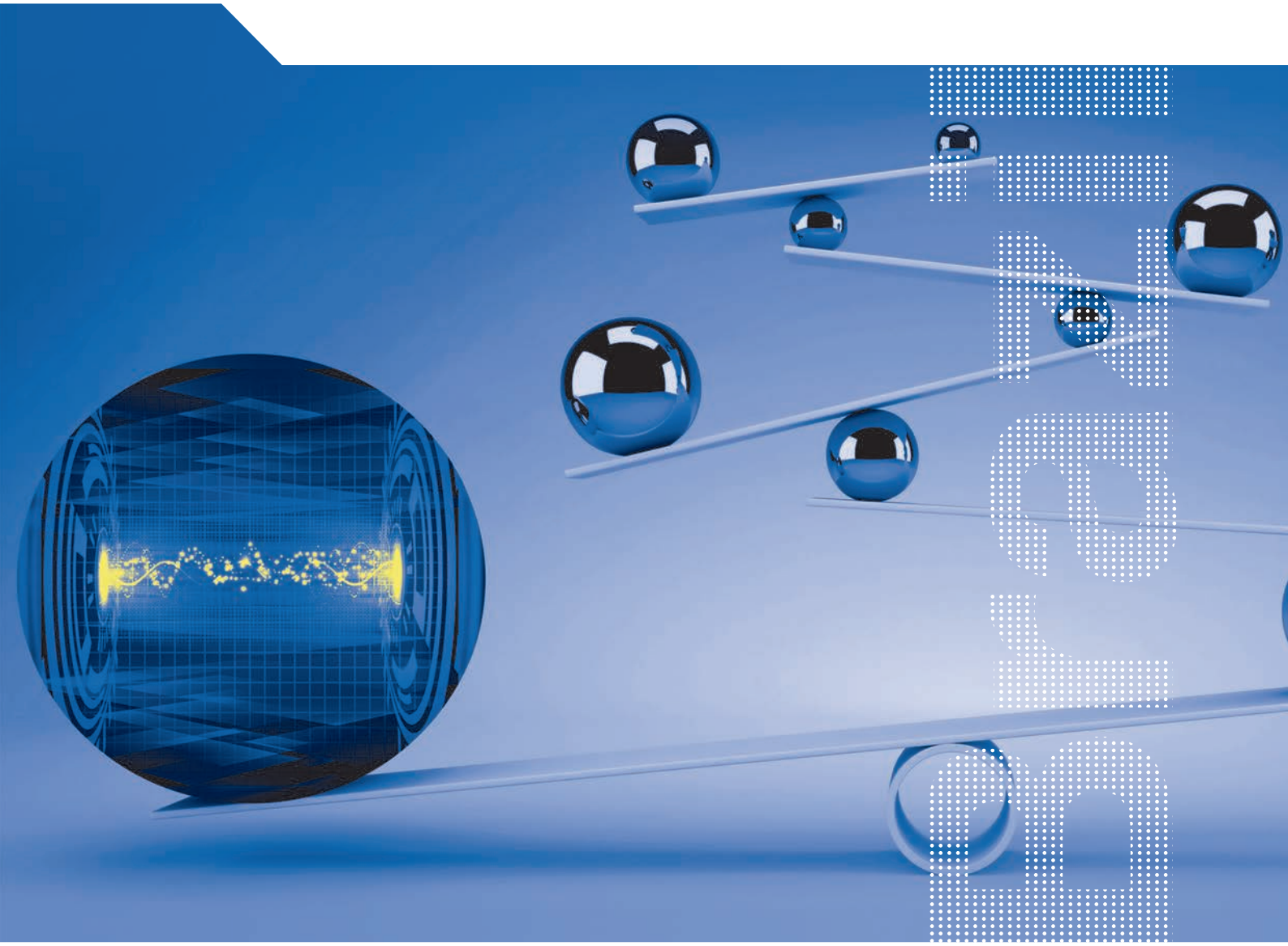
The Governance of Regulators

Driving Performance at Brazil's National Agency for Water and Basic Sanitation



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Foreword

Economic regulators play an important role in ensuring the affordability, quality and accessibility of essential services, such as water and sanitation, as well as promoting the sustainable use of resources to ensure their continued availability. The stakes are high: regulators' actions affect market outcomes and can have strong social and environmental implications. Exogenous shocks, such as the climate crisis, and a fast-changing political, economic and social environment make balancing these outcomes even more challenging. Regulators are expected to provide stability and to design regulations that protect the public interest without impeding innovation. Good governance is essential to ensure the effectiveness of the regulator and support better outcomes, especially in times of change.

Enhancing water resilience and improving the coverage of water supply and sanitation services are high priority issues in Brazil, where over 200 million people rely on hydropower generation for electricity, and nearly 100 million people lack sewage collection and treatment services. Brazil's National Agency for Water and Basic Sanitation (*Agência Nacional de Águas e Saneamento Básico*, ANA) plays a central role in addressing these challenges.

This report applies the OECD Performance Assessment Framework for Economic Regulators (PAFER) to ANA, at the request of the Agency. The OECD developed the PAFER framework to support regulators in assessing and improving their organisational performance and governance structures. The framework, based on the OECD Best Practice Principles on the Governance of Regulators, analyses regulators' internal and external governance, including their organisational structures, behaviour, accountability, processes, reporting and performance management, as well as role clarity, relationships, and distribution of powers and responsibilities with other government and non-government stakeholders.

ANA has a strong track record in water resource management but now faces the challenge of meeting a mandate that extends to water supply and sanitation, where it will develop national reference standards. To effectively take on these new duties, the review recommends that ANA clarify its role, address misalignments between its mandate, mission and regulatory powers in the water supply and sanitation sector, build its economic analysis capability in water and sanitation, and advocate for reforms that would relieve various external constraints affecting the agency.

This review builds on existing OECD work on the water sector in Brazil, most recently a study in 2022 on fostering water resilience, led by the OECD Centre for Entrepreneurship, SMEs, Regions and Cities (CFE), as well as the OECD's *Review of Regulatory Reform of Brazil*. This PAFER review is the second review of its kind concerning a Brazilian regulatory authority, following the review of Brazil's federal electricity regulatory agency (ANEEL) in 2021.

This report is part of the OECD work programme on the governance of regulators and regulatory policy, led by the OECD Network of Economic Regulators and the OECD Regulatory Policy Committee, with the support of the Regulatory Policy Division of the OECD Directorate of Public Governance. The report was presented to the OECD Network of Economic Regulators for comments at its 21st meeting in December 2023 and declassified by written procedure by the Regulatory Policy Committee on 4 March 2024. It was prepared for publication by the Secretariat.

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Abbreviations and acronyms

ABAR	Brazilian Association of Regulatory Agencies *(Associação Brasileira de Agências de Regulação)*
ABDI	Brazilian Agency for Industrial Development (*Agência Brasileira de Desenvolvimento Industrial*)
ABES	Brazilian Association of Water, Sanitation and Environmental Engineering (*Associação Brasileira de Engenharia Sanitária e Ambiental*)
ABRHidro	Brazilian Association of Water Resources (*Associação Brasileira de Recursos Hídricos*)
ACT	Technical Co-operation Agreement (*Acordo de Cooperação Técnica*)
ACTO	Amazon Co-operation Treaty Organization
ADASA	Federal District Agency for Water (*Reguladora de guas e Saneamento do Distrito Federal*)
ANA	Water Agency *(Agência Nacional de Águas)*
ANEEL	National Electricity Regulatory Agency *(Agência Nacional de Energia Elétrica)*
AR	Regulatory Agenda (*Agenda Regulatória*)
ARR	Regulatory Result Assessment (*Avaliação de Resultados Regulatórios*)
ASCOM	Special Social Communication Advisory Unit (ANA) (*Assessoria Especial de Comunicação Social*)
ASGOV	Special Governance Advisory Unit (ANA) (*Assessoria Especial de Governança*)
ASINT	Special International Affairs Advisory Unit (ANA) (*Assessoria Especial Interncional*)
ASPAR	Special Parliamentary Affairs Advisory Unit (ANA) (*Assessoria Especial de Assunots Parlamentares*)
ASREG	Special Regulatory Quality Advisory Unit (ANA) (*Assessoria Especial de Qualidade Regulatória*)
AUD	Internal Audit Unit (ANA) (*Auditoria Interna*)
CAESB	Water and sanitation provider in the Federal District (*Companhia de Saneamento Ambiental do Distrito Federal*)
CEDAE	Water and sanitation provider in Rio de Janeiro state (*Companhia Estadual de Águas e Esgotos do Rio de Janeiro*)
CEHR	State Water Resource Councils (*Conselhos Estaduais de Recursos Hídricos*)
CGU	Comptroller-General of the Union (*Controladoria-Geral da União*)
CIC Plata	Inter-governmental Co-ordinating Committee of the La Plata Basin Countries
CIG	Inter-Ministerial Council of Governance (*Comitê Interministerial de Governança*)

CISB	Inter-Ministerial Sanitation Committee (*Comitê Interministerial de Saneamento Básico*)
CISC	Communication and Information Security Committee (CISC) (*Comitê de Comunicação e Segurança da Informação*)
CMAP	Council for Monitoring and Evaluation of Public Policies (*Conselho de Monitoramento e Avaliação de Políticas Públicas*)
CNARH	National Registry of Water Users (*Cadastro Nacional de Usuários de Recursos Hídricos*)
CNI	National Confederation of Industries (*Confederação Nacional das Indústrias*)
CNRH	National Water Resource Council (*Conselho Nacional de Recursos Hídricos*)
CODIA	Conference of Ibero-American Water Directors (*Conferência de Diretores Ibero-americanos de Água*)
COMPESA	Water and sanitation provider in Pernambuco state (*Companhia Pernambucana de Saneamento*)
COPASA	Water and sanitation provider in Minas Gerais state (*Companhia de Saneamento de Minas Gerais*)
COR	Internal Affairs Unit (ANA) (*Corregedoria*)
ECJ	European Court of Justice
EMBASA	Water and sanitation provider in Bahia state (*Empresa Baiana de Águas e Saneamento S.A.*)
ENAP	National School of Public Administration (*Escola Nacional de Administração Pública*)
ERA	Academy of European Law
EU	European Union
EU EFJE	European Union Forum of Judges for the Environment
EU IMPEL	European Union Network for the Implementation and Enforcement of Environmental Law
FGV	Getulio Vargas Foundation (*Fundação Getulio Vargas*)
FNCBH	National Forum of River Basin Committees (*Fórum Nacional de Comitês de Bacias Hidrográficas*)
GWI	Global Water Intelligence
IBGE	Brazilian Institute of Geography and Statistics (*Instituto Brasileiro de Geografia e Estatística*)
IRB	Rui Barbosa Institute (*Instituto Rui Barbosa*)
IRD	Development Research Institute (*Institut de Recherche pour le Développement*)
MCIDADES	Ministry of Cities (*Ministério das Cidades*)
MDIC	Ministry of Development, Industry and Foreign Trade (*Ministério do Desenvolvimento, Indústria, Comércio e Serviços*)
MF	Ministry of Finance (*Ministério das Finanças*)
MGISP	Ministry of Management and Innovation in Public Services (*Ministério da Gestão e Inovação nos Serviços Públicos*)
MIDR	Ministry of Integration and Regional Development (*Ministério da Integração e Desenvolvimento Regional*)
MME	Ministry of Mines and Energy *(Ministério de Minas e Energia)*
MoU	Memorandum of Understanding

MPO	Ministry of Planning and Budget (*Ministério do Planejamento e Orçamento*)
NER	Network of Economic Regulators
OECD	Organisation for Economic Co-operation and Development
ONS	National System Operator *(Operador Nacional do Sistema Elétrico)*
OUV	Ombudsman Unit (ANA) (*Ouvidoria*)
PAFER	Performance Assessment Framework for Economic Regulators
PAINT	Internal audit planning report (*Plano Annual de Auditoria Interna*)
PEI	Institutional Strategic Plan (*Plano Estratégico Institucional*)
PFA	Federal Attorney's Office (ANA) (*Procuradoria Federal*)
PGA	Annual Management Plan (*Plano de Gestão Anual*)
PLOA	Annual Budget Law Projection (*Projeção de Lei Orçamentária Anual*)
PNRH	National Water Resources Policy (*Política Nacional de Recursos Hídricos*)
PNSB	National policy for Dam Safety (*Política Nacional de Segurança de Barragens*)
PNSH	National Water Security Plan (*Plano Nacional de Segurança Hídrica*)
PPA	Multiyear Plan *(Plano Plurianual)*
PPP	Public-Private Partnership
PROCOMITES	National Programme for Strengthening Basin Committees (*Programa Nacional de Fortalecimento dos Comitês de Bacias Hidrográficas*)
PROGESTÃO	National Pact for Water Management Program (*Programa de Consolidação do Pacto Nacional pela Gestão das Águas*)
PSH	Water Security Programme (*Programa de Segurança Hídrica*)
RAINT	Internal audit results report (*Relatório Annual de Atividades da Auditoria Interna)*
REGLA	Water Rights Information System (*Sistema Federal de Regulação de Uso*)
RHN	National Hydrometeorological Network (*Rede Hidrometeorológica Nacional*)
RIA	Regulatory Impact Assessment
SABESP	*Companhia de Saneamento Básico do Estado de São Paulo*
SAF	Superintendence of Administration, Finance and Personnel Management (ANA) (*Superintendéncia de Administração, Finanças e Gestão de Pessoas*)
SANEPAR	Water and sanitation provider in Paraná state (*Companhia de Saneamento do Paraná*)
SAS	Superintendence of Support for SINGREH and subnational agencies of basic sanitation (ANA) (*Superintendência de Apoio ao SINGREH*)
SFI	Superintendency of Monitoring and Inspections (ANA) (*Superintendência de Fiscalização*)
SGE	General Secretariat Unit (ANA) (*Secretaria-Geral*)
SGH	Superintendence of Hydrological Monitoring (ANA) (*Superintendência de Gestão da Rede Hidrometeorologica*)
SHE	ANA Superintendency for Water and Economic Studies (*Superintendência de Estudos Hídricos e Econômicos*)
SIAFI	Federal Integrated System of Financial Administration (*Sistema Integrado de Administração Financeira do Governo Federal*)

SIGEST	ANA's digital internal risk management application
SINGREH	National Water Resources Management System (*Sistema Nacional de Gerenciamento de Recursos Hídricos)*
SIOP	Federal Integrated Planning and Budget System (*Sistema Integrado de Planejamento e Orçamento*)
SIPEC	Federal Administration's Civil Personnel System *(Sistema de Pessoal Civil da Administração Federal)*
SISCOR	Federal internal control system (*Sistema de Correição do Poder Executivo Federal*)
SISPLANA	ANA's internal budget management system
SITAI	System of Integrity, Transparency and Access to Information (*Sistema de Integridade, Transparência e Acesso à Informação*)
SIWI	Stockholm International Water Institute
SNIRH	National Water Resource Information System (*Sistema Nacional de Informações sobre Recursos Hídricos*)
SNIS	National System of Information on Sanitation (*Sistema Nacional de Informações sobre Saneamento*)
SNISB	National Dam Safety Information System (*Sistema de Segurança de Barragem*)
SNSA	National Secretariat for Environmental Sanitation (*Secretaria Nacional de Saneamento*)
SOE	Superintendence of Critical Events and Reservoir Operations (ANA) (*Superintendência de Operações e Eventos Críticos*)
SPP	Superintendence of Planning, Programmes and Projects (ANA) (*Superintendência de Planos, Programas e Projetos*)
SRB	Superintendence of Regulation of water services and dam safety (ANA) (*Superintendência de Regulação de Serviços Hídricos e Segurança de Barragens*)
SRE	Superintendence of Regulation of Use of Water Resources (ANA) (*Superintendência de Regulação de Usos de Recursos Hídricos*)
SSB	Superintendence of Basic Sanitation Regulation (ANA) (*Superintendência de Regulação de Saneamento Básico*)
STF	Supreme Federal Court (*Supremo Tribunal Federal*)
STI	Superintendency for Information Technology (ANA) (*Superintendência de Tecnologia da Informação*)
TAR	Reference Tariff
TCU	the Federal Court of Accounts *(Tribunal de Contas da União)*
TED	Terms of Decentralised Execution (*Termos de Execução Descentralizada*)
UFC	University of Ceará
UFLA	University of Lavras
UnB	University of Brasilia
UNEP	United Nations Envrionment Programme
UNICEF	United Nations Children's Fund
UN-WATER	United Nations coordinating unit for water and sanitation
USACE	United States Army Corps of Engineers

UWWTD	Urban Waste Water Treatment Directive (Council Directive 91/271/EEC)
WICS	The Water Industry Commission for Scotland
WRM	Water Resource Management
WSS	Water Supply and Sanitation
WWC	World Water Council

Executive summary

Brazil's National Agency for Water and Basic Sanitation (*Agência Nacional de Águas e Saneamento Básico*, ANA), an independent federal regulatory agency, has seen its mandate expanded significantly in recent years. Initially focused on water resource management (WRM), it now also covers aspects of dam safety, and, since 2020, water supply and sanitation (WSS). In the WSS sector, ANA contributes to ambitious national policy goals such as universal service provision, despite the challenges of Brazil's uneven water distribution, external shocks affecting water security and availability, and the country's complex multi-layered governance system. To support ANA at this important juncture, this review identifies six issue areas and provides recommendations.

