, whether surface or underground, must guarantee ecological and/or environmental flow, in order to meet the minimum criteria for aquatic ecosystems and the multiple uses of the watershed areas. This includes compliance with current environmental legislation and the right of use permit for water resources, avoiding over-extraction or ecological damage.
Conservation and sustainable management and use of soil and forests	• Only projects whose implementation is appropriate to the uses permitted in Conservation Units, PPA, or other legally protected areas will be allowed, provided that the use of alternatives that minimize environmental impacts is proven.
Sustainable use and protection of water and marine resources	• The activities must be in line with the principles and guidelines of the National Water Resources Policy (Law No. 9433/1997), in order to guarantee the rational and integrated use of water resources, and to ensure that current and future generations have the necessary availability of water, at quality standards appropriate to the respective uses of the water (BRASIL, 1997). • PNMA (Law No. 6938/1981), CONAMA Resolutions 357/2005, 274/2000, and 430/2011.
Transition to a circular economy	• All activities must be aligned with the guidelines and objectives of the National Circular Economy Strategy, according to Decree No. 12082/2024 (BRASIL, 2024).
Pollution prevention and control	• Activities must be aligned with the National Solid Waste Policy (Law No. 12.305/2010), so that the management of waste generated follows the following order of priority: non-generation, reduction, reuse, recycling, treatment of solid waste, and environmentally appropriate final disposal of waste. • All systems must meet the minimum criteria of the technical standards for the design and construction of water supply systems, and water treatment activities must meet the drinking water standards for human consumption (Ordinance GM/MS No. 888/2021) or the applicable regulations in force.

Do no significant harm (to any of the following objectives):	
Reduction of socio-economic inequalities, considering racial and gender aspects	• Annex A1: Do no significant harm criteria for social-economic Objective 9.

Source: Own elaboration.

E3: Construction, expansion, and operation of sanitary sewage treatment systems (new and existing systems)

CNAEs:

- 37.0: Sewage and related activities
- 42.2: Infrastructure works for electricity, telecommunications, water, sewage and pipeline transportation [20]

Description:

This activity includes the construction, expansion, and operation of sanitary sewage treatment systems, using physical, chemical, and biological processes, and the appropriate final disposal of treated effluents to produce reuse water or their appropriate discharge into the environment. The treatment process aims to remove contaminants from sanitary sewage, reducing the impact on public health and the environment.

Sanitary sewage treatment systems must actively contribute to achieving the target of 90% of sewage disposal by 2033, as established by the Federal Basic Sanitation Policy (Law No. 11445/2007, and its updates), in both urban and rural areas. This includes individual or collective solutions for sewage disposal in rural areas and peripheral territories, whose technology must comply with the guidelines for sewage disposal in the National Rural Sanitation Program[21] and Decree No. 7.217/2010, which regulates Law No. 11.445/2007, which establishes national guidelines for basic sanitation.

Examples of activities:

- Construction, expansion, and operation of sewage treatment plants (ETE)
- Construction and maintenance of individual or collective sewage disposal systems (septic tanks associated with root zones or biological filters, biodigesters, among others)

Out-of-scope activities:

- Collection, treatment, and distribution of drinking water
- Construction, extension, and operation of sanitary sewage collection and transportation systems (included in activity E4)

[20] For companies falling under CNAE 42, it is recommended to consult the CNAE F — Construction technical chapter, which describes the specific criteria for infrastructure work activities, aligned with the objectives of the TSB.

[21] See item 5.3.2 — Guidelines for Sewage Disposal of the National Rural Sanitation Program — PNSR, published by the National Health Foundation (FUNASA, 2019).

Substantial contribution to Objective 1 — Climate change mitigation

New systems (sanitary sewage treatment)

To qualify as a substantial contribution, new sewage treatment systems must meet at least one of the following criteria:

A. Evidence must be provided that the new treatment system or ETE can reduce GHG emissions compared to the existing system, if any.
B. The new sanitary sewage treatment system must replace systems with high GHG emissions or replace the inadequate discharge of raw sewage into the environment.
C. The new systems must expand the provision of sewage disposal treatment for the population served, when they serve a region with less than 90% of the population coverage with sewage collection and treatment,[22] either through centralized, decentralized, or individualized solutions, aiming at inclusion and adequate service even in areas that are difficult to access. [23]

Anaerobic treatment systems

To qualify as a substantial contribution, anaerobic treatment systems must meet all of the following criteria:

A. A maintenance and monitoring plan is required, ensuring that the systems are operated safely and always preventing uncontrolled emissions of biogas and biomethane.
B. The biogas produced must be used in activities[24] provided for under this taxonomy, such as vehicular use, residential, commercial, industrial, energy generation (i.e., electricity and/or heat), application in the chemical sector, injection into the piped distribution system, among other activities carried out in a sustainable manner, provided that the quality parameters established by current regulations are met.[25]

Note: Auxiliary activities that facilitate the use and utilization of biogas and biomethane should be implemented, expanded, and adapted, such as infrastructure for the runoff, transportation, distribution, liquefaction, regasification, compression, decompression, storage, loading, unloading, supply, regulation, measurement, monitoring of biogas and biomethane, according to the proposed use. The various forms of use should be in line with the other activities in this taxonomy.

Existing systems (sanitary sewage treatment)

To qualify as a substantial contribution, existing sewage treatment systems must meet at least one of the following criteria:

A. Investments in existing systems should promote the expansion of treatment capacity and/or the improvement of treatment processes, as long as it is linked to the proportional increase of the sanitary sewage collection and transportation systems from the building connections.

[22] As defined in Law No. 11.445/2007 and its updates.
[23] Compliance with this criterion does not necessarily imply compliance with the criteria relating to anaerobic treatment systems.
[24] The activities in which biogas and biomethane are used must respect the regulatory emission targets established by the Fuel of the Future Act (Lei nº 14.993, 2024), according to the type of use and in compliance with the technical standards defined by the National Agency for Petroleum, Natural Gas and Biofuels (*Agência Nacional do Petróleo, Gás Natural e Biocombustíveis*, ANP) and the competent environmental bodies.
[25] As established in ANP Resolution No. 886/2022, or in current regulations that may replace it.

B. Investments in existing systems must reduce energy consumption by at least 20% compared to the average of the last three years, considering kilowatt-hours (Kwh) per cubic meter of treated sewage (m^3) as the unit of measurement.
C. Investments that enable the integration of individual solutions into public sewage treatment systems.
D. Investments in existing systems should promote an increase in the rate of sewage treatment for the population served, whether through centralized, decentralized, or individualized solutions, with a view to inclusion and adequate service even in areas that are difficult to access.
E. Investments in innovative technologies, including NbS, for the treatment and management of sewage and the sludge generated in the process.

Do no significant harm (DNSH)

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):	
Climate change adaptation	• Resilience of drinking water and sewage infrastructure (BRASIL. MMA, 2016).
Protection and restoration of biodiversity and ecosystems	• N.A.
Conservation and sustainable management and use of soil and forests	• Only projects whose implementation is appropriate to the uses permitted in Conservation Units, PPA, or other legally protected areas will be allowed, provided that the use of alternatives that minimize environmental impacts is proven.
Sustainable use and protection of water and marine resources	• The characteristics of the treated sewage must comply with the following regulations: o CONAMA Resolution 357/2005 (CONAMA, 2005) supplemented by CONAMA Resolutions 274/2000 (CONAMA, 2011) and 498/2020 (CONAMA, 2020), or more restrictive environmental legislation. o PNMA (Law No. 6938/1981). o ABNT NBR 9800:1987 (ABNT, 1987).
Transition to a circular economy	• All activities must be aligned with the guidelines and objectives of the National Circular Economy Strategy, according to Decree No. 12082/2024 (BRASIL, 2024).

Do no significant harm (to any of the following objectives):	
Pollution prevention and control	• Reduce contaminants and pathogens to acceptable levels, in accordance with: • CONAMA Resolution 357/2005 (CONAMA, 2005) CONAMA supplemented by Resolution 430/2011 (CONAMA, 2011), or more restrictive environmental legislation. • ABNT NBR 9800:1987 (ABNT, 1987) ABNT NBR 17076:2024 (ABNT, 2024). • Activities must be aligned with the National Solid Waste Policy (12305/2010), so that the management of waste generated follows the following order of priority: non-generation, reduction, reuse, recycling, treatment of solid waste, and environmentally appropriate final disposal of waste. • Respect pollutant emission limits as determined by legislation or the competent environmental body.
Reduction of socio-economic inequalities, considering racial and gender aspects	• Annex A1: Do no significant harm criteria for social-economic Objective 9.

Source: Own elaboration.

E4: Construction, extension, and operation of sanitary sewage collection systems (new and existing systems)

CNAEs:

- 37.0: Sewage and related activities
- 42.2: Infrastructure works for electricity, telecommunications, water, sewage and pipeline transportation [26]

Description:

This activity covers the sewage disposal systems that collect and transport effluent from building connections to treatment plants. The aim of this activity is to increase the efficiency of sanitary sewage collection and transportation systems until their final destination to produce reuse water or their proper discharge into the environment, significantly reducing environmental impacts and GHG emissions.

Examples of activities:

- Construction, extension, and operation of collection networks and pumping stations for sanitary sewage collection and transportation systems.

Out-of-scope activities:

- Water collection, treatment, and distribution (included in activities E1 and E2).
- Sanitary sewage treatment systems.

[26] For companies classified under CNAE 42, it is recommended to consult the CNAE F — Construction technical chapter, which describes the specific criteria for infrastructure work activities, aligned with the objectives of the TSB.

Substantial contribution to Objective 1 — Climate change mitigation

To qualify as a substantial contribution, sewage disposal collection systems must meet at least one of the following criteria:

A. The systems must provide adequate collection and transportation of sanitary sewage without leakage, overflows, and the discharge of untreated sewage into bodies of water or underground, or irregular connections.
B. The systems must promote the separation of domestic and industrial wastewater from rainwater for proper treatment through an absolute separator system (minimal presence of rainwater), allowing for efficient treatment.
C. The new systems must expand the provision of sewage disposal collection for the population served, when they serve a region with less than 90% of coverage of the population with sanitary sewage collection and treatment,[27] either through centralized, decentralized, or individualized solutions, aiming at inclusion and adequate service even in areas that are difficult to access.

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):	
Climate change adaptation	• Resilience of drinking water and sewage infrastructure (BRASIL. MMA, 2016).
Protection and restoration of biodiversity and ecosystems	• N. A.
Conservation and sustainable management and use of soil and forests	• Only projects whose implementation is appropriate to the uses permitted in Conservation Units, PPA, or other legally protected areas will be allowed, provided that the use of alternatives that minimize environmental impacts is proven.

Sustainable use and protection of water and marine resources	• The characteristics of the treated sewage must comply with the following regulations:
	  ○ CONAMA Resolution 430/2011 (CONAMA, 2011).
	  ○ ABNT NBR 9800:1987 (ABNT, 1987).
	  ○ ABNT NBR 17076:2024 (ABNT, 2024).
	• Where possible, increase the reuse of treated sewage in accordance with current legislation.