Clarifying ANA's role and addressing misalignment between ANA's mandate, mission, and regulatory powers

To effectively fulfil its duties, ANA must have powers that align with its mission and mandate, and it is crucial for both ANA and its stakeholders to have a clear understanding of the regulator's role and expected contribution. ANA's wide-ranging activities reflect national policy ambitions, however, a mismatch between roles and regulatory powers in WSS – notably the lack of enforcement powers – may impede its ability to improve consumer outcomes. In WRM, the agency must co-ordinate with subnational stakeholders to align efforts and influence regulatory outcomes.

Key recommendations

- **Identify** and use alternative approaches and channels to increase ANA's impact and encourage compliance with the standards set by the regulator.
- **Manage** expectations around the results that ANA can deliver and when, given the scope of the agency's role and powers, as well as its level of resources and capacity.

Building analytical capabilities in the economics of water and sanitation

ANA has developed a strong reputation and expertise in water resource management. To fulfil its expanded responsibilities in the WSS sector, ANA needs to build analytical capability in the economics of water and sanitation. At the same time, ANA's access to a large amount of data presents an opportunity to further enhance its analytical capacity and support regulatory quality.

Key recommendations

- **Prioritise** the hiring of staff to increase ANA's capacity and capabilities in line with the requirements of a professional economics function.

- **Redefine** the attributes of senior-level positions at ANA, including at the board level, to include economic expertise when relevant, and in a proportional manner.
- **Direct** ANA's current and future analytical capacity toward developing the required evidence base and commit to disseminating and promoting its use by stakeholders.

Designing an organisation that supports accountability and the efficient delivery of outcomes for citizens

ANA's mandate spans three sub-sectors: water resource management (including water-use regulation), water supply and sanitation, and dam safety. However, neither ANA's current organisational structure nor its governance framework is set up to operate effectively in all three areas. A lack of clear accountability and whole-of-organisation approach to achieving results potentially undermines the efficient management of resources.

Key recommendations

- **Map** how resources are currently being allocated and used to achieve regulatory objectives in order to identify synergies across work areas and opportunities for greater efficiency in the delivery of outcomes for citizens.
- **Assess** the feasibility of adjusting ANA's organisational structure or governance framework, by introducing new divisions or matrix governance, to help align the work to the three core business areas and enable clearer lines of accountability.

Operating within financial and human resource constraints

ANA faces constraints relating to the management of its human and financial resources due to rules governing the collection and use of sector revenues, fiscal management, and civil service hiring procedures. These constraints create concerns around ANA's ability to carry out its new duties, to react to emerging challenges and ensure an efficient use of resources, and to act independently in the future.

Key recommendations

- **Advocate for** legislative changes to secure the revenues necessary to perform functions relating to the regulation of WSS and to increase the regulator's flexibility and autonomy in using resources.
- **Advocate for** further approval of the hiring of permanent civil servants and the modernisation and increased flexibility of civil service hiring practices.

Promoting a culture of independence and integrity during a period of organisational change

Recent evolutions in ANA's mandate, organisational structure and leadership have proceeded at a fast pace – four new directors joined the organisation in 2022, just two years after ANA's new mandate in WSS was adopted. Change has affected staff and organisational identity and generated a degree of uncertainty. In this context, ANA faces the challenge of designing new units and governance processes that function in an inclusive and effective manner, whilst respecting high standards of integrity.

Key recommendations

- **Create** institutionalised channels of communication connecting ANA's integrity structures to the board and wider organisational decision making.
- **Consider** new initiatives as part of a consolidated strategy to boost ANA's resilience during periods of institutional change. This strategy could strengthen ANA's internal culture and identity by targeting issues related to integrity, staff morale, and uncertainty, especially when roles and expectations around behaviour and outcomes are changing.
- **Advocate for** a return to staggered appointments of board members in line with legislation, and adherence to best practice in terms of selection procedures.

Boosting transparency and access through data and digital transformation

Digital tools, data and technology – underpinned by robust governance – can enable new ways of working and enhance ANA's ability to meet the needs of regulated entities and citizens. ANA must ensure digital and data governance remains fit for purpose. Additionally, ANA ensuring information, reporting and data resources are easily accessible and tailored to stakeholders' needs is essential.

Key recommendations

- **Improve** the accessibility of regulatory decision-making using jargon-free language, easy-to-read guidance on decisions, visualisations, summaries, and other accessible formats.
- **Engage** with other regulatory agencies in Brazil and abroad to exchange on good practices in the use of digital technologies.
- **Design** monitoring and evaluation practices that focus on the organisation's main data processes to allow the regulator to assess the costs and benefits of data collection and use.
- **Assess** the use of data and technological capabilities in developing ANA's programme of work and identify opportunities to extend their benefits to more areas, whilst avoiding duplication within ANA, and among other institutions.

1 Assessment and recommendations

This chapter summarises the main findings and recommendations of the Performance Assessment Framework for Economic Regulators (PAFER) review of Brazil's national water and basic sanitation agency (*Agência Nacional de Águas e Saneamento Básico* – ANA). The recommendations aim to strengthen the regulator's organisational performance and governance structures.

This chapter assesses the main issues that Brazil's national water and sanitation agency (*Agência Nacional de Águas e Saneamento Básico*, ANA) faces in terms of its governance and performance, and outlines areas of recommendation – ways in which ANA could continue good practice, address changing needs and challenges, or react to areas of opportunity. Relevant case study examples submitted by peers from the OECD's Network for Economic Regulators (NER)[1] are included to help illustrate potential ways forward or indicate enabling tools for ANA to consider.

Introduction

ANA has been central to the implementation of the National Water Resources Policy (PNRH) – the key legal instrument governing the country's water resource management (WRM) since the agency's founding in 2000. In delivering its duties in WRM, ANA has shown leadership and the capability to engage stakeholders and build capacity within a complex sector structure to implement policy and improve compliance. In addition, since 2010, ANA has been involved in the regulation of dam safety, in line with the National Dam Safety Policy. This additional task requires specific skills and significant co-ordination, which, in combination with ANA's duties regarding reservoir operations, will become even more important as water availability, demand, and usage changes.

The agency is now at an important juncture. In 2020, ANA's mandate was extended to include functions in the water supply and sanitation (WSS) sector. Here ANA is tasked with developing national reference standards and support and monitor their adoption by subnational regulatory agencies (Law No. 14.026, 2020[1]), stepping into a role akin to "the regulator of the regulators". These reference standards cover issues of governance, universal access, service quality and technical matters, such as tariff-setting, for each of the four WSS service areas: drinking water supply; the collection and treatment of sewage; urban cleaning and solid waste management; and urban rainwater management and drainage (see Chapter 3). The adoption of effective reference standards, which is fundamentally the responsibility of subnational regulatory agencies and municipalities, is an essential stepping-stone on Brazil's path to meet national goals for universal water supply and sewage collection and treatment. Today, 44% of Brazil's population are not covered by sewage collection and treatment services and 16% of the population are not supplied with drinking water, with stark differences between urban and rural areas (see Chapter 2).

The agency is adapting to its new role and delivering its duties in a complex context. The WRM and WSS sectors, which are inevitably connected, face significant challenges, including the uneven distribution of Brazil's water wealth, the impacts of climate change and other external shocks, and a complex multi-layered governance system (OECD, 2022[2]).

The following sections of this chapter assess six issues and areas of recommendation identified as part of the review process, relating to: clarifying ANA's role and addressing misalignment between ANA's mandate, mission and regulatory powers; building analytical capabilities in the economics of water and sanitation; designing and organisation that supports accountability and the efficient delivery of outcomes for citizens; operating within financial and human resource constraints; promoting a culture of independence and integrity during institutional change management; and, lastly, boosting transparency and access through data and digital transformation.

First, ANA, as the federal regulatory agency, takes responsibility for setting national standards in WSS and implementing policies in WRM with the final aim to improve regulatory outcomes in the relevant sectors and for citizens. ANA holds a wide variety of important functions, however, ANA's regulatory powers in WSS are not aligned with policy goals, which constrains the agency's ability to influence final outcomes (Issue 1). Furthermore, in WRM, ANA may depend on other actors, particularly at the state level, to help manage challenges or effectively and efficiently achieve its stated objectives for Brazil. To mitigate reputational risks, support policy ambitions and help achieve the regulator's mission, ANA can seek to clarify its role with stakeholders and identify ways to address structural weaknesses in its regulatory toolkit.

Second, decision makers at the subnational level in both WRM and WSS, where institutions vary in capacity and capabilities, will require guidance and an independently developed evidence base to support their deliberation processes. ANA, as a well-respected institution with experience in an advisory and capacity-building role in WRM, is well-placed to fulfil this need, but, as the responsibilities of the institution transform, the skills the agency requires will have to transform as well (Issue 2). ANA may look to increase its capacity and capability in the economics of water and sanitation as a priority in this regard, having already developed a good reputation and expertise in hydrology and many other scientific and technical areas relating to water resource management.

Organisational change, in the form of a new mandate, new leadership and new ways of working, presents both opportunities and risks. Two risks relating to regulatory governance identified in this review concern lines of accountability (Issue 3) and promoting a culture of independence and integrity (Issue 5). Since ANA's reorganisation in 2022, ANA's organisational structure continues to be adapted to reflect new requirements and challenges. This organic growth in the organisation risks sight of ANA's mandate and core deliverables being lost and lines of accountability disrupted – essentially, ANA's mandate spans three sub-sectors (water resource use regulation and water resource management, dam safety, and water supply and sanitation). Changes have proceeded at a fast pace, impacting staff, and creating a challenging environment for the design of new units and governance processes that function in an inclusive and effective manner, whilst promoting a culture of integrity.

It is important to recognise that ANA is operating within constraints, impacting the agency's financial autonomy and ability to manage human resources (Issue 4), which has partly shaped the organisation's choices on how to structure itself and adapt to its new mandate. These constraints have already been acknowledged in independent reporting conducted by the Federal Court of Accounts (*Tribunal de Contas da União*, TCU) (see Chapter 3) (TCU, 2021[3]) but remain applicable at the time of this review, since addressing these constraints requires revision of the legislative and governance framework and therefore significant political co-ordination and willingness to reform.

Finally, ANA plays a leading role for the water sector in terms of data collection and dissemination, knowledge sharing and reporting. However, not all information, reporting and data resources are easily accessible and tailored to stakeholders' needs (Issue 6). Digital tools, data and technology, and their governance, can enable new ways of working, and underpin ANA's ability to meet the information and interaction needs of regulated entities and citizens in an inefficient and effective way. As these areas continue to evolve at a fast pace, ANA must ensure digital and data governance remains fit-for-purpose and forward-looking. At the same time, ANA can engage with other institutions to ensure data-related tasks are not being duplicated and ANA may choose to continue its leading role and co-ordinate data management activities, so as to reduce resource-use inefficiencies for all involved.

Clarifying ANA's role and addressing misalignment between ANA's mandate, mission, and regulatory powers

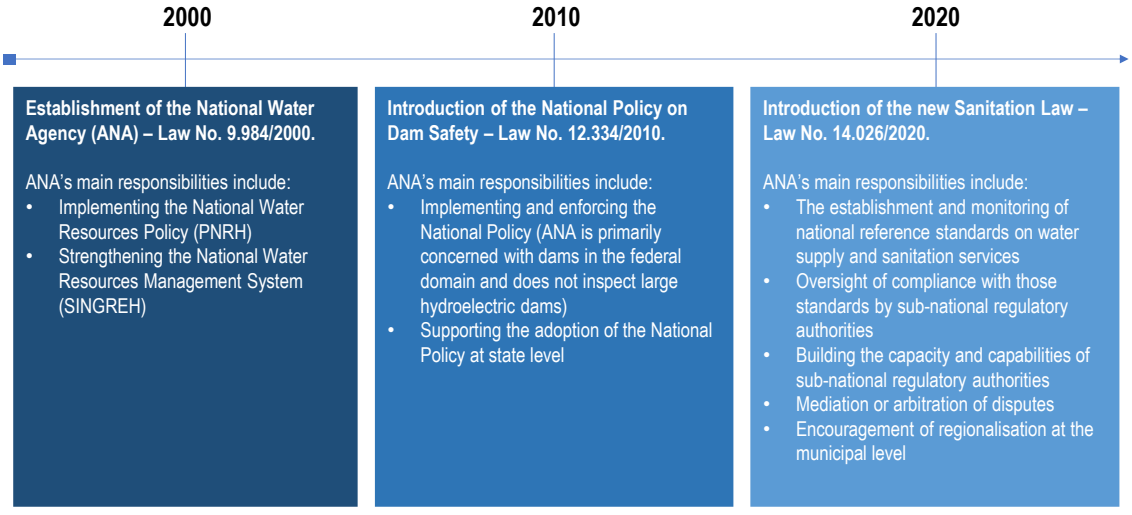
Issue 1: ANA's wide-ranging activities reflect national policy ambitions to strengthen water resource management and improve water supply and sanitation across the country. However, the powers to directly regulate providers of water supply and sanitation services or take final decisions relating to water management are not always held by ANA as the federal regulator. In WSS, regulatory powers lie primarily with subnational authorities whilst ANA takes responsibility for setting non-binding national standards. Whilst ANA is well-placed and trusted to lead on standard-setting, a mismatch between roles and regulatory powers may impact its ability to improve policy outcomes in WSS and present reputational risks for the regulator if ANA's role is not well understood and expectations are not effectively managed. In WRM, whilst ANA holds direct powers within the Union's domain on certain issues, the agency is required to co-ordinate decisions with

multiple stakeholders to progress outcomes for the sector and does not take regulatory decisions outside of the Union's domain.

Assessment

ANA has experienced two significant expansions to its mandate since its founding, reflecting the trust and good reputation the agency has built as a technically competent and responsive agency. After operating as the National Water Agency for more than a decade since its founding in 2000, tasked with water resource management, ANA's mandate expanded first in 2010, with the introduction of a new role under the National Policy for Dam Safety (Law No. 12.334, 2010[4]). More recently in 2020, the new Sanitation Law (Law No. 14.026, 2020[1]) expanded the regulator's mandate into water supply and sanitation services, where ANA is tasked with developing national reference standards and supporting and monitoring their adoption by subnational regulatory agencies (see Chapter 3).

Figure 1.1. Evolution of ANA's mandate



ANA holds a wide variety of important functions, some of which go beyond traditional economic regulatory functions. ANA holds direct regulatory powers in relation to a number of its roles, for example in its duties to regulate bulk water supply and water-use concessions for irrigation, or to inspect and enforce compliance with operational and safety rules for certain types of reservoir and dams. There are also many instances when ANA's role is closer to that of capacity-builder, facilitator, co-ordinator, or expert advisor. ANA has chosen to adopt "softer" tactics to influence sector outcomes in cases where subnational regulatory authorities have not taken the initiative. ANA shows effectiveness in relation to areas where it holds direct regulatory powers and has made great efforts in its engagement and role as co-ordinator and advisor in other areas. Looking forward, ANA's reputation of effectiveness may need to be leveraged during engagement with stakeholders, together with new evidence as it becomes available, to achieve greater influence and impact.

ANA's stakeholders, and ANA itself, hold high expectations for the agency's contribution to delivering ambitious policy goals in a challenging context. For example, Brazil's policy aims to achieve the universalisation of water supply and sanitation services by 2033. Reaching this goal will require significant investment and the co-ordination of multiple actors across Brazil's multi-layered political system, but also beyond the public sector with private providers, investors, and sector experts. ANA is looked-to to provide leadership via the development of national reference standards and has set itself similarly

challenging objectives by incorporating progress on policy objectives in its strategic planning. The new sanitation framework was envisaged to encourage the participation of private sector investment, and this remains a priority and expectation for many stakeholders, though ANA's reference standards do not necessarily need to address the means, or structures of ownership, through which outcomes are delivered.

Considering the scale of the challenge and importance of ANA's work to develop national reference standards in WSS, ANA's regulatory powers are not aligned with policy goals, which constrains the agency's ability to influence final outcomes. The direct regulation of water supply and sanitation service providers remains the responsibility of state and municipal regulatory authorities. While ANA develops the national reference standards for WSS, it has no powers to enforce them. Subnational regulatory agencies may adopt ANA's reference standards on a voluntary basis. Service providers at the municipal level may avoid requirements to comply with ANA's standards by altering the regulatory agency to whom they are accountable – under Brazil's framework, providers do not need to be regulated by their state agency but may choose an agency in another state or municipality, as long as at the appropriate level.

The necessary resources and incentives to support the adoption of ANA's WSS reference standards by subnational authorities are currently lacking or apply unevenly. The current incentive structure is based on conditional federal funding, which municipalities will receive when they are regulated by subnational regulators complying with the national standards. However, access to federal funding is unlikely to guarantee adoption in cases where local political will is governed by narratives of sovereignty and control – the regionalisation of service provision (the creation of municipal blocks) is key to improving access, especially for rural areas, by delivering necessary economies of scale and enabling cross-subsidisation. ANA does not have any powers to impose regionalisation, which must be implemented by municipal authorities working in co-operation. Sanitation may not be identified as a priority at the local municipal level, which could be addressed through collaboration with subnational regulatory agencies and discussion of the evidence (discussed under Issue 2). Addressing the issue of incentives and strengthening measures to mitigate non-compliance are key to making change happen and building momentum at the local level.

In WRM too, whilst ANA's holds greater regulatory powers, there are certain situations where ANA depends on other actors to help manage challenges or to achieve its stated objectives. In water resource management, ANA's direct regulatory powers apply within the Union's domain[2] and, given the scale of this domain, this translates to a significant set of powers: to directly regulate bulk water supply and water-use concessions for public irrigation, define allocation rules and priority resource uses, and set overarching regulatory frameworks for resource management. However, at the state level, regarding the management of state rivers and bodies of water, ANA lacks direct regulatory powers, and is required to co-ordinate closely with state water management agencies and basin committees to strengthen the National Water Resources Management System (SINGREH) and deliver the PNRH. Whilst ANA provides financial support, technical expertise, guidance and capacity building, most decisions on water management are made by the relevant basin committee or state water management agency. For the country to make informed, integrated decisions to ensure water resources are sustainably managed, resilient, and sufficient to meet changing needs and pressures, ANA will be required to continue to influence the sector through its coordination and engagement with state water management agencies and river basin committees. This effort becomes even more important in the face of trends such as climate change, population growth and urbanisation (see Institutional and Sector Context for a more detailed discussion).

An ingredient in ANA's success so far has been its ability to build capacity across the sector and develop positive working relationships. ANA has developed different, proportionate modes of engagement to achieve different objectives, reflecting instances when ANA holds a capacity-building or administrative rather than regulatory role. At the same time, ANA has successfully co-ordinated the

national hydrometeorological monitoring network (RHN) and managed the National Water Resource Information System (SNIRH), which together provide the sector with operational data and builds transparency. ANA has shown itself to be open and proactive, organising long-term co-operation agreements and research programmes with key stakeholders to receive external perspectives on current issues or develop horizon scanning work. There may be further opportunities to formalise a more inclusive, multi-stakeholder advisory group for similar purposes and to develop two-way engagement.

Role clarity and expectation management

At a time when stakeholders' understanding of ANA's role is low, expectations and policy ambitions are high, and the powers of the regulator are limited, there is increased reputational risk. ANA has a strong reputation, one of the reasons why its mandate was expanded in 2020. However, a lack of understanding of ANA's role and responsibilities has been shown from a range of stakeholders, from public officials to consumers. This is evidenced by feedback received by the agency during its public consultation on strategic planning, submissions made during congressional debate, as well as the large volume of consumer information requests and complaints directed to ANA, despite concerning the responsibilities of service providers and subnational regulatory agencies. ANA's work is expected to support a highly ambitious national policy agenda to improve access to water supply and sanitation services, which, despite recent legislative efforts, remains some distance from national goals set for 2033 (see Chapter 2). The recognised need for urgent action creates significant pressure on all institutions involved in delivery. This creates additional pressure and expectations for ANA, as the agency responsible for establishing national reference standards for the regulation of WSS services. The precise role of ANA and the limitations the institution faces, due to the misalignment of its powers and mandate, as well as other external constraints, need to be well understood by ANA's different stakeholders to ensure expectations are realistic. The reputational risk may subside as understanding of the recent reforms increases, but this understanding may require ANA's intervention to develop and remain accurate.

ANA's current strategic plan reflects the high level of policy ambition and may reinforce rather than mitigate the reputational risk linked to its new mandate. ANA's strategic plan is ambitious in several ways: the volume of regulation and progress set-out to be delivered versus tight timelines; the scale of individual objectives and targets; and the assumed level of direct impact ANA's actions may have on sector-wide outcomes. ANA's current strategic plan sets-out 20 strategic objectives and multiple associated targets (see Box 1.1) which reach beyond ANA's core responsibilities and relate more to final outcomes for the sector than to intermediate outcomes which ANA may directly influence through its own work and regulatory actions. Whilst some objectives and targets appear to reach beyond the responsibilities of the regulator, others require additional detail to be effectively interpreted and implemented as intended. For example, the use of phrases such as "*number of contracts signed*" or "*number of initiatives proposed*", if not defined in relation to the expected outcome of those contracts or initiatives, may not result in the most effective actions being taken to achieve policy objectives. Overall, these factors create a risk that ANA's role is misunderstood by stakeholders and expectations of ANA become intertwined with the success of the wider policy programme.

ANA has already begun to consider how it can operate within the existing regulatory framework and adapt to constraints. For example, ANA has identified and seized opportunities to partner and engage, and created an open environment for debate with stakeholders, including subnational entities, in both WRM and WSS – engagement on the development of the 2023 National Pact for Water Governance and co-operation agreements with the TCU are good examples of this consideration. With regards to the development of incentives, discussed above, ANA has begun to explore new ways to encourage compliance but must work swiftly to ensure these mitigation measures are in place. Building co-operation with prosecutors and the judiciary, as proxy enforcers of federal law, may help mitigate the impact of some constraints, following the experience of the European Commission (Box 1.2). This type of action is required due to the legislative framework, consisting the constitution and other primary legislation, which cannot

easily be amended to address the balancing of powers, mandate and expectations, which is the source of this reputational risk.

Securing role clarity and managing expectations will continue to be a challenge given the complex and dynamic political and policy context and ANA's extensive network of stakeholders. ANA is navigating a political context that is in flux, with Brazil's recent elections having created uncertainty around the assignment of ministerial responsibilities. ANA's full stakeholder map is complex and spans entities from small river basin communities to the National Congress. One consequence of this political and institutional landscape is the requirement for ANA, especially its leadership, to invest significant time and effort in stakeholder engagement. The recent election in Brazil provides further impetus for ANA to engage – ensuring newly elected and appointed decision-makers are aware of ANA's regulatory roles, technical expertise, and availability to input into policy development.

Box 1.1. ANA's strategic objective-setting and regulatory agenda

Following good practice, to develop the strategic plan, objectives and targets, ANA implemented a participative design process involving all ANA staff, its board of directors, as well as external stakeholders. The planning process for the 2023-26 strategy lasted approximately two months, starting with an organisational diagnostic, then moving through a series of validation meetings and workshops before the final strategy was drawn-up by Directors and Superintendents and signed-off of by the collegiate board.

ANA's regulatory agenda for 2022-24 contains 43 items across 9 themes, of which 63% are on track and have been delivered, or are expected to be delivered, on time.[1] In its separate strategic plan, ANA has defined 20 wide-reaching strategic objectives accompanied by 43 quantitative indicators, with annual targets defined for each indicator out to 2026 (full schedule available in Chapter 3).

Table 1.1. ANA's strategic objectives

Output area	Theme	Strategic objective	
Results for society	Critical event management	1.	Prevent and minimise the impacts of droughts and floods and promote the adaptation to climate change
	Dam safety	2.	Foster a dam safety culture through regulation, co-ordination, and articulation with other inspectors/enforcement institutions
	Water resources	3.	Ensure the availability of water in quantity and quality for their multiple uses with efficient and integrated management
	Basic sanitation	4.	Promote universal access to sanitation services
Internal processes	Information and communication	5.	Improve availability, quality and integration of data and information
		6.	Strengthen ANA's institutional image by generating trust and credibility
	Innovation	7.	Improve user experience, facilitating and expanding access to services offered through a digital channel
		8.	Make ANA's day-to-day modus operandi more efficient
		9.	Promote a regulatory environment favourable to development and innovation
	Integrated management	10.	Seek integrated and participatory management of water resources in priority areas
		11.	Contribute to the financial sustainability of water infrastructure
		12.	Strengthen SINGREH considering regional diversities
	Regulation	13.	Improve the regulation model with a view to the quality and safety of services
		14.	Promote management and regulation of water resources, dam safety

			and regulatory harmonization for the sanitation sector
Learning and growth	Governance	15.	Improve the governance system, seeking effective benefits to society
		16.	Foster a risk management culture with integrity, information security and data protection
	Corporate infrastructure	17.	Provide high-performance technological infrastructure and logistical support
		18.	Efficiently execute action-oriented institutional resources and priorities
	People	19.	Promote continuous improvement in the organizational environment
		20.	Implement strategic people management

Whilst some objectives and indicators are defined at a more conservative level, with targets which relate directly to ANA's mandate and scope of work, other objectives and indicators appear one or more steps removed from ANA's control, and depend on other institutions, operators, or service providers to achieve. For example, progress on ANA's strategic objective OE-7, "*improve the experience of users, facilitating and expanding access to public services offered to society through a digital channel*", is indicated by the "*number of services digitised in an integrated digital channel (mobile application 'ANA Digital')*", which is an area that ANA can internally control and influence. In contrast, progress on ANA's strategic objective OE-4, "*promote the universalisation of access to basic sanitation services by the Brazilian population"*, is indicated by improvements in the attendance index of the total population with water network access, with a target increase of 4 percentage points by 2026 (i.e., securing coverage for an additional 9 million people).

1. Please refer to ANA's monitoring panel for its Regulatory Agenda 2022-2024, available at: Regulatory Agenda — National Water and Basic Sanitation Agency (ANA) (www.gov.br).

Source: ANA Strategic Plan 2023-2026 (ANA, 2023[5]); ANA Regulatory Agenda 2022-2024 (ANA, 2022[6]).

Recommendations

- **Identify** and **leverage** alternative approaches and channels to increase ANA's impact and encourage compliance with the national WSS reference standards set by the regulator, within the constraints of the existing institutional and legislative framework. This might involve:
  - more institutional co-operation and joined-up approaches with subnational entities that do have enforcement powers, such as the judiciary, or that can raise issues of non-compliance for deliberation, such as state prosecutors (Box 1.2). Given ANA's inability, due to the legislative framework, to enforce the adoption of reference standards and compliance directly, it may need to work more closely with subnational entities to increase incentives for the universalisation of services to the benefit of Brazilian citizens. ANA's reputation for effectiveness together with providing the evidence base can be leveraged in discussions with stakeholders to drive impact, such that ANA's assistance and involvement may in itself present some incentive to stakeholders to engage on adoption;
  - a strengthened focus on capacity building and engagement with subnational regulatory agencies of WSS, including the development of inclusive fora for gathering and disseminating inputs, for example through expert panels. ANA would likely need to make a concerted effort to proactively engage with those regulatory agencies with relatively weaker capacity. As above, ANA's reputation for effectiveness together with new supporting evidence can be leveraged in discussions with stakeholders to drive impact;
  - the development of new engagement methods, such as representative advisory boards, in addition to existing open call consultation processes, may provide a targeted method to invite

input and guarantee relevant stakeholders (including harder to reach groups) input to the development of reference standards, and that, as legislation requires, local and regional conditions are considered. Different engagement methods may also help ANA by reducing burden, though public consultation is of course still a vital process and should not be removed – during the review process, ANA reported a high level of interest by stakeholders in reference standard development, but the key tool for gathering input, due to capacity constraints, remains the public consultation process, rather than supplementary stakeholder engagement channels. As is the case for all public institutions with such responsibilities, it will remain important for ANA to continuously assess whether engagement occurs at an appropriate frequency and remains purposeful, accessible, and inclusive; and

- the use of sunshine regulation, benchmarking, or formal recognition of good performance by subnational regulatory agencies of WSS. This could include creating an ANA-approved regulatory network oriented around the promotion and implementation of reference standards, in combination with requirements or incentives (included in reference standards) for municipalities to work with subnational regulators that meet the necessary standards. ANA could also consider working with regional regulators to establish a taxonomy of effective regulation (with regard to regulatory outcomes) at a local level and collaboration and co-operation with the federal level. Such best practices could be effective to build capacity, set a clear direction, and increase pressure on entities resistant to change or who remain non-compliant.
- each of the above points may be reflected in ANA's strategic management outputs, as a part of high-level planning for how strategic objectives, focused on ANA's engagement with national and subnational entities to deliver greater impact, can be achieved.

- **Manage** expectations around the results that ANA can deliver and when, given the scope of agency's role and powers, as well as its level of resources and capacity. This will serve to maintain stakeholder trust in the regulator, including the trust of the government in the regulator, trust in government more broadly, and boost understanding and mitigate reputational risks. ANA may identify and select a range of different management and mitigation strategies, but each will involve clearly communicating the scope of ANA's role and limitation relating to powers, by:
  - assessing the feasibility of ANA's regulatory agenda, strategic objectives, and related targets, and a review of what ambitions are being set and communicated externally. Objectives and targets should remain feasible and aligned with the organisation's core functions and powers as an independent regulator to mitigate two areas of risk: first, stakeholder expectations not being met, and second, ANA going beyond its mandate in order to meet ill-defined or out-of-reach targets. There is an opportunity for ANA to refine outputs and strategic objectives within the regulator's strategic plan to focus on outcomes closer to ANA's sphere of influence, while still monitoring broader sector outcomes as "watchtower" indicators. This could help to communicate the regulator's impact more clearly, and to put this in context with powers and responsibilities of other sector actors;
  - developing supporting communication channels and bespoke strategies to protect ANA from reputational risks, including those originating from mis- and dis-information, and enable ANA to effectively manage the expectations of its various stakeholder groups using public and plain language communication; and
  - engaging with external bodies involved in scrutinising and controlling ANA's actions, including government (e.g., CGU) and independent (e.g., TCU) entities to ensure an alignment of understanding and expectations, especially during periods of public scrutiny and during the process of assessment. This extends to newly elected or appointed decision-makers in government and the regulated sector, who require, but may initially lack, a good understanding of ANA's regulatory roles, technical expertise, or availability to aid policy development.

Box 1.2. Implementing the EU Urban Wastewater Treatment Directive

In 1991 the European Union adopted a Council Directive concerning “Urban Waste Water Treatment”. In the EU, treatment of urban wastewater is essential for ensuring enough good quality water for human and economic use and for nature and biodiversity. The Directive, which complemented any national legislation already adopted by EU Member States, set out EU-wide legal obligations to establish collection systems, apply treatment standards for discharges of urban wastewater from population agglomerations and to report on implementation. The Directive set out a differentiated 14-year implementation timetable, from 1991 to 2005, with a requirement for Member States to transpose the Directive into national legislation by 1993 and begin to apply the relevant treatment standards accordingly. Ensuring compliance is the responsibility of the Member States under this legislation.

Despite significant grant support from EU Cohesion and Regional funds for the necessary infrastructure investments (up to 85%), the Directive was far from fully implemented at the end of the 2005 implementation deadline. In 2018, 27 years after the adoption of the Directive, 15 years after the original deadline, the European Commission has estimated that compliance rates were above 90% for discharges to areas classified as sensitive in 9 out of the 12 States, with compliance rates of only between 44% and 84% for the remaining 3 States. For other areas, 8 out of the 12 States had compliance rates above 90%, while 4 States had compliance rates between 24% and 83%.