Transition to a circular economy	• All activities must be aligned with the guidelines and objectives of the National Circular Economy Strategy, according to Decree No. 12082/2024 (BRASIL, 2024).

[27] As defined in Law No. 11.445/2007 and its updates.

Do no significant harm (to any of the following objectives):	

Pollution prevention and control	• Reduce contaminants and pathogens to acceptable levels, in accordance with:
	  ○ CONAMA Resolution 357/2005 supplemented by CONAMA Resolution 430/2011, or more restrictive environmental legislation.
	  ○ ABNT NBR 9800:1987 (ABNT, 1987).
	  ○ ABNT NBR 17076:2024 (ABNT, 2024).
	• Activities must be aligned with the National Solid Waste Policy (12305/2010), so that the management of waste generated follows the following order of priority: non-generation, reduction, reuse, recycling, treatment of solid waste, and environmentally appropriate final disposal of waste.

Reduction of socio-economic inequalities, considering racial and gender aspects	• Annex A1: Do no significant harm criteria for social-economic Objective 9.

Source: Own elaboration.

E5: Production and distribution of reuse water for non-potable purposes

CNAEs:

- 36.0: Water collection, treatment, and distribution
- 37.0: Sewage and related activities

Description:

This activity covers the production, complementary treatment, and distribution of reuse water from treated sewage, gray water, or other safe sources, intended for non-potable purposes, such as landscape irrigation, industrial use, and urban reuse (e.g., washing public roads, firefighting). Aquifers should only be recharged with rainwater that has been properly collected and treated for this purpose. The operation must comply with established regulatory and sanitary standards, helping to reduce pressure on conventional water sources.

Examples of activities:

- Implementation of reuse systems with tertiary treatment, disinfection, storage, and distribution infrastructure.
- Operation of reused water production units in ETEs, with specific destination for non-potable use.
- Planned aquifer recharge systems using rainwater.

Out-of-scope activities:

- Direct reuse for drinking purposes (except under specific regulation).
- Drinking water production (included in activity E1).

Substantial contribution to Objective 1 — Climate change mitigation

To qualify as a substantial contribution, the activity of production and distribution of reused water for non-potable purposes must meet at least one of the following criteria:

A. The system must make it possible to replace a significant part of the total volume of water previously used for the same purposes. This criterion applies mainly to end users, such as industries or other facilities, which incorporate reused water into their processes to reduce the demand for conventional sources.

B. The system must promote the production of reuse water from the volume of treated sanitary sewage effluent, including complementary treatment and a distribution system for non-potable purposes, prioritizing purposes consistent with its level of treatment. This criterion applies mainly to sewage treatment plants that generate reuse water.

C. The replacement of conventional sources with reuse water must result in a proven reduction in GHG emissions associated with the collection, treatment, and distribution of drinking water, using a recognized methodology such as the Greenhouse Gases (GHG) Protocol or another equivalent.

Note: The use of rainwater (for example, through rainwater harvesting systems) can be considered a valid measure to reduce the demand for drinking water or other conventional sources. However, it is not considered reuse water in the context of criterion B, as it does not originate from effluent treatment, but from a direct rainwater source.

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):	
Climate change adaptation	• Resilience of drinking water and sewage infrastructure (BRASIL. MMA, 2016).
Protection and restoration of biodiversity and ecosystems	• N/A
Conservation and sustainable management and use of soil and forests	• Only projects whose implementation is appropriate to the uses permitted in Conservation Units, PPA, or other legally protected areas will be allowed, provided that the use of alternatives that minimize environmental impacts is proven.
Sustainable use and protection of water and marine resources	• The system must include tertiary treatment with disinfection, consistent with the end use, as defined in ABNT NBR 17076:2024, and/or in applicable state or municipal regulations. • The system must have a reuse water quality monitoring program, with frequency and parameters defined in accordance with current legislation, including at least physicochemical and microbiological indicators and, where applicable, emerging contaminants. • Projects that use rainwater collected from roofs must comply with ABNT NBR 15527:2019, which establishes the technical requirements for collection, storage, treatment, and use systems, ensuring water quality, the separation of hydraulic networks, and sanitary safety.

Do no significant harm (to any of the following objectives):	
Transition to a circular economy	• All activities must be aligned with the guidelines and objectives of the National Circular Economy Strategy, according to Decree No. 12082/2024 (BRASIL, 2024).

Pollution prevention and control	• Reduce contaminants and pathogens to acceptable levels, in accordance with:
	  ○ CONAMA Resolution 357/2005 supplemented by CONAMA Resolution 430/2011, or more restrictive environmental legislation.
	  ○ ABNT NBR 9800:1987
	  ○ ABNT NBR 17076:2024
	• Water quality standards for non-potable purposes must comply with ABNT NBR 15527:2019 (ABNT, 2019a), ABNT NBR 16783:2019 (ABNT, 2019b) and its updates.
	• Projects must be in line with the provisions of Law No. 14546/2023, which promotes the efficient use of water and regulates the use and reuse of alternative sources for non-potable use, ensuring the separation of networks and safe sanitary conditions.
	• Activities must be aligned with the National Solid Waste Policy (12305/2010), so that the management of waste generated follows the following order of priority: non-generation, reduction, reuse, recycling, treatment of solid waste, and environmentally appropriate final disposal of waste.

Reduction of socio-economic inequalities, considering racial and gender aspects	• Annex A1: Do no significant harm criteria for social-economic Objective 9.

Source: Own elaboration.

E6: Anaerobic digestion of sludge and sewage

CNAEs:

- 37.01-1: Sewage network management
- 35.20-4: Gas production; natural gas processing; distribution of gaseous fuels through urban networks

Description:

This activity involves the generation of biogas from the treatment of sludge and sewage through anaerobic digestion. Biogas can be used to generate electricity or heat or purified and used in the form of biomethane as a fuel, as a raw material in industry, to generate energy, to produce synthetic fuels, or to fractionate the gases in its composition, if it is technically and economically feasible to use it in other processes. This process helps to reduce greenhouse gas emissions by capturing and using biogas, replacing non-renewable energy sources with renewable alternatives.

Examples of activities:

- Anaerobic digestion facilities for sludge and sewage

Out-of-scope activities:

- Firing facilities for burning the biogas produced, with no potential or projected use.

Substantial contribution to Objective 1 — Climate change mitigation

To qualify as a substantial contribution, the activity of anaerobic digestion of sludge and sewage must meet all of the following criteria:

- **A.** A maintenance and monitoring plan is required, ensuring that the systems are operated safely and always preventing uncontrolled emissions of biogas and biomethane.
- **B.** The biogas produced must be used in activities[28] provided for under this taxonomy, such as vehicular use, residential, commercial, industrial, energy generation (i.e., electricity and/or heat), application in the chemical sector, injection into the piped distribution system, among other activities carried out in a sustainable manner, provided that the quality parameters established by current regulations are met.[29]
- **C.** The sewage sludge generated must be properly treated, stabilized, or sanitized to enable, as long as technically feasible and legally permitted, its safe and sustainable reuse for agricultural or industrial purposes, including mineralization processes and recovery of nutrients such as nitrogen and phosphorus, use as a soil conditioner, organic compost, among other activities carried out in a sustainable manner, as long as current legislation is observed.

Note: Activities that facilitate the use and utilization of biogas, such as upgrading, compression, or storage, are qualified if they meet the criteria above.

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):	
Climate change adaptation	• N/A
Protection and restoration of biodiversity and ecosystems	• N/A
Conservation and sustainable management and use of soil and forests	• N/A
Sustainable use and protection of water and marine resources	• N/A

[28] The activities in which biogas and biomethane are used must respect the regulatory emission targets established by the Fuel of the Future Act (Lei nº 14.993, 2024), according to the type of use and in compliance with the technical standards defined by the ANP and the competent environmental bodies.

[29] As established in ANP Resolution No. 886/2022, or in current regulations that may replace it.

Do no significant harm (to any of the following objectives):	
Transition to a circular economy	• All activities must be aligned with the guidelines and objectives of the National Circular Economy Strategy, according to Decree No. 12082/2024 (BRASIL, 2024).
Pollution prevention and control	• Activities must be aligned with the National Solid Waste Policy (12305/2010), so that the management of waste generated follows the following order of priority: non-generation, reduction, reuse, recycling, treatment of solid waste, and environmentally appropriate final disposal of waste. • Atmospheric emissions (such as CO_2, CO, SO_x, NO_x, particulate matter, and volatile organic compounds) generated by the combustion of biogas must be controlled and reduced (where necessary), within the limits established by the standards in force in the country: ○ CONAMA Resolution No. 382/2006 (CONAMA, 2006), supplemented by Resolution No. 436/2011 (CONAMA, 2011). ○ CONAMA No. 491/2018 (CONAMA, 2018). ○ ANP Resolution No. 886/2022 (ANP, 2020)., ABNT NBR 16562/2017 (ABNT, 2017). • Respect pollutant emission limits as determined by legislation or the competent environmental body.
Reduction of socio-economic inequalities, considering racial and gender aspects	• Annex A1: Do no significant harm criteria for social-economic Objective 9.

Source: Own elaboration.

Overview — Solid waste management and decontamination

Solid waste management practices in Brazil vary significantly. While large cities benefit from landfills equipped with biogas recovery systems for electricity generation, some municipalities still lack environmentally sound final disposal solutions. These municipalities continue to face serious difficulties that lead to environmental damage and social problems (BRASIL. MF, 2023). The challenges include the complexity and high cost of processes such as collection, treatment, and disposal, the increasing quantities, volumes, and risks associated with the waste produced throughout the country, and final disposal methods (LINO, 2023; DINIZ, 2023).

According to the SNIS in 2022, the average coverage rate of regular domestic waste collection in the urban and rural population was 90.4%, representing 177.8 million inhabitants (ANA, 2024). The macro-regional averages ranged from 79.2% in the North to 95.7% in the Southeast. In addition, the national average for waste collection per capita was 0.98 kg/person/day, with the total mass of municipal solid waste (MSW) collected estimated at 63.8 million tons/year. It is estimated that at least 3,114 suppliers provide solid waste management services.

With regard to the selective collection of household solid waste in urban areas, 1,630 municipalities (32.2%) were found to have this service, with an estimated 1.87 million tons collected per year and with percentage variations in the macro-regional averages ranging from 11.3% in the municipalities of the Northern macro-region to 57.5% in those of the South. It is estimated that 1.12 million tons of dry recyclables and 0.18 million tons of organic recyclables are recovered. Of the

MSW collected, 63.80 million tons/year were disposed of in sanitary landfills (73.74%), controlled landfills (11.92%), and dumps (14.34%).

The Ministry of Labor and Employment (*Ministério do Trabalho e Emprego*, MTE, 2024) reports that in 2024, waste collection, treatment, disposal, decontamination, and other waste management services created 71,507 jobs (BRASIL. MTE, 2024). According to the National Movement of Waste Pickers, there are an estimated 800,000 waste pickers in Brazil[30], 70% of whom are women (BRASIL. MDR, 2023; ABREMA, 2023; CENTRO CLIMA/COPPE/UFRJ, 2023). In addition to waste pickers, the waste and scrap wholesaling is also a significant employment and production segment in the sector. The estimate of the total expenditure of all municipalities in the country on urban cleaning and MSW management resulted in a figure of BRL 26.63 billion Brazilian reais (SNIS, 2022).[31]

Improper disposal of solid waste in dumps and controlled landfills significantly pollutes water, soil, flora, and fauna, and contributes to greenhouse gas emissions. In Brazil, economic activities related to sanitary sewage collection and treatment, as well as urban solid waste management, final disposal, and treatment, were responsible for 4.2% of total GHG emissions in 2020. Of this total, 60.9% originated from solid waste disposal, 37.7% from effluent treatment and the discharge of sanitary sewage and urban waste, 1.3% from open burning and waste incineration, and 0.1% from the biological treatment of solid waste (BRASIL. MCTI, 2022).

A robust legal framework has been developed to regulate the sector. National Solid Waste Policy (PNRS), established by Federal Law No. 12305/2010, set out the principles and responsibilities that underpin the waste sector. It introduced shared responsibility across the product life cycle, requiring producers, municipalities, states, and consumers of packaging and products to share obligations. Since then, the PNRS has been complemented by the National Solid Waste Plan (*Plano Nacional de Resíduos Sólidos*, Planares)[32] (BRASIL, 2010) and other relevant laws, such as the Recycling Incentive Law (BRASIL, 2024).[33]

With regard to adaptation, Brazil's 2016 National Adaptation Plan (*Plano Nacional de Adaptação*, PNA) includes aspects related to waste management. In the strategies for "Cities", the guidelines focus on supporting actions to improve street cleaning and solid waste management. In addition, the strategy for "Water resources", adaptation measures emphasize strengthening the participation of municipalities in SINGREH, given their fundamental role in land use and settlement planning, urban solid waste management, local environmental licensing, and sanitation issues (BRASIL. MMA, 2016).

Considering the context above, the sector should focus on improving waste separation, expanding collection coverage, boosting recycling, promoting incentives for the recovery of landfill gas and energy from MSW, adapting infrastructure and equipment for management and use, and boosting the closure of contaminated landfills or those that have already reached the limit of their useful life. The waste sector is crucial for decarbonization and can positively impact other sectors by promoting the reuse of materials and energy. This will not only solve the scarcity of resources, but also reduce waste generation, alleviating pressure on current waste management systems. It will also promote a shift from linear to circular production models, improve supply chain efficiency, and encourage product redesign.

[30] Cooperatives and waste pickers have been given legal priority over private companies in the waste management infrastructure established by National Solid Waste Policy (*Política Nacional de Resíduos Sólidos*, PNRS).

[31] This includes expenditure on staff, vehicles, maintenance, inputs, outsourcing, and other remuneration, except investments.

[32] Approved by Decree No. 11043, this strategy aims to expand waste collection, boost material recovery, promote the transformation of waste into energy, close dumps, implement municipal waste charges, and support the recovery of organic waste through public-private partnerships.

[33] Established by Decree No. 12106/2024 and defines financial incentives (such as tax deductions) eligible for projects related to recycling infrastructure (e.g., vehicles, sorting equipment, training sessions, awareness campaigns, research etc.)

Collective solutions include solid waste management in rural areas, whether or not integrated into the urban system. The technology to be implemented must comply with the guidelines for solid waste management of the National Rural Sanitation Program[34].

The prioritization of economic activities in the TSB Action Plan sectors was carried out through a quantitative and qualitative analysis, taking into account available data. The indicators used for this assessment include a five-year historical series of the following indicators:

1. GDP, employment, and the Economic Complexity Index, which measure the social and economic relevance of activities;
2. GHG emissions and other climate indicators based on the IPCC and IEA scenarios, which assess the potential for climate change mitigation;
3. The existence of economic activities in other taxonomies, which enhances interoperability;
4. An expert assessment that takes into account the sector's climate priorities and regulations, reflecting its importance in the Brazilian context. The data were normalized and scored, with different weights according to the importance of each sector, to rank activities by priority within a standardized framework.

Categories of eligible activities

- E7: Collection and transportation of non-hazardous waste
- E8: Recovery of recyclable or reusable materials
- E9: Composting units
- E10: Anaerobic digestion of organic waste
- E11: Treatment and disposal of non-hazardous waste (landfill gas capture)
- E12: Construction of urban solid waste landfills
- E13: D18: Research, development and innovation activities for the sector

E7: Collection and transportation of non-hazardous waste

CNAEs:

- 38.11-4: Collection of non-hazardous waste

Description:

The non-hazardous waste collection and transportation activities must include specialized infrastructure to ensure separation at source, aiming at preparing materials to be reused or recycled. This infrastructure must include containers suitable for different types of waste, optimized vehicles with mechanized or semi-mechanized collection systems, and advanced technologies such as GPS monitoring and digital platforms for tracking and efficient management.

[34] See item 5.3.3 — Guidelines for Solid Waste Management of the National Rural Sanitation Program — PNSR, published by the National Health Foundation (FUNASA, 2019).

Examples of activities:

- Collection of non-hazardous waste from domestic, urban, or industrial sources using containers, vehicles, skips etc.
- Cutting, pressing, compacting, or other mechanical processing methods, such as reducing the volume of materials
- Collection of recoverable materials

Out-of-scope activities:

- Collection of hazardous waste
- Recycling of materials

Substantial contribution to Objective 1 — Climate change mitigation

To qualify as a substantial contribution, the non-hazardous waste collection activity must meet at least one of the following criteria:

A. Collection and transportation: the infrastructure for collecting and transporting urban solid waste, which must be collected and transported separately from the source for reuse and/or recycling or other scientific treatment and proper final disposal of waste.

B. Optimization of waste collection and transport: facilities and infrastructure must optimize the collection and transport of urban solid waste, such as transfer stations, temporary storage and distribution centers that increase the efficiency of waste management operations.

C. Logistical improvements: investments in compaction, shredding, and other related activities should promote an increase in the capacity for transporting waste for recycling or other scientific treatment sites and proper final disposal of tailings.

Note: Considering the PNRS (Law No. 12305/2010), which determines environmentally appropriate waste management practices, the collection and transportation of non-hazardous waste must necessarily be linked to adequate final disposal in regulated and properly managed landfills.

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):	
Climate change adaptation	• N. A.
Protection and restoration of biodiversity and ecosystems	• Waste activities must comply with Brazil's environmental protection laws, licensing requirements, and implementation measures to prevent contamination, ensuring that the disposal and handling of waste does not cause groundwater pollution or environmental damage.

Do no significant harm (to any of the following objectives):	
Conservation and sustainable management and use of soil and forests	• Only projects whose implementation is appropriate to the uses permitted in Conservation Units, PPA, or other legally protected areas will be allowed, provided that the use of alternatives that minimize environmental impacts is proven.
Sustainable use and protection of water and marine resources	• Solid waste management activities must ensure that operations do not compromise the quality of groundwater sources, maintaining levels that support all ecosystem activities and the multiple uses of water by the community.
Transition to a circular economy	• All activities must be aligned with the guidelines and objectives of the National Circular Economy Strategy, according to Decree No. 12082/2024 (BRASIL, 2024).
Pollution prevention and control	• Activities must be aligned with the PNRS, so that the management of waste generated follows the following order of priority: non-generation, reduction, reuse, recycling, treatment of solid waste, and environmentally appropriate final disposal of waste.
Reduction of socio-economic inequalities, considering racial and gender aspects	• Annex A1: Do no significant harm criteria for social-economic Objective 9.

Source: Own elaboration.

E8: Recovery of recyclable or reusable materials

CNAEs:

- 38.3: Materials recovery

Description:

Recycling consists of transforming solid waste by altering its physical, physicochemical or biological properties to convert it into inputs or new products, subject to the conditions and standards established by the competent bodies of the National Environment System (*Sistema Nacional do Meio Ambiente*, Sisnama) and, if applicable, the Brazilian Health Regulatory Agency (*Sistema Nacional de Vigilância Sanitária*, SNVS) and the Unified System for Agricultural Health Care (*Sistema Unificado de Atenção à Sanidade Agropecuária*, SUASA), as defined by Law No. 12.305/2010.

Examples of activities:

- Mechanical crushing of material with subsequent separation.
- Recovery of plastic, metal, and other recoverable materials through separation and classification on waste sorting conveyors.
- Sorting and compaction of plastics, metals, and other recoverable materials to produce secondary raw materials.
- Recycling through waste picker cooperatives

- Mechanical waste processing: includes the crushing and grinding of materials such as plastics, cardboard, and wood, as well as magnetic separation for the recovery of ferrous and non-ferrous metals.
- Semi-automated sorting: uses automated conveyors with optical and pneumatic sorting systems to sort dry waste, with manual support from the waste pickers.
- Recovery of glass and ceramics: includes the crushing and melting of glass for the production of new packaging or products, as well as the reuse of ceramic waste in coatings or paving.
- Socially inclusive recycling: involves selective collection and sorting carried out by cooperatives or other forms of association of waste pickers made up of low-income individuals, as well as by self-employed waste pickers, promoting social inclusion and income generation.

Out-of-scope activities:

- Collection of hazardous waste
- Treatment and disposal of hazardous waste

Substantial contribution to Objective 1 — Climate change mitigation:

To qualify as a substantial contribution, the activity of recovering materials from non-hazardous waste must meet at least one of the following criteria:

A. The material recovery facility is qualified when:
  i. At least 50% of the waste, by weight, is converted into secondary raw materials suitable for replacing virgin materials in production processes.
  ii. The by-products have a traceability system for identification and use.
  iii. The recovered material must be destined for use in industries as a raw material through a mechanical or chemical recycling process.

B. The following assets are directly qualified:
  i. Mechanized separation (e.g., sorting and recovery stations).
  ii. Processing activities such as drying, cutting, extrusion, or other machinery that increase the value and usability of the material.
  iii. Voluntary drop-off points (VDPs) and sorting systems operated by cooperatives or other forms of association of waste pickers with their location

Note: Initiatives aligned with the objectives of the *Diogo de Sant'Ana* Popular Recycling Program for Waste Pickers (Decree No. 11.414, 2023) will be prioritized, such as: (i) the recognition of waste pickers as the protagonists of the recycling process; (ii) paid contracting for public services; (iii) technical training and capacity building; (iv) ongoing technical advice; (v) socio-economic inclusion in solid waste management; among others, in accordance with current legislation.

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):	
Climate change adaptation	• The physical climatic risks that are relevant to the activity should be identified.