Non-compliance can be attributed to governance failures and/or lack of will to implement the Directive in the competent authorities of the Member States, which are in many cases regional or local. The fact that there was still a significant backlog almost 30 years after the adoption of the legislation illustrates the challenge of implementing standards when the co-ordination of a multi-layered and complex governance system is required.

In Europe, many environmental and public health issues such as treatment standards for urban wastewater and their application were considered subjects that were best dealt with by technical and scientific specialists and disputes in this respect were often dealt with and resolved by quasi-judicial technical bodies or agencies. Courts of justice were only rarely involved in resolution of such disputes. There was therefore not a tradition in the judiciary of the Member States for dealing with such issues.

With the adoption of a significant body of environmental EU legislation, the judiciary became an important player in implementation, including for the legislation on urban wastewater. The main enforcement instrument available to the European Commission is bringing cases to the European Court of Justice (ECJ) against Member States for failure to correctly implement the Directive. In such cases the ECJ rules about whether a member State is complying with its obligations. If a Member State despite a ruling from the ECJ continues not complying with its obligations, there is a possibility for the ECJ to inflict substantial financial penalties on that Member State. Some Member States, including founding EU Member States are still paying significant fines for implementation delays.

There is no doubt that the involvement of the judiciary and the numerous rulings by the ECJ have provided an important impetus and contributed significantly to implementation.

In recent years, the courts of the Member States have increasingly played a role in enforcement of EU environmental legislation and the European Commission has encouraged compliance proceedings to take place at the national level, provided that there are appropriate mechanisms in place, including judicial ones. In this context it is important that the ECJ has ruled that not only individuals negatively affected by bad application of EU legislation, but also environmental non-governmental organisations have legal standing and can bring such cases to national courts. In order to support effective implementation and enforcement in the Member States, the Commission supports the Member States’ IMPEL network (European Union Network for the Implementation and Enforcement of Environmental

Law) of environmental regulators at national and subnational level and co-operates closely with European Union Forum of Judges for the Environment (EFJE) and the Academy of European Law (ERA) targeting specifically public prosecutors and the judiciary in the Member States with a view to strengthening the training and the role of the national judiciary in the enforcement of environmental law. Bringing disputes about implementation of EU environmental legislation has brought significant benefits in the form of faster resolution of disputes closer to the affected citizens. In such cases, courts have benefited from the possibility to request preliminary rulings from the ECJ, providing authoritative interpretations of EU legislative provisions in cases of doubt in the absence of jurisprudence.

Bringing implementation disputes to the national courts can bring significant benefits for enforcement by increasing overall judicial capacity to deal with disputes and ensuring faster resolution of disputes closer to the affected citizens with a better appreciation of local conditions.

Note: References to implementation in this paragraph refer to the 12 EU Member States who were EU members at the time of adoption of the Directive. Member States who joined later had different deadlines.
Source: Official Journal of the European Communities, No. L 135, pp. 140-152 (30.5.1991); European Commission, 11th Technical assessment on UWWTD implementation (2022) (https://op.europa.eu/en/publication-detail/-/publication/f9acae5a-ed21-11ec-a534-01aa75ed71a1 accessed on 1023-10-07); https://impel.eu; https://www.eufje.org/index.php?lang=en; https://www.era.int/environmental_law.

Building analytical capabilities in the economics of water and sanitation

Issue 2: ANA has developed a strong reputation and expertise in hydrology and other technical areas relating to water resource management, but, as the responsibilities of the institution transform, the skills the agency requires will have to transform as well. As the regulator takes on more responsibilities relating to economic regulation, it faces the challenge to build capabilities and capacity in the economics of water and sanitation. This capability will need to underpin ANA's regulatory decision-making, as well as their advisory and capacity-building activity as the regulated sector tackles emerging challenges. At the same time, ANA's access to a large amount of data could be further utilised to build analytical capacity and support regulatory quality.

Assessment

ANA is well recognised for the technical competence of its staff and for sharing its knowledge and expertise with sector actors. Specifically, ANA is known for its expertise and competency in areas such as hydrology, engineering, and water sciences. ANA offers formal training and qualifications in water-related disciplines for thousands of stakeholders within the sector and its own staff. A portion of its budget is earmarked for research and external training for water resource managers across the country, and short to medium-term, in-person and remote training initiatives have been completed by more than 260 000 people during the last 20 years. Furthermore, as part of its work to strengthen the national water resources management system, ANA helps design and sponsors formal education initiatives, such as the ProfCiamb and ProfÁgua post-graduate qualifications in Brazil. Its technical competence is one of ANA's main assets that should be preserved and built upon.

ANA's capacity and capability for economic analysis is relatively underdeveloped, reflecting the recent addition of many economic regulatory functions. Economists represent 4.6% of the workforce, whilst more than 30% of the workforce hold professional qualifications in civil engineering and the biological sciences. ANA established the Superintendency for Water and Economic Studies (SHE) in 2020, which could co-ordinate the insights from analytical and evaluation work to inform decision making, but its capacity is currently allocated to the construction of databases and the delivery of high-level studies, such

as updates on Brazil's progress relative to the Sustainable Development Goal and indicators relating to water and sanitation (SDG6) (ANA, 2019[7]). Furthermore, regulatory impact assessment tends to be qualitative rather than quantitative, although this is an area that the agency has identified for enhancement and is taking steps to improve. A range of economic analyses will be required to inform decision-making, from an ex-ante, shorter-term perspective (insights relating to what policy and regulation is achieving today and what is required to meet current needs), as well as a longer-term "stewardship" perspective (insights on what is being done to meet future needs and challenges) (Box 1.4).

ANA will need to rise to the task of creating an evidence base to support the implementation of new standards and reform. The insights provided by economic analysis or other relevant data analysis will be required to set realistic expectations and inform regulatory decision-making at the subnational level. Areas which could benefit from robust economic analysis include the financial implications of reference norms, water management and the universalisation and regionalisation initiatives. Stakeholders have voiced the need for evidence and tools to understand and assess the complex economic trade-offs inherent in sector regulation and financial management. Furthermore, evidence-based economic evaluation may help to convince certain stakeholders of the benefit of acting today for the benefit of future consumers and businesses, for example, in the case of water charging, by considering the consequences of inaction and issues of water quality and water security in terms of financial costs and lost revenue. A comprehensive evidence base, accessible and tailorable to all relevant stakeholders, which includes data on populations, costs, the asset base, service levels, risks and issues, and reporting on the maintenance and improvement of infrastructure, is currently lacking.

The demand for evidence and insights applies equally to ANA's work in WRM and WSS, though in WSS there is more urgency. In WSS, subnational regulatory authorities will look to adopt reference standards in the coming years, whilst the regulated sector will be required to make changes to their business, including changes to financial planning, contracts, and investments. A clear understanding amongst policymakers, regulators, and regulated sector actors on the costs of meeting national reference standards will aid better decision making. In WRM, insights are required to bring awareness of emerging challenges, such as climate change, and the validity of considering these longer-term challenges into the decision-making process today, in addition to insights which can support shorter-term operational decision relating to, for example, the use of alternative water resources and the allocation of scarce water between competing uses.

Developing empirical economic analysis and a strong quantitative evidence base to deliver on new economic functions could bring additional benefits in terms of protecting against undue influence. A robust evidence base that is used to inform internal decision making will be useful for protecting against undue influence and misinformation targeting ANA, by helping to position the agency as apolitical and evidence-based. In the OECD's work on the governance and independence of regulators, one of the factors identified to help prevent undue influence and maintain trust is for regulatory decisions to be founded on empirical evidence or research, post-implementation evaluation, and stakeholder input (OECD, 2014[8]).

ANA's access to a large amount of data could be further utilised to build analytical capacity and support regulatory quality. Developing an evidence-base and conducting more sophisticated economic analyses requires good quality and timely data. For WRM, ANA is the custodian of a large amount of data: the regulator makes an important contribution to transparency by coordinating the national hydrometeorological monitoring network (RHN) and managing the National Water Resource Information System (SNIRH) and National Dam Safety Information System (SNISB). This data, whilst being publicly disseminated, may not be being fully exploited internally for the purposes of regulatory decision-making. Good data will be vital to support ANA's stated ambition to develop the quantitative aspect of its regulatory management tools such as regulatory impact analyses and ex-post reviews.

However, the quantity and quality of data is not consistent across all areas of its mandate. In this regard, ANA faces particular challenges in water supply and sanitation since key data is owned by municipal and state-level entities and currently consolidated by central government ministries, for example data for WSS which is compiled by the Ministry of Cities responsible for the SNIS (Table 1.2.). ANA is a data consumer in this sector, and thus may face delays in receiving requested data and cannot assure or control data quality – data at the municipal level in particular can be of very poor quality. With regard to ANA's stated ambitions to develop impact analysis and reviews, the collection and use of data on fixed and variable costs, and an understanding of cost schedules and how they differ for different classes of asset, will be vital, in addition to finding ways to value other economic and social costs in the WRM and WSS environment.

Table 1.2. ANA's involvement in sector data flows

	Water resources management	Water supply and sanitation
Data ownership and initial collection	National Hydrometeorological Network (RHN)	Municipalities / States
Data consolidation and verification	**ANA** (e.g., for delivery of SNIRH) (use of AI for verifications)	Central government ministries (MCIDADES; MIDR) (e.g., for delivery of SNIS)
Data use / analytics / reporting	**ANA** (e.g., evaluation studies); Basin Committees; Water Resource Councils	**ANA**
Data process review	**ANA** (e.g., systemised review of collection and data gaps)	Central government ministries (process unknown)

Source: OECD analysis based on ANA input.

Recommendations

- **Prioritise** the hiring of staff at both junior and senior levels to increase ANA's capacity and capabilities in line with the requirements of a professional economics function that supports ANA's decision-making and advisory work across both WRM and WSS:
  - ANA might use the civil service hiring process approved in 2023, the first process to take place since 2008, to recruit new talent in this area. However, given the demand for staff across the organisation, this process will likely not be enough on its own. ANA requires not only entry-level staff, but also experienced senior experts who can consult decision-makers and bring in expertise on setting-up best practice processes and methodologies.
  - If current hiring constraints (see Issue 4 below) prevent ANA from taking immediate action, ANA may seek alternative routes to build capacity and capability. For example, by partnering with experts or institutions and designing appropriate channels to gather their input, leveraging the rotation opportunities within the civil service or other secondment or staff loaning options (considering regulatory agencies in Brazil or international programmes and arrangements with regulators outside of Brazil), training selected existing staff, or directing funds on a temporary basis to secure external support, but only if outsourcing can be designed in a way that supports the development of a sustainable economic capability for the agency.
- **Redefine** the attributes of senior-level positions at ANA, including at the board level, to include economic expertise when relevant, and in a proportional manner.
  - Where additional hiring for capacity and capability may be limited, ANA may consider redefining the expected attributions of "free provision" positions, such as Superintendent or Board positions, at the next available opportunity, without interfering with the appointment and nomination process. A redefined set of attributions could include economic expertise as criteria and could be defined in relation to specific superintendent roles and for board members.

- **Direct** ANA's current and future analytical capacity toward developing the evidence base that supports stakeholders' and ANA's understanding of the economics and financial costs and benefits of national reference standard adoption in WSS, and engage to disseminate and promote the use of this new evidence base:
  - Alongside the definition and delivery of the national reference standards themselves, there is an urgent need for an objective evidence base, a "source of truth", to aid decision making in the WSS sector – ANA may seek examples of analytical approaches and good practice from other regulators (Box 1.3) and develop a toolkit for subnational regulators.
  - To develop this evidence base, ANA can co-ordinate with Ministry of Cities to ensure data on sanitation is made available that meets ANA's analytical requirements and the requirements of the sector, and advocate for any necessary changes to data collection methodology.
  - Once this evidence-base has been prioritised and developed, ANA should act to promote its use and stakeholder awareness, presenting an opportunity for ANA to clarify its role, and manage stakeholder expectations (see Issue 1).

  ANA will need to also develop the internal processes, including data processes, to support the economic analysis indicated above and enable insights to feed into the Board's decision-making, whilst continuing to engage with external stakeholders to develop processes or partnerships that enable ANA to access relevant information and provide feedback to data owners (Box 1.4; Box 1.5).

Box 1.3. WICS analysis on the future costs of drainage in Aberdeen

Aberdeen is a substantial city on the North East coast of Scotland. It is the third largest in Scotland and has a current population of around 230 000. It was the hub of the oil industry in the North Sea.

Being on the east coast, it has become used to much less rainfall than the western side of the country. Scottish Water worked with Aberdeen City Council to understand how future projected rainfall in the area could be managed. They used rainfall pattern ranges estimated by modelling of the impacts of global temperature increases.

The conclusion of the work between Scottish Water and Aberdeen City Council was that there were several initiatives that could allow for more effective management of the surface water that would result from the projected increase in rainfall. These initiatives would involve may parties and would require a considerable degree of collaboration and consensus building. They were consistent with pursuing a "Green/ Blue" strategy for the management of the water environment in the city.

The cost of these interventions was estimated to be between £400 million and £500 Million over the next 50 years. Scottish Water was clear that these collaborative approaches were likely to be much more cost effective than grey infrastructure solutions such as up sizing the sewer network and building increased storage. One of the key assumptions was that Scottish Water would maintain the capacity and effectiveness of its sewer system at no less than current levels throughout the transition period (the fifty years) and beyond.

WICS worked with Scottish Water to assess the economic impact of this necessary response to climate change. This involved understanding the replacement cost of the sewer network, its on-going maintenance and operational costs. This analysis was quite different to the aggregated assessment of current costs and the need for investment that would normally be the substance of a price setting exercise for a regulatory control period. This analysis was taking a specific bottom-up example for a

discrete area and seeking to understand how much it may cost in future relative to the costs incurred at the current time.

WICS considered different asset lives for the sewer network and concluded that around 20% would likely have had to be substantially refurbished or replaced in the next fifty years. This suggested a transition cost requirement of 20% of the identified modern equivalent asset value of the sewer system serving Aberdeen. In addition, the £400-£500 million of new initiatives would have to be funded. The conclusion was that current expenditure on providing drainage services would have to increase by a factor of (at least) three. Drainage would become a larger component of costs than the collection and treatment of foul sewerage.

Separately, the Scottish Government had been considering splitting wate water charges into a waste and a drainage component. This analysis confirmed that it may be useful to establish clear charging arrangements for drainage in order that incentives could be created to limit flows of water from property drainage entering the sewerage system.

Source: Case study provided by WICS (Water Industry Commission for Scotland | WICS).

Box 1.4. Data collection methods to inform economic analysis – WICS example

WICS adopted the information framework that had been refined by Ofwat during the 1990s from an original set of templates used by HM Treasury for its scrutiny of the England and Wales water industry before privatisation. This annual information framework covers assets, costs, service and compliance levels, costs, and investment projections. The submission responds to detailed guidance issued with the templates by the regulator. The actual submission includes a detailed commentary explaining how the source of the information, assumptions that have been made and how it may be different to previous reports. There is a system of confidence grade that allow for the accuracy level and the quality of the information source to be made clear.

Following submission of the information, WICS engages in a query process (usually two rounds of queries are required to ensure a complete understanding has been developed) through which it works with Scottish Water to ensure that the information provided is as good and as consistent as it can be.

This information allows for the analysis of performance and for future price setting to be as robustly evidenced as possible. It allows any subsequent questions that may be raised by Government, customers or other stakeholders to be explained fully. This information framework is fundamental to the regulatory framework and helps to ensure that decisions are properly evidenced. It also helps safeguard the independence of the regulatory process.

Source: Case study provided by WICS (Water Industry Commission for Scotland | WICS).

Box 1.5. How New Zealand's Commerce Commission gathers and disseminates information relating to the economic and financial performance of the regulated sector

New Zealand's Commerce Commission is a multi-sector economic regulator. As well as price reviews, it has significant powers to require the public disclosure of information to reveal whether the objective of regulation is being met, "to promote the long-term benefit of consumers in [regulated] markets by promoting outcomes that are consistent with outcomes produced in competitive markets". Sectors covered include electricity, gas, airports, telecommunications, fuel, and potentially in the future water.