Do no significant harm (to any of the following objectives):	
Protection and restoration of biodiversity and ecosystems	• When an Environmental Impact Assessment (EIA) is carried out, the mitigation and compensation measures required for environmental protection must be put in place. For sites or operations located in or near biodiversity-sensitive areas, an appropriate assessment should be carried out where necessary. Based on the results of this assessment, the mitigation measures required should be implemented.
Conservation and sustainable management and use of soil and forests	• N.A.
Sustainable use and protection of water and marine resources	• N.A.
Transition to a circular economy	• All activities must be aligned with the guidelines and objectives of the National Circular Economy Strategy, according to Decree No. 12082/2024 (BRASIL, 2024).
Pollution prevention and control	• Activities must be aligned with the PNRS, so that the management of waste generated follows the following order of priority: non-generation, reduction, reuse, recycling, treatment of solid waste, and environmentally appropriate final disposal of waste. • Implement measures to prevent soil and water contamination due to leaching. • Implement air filtration and treatment systems to prevent air pollution.
Reduction of socio-economic inequalities, including racial and gender disparities	• Annex A1: Do no significant harm criteria for social-economic Objective 9.

Source: Own elaboration.

E9: Composting units

CNAEs:

- 3839-4/01: Composting plants

Description:

This activity involves obtaining organic compounds for soil fertilization through the biological degradation of non-hazardous organic waste, such as food waste, animal manure, agricultural crop residues, and urban solid waste. It includes the recovery of bio-waste through composting.

Composting, which uses aerobic microorganisms to break down organic matter, reducing GHG emissions more effectively than other waste management methods. The resulting compost replaces synthetic fertilizers and contributes to carbon sequestration in the soil, stabilizing organic matter, reducing odors, and generating valuable products.

Examples of activities:

- Biological degradation of non-hazardous organic waste
- Obtaining organic compounds for fertilization

Out-of-scope activities:

- Manufacture of intermediate products for fertilizers
- Obtaining compost and fertilizers from a mixture of inorganic chemical components

Substantial contribution to Objective 1 — Climate change mitigation

Composting the organic fraction of urban solid waste is qualified if it meets all the following criteria:

A. Segregation and collection: Organic waste must be separated by source and collected separately.

B. Fertilizer production and use: The compost produced must be used as a fertilizer or soil structurer and comply with national standards on fertilizers or soil improvers for agricultural use.

C. Minimizing emissions and monitoring:

i. Methane losses during the compost production process should be minimized by ensuring aerobic conditions with oxygen above 10% in the compost heaps.

ii. Good aeration of the system should be ensured to maintain optimum oxygenation and accelerate decomposition, to avoid the development of anaerobic zones in the compost heaps that emit methane.

iii. An aeration and monitoring system must be implemented for the compost production process. The monitoring system should measure temperature (ideally kept between 55°C and 65°C), humidity and oxygen, with automated systems recommended for large facilities. A record should be kept of the volume of waste received and the volume of compost produced, with reports on efficiency and the reduction of GHG emissions.

iv. In larger facilities (more than 100 tons per day), bio-filters or chemical filters should be installed, as well as management measures to neutralize methane and ammonia emissions.

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):	
Climate change adaptation	• The physical climatic risks that are relevant to the activity should be identified.
Protection and restoration of biodiversity and ecosystems	• When an EIA is carried out, the mitigation and compensation measures required for environmental protection must be put in place. For sites or operations located in or near biodiversity-sensitive areas, an appropriate assessment should be carried out where necessary. Based on the results of this assessment, the mitigation measures required should be implemented.
Conservation and sustainable management and use of soil and forests	• Only projects whose implementation is appropriate to the uses permitted in Conservation Units, PPA, or other legally protected areas will be allowed, provided that the use of alternatives that minimize environmental impacts is proven.

Do no significant harm (to any of the following objectives):	
Transition to a circular economy	• All activities must be aligned with the guidelines and objectives of the National Circular Economy Strategy, according to Decree No. 12.082/2024 (BRASIL, 2024).
Pollution prevention and control	• Emissions to air and water must be at or below the emission levels associated with the best available technique-associated emission level (BAT-AEL) ranges established for aerobic waste treatment in the latest relevant BAT conclusions, including those for waste treatment. There should be no significant cross-media effects. • For the purposes of controlling atmospheric emissions (BAT-Based Systems), forced ventilation should be used, which ensures continuous aeration in the compost heaps, or periodic turning, avoiding anaerobic conditions and minimizing methane emissions, or thermal oxidation technologies, which use thermal or catalytic oxidizers to eliminate volatile organic compounds (VOCs). • The system must include filters to minimize the release of gases into the environment (such as NH_3, CH_4, H_2CO_2, H_2S, and particles). • An emissions and odor management plan must be in place, and emissions to air and water must comply with current regulations. It should include continuous monitoring and strategies to minimize odors, especially in sensitive areas, such as heap encapsulation (which reduces the dispersion of odors in outdoor operations), biofilters and gas scrubbers (which mitigate odors and volatile compounds emitted during the process). Activities must be aligned with the PNRS, so that the management of waste generated follows the following order of priority: non-generation, reduction, reuse, recycling, treatment of solid waste, and environmentally appropriate final disposal of waste. • The site must have a system to prevent leachate from reaching groundwater and to reduce soil contamination, for example, by sealing the ground. • The compost produced must meet the requirements for organic fertilizers set out in the national standards for fertilizers and soil improvers for agricultural use.
Sustainable use and protection of water and marine resources	• Comply with inter-institutional coordination regulations for the protection of water resources in order to minimize their pollution. • Comply with the relevant regulations regarding sewage, sludge, waste, or any polluting substance discharged into springs, rivers, streams, permanent or non-permanent watercourses, lakes, ponds, swamps, and natural or artificial reservoirs, estuaries, peat bogs, marshes, wetlands, as well as fresh, brackish, or salty waters, their beds, or their respective protection areas. • If effluents are discharged into the sewage system as a result of the activity, the regulations relating to the discharge and reuse of treated effluent must be observed.
Reduction of socio-economic inequalities, considering racial and gender aspects	• Annex A1: Do no significant harm criteria for social-economic Objective 9.

Source: Own elaboration.

E10: Anaerobic digestion of organic waste

CNAEs:

- 38.21-1: Treatment and disposal of non-hazardous waste
- 35.20-4: Gas production; natural gas processing; distribution of gaseous fuels through urban networks

Description:

This activity covers the construction and operation of facilities for treating organic waste using biological processes, by means of anaerobic digestion. This method transforms organic matter into less polluting substances and generates biogas as a by-product. By diverting biodegradable waste from landfills, it contributes to the reduction of uncontrolled methane emissions and enables the production of biogas and valuable chemicals for electricity generation, heating, biomethane, and biofertilizer.

Examples of activities:

- Organic matter processing stations through anaerobic digestion

Substantial contribution to Objective 1 — Climate change mitigation

The activity must meet all of the following criteria:

A. A maintenance and monitoring plan is required, ensuring that the systems are operated safely and always preventing uncontrolled emissions of biogas and biomethane.

B. The biogas produced must be used in activities[35] provided for under this taxonomy, such as vehicular use, residential, commercial, industrial, energy generation (i.e., electricity and/or heat), application in the chemical sector, injection into the piped distribution system, among other activities carried out in a sustainable manner, provided that the quality parameters established by current regulations are met.[36]
The sewage sludge generated must be properly treated, stabilized, or sanitized to enable, as long as technically feasible and legally permitted, its safe and sustainable reuse for agricultural or industrial purposes, including mineralization processes and recovery of nutrients such as nitrogen and phosphorus, use as a soil conditioner, organic compost, among other activities carried out in a sustainable manner, as long as current legislation is observed.

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

[35] The activities in which biogas and biomethane are used must respect the regulatory emission targets established by the Fuel of the Future Act (Law No. 14.993/2024), according to the type of use and in compliance with the technical standards defined by the ANP and the competent environmental bodies.
[36] As established in ANP Resolution No. 886/2022, or in current regulations that may replace it.

Do no significant harm (to any of the following objectives):	
Climate change adaptation	• N. A.
Protection and restoration of biodiversity and ecosystems	• N. A.
Conservation and sustainable management and use of soil and forests	• N. A.
Sustainable use and protection of water and marine resources	• The discharge of effluents into surface waters or other types of water sources must comply with the applicable regulations (CONAMA, 2011) or environmental licenses according to CONAMA Resolution No. 430 of May 13, 2011, which supplements and amends Resolution No. 357/2005.
Transition to a circular economy	• All activities must be aligned with the guidelines and objectives of the National Circular Economy Strategy, according to Decree No. 12082/2024 (BRASIL, 2024).

Pollution prevention and control	• Activities must be aligned with the National Solid Waste Policy (12305/2010), so that the management of waste generated follows the following order of priority: non-generation, reduction, reuse, recycling, treatment of solid waste, and environmentally appropriate final disposal of waste.
	• Atmospheric emissions (such as CO_2, CO, SO_x, NO_x, particulate matter, and volatile organic compounds) generated by the combustion of biogas must be controlled or reduced, where necessary, within the limits established by the standards in force in the country:
	  • CONAMA Resolution No. 382/2006 (CONAMA, 2006) supplemented by Resolution No. 436/2011 (CONAMA, 2011).
	  • CONAMA No. 491/2018 (CONAMA, 2018).
	  • ANP Resolution No. 886/2022 (ANP, 2020).
	• ABNT NBR 16562/2017 (ABNT, 2017).
	• A continuous stirred tank reactor (CSTR) must be used, which is capable of monitoring solids, pH, temperature, and hydraulic retention time for process efficiency.
	• Including regard to by-products, Chemical Oxygen Demand (COD), Biochemical Oxygen Demand (BOD), heavy metals, pathogens, and micropollutants should be analyzed.
	• Pollutant emission limits must be complied with as determined by legislation or the competent environmental body.

Do no significant harm (to any of the following objectives):	
Reduction of socio-economic inequalities, considering racial and gender aspects	• Annex A1: Do no significant harm criteria for social-economic Objective 9.

Source: Own elaboration.

E11: Treatment and disposal of non-hazardous waste (landfill gas capture)

CNAEs:

- 38.21-1: Treatment and disposal of non-hazardous waste
- 35.20-4: Gas production; natural gas processing; distribution of gaseous fuels through urban networks

Description:

This category covers the treatment and final disposal of non-hazardous waste, with a focus on sanitary landfills and the installation of infrastructure to capture and use biogas in landfills or permanently closed cells. This process involves the use of new or additional equipment installed during or after closure.

Landfill biogas can be converted into electricity, heat or biomethane for use in natural gas networks or as fuel for vehicles, supporting renewable energy targets and the reduction of greenhouse gas emissions. Capturing methane, a powerful greenhouse gas, helps mitigate climate change by reducing emissions.

Examples of activities:

- Operation of landfills for the management of non-hazardous waste with biogas recovery

Out-of-scope activities:

- Incineration and combustion of hazardous waste
- Construction of solid waste landfills

Substantial contribution to Objective 1 — Climate change mitigation

To qualify as a substantial contribution, the activity of treating and disposing of non-hazardous waste (landfill gas capture) must meet all of the following criteria:

A. A maintenance and monitoring plan is required, ensuring that the systems are operated safely and always preventing uncontrolled emissions of biogas and biomethane.