The Commerce Commission publishes several visualisation tools based on the data collected. This includes the use of "dashboards" combining information from different regulated entities in the same sector to reveal comparisons, and a Performance Accessibility Tool (PAT). The Commission uses "Tableau" software to present the information and has developed internal capability in data handling and performance analysis.

The Performance Accessibility Tool for electricity distribution businesses, for example, allows anyone with an interest to compare performance between entities or focus on one particular entity. There are different metrics such as financial data, asset age and condition, system demand, network length, and network reliability. Financial data cover profits and ROI, regulatory asset base valuation, and itemised breakdowns of expenditure (capital and operating expenditure).

The Commission occasionally publishes analysis based on the information disclosed. The information in the PAT and the published reports helps third parties draw conclusions and engage with industry on questions of wider concern, including investment for decarbonisation and resilience to climate-related events.

Note: The PAT is accessible here: https://public.tableau.com/app/profile/commerce.commission/viz/Performanceaccessibilitytool-NewZealandelectricitydistributors-Dataandmetrics/Homepage. Additional examples of the types of analysis and reporting produced by the Commerce Commission are available here: https://comcom.govt.nz/regulated-industries/gas-pipelines/gas-pipelines-performance-and-data/trends-in-gas-pipeline-business-performance; https://comcom.govt.nz/regulated-industries/gas-pipelines/gas-pipelines-performance-and-data/performance-summaries-for-gas-distributors
Source: Information submitted by the Commerce Commission, 2024.

Designing an organisation that supports accountability and the efficient delivery of outcomes for citizens

Issue 3: ANA's mandate spans three sub-sectors (water resource management, water supply and sanitation, and dam safety), each with distinct regulatory objectives and outcomes, sector and institutional contexts, stakeholders, and management challenges. However, neither ANA's current organisational structure, nor its governance framework, operates along the same lines. A lack of clear accountability and whole-of-organisation approach to the delivery of results under each sub-sector potentially undermines the efficient management of resources.

Assessment

ANA's mandate spans three discrete areas, each with distinct regulatory objectives and different needs in terms of processes and resources. ANA's activities relate to three fundamental areas – water resources management (including water-use regulation), water supply and sanitation services, and dam safety. In each of these areas, ANA has distinct objectives and ways of working, faces different institutional

and sector contexts, interacts with different stakeholders, and must manage different risks and resourcing challenges (Table 1.3).

Table 1.3. ANA's core business areas

	Water resource use regulation and water resource management	Dam Safety	Water supply and sanitation services regulation
ANA's function	• Direct economic regulation of water use (bulk supply and public irrigation) • Implementation of National Water Resources Policy (PNRH) and strengthening the SINGREH system (advisory and capacity-building function) • Co-ordination and management of the National Hydrometeorological Network (RHN)	• Ensure the structural integrity and safety of a specific set of dams • Encourage the harmonisation with the National Dam Safety Policy (PNSB) at subnational level • Collect information on the status of dams	• Standard-setting (national reference standards), in support of national targets to reach universalisation • Encouraging the adoption of standards at subnational level • Monitoring adoption progress
ANA's main tasks	• Granting rights and monitoring usage • Crisis management and coordination • Setting conditions for reservoir operations (liaison with the electricity system operator) • Advising on development of river basin committees, water resources plans, and water charging • Classification of water bodies • Delivery of the SNIRH and dissemination of information • Managing and developing the RHN monitoring network	• Co-ordinating inspections and enforcement • Delivery of the PNSB National Information System on Dam Safety (SNISB) • Liaison with other inspections agencies	• Designing and publishing reference standards whilst promoting quality and efficiency of provision, regionalisation, and reducing administrative burden • Oversight of compliance • Capacity-building of subnational authorities • Mediation or arbitration between subnational regulatory agencies and service providers
ANA's stakeholders	• Ministry for Integration & Regional Development (MIDR) • National and State Water Resource Councils (CNRH, CERHs) • State governments and water resource management bodies (OGERHs) • River basin committees (CBHs) (includes civil society) • Water users • Electricity system operator (ONS)	• National Water Resource Council • State governments and inspection bodies • Federal inspection bodies • Dam and reservoir owners and operators • Technical advisors/contractors	• Ministry for Cities (MCIDADES) • State and municipal WSS regulatory agencies • State and municipal governments or "executive agencies" • Sector associations, service providers and other civil society groups (e.g., academia, consumer associations)
Legislative framework[1]	• Federal constitution (1988) and Water Resources Law (1997)	• National Dam Safety Policy (2010)	• General Sanitation Law (2007) and new Sanitation Law (2010)
Business line "ways of working" or "functional focus"	• Water sciences • Economic regulation • Stakeholder engagement (advisory and capacity-building) • Data networks and	• Engineering • Risk assessment • Stakeholder co-ordination (operational partnerships) • Data management	• Regulatory standards (legal and economic focus) • Data analysis • Stakeholder engagement

	Water resource use regulation and water resource management	Dam Safety	Water supply and sanitation services regulation
	management • Crisis management		(information gathering and capacity-building)

1. Please refer to Chapter 2 – Sector Reform – for a full discussion of the legislative framework.

The current organisational structure and governance framework does not clearly map onto these three areas. ANA's organisational structure was reorganised in 2022 into its current form, which includes 11 superintendencies, 5 special advisory bodies, 5 decision support units, and the internal governance committee, all reporting to a collegiate board (comprising five members, including the Director-President). In addition, an internal Ethics Commission was created, which may escalate issues outside of ANA to the higher Ethics Commission of the Presidency of Brazil. This reorganisation did not provide a fundamental restructuring of the agency around common inputs, process and goals, but rather the addition of units and layers of governance, and the reallocation of resources: the restructure was prompted by legislative requirements to introduce certain functions, such as the ombudsmen and a governance committee, as well as the need to consolidate advisory capabilities in governance and reallocate resources into new areas, such as basic sanitation. It is possible that this organic growth in the organisational structure means that ANA's current structure does not facilitate an efficient, or the most effective, division of tasks and resources between superintendencies, or even within superintendencies.

The current organisational structure does not enable clear lines of accountability for the delivery of the three areas of its mandate between superintendencies and the Board. The collegiate board, as a collective, is technically accountable for all regulatory and administrative decisions, though the Director-President remains the legal representative of ANA. In practice, agenda items for board deliberation are almost fully developed at the level of the superintendency, accompanied by the supervising Board member (Director), the supervising Director's cabinet, and relevant decision and management support units (such as SGE, ASGOV and ASREG), before reaching the board. The process of formulating a proposal, which is an important stage in developing the final decision due to the procedural nature of board deliberative meetings, therefore involves multiple parties, and may involve multiple superintendents. This process may improve transparency and the quality of final proposals but not necessarily accountability, specifically accountability for the decisions on regulatory developments which connect directly to ANA's strategic objectives in each business area.

There is scope for ANA's strategic plan and management reporting to better support lines of accountability and increase the focus around the three business areas. As already highlighted above (see Issue 1), ANA's strategic planning process is an example of good practice in the way it promotes participation and its consideration of shared values and cross-cutting issues. The strategic plan and annual management plan are both sophisticated products that provide a comprehensive overview of ANA's ambitions and transparency on ANA's activities. However, the strategic plan as an output, in addition to being a tool to set and manage stakeholder expectations, is also a tool to help organise internal teams, provide focus in the regulator's work and set common objectives and ways of working. ANA's strategic and annual management plans could more clearly identify common objectives and co-ordinate areas of responsibility for the three areas of the regulator's mandate, identifying accountability mechanisms at a higher level. There is also scope for more information to be provided on how ANA will work to achieve its stated objectives and targets, and for a view to be developed of how resources are currently allocated between the three business areas and how they are being utilised to achieve ANA's primary objectives.

ANA's roles and responsibilities in water resource management are far more developed and resource intensive today than those in dam safety or water supply and sanitation, and this will likely remain the case in the future. ANA's roles and responsibilities across the three business areas are not equal in terms of the resources required to fulfil the regulators core functions and ANA's structure

does not need to aim for an equal distribution of resources between business areas. However, there is room to develop the current organisational structure and governance framework in order to promote accountability and the efficient use of resources.

Recommendations

- **Develop** a view of how resources are currently being allocated and used across ANA's three business areas at an aggregate level to deliver regulatory objectives and use this process as an opportunity to identify any issues and opportunities, for example relating to under-resourcing or opportunities for joined-up working. This process would not pre-determine an allocation of resources between business areas, it is a process meant to explore synergies and opportunities to improve ANA's delivery of its functions from the perspective of efficiency, whilst maintaining clear governance and accountability.
- **Assess** the feasibility of adjusting ANA's organisational structure or governance framework to better align with its three core business areas – water resource management (including water resource use regulation), dam safety, and water supply and sanitation services – to enable clearer lines of accountability. ANA will need to assess how such an adjustment can be delivered whilst respecting the constraints on organisational design and resourcing provided by legislation, as well as civil service norms.
    - **Consider** a divisional or new hierarchical structure based on the three business areas to enable the drawing of clearer lines of accountability and oversight, by identifying lines of responsibility for expected outputs and outcomes in each of the three areas. A divisional structure can help provide clarity, strengthen interlinkages between superintendencies working in the same area, pool capacity and capabilities, and may free-up capacity at senior and junior levels to allow the development of required talent, for example in economic analysis (see Issue 2).
    - **Consider** the articulation of a governance framework based on matrix management principles, as an alternative, or complementary action, to formal restructuring, which would enable the co-ordination and integration of the various activities and resources and allow for a simplification of the accountability structure based on the three business areas. ANA would need to assess how this might be operationalised within ANA's existing structure and governance arrangements, considering any mandatory requirements and limitations.
    - Explore possibilities to delegate certain decision-making powers to the responsible superintendency, to create clearer lines of accountability and enable the Board to focus on strategic decisions and oversight and performance monitoring.
    - Put in place an ongoing review process to confirm whether the organisational structure remains fit for purpose and address the following concerns:
        - overlaps in specialisation and function are avoided;
        - siloed working on similar topics is not apparent within or across superintendencies; and
        - the structure enables the efficient development of capacity and capabilities which can be directed toward ANA's distinct business areas.
- **Structure** future strategic and management outputs, including the strategic and annual management plans, around the three business areas:
    - Utilise the strategic plan and annual management reporting to (for each business area) identify common objectives, allocate areas of responsibility, and re-state lines of accountability, whilst motivating staff by clearly identifying how ANA will achieve its stated objectives and address identified risks and issues within each business area.

- Incorporate a view of the allocation of resources (human capacity and capability or financial resources), by business area, into the management outputs to provide transparency on how resources are being used to achieve ANA's main objectives, and clarify the opportunities and needs for adjustment, including any issues related to the external governance of human and financial resources.

Operating within financial and human resource constraints

Issue 4: ANA faces constraints relating to its human and financial resources and the ways in which these resources can be used and managed. These constraints create some concerns around the delivery of ANA's new duties under the 2020 Sanitation Law, the regulator's ability to react to new and emerging challenges and ensure an efficient use of resources in those areas where it can achieve the highest impact, as well as its ability to act independently in the future.

Assessment

Brazil's legislative framework and current external governance processes create constraints and challenges around resource management which ANA must navigate. Specifically, due to current fiscal management processes and legislative arrangements on the collection and use of revenues which impact ANA as a federal regulator, ANA faces significant revenue uncertainty and budgetary control. Additionally, ANA does not have full control over its hiring practices: ANA must seek approval from government to hire permanent civil servants, lacks the ability to directly assess candidates during the hiring process, and lacks the tools to manage performance following civil servant appointments.

Financial resources and management

ANA's new mandate in WSS has not been accompanied by sustainable arrangements which satisfactorily guarantee the revenues to enable ANA to deliver on its mandate in the long-term. The funding of ANA's new duties in WSS, under which the development of reference standards and monitoring of their adoption is mandatory, must ordinarily be taken from ANA's national budget allocation. ANA has successfully negotiated a budget adjustment with Congress to increase the amount of its discretionary funding, amounting to 0.75% of the value of the charges levied on hydroelectric power generation, to supplement the national budget allocation (see Chapter 3). This arrangement is temporary and requires approval on an annual basis, resulting in resource uncertainty. Whilst this temporary arrangement currently facilitates ANA's role in WSS, it does not represent an adequate solution for ANA's role in WSS, which represents a long-term endeavour. It is unclear how ANA can deal with future increases in workload, for example when reference standards are in place and ANA must commence monitoring and capacity-building initiatives. The agency has already noted the importance of outsourced consultant resource and the development of training initiatives for supporting reference standard adoption by subnational agencies. A change in legislation would be required to guarantee the availability of revenues from current "earmarked" sources over the longer-term (i.e., open-up earmarked resourced for new uses) or to design appropriate new earmarked funding arrangements for WSS, both of which would provide greater financial stability for ANA and reduce risk of non-delivery.

A long-term budgetary solution which enables ANA to fulfill its duties in WSS becomes more important when considering ANA's limited pool of discretionary resources. Revenues from industry fees associated with hydropower production and water charging are earmarked under primary legislation, with revenues flowing through ANA into specific projects, such as the implementation of the PNRH and management of the RHN or, in the case of revenues for water charging, flow directly to river basin committees. Assessing actual revenues from 2020 to 2022, on average, fees from hydropower production

represented 57% of ANA's annual revenue, a further 7% was contributed from the federal budget, and the remaining 36% came from water charges levied at the basin level (see Chapter 3 - Governance). Ignoring those revenues from water charging which flow directly back to basins, of the remaining revenue which ANA is responsible for allocating (federal budget plus fees levied on hydropower operators), approximately 11% of ANA's revenues are truly discretionary, but 89% are earmarked. Earmarking arrangements provide stability and follow best practice, however, in combination with a comparatively low discretionary budget, the regulator's autonomy, and ability to adapt to changing circumstances is reduced. Combined with a limited unearmarked budget, this may undermine the implementation of the regulator's work in the WSS sector. ANA, as other government departments and federal agencies, also faces pressure to cut administrative spending and the threat of a reduction to its federal budget allocation, though this has so far not materialised.

Finally, although funding levels are currently sufficient to enable ANA to fulfil its duties, there are risks that ANA may face revenue uncertainty during the financial year. Federal government processes of fiscal consolidation and rebalancing throughout the year may result in changes to the expected levels of income as approved in the budget. Additional uncertainty in the annual discretionary budget is created by the threat of fiscal constraints, which are assessed and may be applied at the start of the financial year by government.

Human resources and management

Regarding human resources, ANA faces several constraints which carry different risks, starting with an overarching constraint on its ability to hire new permanent civil servants. ANA wishes to hire more permanent civil servants to join its career paths and carry out specific administrative and specialist roles. The level of permanent civil servants at ANA is currently below the legislated cap, however, new permanent positions, and the civil service examinations required to recruit for these positions, must be approved by the Ministry of Management and Innovation in Public Services. This Ministry has recently approved hiring for 40 of the 110 available positions at ANA, the first approval of its kind since 2008, however, this remains below the requested volume. One of the consequences of this constraint on ANA's hiring is a lack of permanent civil servants in specific roles and a growing reliance on temporary civil servants or outsourced staff, which is significant since some regulatory duties can only be completed by permanent civil servants. In some areas, such as IT, ANA is also facing a general challenge to compete with the market, if it is unable to offer job stability – the distinctive benefit of a role at ANA, versus private sector companies who tend to offer higher salaries but less job security.

Additionally, ANA's autonomy in civil servant selection and performance management is limited, which impacts organisational efficiency and effectiveness. Once approval for civil servant hiring has been granted, ANA defines the desired candidate profiles and basic requirements, such as educational background, technical qualifications and experience, for which candidates may gain credit, but ANA is not directly involved in the assessment of candidates. This process is consistent across Brazil's civil service and is the case for all other federal regulatory agencies. Furthermore, candidates are not subject to any competency-based assessment or in-person interview, which, although aimed at removing a bias in the quantitative scoring, prevents ANA from assessing whether candidates will be a suitable fit within ANA's workforce given the specific nature of its work as a regulator. Once civil servants are confirmed, a rigid performance management process applies, defined under legislation, which covers only an assessment of the minimum requirements for civil servants to progress in salary and title. It is effectively impossible for ANA to dismiss permanent civil servants, except in cases of misconduct.