B. The biogas produced must be used in activities[37] provided for under this taxonomy, such as vehicular use, residential, commercial, industrial, energy generation (i.e., electricity and/or heat), application in the chemical sector, injection into the piped distribution system, among other activities carried out in a sustainable manner, provided that the quality parameters established by current regulations are met.[38]

C. The intake of waste in sanitary landfills or landfill cells where the gas capture system has recently been installed, extended or adapted should definitively stop; the intake and disposal of new waste should not be allowed.

[37] The activities in which biogas and biomethane are used must respect the regulatory emission targets established by the Fuel of the Future Act (Law No. 14.993/2024), according to the type of use and in compliance with the technical standards defined by the ANP and the competent environmental bodies.

[38] As established in ANP Resolution No. 886/2022, or in current regulations that may replace it.

D. The system must comply with national regulations, and the monitoring plan must be in line with international best practices.[39]

[39] An example of practice: https://www.globalmethane.org/documents/toolsres_lfg_IBPGcomplete.pdf).

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):	
Climate change adaptation	• N.A.
Protection and restoration of biodiversity and ecosystems	• Waste activities must comply with Brazil's environmental protection laws, licensing requirements, and implementation measures to prevent contamination, ensuring that the disposal and handling of waste does not cause groundwater pollution or ecological damage.
Conservation and sustainable management and use of soil and forests	• Ensure that there is no interference with Conservation Units, APP, or other legally protected areas, except in cases where it is unequivocally proven that alternatives that minimize environmental impacts are not feasible.
Sustainable use and protection of water and marine resources	• Solid waste management activities will ensure that operations do not compromise the quality of groundwater sources, maintaining levels that support all ecosystem activities and the multiple uses of water by the community.
Transition to a circular economy	• All activities must be aligned with the guidelines and objectives of the National Circular Economy Strategy, according to Decree No. 12082/2024 (BRASIL, 2024).
Pollution prevention and control	• The permanent closure, rehabilitation, and post-closure care of old landfills where landfill gas capture systems are installed must comply with national and international provisions. This includes adherence to guidelines such as the Global Methane Initiative's International Best Practices Guide for Landfill Gas Energy Projects (EPA, 2012). • Atmospheric emissions from the combustion of landfill gas, such as SO_X, NO_X, and particulate matter, should be controlled and, where necessary, reduced. This can be done by installing filters or other emission reduction technologies to prevent harmful particles from dispersing into the atmosphere. Emissions must remain within the limits established by Brazilian national regulations and, where applicable, international standards. • The entire landfill gas capture process, from installation to operation and post-closure care, must comply with environmental regulations designed to protect the quality of air, soil, and water resources. • After the closure of the landfill, ongoing monitoring and care of the site will be required to ensure that the landfill's gas capture system operates effectively and does not generate harmful emissions. The post-treatment phase should involve regular inspection, gas monitoring, and environmental assessments to detect and address any potential risks or faults in the system. • Activities must be aligned with the PNRS, so that the management of waste generated follows the following order of priority: non-generation, reduction, reuse, recycling, treatment of solid waste, and environmentally appropriate final disposal of waste. • As part of environmental monitoring, it is recommended to assess soil quality based on CONAMA Resolution No. 420/2009, including prevention and investigation values, as well as managing contaminated areas through diagnoses, investigations,

Do no significant harm (to any of the following objectives):	
	and corrective measures. For atmospheric emissions, monitoring must cover particles (PM2.5, PM10), primary gases (CH_4, CO_2, H_2S, NH_3) and volatile organic compounds (VOCs), with a frequency and methodology based on CONAMA resolutions No. 382/2006, No. 436/2011, and No. 506/2024. Atmospheric dispersion studies must also be carried out after the first year of measurements and data made available to the environmental agency. • Respect pollutant emission limits as determined by legislation or the competent environmental body.
Reduction of socio-economic inequalities, including racial and gender disparities	• Annex A1: Do no significant harm criteria for social-economic Objective 9.

Source: Own elaboration.

E12: Construction of urban solid waste landfills

CNAEs:

- 38.2: Waste treatment and disposal
- 42.0: Infrastructure works[40]

Description:

Development and implementation of advanced engineering infrastructures for the environmentally appropriate final disposal of urban solid waste on the ground, prioritizing the minimization of environmental impacts, including integrated leaching collection, drainage, and treatment systems and/or units for the sustainable energy use of the biogas generated.

Examples of activities:

- Construction of new solid waste landfills
- Use of landfill biogas

Out-of-scope activities:

- Incineration and combustion of hazardous and non-hazardous waste
- Operation of existing landfills for the management of non-hazardous waste.

[40] For companies classified under CNAE 42, it is recommended to consult the CNAE F — Construction technical chapter, which describes the specific criteria for infrastructure work activities, aligned with the objectives of the TSB.

Substantial contribution to Objective 1 — Climate change mitigation:

To qualify as a substantial contribution, the construction of solid waste landfills must meet at least one of the following criteria:

- **A.** Implementation of a sanitary landfill in a site where final disposal is not universal (100% of urban solid waste with adequate final disposal) or which is the counterpart to the closure of one or more dumps or controlled landfills.
- **B.** Measures must be implemented to collect, drain, and treat the biogas, with efficient control and monitoring systems, ensuring that the gases can be used for energy. The biogas produced must be used in activities[41] provided for under this taxonomy, such as vehicular use, residential, commercial, industrial, energy generation (i.e., electricity and/or heat), application in the chemical sector, injection into the piped distribution system, among other activities carried out in a sustainable manner, provided that the quality parameters established by current regulations are met.[42]
- **C.** Installation of a waste recovery unit on site to maximize the separation of reusable and recyclable solid waste and minimize the volume of waste for environmentally appropriate final disposal.

In all cases, projects must be accompanied by the following practices:

- **A.** Drainage and treatment of leaching: measures must be implemented to ensure that the leaching generated by the landfill is properly drained and treated in order to meet the standards of the receiving water body. Furthermore, it is preferable to adopt good practices, such as controlling rainwater infiltration and producing reuse water from the treated effluent for use in non-potable applications.
- **B.** Landfill closure plan and aftercare: a closure plan should be drawn up detailing how and when the landfill will be closed, as well as the measures adopted after closure, such as monitoring and vector control and the use of biogas.
- **C.** Advanced biological treatment: addition of anaerobic reactors followed by aerobic processes to treat complex leaching with high organic load and nutrients, significantly reducing BOD.
- **D.** Advanced waterproofing barriers: implementation of state-of-the-art geomembranes combined with high-conductivity drainage layers to prevent rainwater infiltration and improve leaching collection.
- **E.** Modular treatment systems: modular units that combine different technologies, such as advanced filtration, coagulation, chemical precipitation, and UV disinfection, allowing adjustment to the specific conditions of the leachate.
- **F.** Reuse of treated effluents: integration of polishing systems (ultrafiltration and UV disinfection) to guarantee the production of safe reuse water for non-potable applications, such as irrigation or vehicle washing.

Note: Biogas, biochemical gas (GBQ) or landfill gas is generated in all landfills where organic waste decomposes. Biogas is a natural by-product of the anaerobic biological decomposition of the organic fraction of solid waste. The gases are mainly composed of CH_4 and CO_2, but can contain other components in small quantities, such as nitrogen, oxygen, sulphides, disulphides, mercaptans, volatile organic compounds (VOCs), ammonia, hydrogen, carbon monoxide, water vapor, and other organic gases.

[41] The activities in which biogas and biomethane are used must respect the regulatory emission targets established by the Fuel of the Future Act (Law No. 14.993/2024), according to the type of use and in compliance with the technical standards defined by the ANP and the competent environmental bodies.
[42] As established in ANP Resolution No. 886/2022, or in current regulations that may replace it.

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):	
Climate change adaptation	• Landfills located in areas susceptible to flooding must ensure that they do not obstruct rainwater drainage, reduce temporary storage capacity, or drag waste away. • The internal roads of the landfill must be properly constructed to ensure safe and unobstructed access to the unloading site, regardless of weather conditions. Separate lanes for machinery traffic may be necessary to ensure efficient operations.
Protection and restoration of biodiversity and ecosystems	• Implement effective bird control measures, such as proper covering of waste, to limit animal attraction and prevent birds from nesting or breeding on the site. • Landfills should not be located in areas that affect critical fauna and flora habitats, including conservation, environmental, and wildlife protection units.
Conservation and sustainable management and use of soil and forests	• Ensure that there is no interference with Conservation Units, APP, or other legally protected areas, except in cases where it is unequivocally proven that alternatives that minimize environmental impacts are not feasible. • Make sure that the area destined for the landfill has an environmental and social management plan and meets the requirements set out in environmental regulations and licenses. • Ensure prior consultation with stakeholders and the local community before landfill operations begin.
Sustainable use and protection of water and marine resources	• Prevent diffuse sources of pollution from spreading into water bodies or water tables, including wetlands, by complying with the requirements established in water quality management plans or environmental licenses. • Carry out a hydrogeological assessment to verify possible impacts on groundwater quality and draw up a risk mitigation plan.
Transition to a circular economy	• All activities must be aligned with the guidelines and objectives of the National Circular Economy Strategy, according to Decree No. 12082/2024 (BRASIL, 2024). • The waste recovered at the on-site sorting unit should be sent for recycling.
Pollution prevention and control	• Ensure adequate separation between rainwater, leaching, and groundwater to avoid cross-contamination and protect water quality. • Implement daily covering techniques, such as the application of topsoil or alternatives such as tarpaulins or synthetic materials, to control odors, pests, and the dispersion of particulate matter into the atmosphere. • Procedures for cleaning the wheels of trucks and machinery must be rigorously applied to prevent mud or debris from being carried onto public roads. Measures such as the extension of paved internal roads, the use of mechanical sweepers, wheel washing facilities, and effective maintenance of internal roads may be necessary. • Containment measures may be necessary to prevent the scattering of waste, such as scavenging along access roads and buffer zones, the installation of portable or

Do no significant harm (to any of the following objectives):	
	semi-permanent fences, and the proper handling of light waste in order to reduce the dispersal of waste inside and outside the landfill. • Respect pollutant emission limits as determined by legislation or the competent environmental body.
Reduction of socio-economic inequalities, considering racial and gender aspects	• Annex A1: Do no significant harm criteria for social-economic Objective 9.

Source: Own elaboration.

E13: D18: Research, development and innovation activities for the sector

CNAEs:

- 71.0: Architecture and engineering services; technical testing and analysis
- 72.10-0: Research and experimental development in physical and natural sciences

Description:

This category covers activities related to research, development, and implementation of innovative solutions, processes, technologies, and business models aimed at reducing, eliminating, or preventing emissions in the CNAE E sector. It also includes individual measures and professional services needed to ensure that economic activities comply with the objectives of the TSB. The solutions developed must demonstrate their ability to contribute significantly to the climate change mitigation objective of the sector's activities.

Out-of-scope activities:

Activities linked to the improvement of technologies and processes for the use of fossil fuels.

Substantial contribution to Objective 1 — Climate change mitigation

Creation of intangible assets and conduction of research, development, and innovation activities explicitly aimed at facilitating compliance with the TSB's substantial contribution criteria and achieving the limits established for the CNAE E sector.

Objective 2 — Climate change adaptation

The water sector is fundamental to the economic and social development of Brazil. Although the country has vast water resources, access to drinking water and adequate sanitation remains a significant challenge in many regions, especially in rural areas and vulnerable urban zones. These challenges are exacerbated by the impacts of climate change, including shifts in rainfall patterns, longer and more severe droughts, and an increase in the occurance of extreme weather events. In this context, adapting the water sector to climate change is fundamental to ensuring water security, public health, and environmental sustainability in the country.

Brazil has recognized the importance of water sector adaptation in its climate and environmental policy frameworks (Brazilian Ministry of Environment and Climate Change, 2025). Adaptation strategies focus on improving water infrastructure, promoting sustainable water management, and protecting and restoring river basins. Directing investments towards projects that increase water resilience is essential for promoting the conservation and sustainable use of water. In doing so, Brazil not only mitigates the risks associated with climate change but also improves the living conditions of its population.

Categories of eligible activities

- EA1: Construction/expansion/operation/modernization of water supply systems
- EA2: Construction/expansion/operation/modernization of sanitary sewage treatment systems
- EA3: Investment in water efficiency projects
- EA4: Ecosystem improvement projects in watershed areas
- EA5: Rainwater drainage and management
- EA6: NbS or ecosystem-based adaptation (EbA) projects for drought prevention and/or protection
- EA7: Wetland restoration
- EA8: Rainwater drainage and management using Sustainable Urban Drainage Systems (SUDS)

Criteria for substantial contribution: types of technical criteria applied

Qualified activities and measures in the water, sewage, waste management, and decontamination sector apply the following types of technical criteria:

- **Directly qualified:** activities or measures with low risk of poor adaptation and high potential for a substantial contribution to Adaptation do climate change are directly qualified.
- **Quantitative/verifiable criteria:** substantial contribution criteria for activities that are based on verifiable indicators (e.g., % of water savings, design return periods for hydraulic systems etc.)
- **Qualitative criteria:** substantial contribution criteria determined by a set of qualitative criteria and verifications (e.g., forest management plan, audit, stakeholder engagement, etc.).
- **Vulnerability assessment:** for any other measure not listed in the Adapted and Enabling activities and measures, a detailed vulnerability assessment is required to demonstrate that the activity/measure mentioned contributes to improving the sector's resilience. This applies to both adapted and enabling activities/measures. The methodology for this assessment is described in Annex A2.

How to use these criteria:

Listed below are the activities and measures that have specific criteria for making a substantial contribution to the Climate change adaptation objective. The activities are defined as those that are economic activities that generally have a CNAE code, while measures are the smaller-scale components of an activity. Each activity and measure indicate the threat (or threats) it addresses. In addition to this, it is also possible to present a vulnerability assessment along with an activity aimed at mitigating its risk. The criteria for this assessment are described in Annex A2. All measures with a substantial contribution to the Climate change adaptation objective must also meet the cross-cutting DNSH criteria presented in Table 1.

Adapted and enabling activities and measures

EA1: Construction/expansion/operation/modernization of water supply systems

CNAEs:

- 42.22-7/01: Construction of water supply networks, sewage collection, and related constructions, except irrigation works

Description

Construction, expansion, operation, and/or renovation of systems for collecting, storing, treating, and supplying water for human consumption from the extraction of natural resources from surface or groundwater sources. The activity includes collecting the water resource, treating it to ensure that the quality of the water complies with current legislation, storing it and distributing it to the population and commercial operators through pipeline systems. Irrigation and the extraction of water resources for the desalination of seawater or brackish water are not included in the economic activity.

Threats

Water stress

Substantial contribution to Objective 2 — Climate change adaptation:

The activity must comply with the following corresponding criteria:

<u>Storage systems</u>

- Before implementing any rainwater harvesting system, it is essential to carry out a site assessment. This includes hydrography, topography, soil type, rainfall intensity, natural threats, and other environmental and geographical factors.
- The project must be appropriate to the size of the harvesting and the local water needs. The storage capacity, the expected flow, and the ideal location of the harvesting systems must be taken into account.
- If rainwater is planned to be used for human consumption, the need for additional treatment, such as filtration and disinfection, should be considered.
- In the case of rainwater harvesting at the collection level, it is important to adopt an integrated water management approach that considers the relationship between surface water and groundwater, as well as socio-economic and environmental aspects.

Note: the design of rainwater harvesting systems, both for surface runoff and catchments, can vary according to the context and local conditions. Rainwater used for non-potable and potable purposes should always be treated to reflect the intended end use and sanitary precautions must be taken, such as purple segregated networks and warnings to users at the points of consumption (ABNT, 2020).

- These investments are always qualified:

- Roofs, sidewalks, and other impermeable surfaces to capture rainwater.
- Gutters and pipelines to direct the water to the storage system.
- Storage systems can be underground tanks, elevated tanks, cisterns, or reservoirs, depending on the availability of space and water requirements.
- Suitable filtration systems to remove contaminants and sediments from the water before storage.

Operation of existing water supply systems

For the operation of an existing water supply system that provides water of sufficient and healthy quality to consumers and contributes to the efficiency of water use, the activity must meet the following criteria:

- The system's leakage level is monitored regularly, and total losses are less than 20% of the total water supplied.
- Water supply systems include metering at the consumer level, where water is delivered to a contractual delivery point of the consumer's drinking water distribution system.

New water supply systems

For the construction and operation of a new water supply system or the extension of an existing system that supplies water to new areas or improves the supply to existing areas, the activity meets the following criteria:

- The new system or extension must have leakage detection systems and a maintenance, and operations plan to minimize losses.
- The water supply system includes metering at the consumer level, where water is supplied to a contractual delivery point of the consumer's drinking water distribution system.

Renovation of existing water supply systems

For the renovation of existing water supply systems, the activity meets the following criteria:

- The activity reduces the gap by at least 20% between the current level of leakage and the three-year average.
- The current level of leakage, averaged over three years, is calculated over the length of the specified part of a water distribution (supply) network where the works are carried out.

Do no significant harm

In addition to the criteria described in the table below, the DNSH criteria for the social-economic objective of reducing socio-economic inequalities, considering gender and race aspects, listed in Annex A1, must also be met, along with the cross-cutting DNSH criteria specific to the Climate change adaptation objective.

Do no significant harm (to any of the following objectives):	
Climate change mitigation	• N.A.
Protection and restoration of biodiversity and ecosystems	• Collection activities for raw water, whether surface or underground, must guarantee ecological[13] and/or environmental[14] flow, in order to meet the minimum criteria for aquatic ecosystems and the multiple uses of the watershed areas. They must also comply with current environmental legislation and the right of use permit for water resources, avoiding over-extraction or ecological damage.

Conservation and sustainable management and use of soil and forests	• Only projects whose implementation is appropriate to the uses permitted in Conservation Units, PPA, or other legally protected areas will be allowed, provided that the use of alternatives that minimize environmental impacts is proven.
Sustainable use and protection of water and marine resources	• In the case of desalination, priority should be given to alternatives for the integrated use of effluent with a high concentration of salts, promoting its reuse and closing the cycle, except in cases where the technical and economic unfeasibility of these alternatives is unequivocally proven, with the effluent being disposed of without affecting the ecosystem and with authorization from the competent bodies. • The activities must be in line with the principles and guidelines of the National Water Resources Policy (Law No. 9433/1997), in order to guarantee the rational and integrated use of water resources, and to ensure that current and future generations have the necessary availability of water, at quality standards appropriate to the respective uses of the water (BRASIL, 1997). • PNMA (Law No. 6938/1981), CONAMA Resolutions 357/2005, 274/2000, and 430/2011.
Transition to a circular economy	• All activities must be aligned with the guidelines and objectives of the National Circular Economy Strategy, according to Decree No. 12082/2024 (BRASIL, 2024).
Pollution prevention and control	• Activities must be aligned with the National Solid Waste Policy (12305/2010), so that the management of waste generated follows the following order of priority: non-generation, reduction, reuse, recycling, treatment of solid waste, and environmentally appropriate final disposal of waste. • All systems must meet the minimum criteria of the technical standards for the design and construction of water supply systems, and water treatment activities must meet the drinking water standards for human consumption (Ordinance GM/MS No. 888/2021) or the applicable regulations in force.
Reduction of socio-economic inequalities, including racial and gender disparities	• Annex A1: Do no significant harm criteria for social-economic Objective 9.

Source: Own elaboration.

EA2: Construction/expansion/operation/modernization of sanitary sewage treatment systems

CNAEs:

- 42.22-7/01: Construction of water supply networks, sewage collection, and related constructions, except irrigation works

Description
Construction, expansion, improvement, operation, and renovation of sanitary sewage infrastructure in urban areas, including treatment stations, sewage networks, rainwater drainage and management structures, sanitary sewage infrastructure connections, decentralized facilities for sanitary sewage treatment, including individual systems and other appropriate ones, as well as discharge structures for treated effluent. The activity can include innovative and advanced treatments, including the removal of micro-pollutants.

Threats
Flood damage

Substantial contribution to Objective 2 — Climate change adaptation:
The activity must meet the following criteria:

A. Before implementing any sewage disposal system, it is essential to carry out a site assessment. This includes hydrography, topography, soil type, natural threats (such as flooding), and other environmental and geographical factors.
B. The sanitary sewage treatment system does not affect the good state and ecological potential of water systems and contributes to their improvement. Information on discharge parameters must be updated regularly and be available for external audit.
C. The system complies with the discharge requirements of local authorities and contributes to the good environmental status of marine waters.
D. The system has a secondary collection and treatment system, in compliance with current environmental standards (e.g., control of discharges to surface waters, sewage treatment, protection of groundwater, and coastal waters (ABNT, 1987), (MMA, 2005), (MMA, 2011), (ABNT, 2024)).
E. For projects with a capacity exceeding 100,000 population equivalents,[43] sludge treatment using anaerobic digestion or technology with a similar or lower net energy demand should be prioritized.
F. A water protection and use management plan should be developed in consultation with relevant stakeholders to ensure that: 1) the impact of activities on the identified good ecological status or potential of potentially affected water bodies is assessed and 2) degradation or reduction of this good ecological status or potential is avoided.

Do no significant harm:
In addition to the criteria described in the table below, the DNSH criteria for the social-economic objective of reducing socio-economic inequalities, considering gender and race aspects, listed in Annex A1, must also be met, along with the cross-cutting DNSH criteria specific to the Climate change adaptation objective.

Do no significant harm (to any of the following objectives):	
Climate change mitigation	• N.A.
Protection and restoration of biodiversity and ecosystems	• N.A.

[43] Population equivalent (p.e.) means the biodegradable organic load with a five-day biochemical oxygen demand (BOD5) of 60g of oxygen per day.