Both the hiring of new civil servants and outsourcing of work, whichever resourcing option is taken, present human resource management challenges for ANA. Newly qualified civil servants enter ANA at junior staff levels, at which point there is a significant effort required of ANA to onboard and develop civil servants. It is also necessary for ANA to invest to develop staff competencies, for example trainings in management for staff stepping-up from technical to managerial roles, rather than hiring expertise and

competence externally at the appropriate level. A separate consequence of an increase in temporary or outsourced staff within ANA's workforce, as an alternative to permanent civil servant hiring, is that a greater number of staff are not subject to the formal arrangements for performance assessment and career progression, training, or other administrative arrangements that apply only to permanent civil servants, nor do these staff receive the same level of remuneration and benefits. In 2023, ANA's workforce totals 559 people, including 373 civil servants, the majority (76%) of which are permanent civil servants, and 186 outsourced staff – approximately one third of ANA's total workforce. This is broadly in line with the average for other water regulators internationally (Box 1.6) Over the longer-term, a growing reliance on temporary and outsourced staff combined with staff turnover, such that it alters the make-up of ANA's workforce, may impact institutional knowledge as well as ANA's working culture and the morale and dedication of its staff.

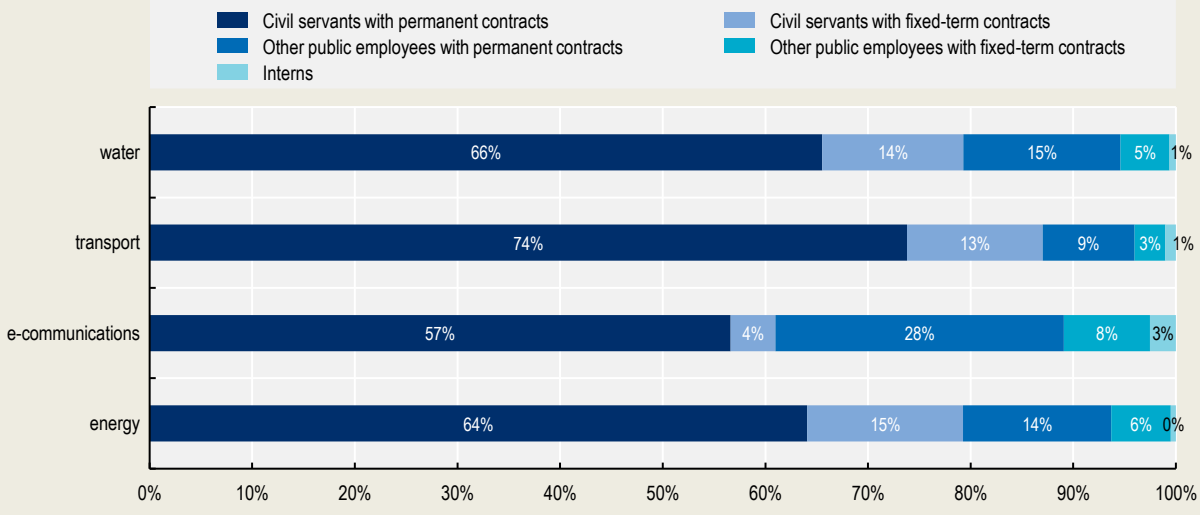
Box 1.6. Comparing economic regulators' workforce arrangements

In 2022, as part of a report on *Equipping Agile and Autonomous Regulators* (OECD, 2022[9]), the OECD published the results of a survey investigating how economic regulators receive and manage their human resources. The underlying "Survey on the Resourcing Arrangements of Economic Regulators" was conducted in 2021 and involved 57 economic regulators across 31 countries.

Considering responses relating to a question on regulators' workforce and contractual arrangements, analysed by sector, the report shows approximately 66% of water regulator employees are permanent civil servants, and further 15% civil servants with fixed-term contracts. The survey did not ask regulators to include outsourced staff (e.g., external consultants) in their response, and therefore the proportions reported below (Figure 1.2) would reduce if outsourced staff were added to the calculation.

However, the 2021 survey did ask regulators whether they make use of external professionals to support their work, to which 86% of regulators answered "yes". Regulators specified that external professionals were hired for a range of tasks, including to provide expert consulting services (legal, economic, and digital services), for IT, finance, and accounting services, and to provide business support, or support for one-off tasks, such as publications and events.

Figure 1.2. Staff breakdown by contract type



Note: For further information and to see comparative data for economic regulators' arrangements in relation to training and career development, please refer to the OECD *Equipping Agile and Autonomous Regulators* report (OECD, 2022[9]).
Source: 2021 OECD Survey on the Resourcing Arrangements of Economic Regulators.

Recommendations

- **Advocate for** structural changes to the legislation to safeguard the revenues necessary to perform functions, to:
  - Clarify structural and long-term funding sources to remove the reliance on short-term or temporary funding sources for longer-term responsibilities and safeguard the regulator's budget from frequent changes or threats over the course of the financial year. The priority for ANA at the time of writing is to ensure adequate stable revenue to deliver on its new mandate and duties in WSS. This could be supported by fostering on-going dialogue with the government and Congress about budgetary and funding, to proactively communicate upcoming funding needs and to create a "no surprises" relationship. ANA can analyse and communicate the consequences of budget decisions and the risks associated with reducing revenues for key programmes, such as the delivery of its duties in WSS, and the impact this could have on ANA's targets and the final outcomes for society. In this effort, ANA could engage with other sector stakeholders and regulators to build broader awareness of the resources needed to execute functions effectively.
  - ANA may draw upon the OECD's guidance on the governance of regulators (OECD, 2014[8]) and publications on regulatory independence (OECD, 2016[10]) (OECD, 2017[11]) when advocating for alternative arrangements to increase the regulator's financial autonomy and support the predictability and stability of funding. This should include a transparent decision and allocation of funding to the regulator on a longer-term basis along with an explanation of the funding decision by the budget authority, to support its financial independence.
  - ANA may also seek to generate advocates for change amongst its stakeholder base by working collaboratively and demonstrating progress, strengthening the link between ANA resources and impact, thereby creating an appetite for the agency's involvement and the evidence and demand required to bring about a long-term shift in resourcing strategy for the agency.
- **Advocate** for increased flexibility and autonomy for the regulator to direct its use of resources towards those areas which will have the largest positive impact on the regulator's objectives. This would require the regulator's budget to include a smaller share of "earmarked" resources, which pose both the risk of an inefficient use of public resources and an underfunding of specific areas of the regulator's work.
- **Advocate for** further approval of the hiring of permanent civil servants at ANA, up to the volume required to mitigate retirements and resignations and meet known workforce needs over the short- to medium-term. Increasing staffing capacity, specifically permanent civil servant roles, is important not only because there are unmet needs, but since it also provides ANA with a way to mitigate the risks of budget constraints, since salaries, and therefore workforce capacity, are guaranteed. In the absence of hiring approval of permanent staff, training, and the hiring of temporary civil servants via exchange or loan is preferable to outsourcing, where relevant profiles are available.
- **Advocate for** greater flexibility and the modernisation of civil service hiring practices, to improve the agility of the regulator's operations and staff to respond to new responsibilities (Box 1.7).
  - Assess the staffing and competency gaps and the impact this has on the regulator's activities and its ability to contribute to policy goals;
  - Identifying ways of increasing the regulator's involvement in the selection process for civil servants, to ensure new staff members match the regulator's identity and the competencies required to work at an independent regulator;
  - Engage with other regulatory agencies to discuss common challenges and define joint approaches, for example co-ordinated engagement or new programmes to share or increase staff resources and capabilities (secondments, training, etc.).

Box 1.7. How the Essential Services Commission of South Australia (ESCOSA) attracts and retains staff in a competitive environment within a fiscally responsible framework

ESCOSA is an independent statutory authority and, though its annual budget and work program are approved by Ministers, ESCOSA has some flexibility to determine, within the overall government context, prudent and efficiency operational strategies and delivery models. One element of those strategies and delivery models relates to the attraction and retention of staff. As a knowledge organisation, ESCOSA depends on staff skills and capabilities to deliver positive consumer outcomes.

In 2023, ESCOSA identified, through a review of national and international evidence, the following factors as important for the attraction and retention of employees: flexible working conditions, prioritising staff mental health and wellbeing, ensuring clarity of work for staff, provision of learning and development opportunities for all staff, fostering social connection, shared values around diversity, equity and inclusion and salary and benefits.

The Commission reviewed its current practice related to these factors and has set an ambitious workplan for 2024 to extend upon work already being done in these areas, including a mental health program, White Ribbon accreditation, a Reconciliation Action Plan , tailored learning and development opportunities, and flexible working practices focused on outcome delivery.

ESCOSA has introduced a monthly pulse survey to measure seven metrics – wellbeing, communication, team collaboration, alignment, leadership, continuous improvement and growth. The aim of the monthly pulse survey is to identify and quickly remediate workplace concerns. Anonymously gathered scores and comments are discussed monthly within teams and across the organisation with actions tracked. Engagement remains high (on average 80%+) and trends are proving to be invaluable data for the leadership team.

ESCOSA recruits quality staff using techniques such as leveraging the positive reputation of ESCOSA, and value-add employment arrangements - use of attraction allowances (paying above the 'standard' salary range) and offering secondments have proven to be successful in attracting staff. When unable to fill more senior or niche roles, ESCOSA has recruited promising junior staff and grown them into more senior roles through tailored training.

When given new functions or responsibilities ESCOSA looks at different funding sources – examples have included recovering costs from involved entities and examining budget lines related to outsourcing work and determining whether it is more cost effective to hire staff to perform functions for term limited contracts. While contracting out work can be necessary at times, ESCOSA's preference for building the expertise within the organisation ensures the organisational strengthens and matures.

Note: White Ribbon Accreditation involves a three-year programme to implement a safe working environment for women and cultural change (see Domestic Violence Workplace Training | White Ribbon Australia). Reconciliation Action Plans (RAPs) enable organisations to sustainably and strategically take meaningful action to advance reconciliation. Based around the core pillars of relationships, respect and opportunities, RAPs provide tangible and substantive benefits for Aboriginal and Torres Strait Islander peoples, increasing economic equity and supporting First Nations self-determination.
Source: ESCOSA, 2024

Promoting a culture of independence and integrity during periods of organisational change

Issue 5: Recent changes to ANA's mandate, organisational structure and leadership have proceeded at a fast pace, impacting staff, and creating a challenging environment for the design of new units and governance processes that function in an inclusive and effective manner, whilst respecting high standards of integrity.

Assessment

The institutional culture of ANA is in transition given recent changes in mandate and organisational structure. Since the adoption of the new mandate in WSS in 2020, ANA has implemented a new institutional structure, which reorganised the superintendencies and created new units and committees, both to meet legislative requirements and to better address its new roles. ANA is continuing to develop the organisation's governance structure with the creation of new units and sub-committees, primarily to provide more inclusive fora for discussion on transversal issues, such as data governance, digitalisation, and regulatory quality. Taken together, these changes are altering the identity and institutional culture of ANA, which for a long period of time was focused on its duties in water resource management. In the external environment too, ANA has had to navigate a dynamic political landscape, address requirements stemming from new legislation and, like other public institutions, find a way to deliver its duties during the COVID-19 pandemic and a period of economic stringency and fiscal pressure.

The reorganisation of the agency has coincided with a significant change in ANA's leadership. While legislation requires the staggering of board appointments, four new directors, including the Director-President, joined the organisation in April 2022.[3] As per OECD normative frameworks, staggering can promote independence of the regulator and trust in the continuity of decisions, by guarding against any perception of "capture" or undue influence. In this regard, the 2022 appointments prompted submissions to the Federal Senate and Senate Environment Committee, including from ANA's employee (civil servants) association (*Aságuas*),[4] for example highlighting concerns around the instability caused by a wholesale change in leadership. Furthermore, academic research has highlighted the connection between independence, defined to include board terms, appointments, and dismissals, and improved regulatory outcomes in Brazil (Box 1.8).

Organisational change and transition appear to be having an impact on staff morale. There are signs of stress and demotivation among ANA staff linked to the agency's transition. Evidence suggests that integrity and inappropriate workplace behaviour are core concerns of staff. For example, surveys conducted by the Comptroller-General of the Union (CGU) show that 52% of respondents are undecided or disagree that senior managers at ANA are committed to the theme of public integrity, and not all staff are aware of who to turn to in cases of misconduct.[5] However, survey results do show significant improvement from 2021 to 2022 (results for 2023 are not yet available).

ANA has various structures in place which could contribute to reinforcing integrity. ANA's internal affairs (COR) integrity programme provides for a systematic risk assessment of ANA's exposure to corruption, fraud, and issues of irregularity and ethical misconduct, whilst ANA's internal audit function (AUD) focuses on auditing internal governance, risk, and control processes, working closely with the CGU to implement government-wide control programmes. In addition, ANA's other integrity structures, such as the Ethics Commission and Ombudsmen, provide an opportunity for concerns to be raised and addressed by staff and external stakeholders.

The impact of existing internal bodies and processes could be further enhanced through more capacity and resources as well as more clarity in channels to the Board. Whilst ANA's internal affairs and internal audit functions are relatively well established, the Ethics Commission and Ombudsmen have

limited capacity relative to the importance of their role for the organisation. For the Ethics Commission, serving members are nominated from ANA's existing employees and are expected to perform their role on the commission whilst maintaining their full-time position. Commission members do not receive any training but are nevertheless taking on responsibility to develop ANA's code of conduct and have had to deal with serious complaints in the early stages of their term. For the Ombudsmen, limited capacity results in a minimum level of service, primarily focused on responding to queries and information requests, rather than providing more advanced services which could contribute to ANA's transparency and accountability processes. Both the Ombudsmen and Ethics Commission currently appear to lack buy-in from senior leadership and channels to communicate their findings effectively and allow these to feed into decision making. Board support is especially important given the limited scope internal units may have to remedy the complaints or issues that are brought to their attention, as well as to signal these areas are an important organisational priority.

Box 1.8. Research on independence and regulatory performance in Brazil and the OECD's work on regulatory independence

When driven by the political climate in Brazil, changes in leadership carry risks for regulatory agencies to ensure their independence. Appropriate safeguards are key to its functioning, especially by maintaining the integrity (and stability) of its processes and reputation for independent regulatory decision making and expertise.

Research cited in the OECD's performance review of Brazil's Electricity Regulatory Agency (ANEEL) (OECD, 2021[12]), highlighted how presidential influence over the appointment process has led to a departure from the principle of non-coinciding full-terms of the board, and a lower completion rate of mandates over presidential transition, in the Brazilian context (De Bonis, 2016[13]) (Correa et al., 2019[14]) (Oliveira and Fujiwara, 2006[15]).

A more recent review of research on regulatory reform and performance in Latin America, including Brazil, summarised findings from several academic papers which found a positive correlation between a greater degree of independence and improved regulatory outcomes, highlighting at the same time the fundamental role independence plays in determining how well a regulatory agency is able to function (Gonzalez and Peci, 2022[16]).

Recommendations

- **Create** institutionalised channels of communication connecting ANA's integrity structures (ethics, OUV, COR, AUD) to the board and wider organisational decision making, to guarantee the board's visibility of emerging issues and risks and effective action in a timely manner to address integrity concerns. There are a range of mechanisms ANA can consider implementing to connect ANA's integrity structures with the board, accounting for the potential need to maintain confidentiality whilst providing a more productive communications process than currently exists. For example, ANA may:
  - include a standing item on Board agendas, so the Board has regular information on the health of the organisation and its committees and allowing it to effectively respond or channel findings into its decision-making. Data which should remain confidential but is important for discussion and decision-making may be effectively anonymised by using aggregated data, removing personal information, or using non-identifying case studies for a discussion on principles for future action;

  - designate a board liaison, a member of the board, who can serve as an intermediary between the reporting integrity structure and the collegiate board. This would resemble the existing role that board members take in relation to superintendencies while respecting the offices' independence and the need for direct lines of communication; and
  - consider creating closed sessions between the board liaison, Director-President and integrity structure representatives, but whilst maintaining communications and reporting to the relevant accountable persons – creating a new confidential reporting mechanism between the board and the relevant elements of the integrity structure.
- **Consider**, in support of the above recommendation, whether allocating resources to new initiatives may be key to improving corporate governance practices as they relate to integrity, change management, and organisational health. For example, training on integrity matters for both the board and internal integrity structures, or the retention of external experts, who may advise the board on complex ethical matters or conduct an impartial review and provide independent guidance to the board.
- **Consolidate** existing and new initiatives in a strategy that aims to boost ANA's internal culture and identity and build resilience to the potential impacts of institutional change. This can include measures focused on integrity, but also bring initiatives focused on internal culture, identity, and maintaining a common sense of purpose for staff, under one coherent policy that is easy to understand by staff, easy to monitor and that will be reported on to staff in a transparent manner, focusing as much as possible on impact and outcomes (changes in attitude or behaviour) rather than on inputs (events, trainings, etc.).
- **Advocate for** a return to properly staggered appointment of board members, who subsequently observe their full term of five years, and adherence to best practice in terms of selection procedures.
  - ANA may draw upon the OECD's best practice principles on the governance of regulators and other publications providing guidance on independent regulators and creating a culture of independence within regulatory agencies. This guidance recognises it is the board that takes decisions for which the regulator will be held accountable and who therefore may be exposed to greater pressures than professional staff. This fact makes the processes of board nomination, appointment and the design of board member's mandates all the more important for achieving, or contributing to, the regulator's independence, from the perspective of preventing undue influence and maintaining trust and promoting effective decision making, by nominating and selecting the best candidates for the role (OECD, 2017[11]) (Box 1.9 and cited sources (OECD, 2014[8]) (OECD, 2017[11])).