Conservation and sustainable management and use of soil and forests	• Only projects whose implementation is appropriate to the uses permitted in Conservation Units, PPA, or other legally protected areas will be allowed, provided that the use of alternatives that minimize environmental impacts is proven.
Sustainable use and protection of water and marine resources	• The characteristics of the treated sewage must comply with the following regulations: o CONAMA Resolution 357/2005 (CONAMA, 2005) supplemented by CONAMA Resolutions 274/2000 (CONAMA, 2011) and 498/2020 (CONAMA, 2020), or more restrictive environmental legislation. o PNMA (Law No. 6938/1981). o ABNT NBR 9800:1987 (ABNT, 1987) .
Transition to a circular economy	• All activities must be aligned with the guidelines and objectives of the National Circular Economy Strategy, according to Decree No. 12082/2024 (BRASIL, 2024).
Pollution prevention and control	• Reduce contaminants and pathogens to acceptable levels, in accordance with: • CONAMA Resolution 357/2005 (CONAMA, 2005) supplemented by CONAMA Resolution 430/2011 (CONAMA, 2011), or more restrictive environmental legislation. • ABNT NBR 9800:1987 (ABNT, 1987) ABNT NBR 17076:2024 (ABNT, 2024). • Activities must be aligned with the National Solid Waste Policy (12305/2010), so that the management of waste generated follows the following order of priority: non-generation, reduction, reuse, recycling, treatment of solid waste, and environmentally appropriate final disposal of waste. • Respect pollutant emission limits as determined by legislation or the competent environmental body.
Reduction of socio-economic inequalities, considering racial and gender aspects	• Annex A1: Do no significant harm criteria for social-economic Objective 9.

Source: Own elaboration.

EA3: Investment in water efficiency projects

CNAEs:

- 30.00-6/00: Water collection, treatment, and distribution

Description

Reducing freshwater consumption helps to reduce pressure on water resources, relieving demand on supply systems and strengthening water security at a national level.

Threats

Water stress

Substantial contribution to Objective 2 — Climate change adaptation:

The activity must comply with any of the following:

A. Activities, systems, and/or technologies that generate a reduction of at least 25% in the annual water consumption of economic activities, such as in the construction sector, industrial processes, buildings with efficient systems, and creation of different products or services.
B. Reuse of water, in closed systems, with the aim of minimizing annual water consumption in the facilities by 25%, as well as recovery and reuse of water in processes.
C. Those that produce a minimum 20% reduction in annual water consumption per product unit.

Do no significant harm:
The criteria of do no significant harm the socio-economic objective of reducing socio-economic inequalities, considering gender and race aspects, listed in Annex A1, must be met, along with the cross-cutting DNSH criteria specific to the Adaptation do climate change objective.

EA4: Ecosystem improvement projects in watershed areas

CNAEs:
- 02.30-6: Support activities for forestry production

Description
These projects aim to improve the conditions of water collection areas intended to supply the population. To this end, integrated actions are implemented, such as the conservation of river basins, the expansion of forest cover, and the continuous monitoring of water quality. These initiatives aim, first and foremost, to improve soil characteristics, favoring infiltration and recharging of aquifers, contributing as well as to carbon capture and storage, promoting environmental and social benefits in line with sustainable management practices.

Threats
Water stress

Substantial contribution to Objective 2 — Climate change adaptation:
The activity is qualified if it meets all the following criteria:

A. Forest management plan or equivalent instrument: the activity takes place in an area that is subject to a forest management plan or equivalent management instrument, which demonstrates clear soil and water protection, biodiversity conservation, and/or related ecosystem services objectives, including social issues. This includes an analysis of the impacts and pressures on habitat conservation, logging conditions, and the impacts of other activities that affect conservation objectives, such as hunting and fishing, agricultural, pastoral and forestry activities, and industrial, mining and commercial activities in the project area.
    i. The activity must follow the guidelines of the National Forest Law and Policies in Brazil (Governo Federal do Brasil, 2012).
    ii. The forest management plan or equivalent instrument must cover a period of 10 years or more and must be updated regularly, verifying practices in the forestry sector. The activity must not involve the degradation of lands with high carbon stocks.
    iii. The forest management plan or equivalent instrument must include a monitoring plan to ensure the accuracy of the information contained in the plan, with regard to data related to the affected area.
B. Audits: Within two years of the start of the activity and every ten years thereafter, the activity's compliance with the criteria of substantial contribution to climate and environmental objectives must be verified by any of the following means:
C. The competent national authorities.
D. An independent third-party certifier, at the request of the national authorities or the operator of the activity. To reduce costs, audits can be carried out in conjunction with any forestry, climate certification, or other audits. The independent certifier must not have any conflict of interest with the owner or financier and must not be involved in the development or operation of the activity.
E. Group assessment: compliance with positive impacts should be verified with a group of stakeholders that is sufficiently homogeneous to assess the sustainability risk of the forestry activity, provided that all stakeholders have a long-standing relationship with each other and participate in the activity, and that the group of these properties remains the same in all subsequent audits.

F. The projects must be carried out by personnel qualified in restoring or conserving the ecosystems.

Do no significant harm:
The criteria of do no significant harm the socio-economic objective of reducing socio-economic inequalities, considering gender and race aspects, listed in Annex A1, must be met, along with the cross-cutting DNSH criteria specific to the Adaptation do climate change objective.

EA5: Rainwater drainage and management

CNAEs:
- 42.22-7/01: Construction of water supply networks, sewage collection, and related constructions, except irrigation works

Description
Rainwater is the natural precipitation of rain. Effective rainwater management requires the implementation of appropriate measures to mitigate surface runoff, ensure safe transportation, and promote the treatment required, ensuring water quality according to its various uses.

Threats
Flood damage

Substantial contribution to Objective 2 — Climate change adaptation:
The activity must meet the following criteria:
A. Prioritize systems based on the use of green infrastructure, such as sustainable drainage systems (SUDS) (these systems must comply with the criteria for the SUDS activity in EA8).
B. If a green infrastructure is not feasible, consider conventional systems, but designed taking into account changes in climate for longer return periods and rainfall intensity. The following return periods should be considered when designing rainwater systems (SNSA, 2022):
- Microdrainage — residential: Return period of at least 10 years
- Microdrainage — commercial: Return period of at least 10 years
- Microdrainage — airports: Return period of at least 10 years
- Macrodrainage — residential: Return period of at least 50 years (at least 100 years for high-density areas)
- Macrodrainage — commercial: Return period of at least 50 years (at least 100 years for high-density areas)

C. For the construction of these systems, consult the National Water Resources Plan (*Plano Nacional de Recursos Hídricos*, PNRH), the local, state, or national Building and Construction Code and the ABNT Technical Standards for the building's characteristics (MDIC, 2022) (Governo Federal do Brasil, 1997), (ABNT, s.d.).

Do no significant harm:
In addition to the criteria described in the table below, the DNSH criteria for the social-economic objective of reducing socio-economic inequalities, considering gender and race aspects, listed in Annex A1, must also be met, along with the cross-cutting DNSH criteria specific to the Climate change adaptation objective.

Do no significant harm (to any of the following objectives):	
Climate change mitigation	• N/A
Protection and restoration of biodiversity and ecosystems	• N/A
Conservation and sustainable management and use of soil and forests	• N/A
Sustainable use and protection of water and marine resources	• N/A
Transition to a circular economy	• N/A
Pollution prevention and control	• A management plan must be in place for the waste, sludge, or sediment generated in the system (pollution prevention and control). Establish an operations and maintenance plan.
Reduction of socio-economic inequalities, including racial and gender disparities	• N/A

Source: Own elaboration.

EA6: NbS or ecosystem-based adaptation (EbA) projects for drought prevention and/or protection

CNAEs:

- 36.00-6/01: Water collection, treatment, and distribution
- 42.99-5/99: Other civil engineering work not previously specified
- 02.30-6: Support activities for forestry production
- 42.22-7/01: Construction of water supply networks, sewage collection, and related constructions, except irrigation works

Description:
Water resource management systems based on NbS can be designed for the collection, storage, treatment, or distribution of raw water, as well as for mitigating the impacts of floods or periods of drought. These systems incorporate natural or bio-inspired resources, processes, and functions as essential components to meet the demands related to water management, promoting the sustainability and resilience of natural resources.

Threats
Water stress/Flood damage

Substantial contribution to Objective 2 — Climate change adaptation:
The activity is qualified if it meets the following criteria:

A. The activity is identified as a flood risk reduction or drought risk reduction measure, either in a river basin-scale water protection and use management plan or in an integrated coastal zone management plan. These plans pursue flood and drought risk management objectives, to reduce the adverse consequences, where appropriate, for human health, the environment, cultural heritage, and economic activity.
B. The risks of environmental degradation related to water quality conservation and water stress prevention, as well as prevention of deterioration of the affected water bodies, are identified and addressed in order to achieve good water status and good ecological potential, in accordance with a river basin management plan, developed for the potentially affected water body or bodies, in consultation with relevant stakeholders.
C. The activity includes nature restoration or conservation actions that demonstrate specific benefits for the ecosystem, with a clearly defined timetable. Local stakeholders are involved right from the start in the planning and design phase.
D. A monitoring program is in place to assess the effectiveness of an NbS plan to improve the status of the affected water body, achieve conservation and restoration targets, and adapt to climate condition changes. The program is revised following the regular approach of river basin management plans (including drought management plans, where appropriate) and flood risk management plans.

Do no significant harm:
In addition to the criteria described in the table below, the DNSH criteria for the social-economic objective of reducing socio-economic inequalities, considering gender and race aspects, listed in Annex A1, must also be met, along with the cross-cutting DNSH criteria specific to the Climate change adaptation objective.

Do no significant harm (to any of the following objectives):	
Climate change mitigation	• N/A
Protection and restoration of biodiversity and ecosystems	• The activity is not harmful to the recovery or maintenance of populations of protected species. • The activity does not harm the recovery or maintenance of affected and protected habitats; it prevents the introduction of invasive exotic species or manages their spread (protection of healthy ecosystems and biodiversity).
Conservation and sustainable management and use of soil and forests	• N/A

Do no significant harm (to any of the following objectives):	
Sustainable use and protection of water and marine resources	• The activity does not imply degradation of the terrestrial and marine environment with high carbon stocks (climate change mitigation).
Transition to a circular economy	• N/A
Pollution prevention and control	• The construction of any civil work must have a construction and demolition waste management plan, ensuring the implementation of the best environmental practices.
Reduction of socio-economic inequalities, including racial and gender disparities	• N/A

Source: Own elaboration.

EA7: Wetland restoration

CNAEs:

- 42.99-5/99: Other civil engineering work not previously specified

Description

The restoration of wetlands allows the recovery of these ecosystems for various purposes, such as biodiversity conservation, habitat expansion, improvements in water quality, protection of coastal areas, and even production projects. For some of these purposes, restoring the physical conditions of the site may be enough to allow the establishment of hydrophilous vegetation; in other cases, it is necessary to modify a greater number of parameters, including topography, substrate characteristics, and even the introduction of species.