Box 1.9. The OECD's best practice principles on the governance of regulators and guidance on creating a culture of independence

Relating to the governance of regulators, two of the OECD's best practice principles on the governance of regulators focus directly on aspects of independence: preventing undue influence and maintaining trust; and designing a suitable governing body structure and decision-making model for independent regulators (OECD, 2014[8]). In addition, the OECD has developed guidance on being an independent regulator (OECD, 2016[10]) and creating a culture of independence (OECD, 2017[11]). The latter publication – creating a culture of independence – discusses board nominations, appointments, and mandates.

In relation to board terms and mandates specifically, the OECD's guidance highlights the importance of staggered appointments for maintaining knowledge and expertise between renewals:

- **Board mandates:** For regulators led by a board, appointments of board members should be staggered to maintain knowledge and expertise in between renewals of appointments. The length of office terms should be designed in a way that ensures that board members' terms cut across electoral cycles, compatible with each country's constitutional arrangements. Mandates should be of at least five years to allow for knowledge and expertise development.

Regarding board nominations and appointments, the OECD's guidance recommends the following:

- **Nomination:** The nomination process for the leadership of the regulatory agency should be transparent and accountable through a specific formal requirement in the legislation or the governing act. Relevant information should be communicated to stakeholders, including the functions to be performed, the skills required for the position, the time frame for nominations, who will officially nominate potential candidates, who will be consulted and whose views will be taken into account in selecting potential candidates, the selection criteria, and any particular considerations in the process (e.g. diversity of expertise in the case of regulators led by a board).
- **Appointment:** The appointment process should also be transparent and accountable with a justification based on the number of candidates considered, selection criteria and consultations that should be publicly available. It should also be clear who specifically has made the final and legal appointment and the terms and conditions of the appointment. This provides greater confidence in the governance of the regulator.

Boosting transparency and access through data and digital transformation

Issue 6: Digital tools, data and technology, and their governance, can enable new ways of working, and underpin ANA's ability to meet the information and interaction needs of regulated entities and citizens in an inefficient and effective way. As these areas continue to evolve at a fast pace, ANA must ensure digital and data governance remains fit-for-purpose and forward-thinking.

ANA plays a leading role for the water sector in terms of data collection and dissemination, knowledge sharing, and reporting. However, not all information, reporting and data resources are easily accessible and tailored to stakeholders' needs.

Assessment

ANA responds to citizen requests for information in a timely manner, but the high volume of demand may be partially driven by insufficient accessibility of information on the website. ANA receives a significant volume of information requests but has shown a positive response to this demand relative to other public institutions in Brazil. From May 2012 to June 2023, ANA received nearly 4 000 information requests (54th highest of 323 public institutions), of which 99.9% have been responded to within an average time of 7.9 days (21st fastest of 323). Much of ANA's regulatory documentation, including ANA's resolutions defining high-level operational policies, is available to all stakeholders via ANA's website, but these documents can be technical, legalistic, and not always available in accessible formats. ANA provides a Charter of Citizen's Services, listing ANA's services in a document in more simplified language for the public, and also provides this list of services on its website. However, there may be scope to update these resources and further simplify language, signpost them more effectively to ensure ease of access, and conduct further work to transpose key legal documents into more accessible guidance.

ANA shows maturity in its ongoing projects and plans to utilise technology and digital solutions for its own internal needs and for the needs of regulated entities and citizens. At the current time, ANA's Superintendency for Information Technology (STI), which co-ordinates the technology choices regarding the SHIRH and manages ANA's IT infrastructure and resources, demonstrates the use of industry best practices and has already identified and made progress on several opportunity areas, including the build-out of a "one-stop shop" application for ANA services (in the testing phase) and increasing integration with state institution data systems. Internally, ANA is utilising new remote technologies, and assessing the use of other technologies, to enhance its inspections process, prompted by the impact of the COVID-19 pandemic, and the management of the hydrometeorological network. Within the hydrometeorological network, the application of new technologies and associated procedures in relation to operational hydrology, spatial hydrology and treatment of hydrological data can bring many quality and efficiency benefits. For inspection and enforcement, ANA's SFI division has already invested in new technologies and data-driven procedures to enable self-monitoring of water resources, remote monitoring using satellites and drones, applications for surveying, navigation and to facilitate the delivery and management of relevant information.

Digital tools and commercially available technologies continue to evolve at a fast pace. ANA's governance arrangements and capabilities will need to be continuously assessed and similarly need to evolve to remain effective. Whilst ANA shows maturity in its ambition to incorporate new technologies and long-term digitalisation strategy, there are several challenges which need to be managed, some of which have already been identified in internal planning. First, contracts for the procurement or outsourcing of digital services will need to concentrate on more than just price. This is a limitation of the government procurement policy which restricts ANA from sourcing more costly service providers who may bring greater benefits to service users (the regulated sector and Brazilian citizens). Second, ANA struggles to compete with the private sector to hire expertise and talent to work on core projects, such as the integration of databases. Third, the transition to open source, which will boost transparency to the benefit of stakeholders, but should progress with consideration for the accessibility and simplification criteria already noted.

ANA is unique amongst regulatory agencies due to its role in co-ordinating the RHN and managing data for multiple national data systems. However, ANA must still assess the benefits of the data it gathers and how it is being used against the costs of doing so. Though other agencies may have data monitoring and analytical roles, ANA must co-ordinate a geographically vast network and undertake the necessary stakeholder engagement, contract management, and capacity and capability building to extract the benefits of the monitoring network. The RHN is a good example of a large undertaking and resource commitment that should be accompanied by an evaluation of the use of gathered data, as well as an assessment of costs and benefits, and opportunities for optimising processes, for example through digitisation. Some of this work is already underway at ANA with regards to the RHN, but the principle could be extended to other areas of work as part of digital transformation and data governance development processes. Overall, ANA should assess whether the time and effort required to collect and analyse data is well allocated between business areas, noting there is likely a minimum level of data collection required to first establish the evidence base recommended under Issue 2, and there will be linkages or multiple uses of data, which will need to be considered before making judgements on the marginal costs and benefits of data collection.

Furthermore, there may be a need for an institution, such as ANA, to take a leading role in co-ordinating data management amongst actors, to ensure resources are being efficiently allocated. Considering the business areas where ANA is involved, there is a risk that individual entities at the national, regional, or subnational levels are committing resources to complete the same data-related tasks, such as database creation and management. This type of activity can involve significant staff time and resource which could be freed up if roles and responsibilities were clarified and co-ordinated between the relevant institutions.

Recommendations

- **Improve** the accessibility of regulatory decision-making using jargon-free language, easy to read guidance on decisions, visualisations, summaries, and other accessible formats (Box 1.10).
- **Engage** with other regulatory agencies, in Brazil and abroad, to exchange on good practices in the use of digital technologies, and to feed into the development of monitoring and inspection frameworks.
- **Design** monitoring and evaluation practices which focus on the organisation's main data processes, which enable the regulator to assess the costs and benefits of data collection and use and take appropriate decisions on data governance. Including an assessment of where is most beneficial to target efforts for data collection, which may tackle existing data gaps for regulated sectors.
- **Assess** how data and technological capabilities are being used to develop ANA's programme of work and identify options to bring the benefits of technology and data-use to more areas, for example in developing ANAs programme of responsive regulation.
- **Assess** if data-related tasks are being duplicated across regulatory or other institutions for ANA's business areas, and if ANA is able to co-ordinate data management so as to reduce resource-use inefficiencies for all involved.

Box 1.10. ERSAR's approach to ensure the accessibility of data on regulatory decision-making

ERSAR is an independent economic regulator with responsibility for regulating the water and waste services sector in Portugal. ERSAR has the power to collect information from the regulated sector in accordance with the defined procedures and obligate operators to provide regular reports.

Data collection

ERSAR's data collection processes cover all operators in mainland Portugal, allowing for a comprehensive database to be created regarding the performance of each operator and for the sector. Information is collected on a yearly basis, online, through timesaving informatic tools (Portal ERSAR). ERSAR is renewing some of these tools and reinforcing business intelligence tools to further improve procedures.

ERSAR has a dedicated team that monitors compliance with KPIs and drafts KPI reporting, assisted by the data team (within IT and Information Management) and other ERSAR teams responsible for the regulatory processes which monitor and control operators. Capability and data-ready systems are key to data being collected and organised efficiently so that collection can lead to meaningful reporting for all users.

Availability and accessibility

Non-commercial information is made publicly available on ERSAR's website as soon as validated and published in annual reporting. Users have access to all opinions, decisions, and recommendations, also via ERSAR's website.

ERSAR produces a series of quality-of-service indicators which are used by the regulator as a monitoring tool but are also useful to service users as a comparison tool. The indicators and the associated data collection and validation processes have been used as a reference model by peers due to their robustness. Quality, and at the same time understandability and accessibility, is assured

thanks to the use of concrete definitions, the harmonisation of methodologies for estimation, the assessment of reliability and accuracy as well as reference values and factors that allow users to understand the context of different service operators.

Co-operation

ERSAR collaborates with other institutions, for example the National Statistics Agency, to gather and share information. ERSAR has also co-operated with the Portuguese Environmental Agency (APA) to clarify the boundaries between ERSAR and the APA regarding data collection and reporting. Here, there is a division made based on the sector or regulatory issue area - ERSAR has taken the lead on economic and quality of service data, whilst the APA focuses on the management of water resources and licensing. This requires some degree of co-operation in data management to ensure that there is a common database and set of assumptions and definitions, and to avoid information requests overlapping, which would create additional burden for operators. Digitalisation allows for better integration of information and identification of gaps that require correction and for easier sharing of information between agencies.

ERSAR and APA are currently collaborating to provide geographically referenced data on water quality and quantity to comply with the European drinking water quality directive, allowing for water quality to be monitored from source to tap.

Source: Information provided by ERSAR, 2024.

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Notes

[1] For more information, please refer to: The OECD Network of Economic Regulators - OECD.

[2] Under the “Union’s domain” is commonly cited terminology for rivers crossing state boundaries within Brazil or international boundaries between Brazil and neighbouring countries, which are then managed by federal rather than individual state-level institutions.

[3] In legislation this is phrased as a requirement to follow non-coinciding terms of five years.

[4] The public letter (January 2022) sent by ASÁGUAS - Association of ANA Employees - to the President of the Federal Senate is available at: Ofício ASÁGUAS - 01/2022/ASÁGUAS 9 : Free Download, Borrow, and Streaming : Internet Archive.

[5] Based on reporting provided by ANA’s Internal Affairs (COR).

2 Institutional and sector context

This chapter provides an overview of Brazil's public institutions and describes the main features of the water resources management and water supply and sanitation sectors, as well as the legislative framework that determines the functions of Brazil's National Agency for Water and Basic Sanitation (*Agência Nacional de Águas e Saneamento Básico* - ANA).

Introduction

This chapter presents an overview of the institutional framework in Brazil and legislation on water resource management (WRM) and water supply and sanitation (WSS). It maps how policy has evolved over time – as well as providing information on the structure and performance of the water and sanitation services sector.

Brazil is a large, diverse country dealing with many challenges that affect the development of WRM and WSS policy and regulation. Brazil is characterised by social inequality, geographical and cultural differences between its regions, and low capacity to pay for services (OECD, 2022[1]). Economic crisis and the COVID-19 pandemic have intensified many of these characteristics. Additionally, the high volume of actors at different levels of government, the uneven capacity of those actors, and a policy preference for decentralised and participative decision-making in WRM and WSS results in a complex, multi-level environment that regulatory authorities need to navigate.

Brazil is water-rich, but this wealth is unevenly distributed. The Amazon, Paraná and São Francisco rivers are some of the world's largest water basins. However, there is a mismatch between water sources and water use, with the Amazon rainforest in the sparsely populated North and Centre-West regions, while the developed coast includes the agricultural but semi-arid Northeast and the industrialised population centres of the South and Southeast (OECD, 2022[1]).

Regarding water supply and sanitation, despite refocused efforts, Brazil shows some distance to national and international goals to achieve universal service coverage. Around 16% of Brazil's population lack access to safely managed drinking water whilst 44% of the population lacks basic sanitation services (sewage collection and treatment) (see Sector overview) (SNIS, 2021[2]). The largest deficits are in the North and Northeast of the country, in particular across indigenous villages, urban peripheries and informal settlements (favelas) (SIWI/UNICEF/World Bank, 2020[3]). Rural areas in Brazil also present a challenge, where only 62.9% of the population uses basic sanitation services compared to 94% in urban areas.

Beyond the challenges posed by improving access to essential services for an increasing population, various social, economic, and environmental trends in Brazil create significant security and infrastructure challenges, which compound risks and complicate regulatory decision-making. Actors in the water and sanitation services sector need to consider risks arising due to developing trends, such as extreme climate and weather, population growth, deforestation, and urbanisation. This is true for actors involved in the water and sanitation network but also for stakeholders in other productive sectors like food and energy, who strongly depend on water availability for the performance of their sectors.

Boosting resilience to the risks related to these trends, which include more frequent and severe climate water-related events, such as droughts and floods, the depletion of hydropower reservoirs, increased water pollution around urban centres, and worsening access to services for rural populations and informal settlements, is discussed at length in the OECD's report *Fostering Water Resilience in Brazil: Turning Strategy into Action* (OECD, 2022[1]).

Brazil's institutional framework

Brazil is a presidential federated republic, which the Constitution (1988) defines as formed by four types of autonomous federated entities: the Union, 26 states, 5 570 municipalities and one federal district (the capital, Brasilia). The authorities and bodies of the Union represent the federal state, namely the President, Vice-President and National Congress, whereas Brasilia (the federal district) and the individual Brazilian states have their own elected governors and legislative chambers, with a significant and influential level of delegated power relative to the federal government. At the local level, municipalities also have delegated powers under the constitution regarding legislative, governmental and administrative capacities. The

Constitution establishes the principle of the separation of powers of the Union into legislative, executive and judiciary (Supremo Tribunal Federal, 2022[4]) (European Parliamentary Research Service, 2021[5]).

Legislative branch

The National Congress (*Congresso Nacional*) is a bi-cameral parliament consisting of the Chamber of Deputies (*Câmara dos Deputados*) and the Federal Senate (*Senado Federal*). The Congress is the primary law-making authority responsible for setting out general policy frameworks and principles in primary legislation, whilst the executive branch typically takes responsibility for developing secondary legislation.

In accordance with the Administrative Procedure Law (Law No. 9.784, 1999[6]), the Congress can mandate or authorise federal regulators, including ANA, to edit and issue resolutions. It can also request opinions on draft legislative proposals or responses to official questions raised by representatives. There are a number of permanent committees covering subjects which either directly or indirectly relate to water and sanitation, or sector regulation, for example: the Environment and Sustainable Development Committee; the Consumer Protection Committee; the Mines and Energy Committee; the National Integration, Regional, and Amazon Development Committee; the Agriculture, Livestock, Supply and Rural Development Committee; and the Urban Development Committee. Whilst the performance of federal regulators may be widely discussed within Congress, the committee structure does not hold a formal role in the evaluation of federal regulatory agencies – a role which is undertaken by the Federal Court of Accounts (*Tribunal de Contas da União*, TCU). Instead, committees develop policy proposals, which can indirectly impact the regulatory landscape, and may require input or reaction by federal regulators.