Threats

Flood damage

Substantial contribution to Objective 2 — Climate change adaptation:

The activity is qualified if it meets the following criteria:

A. Restoration plan: The area is covered by a restoration plan, which is consistent with the principles and guidelines of the Ramsar Convention on wetland restoration (MMA, 1996). The restoration plan carefully considers local hydrological and soil conditions, including soil saturation dynamics and changes in aerobic and anaerobic conditions. The restoration plan provides for monitoring to ensure the accuracy of the information contained in the plan, considering the area involved data.

B. Analysis of climate benefits: A climate benefits analysis is carried out which shows a net balance of GHG emissions and removals generated by the restoration activity over a 30-year period (project scenario), compared to a baseline reference year in the absence of the restoration activity (actual scenario). The analysis of climate benefits is based on transparent, accurate, consistent, complete, and comparable information, and covers all carbon pools (including above-ground biomass, groundwater biomass, dead wood, litter, and soil). For coastal wetlands, the analysis of climate benefits considers projections of relative sea level rise and the potential for wetland migration.
C. Guarantee of permanence: the permanence of the wetland status of the area in which the activity is carried out is guaranteed by one of the following measures:
   i. The area has been designated for conservation as a wetland and cannot be converted to another land use.
   ii. The area is classified as a protected area.
   iii. The area is subject to a legal or contractual guarantee that it will remain a wetland.
D. Audit: within two years of the start of the activity and every ten years thereafter, the activity's compliance with the substantial contribution criteria to climate and environmental objectives is verified by any of the following procedures:
   i. The competent national authorities.
   ii. An independent third-party certifier, at the request of the national authorities or the operator of the activity. To reduce costs, audits can be carried out in conjunction with any forestry, climate certification, or other audits. The independent certifier must not have any conflict of interest with the owner or financier and must not be involved in the development or operation of the activity.
E. Stakeholder assessment: compliance with positive impacts should be verified with a group of stakeholders that is sufficiently homogeneous to assess the sustainability risk of the forestry activity, provided that all stakeholders have a long-standing relationship with each other and participate in the activity, and that the group of these properties remains the same in all subsequent audits. The projects must be carried out by personnel qualified in restoring or conserving the ecosystems.

Do no significant harm:
In addition to the criteria described in the table below, the DNSH criteria for the social-economic objective of reducing socio-economic inequalities, considering gender and race aspects, listed in Annex A1, must also be met, along with the cross-cutting DNSH criteria specific to the Climate change adaptation objective.

Do no significant harm (to any of the following objectives):	
Climate change mitigation	• N/A
Protection and restoration of biodiversity and ecosystems	• Carry out monitoring and surveillance of agricultural activities in areas of influence on the ecosystem, in order to avoid impacts from indirect activities due to the use of pesticides and chemical fertilizers. • There is no conversion of habitats specifically sensitive to biodiversity loss or of high conservation value, or of areas set aside for the restoration of such habitats in accordance with national legislation. • The plan mentioned in the first point (Restoration plan) of this section includes provisions to maintain and, where appropriate, enhance biodiversity in accordance with national and local provisions. • In order to guarantee the good conservation status of the habitat and the maintenance of species typical of the habitat, the use or release of invasive species must be excluded.
Conservation and sustainable	• N/A

Do no significant harm (to any of the following objectives):	
management and use of soil and forests	
Sustainable use and protection of water and marine resources	• N/A
Transition to a circular economy	• N/A
Pollution prevention and control	• N/A
Reduction of socio-economic inequalities, including racial and gender disparities	• N/A

Source: Own elaboration.

EA8: Rainwater drainage and management using SUDS

CNAEs:

- 42.99-5/99: Other civil engineering work not previously specified

Description

Activity that implements sustainable urban drainage systems to retain and treat rainwater, reducing flooding and water stress.

Threats

Flood damage
Water stress

Substantial contribution to Objective 2 — Climate change adaptation:

The activity leads to the retention of rainwater in a specific area or an improvement in water quality and must meet the following criteria:

A. The construction and operation of the sustainable urban drainage system must be integrated into the urban drainage network and must provide for the construction and expansion of permeable urban surfaces and consider the adoption of nature-based solutions. If there is no urban drainage network, provide for the implementation of drainage solutions based on the information above. It must be demonstrated as well, through a flood risk management plan or other relevant urban planning instruments, that the activity contributes substantially to achieving the good status and ecological potential of surface and groundwater bodies or to preventing the deterioration of water bodies.

B. The following return periods must be considered when designing rainwater systems (SNSA, 2022):

- Microdrainage — residential: Return period of at least 10 years.
- Microdrainage — commercial: Return period of at least 10 years.
- Macrodrainage — residential: Return period of at least 50 years (at least 100 years for high-density areas).
- Macrodrainage — commercial: Return period of at least 50 years (at least 100 years for high-density areas).

The design of the sustainable urban drainage system must also achieve at least one of the following effects:

- A quantified percentage of the rainwater in the harvesting area of the drainage system is retained and discharged with a staggered delay into the receiving water bodies.
- A quantified percentage of pollutants, including oils, heavy metals, hazardous chemicals, and others, are removed from urban runoff before being discharged into receiving water bodies.
- The maximum run-off flow is reduced by a quantified percentage, with a return period in accordance with the requirements of the flood risk management plans or other local provisions in force.

Do no significant harm:

In addition to the criteria described in the table below, the DNSH criteria for the social-economic objective of reducing socio-economic inequalities, considering gender and race aspects, listed in Annex A1, must also be met, along with the cross-cutting DNSH criteria specific to the Climate change adaptation objective.

Do no significant harm (to any of the following objectives):	
Climate change mitigation	• N/A
Protection and restoration of biodiversity and ecosystems	• N/A
Conservation and sustainable management and use of soil and forests	• N/A
Sustainable use and protection of water and marine resources	• N/A
Transition to a circular economy	• N/A

Do no significant harm (to any of the following objectives):	
Pollution prevention and control	• Depending on the source of the receiving water and the different pollutant loads, such as rainwater, roof runoff, road runoff, or rainwater runoff, SUDS treat this water before it is discharged or infiltrated into other natural media. • Establish an operations and maintenance plan.
Reduction of socio-economic inequalities, considering racial and gender aspects	• N/A

Source: Own elaboration.

Qualified measures

Measure	Threats	Criteria
EA9. Installation of leakage detectors in the drinking water distribution network	Water stress	Directly qualified
EA10. Emergency systems for storing and distributing drinking water	Water stress	Directly qualified
EA11. Installation of water meters	Water stress	Directly qualified
EA12. Implementation of automated drinking water loss control systems	Water stress	Directly qualified
EA13. Installation of water resource monitoring equipment	Water stress	Directly qualified
EA14. Installation of rainwater collection systems.	Water stress	Directly qualified
EA15. Creation of warning systems for droughts, floods, and general monitoring of water quality and quantity	Water stress	Directly qualified
EA16. Installation of reuse water systems.	Water stress	Directly qualified
EA17. Expansion of personnel and equipment for fire	Heat stress	Directly qualified

prevention and firefighting services		
EA18. Execution of preventive services and works against vegetation fires, including EbA actions.	Heat stress	Directly qualified
EA19. Set up a monitoring and warning center; and install equipment to monitor weather events	Multi-risk	Directly qualified
EA20. Blue and green infrastructure (e.g., sustainable drainage and green urban spaces)	Flood damage	Analyze and apply the corresponding criteria defined for activities in the water resources, urban planning, or construction sectors. Alternatively, demonstrate climate risk reduction or improved resilience through: • For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; • For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2. Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.
EA21. Adaptation of waste management, collection, and treatment systems to climate change and extreme weather events	Multi-risk	Directly qualified

Source: Own elaboration.

Cross-cutting criteria of do no significant harm (specific approach to Objective 2)

The following criteria apply to all activities and measures listed in the Adapted and enabling activities and measures, as well as any other activity that contributes to the sector's resilience, provided it is backed up by a Vulnerability assessment (Annex A2). The criteria of “do no significant harm” are based on the adoption of complementary criteria to the substantial contribution criteria, with the aim of ensuring that their implementation does not cause adverse impacts on TSB's other climate, environmental, economic and social objectives.

Table 1. Specific do no significant harm criteria for Climate change adaptation (Objective 2).

Do no significant harm:	
Generics	• Aligned assets and activities must adhere to the local regulatory framework and policies relevant to their activity and the territory in which they are carried out, as well as having an environmental management system in place. • Entities implementing economic activities or asset owners must demonstrate the existence of a management system commensurate with the size of the investment and the scale of the project/entity implementing the financing. • The aligned activity must ensure that it does not generate a negative social impact. To do this, they must adhere to the relevant local regulatory framework and policies and have a social management system in place.
Climate change mitigation	• The activity/measure does not negatively affect the mitigation efforts of other public or private agents. • The activity/measure does not lead to an increase in net greenhouse gas emissions. • Economic activity is consistent with sectoral, regional, and/or national mitigation efforts.
Protection and restoration of biodiversity and ecosystems	• New constructions should not be located in areas that are strategic for food security, rich in biodiversity or that serve as habitat for endangered species, such as those protected by national laws or included on the International Union for Conservation of Nature (IUCN) Red List. • If the facilities are close to sensitive areas, such as United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites or protected areas, an assessment must be carried out in accordance with the criteria of the International Finance Corporation’s (*Corporação Financeira Internacional*, IFC) Performance Standard No. 6 or an equivalent national instrument. It is also necessary to implement a long-term biodiversity monitoring program.
Sustainable use and protection of water and marine resources	• Identify, assess, and manage the risks associated with water consumption and quality. Water quality risk analysis tools should be used when available. • If the assets or activities are located in water stress areas, the implementation of water use handling and conservation plans, developed in coordination with the relevant local entities, must be guaranteed.

Do no significant harm:	
Sustainable soil use and conservation, management and sustainable use of forests.	• The activity/measure does not alter the physicochemical and biological integrity of the soil but instead improves the state of this resource.
Transition to a circular economy	• Apply the principles of the Circular Economy (EU Parliament, 2023) or national standards related to the removal and dismantling of plants and infrastructures. • Seek maximum efficiency in the use of materials, promoting reduction, repair, recycling, and reuse, as well as ensuring the proper treatment and disposal of waste, such as batteries or Waste Electrical and Electronic Equipment (WEEE), complying with the principles of extended producer responsibility (ELLEN MACARTHUR FOUNDATION, 2021). • Design and build new facilities so that they are durable and easy to dismantle, renovate, and recycle. • Ensure the proper repair of facilities and equipment, and the accessibility and interchangeability of equipment components.
Pollution prevention and control	• Water dischargers must comply with the permits issued by the competent National Environmental Authority. • Emissions that pollute the air must have the necessary permits and comply with current national legislation, with special attention to hazardous waste. • Integrated management of the waste generated must be carried out by duly authorized waste managers.
Reduction of socio-economic inequalities, considering racial and gender aspects	• Annex A1: Do no significant harm criteria for social-economic Objective 9.

Source: Own elaboration.

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