Executive branch

The President of the Republic is head of both state and government, and together with the Vice-President is elected by universal suffrage, with a four-year mandate. The President appoints the Council of Ministers, the primary consultative body to the executive together with the National Defence Council, Attorney-General, and Council of the Republic.

The Ministry of Integration and Regional Development (MIDR) has oversight of ANA, whilst both the MIDR and the Ministry of Cities (MCIDADES) are, at the time of writing, the two ministries responsible for developing policy in, respectively, WRM and WSS – the two sectors where ANA holds regulatory duties.

The newly formed Ministry of Finance (MF), Ministry of Planning and Budget (MPO), and Ministry of Management and Innovation in Public Services (MGISP),[1] are responsible for overseeing ANA's budget and financial resource management. Several other ministries remain important for the water and sanitation services sector due to cross-sectoral linkages or dependencies relating to objectives, processes, and outcomes. These other ministries include the Ministry of Agriculture, Ministry of Environment and Climate Change, and the Ministry of Mines and Energy, which, despite a lack of formal governance relationships with ANA in legislation, may be influential due to policy decisions made regarding, for example, energy transition, environmental resilience, infrastructure, and agricultural development.

The National Water Resources Council is chaired by the Minister of Integration and Regional Development and is formally the entity which co-ordinates and directs the National Water Resources Policy (*Política Nacional de Recursos Hídricos,* PNRH), whilst ANA is responsible for its implementation. In practice decision-making in the Council is participative, involving government (including ANA), water resource users and civil society, however the Council's activities are on hold at the current time pending restructure under the new presidency. Furthermore, at the time of writing, executive responsibility for the National Water Resources Policy (PNRH) is undefined, following a Presidential veto of its return to the MIDR.

The Inter-Ministerial Sanitation Committee (CISB), under the presidency of MCIDADES, oversees the implementation and co-ordination of federal sanitation policy (see Chapter 3).

Judicial branch

The Supreme Federal Court (*Supremo Tribunal Federal*, STF) is the highest judicial body in Brazil tasked with safeguarding the Constitution, whereas the Supreme Court of Justice (*Superior Tribunal de Justiça*, STJ) is responsible for ensuring the uniform interpretation of federal law throughout the country. Underneath these courts sit the courts of the federal justice system (state, federal district, and regional courts), responsible for prosecuting and judging cases on behalf of the Union, autonomous entities or federal public companies, acting as plaintiffs.

Other independent bodies

The Federal Court of Accounts (*Tribunal de Contas da União*, TCU), audits the accounts of administrators, including regulatory bodies, and other entities responsible for federal public funds and assets. This autonomous, administrative authority is provided by the Constitution (Supremo Tribunal Federal, 2022[4]). As such, the TCU may scrutinise the performance and accounts of ANA (see Chapter 3).

State and local government

Brazil's federation is made up of 26 states and the federal district. At the state level, the executive power sits with governors and vice-governors, who are supported by a legislative assembly of state deputies. At the local level, municipalities are governed by mayors and deputy mayors and a legislative body of municipal councillors. State and municipal governments can define regulatory measures within their area, noting only state governments, not municipal authorities, hold responsibilities for water resource management.

The nature and extent of the interaction between federal, state, and municipal levels, which is largely determined by legislation, varies depending on whether an issue relates to water resource management, or water supply and sanitation services, which are governed by separate legislative frameworks (see Sector reform). In the case of water resource management, one factor determining the involvement, or not, of federal institutions is the location of the body of water and its use.

Sector reform

Brazil has witnessed rapid institutional development and reform, with recent legislation focusing on developing the legal framework and operations of both the WRM and the WSS sectors.

The overall direction of legislation has been to promote, and provide the means to achieve, increased access to water supply and sanitation services, or otherwise to develop and clarify the institutional or operational frameworks that govern WRM and WSS across federal, state, and municipal levels. More recently, focus has turned to regulatory standardisation and the centralisation of oversight, and management, in the interests of both increasing the effectiveness of policy, and efficiency in its implementation.

Water resource management and dam safety reform

Following the establishment of Brazil's Constitution in 1988, a set of new laws and federal programmes from 1997 to 2019 aimed to establish the National Water Resources Policy and develop water resource management, water services provision and dam safety in Brazil. During this period, in 2000, the National Water Agency (ANA) was created to support the maturing sector - a key moment of institutional evolution.

Brazil's Federal Constitution

The federal constitution established the legal framework for water management by recognising water as a public asset and declaring it as a collective right for present and future generations. The constitution states that the use of water resources must be based on the principles of sustainable development, environmental protection, and social equity (Supremo Tribunal Federal, 2022[4]).

Providing the basis for the implementation of these principles, the National Water Resources Policy (PNRH) created the concept of water basins as the territorial units for WRM, allowing local conditions and needs to be considered and fed into the policy development process. The constitution also established, in general terms, the need for the National Water Resources Management System (*Sistema Nacional de Gerenciamento de Recursos Hídricos,* SINGREH). In doing so, the constitution's provisions have laid the foundation for legal reforms discussed in more detail below.

Water Resources Law, 1997

Following the principles set out in the constitution, the Water Resources Law (Law No. 9.433, 1997[7]) provides more detailed guidelines and regulations for the use, conservation, and protection of water resources in Brazil. The legislation established a system of water rights and enabled the collection of water charges for the use of water resources.[2] The law emphasised the importance of participatory decision-making by establishing Basin Committees (*Comitês de Bacias*), an institutional representation of the water basin communities, and requires Water Management Plans (*Planos de Recursos Hídricos*) to be developed and implemented at the basin level through a participatory and representative process. Finally, the law emphasises environmental protection and sets standards for water quality, ecosystem preservation, and the prevention of pollution, introducing measures to control and mitigate activities that may have a negative impact in these areas.

In Brazil, river basin committees are provided with strong deliberative powers, but in most cases have limited capacity for implementation, which contrasts with the role played by similar institutions in other countries, where basin committees build consensus on priorities and planning but lack decision-making powers.

The PNRH, as further defined, provides the objectives, strategies, and instruments for the sustainable and integrated use, conservation, and protection of water resources. The same law created the SINGREH, which is a network of institutions responsible for the co-ordinated enforcement of the WRM framework in Brazil, including federal and state agencies, as well as the water management councils at the basin level.

Establishment of the National Water Agency (ANA), 2000

The National Water Agency (ANA) was established in 2000 by Law No. 9.984/2000, which created ANA as an autonomous regulatory agency responsible for water resource management at the national level. The establishing legislation grants ANA the power to establish guidelines, regulations and standards for the use, conservation, and protection of water resources, and defines ANA's mandate (Law No. 9.984, 2000[8]). Various legislative acts have amended ANA's establishing legislation since 2000 and added responsibilities.[3]

The creation of ANA was an important step in co-ordinating and implementing water resource management after earlier legislation had delivered a decentralised system in line with the society's needs to enhance localised, bottom-up decision making during the democratic transition (OECD, 2022).

After the establishment of ANA, SINGREH would incorporate the National Council of Water Resources (*Conselho Nacional de Recursos Hídricos,* CNRH); ANA; the state councils of water resources; the basin committees; federal, state, and municipal institutions responsible for water resource management, and water agencies.

National Policy on Dam Safety, 2010

Law No. 12.334/2010 established the National Policy on Dam Safety (*Política Nacional de Segurança de Barragens*) and provided a comprehensive framework for dam safety at the federal level. Guidelines and regulations on the inspection, monitoring, and safety of dams are provided by this legislation, which also empowers regulatory agencies such as ANA to establish further regulation, conduct inspections, and enforce compliance. The law aims to prevent accidents, mitigate risks, and ensure the safety of people and the environment connected to dam structures (Law No. 12.334, 2010[9]).

ANA is responsible for implementing and enforcing the National Policy which, aside from inspections and enforcement action, involves responsibilities for dam classification, and the provision of technical assistance and capacity-building of dam owners, operators, and other regulatory agencies (see Chapter 3).

Programme Progestão, 2013

Following the 2011 National Pact for Water Governance, the *Progestão* programme was instituted in 2013 to help strengthen water resources management and promote co-ordination at the state level and provide flexibility to address situations and capacity that vary from state to state. It sets partnership agreements between ANA and the state and federal district water resource management institutions, including the state water resource councils and state water executive agencies, to develop capacity and capabilities and better integrate the National Water Resources Management System (SINGREH) and the state water resources management systems (SEGREHs) (ANA, 2011[10]).

The first support phase of *Progestão* was launched in 2013. The programme included the payment of up to five instalments of $750 000 BRL (154 000 USD) per year, for each state, subject to the fulfilment of pre-established institutional goals. For the second phase of *Progestão*, the annual instalment increased to $1 million BRL (206 000 USD) (ANA, 2011[11]), and for the third phase, launched on December 2022, it increased to $1.4 million BRL (USD 288 400).

National Water Security Plan and Water Security Programme, 2019

The 2019 National Water Security Plan (*Plano Nacional de Segurança Hídrica,* PNSH) aims to strengthen the country's water security by addressing challenges related to water availability, quality, and resilience. The plan involves strategic infrastructure investments totalling approximately BRL 27.6 billion per year (7.2 billion USD at 2019 rates) from 2019 to 2035 (ANA, 2019[12]).

The 2019 Water Security Programme (*Programa de Segurança Hídrica*, PSH) attached to the PNSH effectively doubled the level of investment in water infrastructure. As of July 2022, 2% of projects under the PSH were completed, 48% are under construction, 3% are out for bidding, 17% have concluded the planning stage, 21% are in the planning phase, and 7% are on hold. The Union's support in the implementation of fully qualified interventions in the PSH represents a total investment of $18.03 billion BRL (3.7 billion USD), of which 79% has already been disbursed (ANA, 2022[13]).

National Pact for Water Governance, 2023

The National Pact for Water Governance aims to strengthen the institutional relationship between ANA and the states and federal district. At the current time of writing, 23 states have signed up to the pact, which focuses on specific objectives in each of ANA's three business areas – water resources management, the regulation of sanitation services, and water infrastructure, including dam safety.[4] The Pact will be formalised through "Terms of Adhesion", but is founded on the principle of co-operation already provided for in legislation, for example under the National Water Resources Policy, the new sanitation framework, and the National Dam Safety Policy.

Water supply and sanitation reform

Following earlier efforts to manage the water supply and sanitation challenge through large state-led infrastructure programmes and then decentralised, less co-ordinated action at the municipal level, the General Sanitation Law established comprehensive guidelines, principles, and targets for the sector. In 2020, the Sanitation Law renewed this effort, at the same time introducing new tasks, assigned to ANA, to develop national reference standards to guide subnational regulatory agencies and supervisory bodies towards standardised best practices.

General Sanitation Law, 2007

The General Sanitation Law (Law No. 11.445, 2007[14]) established guidelines and principles for comprehensive sanitation services. The law represented a significant shift and improvement compared to earlier legislation on sanitation for several reasons: the law provided a comprehensive approach instead of addressing isolated sanitation issues; it focused on universal access to safe water supply, sanitation facilities and proper waste management; the law promoted citizen participation and social control in decision-making processes; it established a more comprehensive regulatory framework by creating regulatory agencies at different levels of government; and it encouraged public-private partnership as a means to improve service efficiency and effectiveness.

The General Sanitation Law defined basic sanitation as comprising four services: drinking water supply; sewage (or wastewater) collection and treatment; urban cleaning services and solid waste management; and urban rainwater drainage and management. It also establishes the Inter-Ministerial Committee for Basic Sanitation (CISB), which as a co-ordinating body for water supply and sanitation policy at the federal level, became an important stakeholder for ANA after the 2020 Sanitation Law extended the agency's mandate.

Sanitation Law, 2020

The 2020 Sanitation Law, or "New Legal Framework for Basic Sanitation" (Law No. 14.026, 2020[15]), is the most recent piece of federal legislation to introduce reforms to Brazil's sanitation sector. The legislation's primary objectives are to achieve universal access and promote proper sanitation practices and water quality monitoring in the interests of public health and the environment. Whilst the law covers similar aspects as the General Sanitation Law (for example the promotion of universal access, the regulatory framework, and public-private partnerships), the 2020 legislation adapts the focus of earlier approaches and addresses new topics, such as regional collaboration.

The law introduces a more precise set of targets for making progress toward universal access, deadlines for the achievement of the targets, and requirements for regular monitoring and progress reporting. Regarding universal access, all networked urban and rural areas should have continuous access to safe drinking water by July 2033, which represents access for 99% of the population. For sewage services all urban areas should have access to sewage collection and treatment services, representing coverage for approximately 90% of the country's population.

The new legal framework includes an expansion of ANA's mandate into the WSS sector – introducing responsibilities for the definition of reference standards for water and sanitation and monitoring their adoption by subnational regulatory authorities (see Chapter 3). This is an important change for the sector, since under the previous framework, water supply and sanitation services were regulated locally without federal direction.

The law stresses certain processes or outcomes as important for realising the legislation's primary objectives. Those processes or outcomes include the regionalisation process noted below, but also the enhancement of private sector participation, and the harmonisation of approaches and standards by

subnational regulatory authorities. This outcome concerns the ANA-issued reference standards, which can be supported by ANA-led capacity building efforts (see Chapter 3).

Another revisited topic in the 2020 legislation is tariff regulation and social assistance. The law introduces measures to ensure fair and affordable tariffs for users and emphasises the importance of social assistance programmes to guarantee access to basic sanitation services for more vulnerable segments of the population.

The Sanitation Law places increased emphasis on attracting private investments in the sanitation sector. It aims to provide greater legal certainty and promotes the use of public-private partnerships to drive innovation and efficiency. In the interest of optimising resources and increasing efficiency, the law also promotes regional collaboration and the formation of consortia, or "blocks", among municipalities. This formation of consortia, referred to as the "regionalisation" of provision, aims to achieve economies of scale, and is incentivised through prioritised access to federal investment. At the same time, competition conditions are improved by new rules around contract renewal and the prohibition of "programme" contracts (Smiderle *et al.* 2020).

Five separate decrees accompany the new legal framework and provide additional guidelines on aspects of inter-ministerial governance (Decree No. 10.430, 2020[16]), the federal government's support to states and municipalities (Decree No. 10.588, 2020[17]), required evidence of the financial capacity of potential service providers (Decree No. 10.710, 2021[18]) and the methodology to be used (Decree No. 11.598, 2023[19]), and support for the regionalised provision of public sanitation services (Decree No. 11.599, 2023[20]).

Sector overview

The WRM and WSS sectors within which ANA operates are complex, vast in scale, and are grappling with considerable challenges as signalled in the introduction to this Chapter. The two sectors are connected, since water supply and sanitation represents one source of demand on water resources, but the two sectors have evolved at different rates and face very different challenges today in terms of sustainability, efficiency, and the gap to bridge to stated policy objectives.

Water resource management

Before water is consumed it must be withdrawn from freshwater or groundwater resources, which fall under either state or federal supervision[5], and transported. The wholesale market for bulk water use, in which water supply and sanitation is just one use-case contributing to demand, is regulated through the allocation of water rights and the levying of water charges.

ANA's role in water resource management is summarised in more detail in Chapter 2, whilst a more detailed analysis of water charging, including an overview of the economic principles and the state of play in Brazil, is available in *Water Charges in Brazil: The Way Forward* (OECD, 2017[21]).

Water abstraction and pollution charges

The water charge (*cobrança*) is a price for the use of a common resource. The objective of charging is to ensure water is appropriately valued, so that usage is rationalised, efficiency incentivised, and, where earmarking processes are in place, funds are raised to enable investment which, among other things, can preserve water quality and resource availability. All permit holders (*outorgas*) are subject to water charges. Permits are normally applicable to water withdrawal for economic purposes, meaning the sectors subject to charges in Brazil are more likely to constitute water supply and sanitation utilities, industry, hydropower and agriculture.[6]

Water charges are not applicable everywhere in Brazil and the introduction of water charging is an ongoing process. This process is promoted and supported by ANA for basins in the Union's domain, but ultimately implemented by basin committees. Charging requires a place-based approach depending on states and basins' exposure to water-related risks. Water charges are in place in the Southeast and in the Northeast of Brazil – those areas where water is more scarce. The Southeast is the richest region in Brazil but suffers from water pollution, especially in urbanised and industrialised metropolitan areas. The Northeast is a poorer region with only 3% of total available water sources but 29% of the total population (SNIS, 2021[2]) (OECD, 2022[1]).

The process for setting and implementing water charges at federal and state level is similar across the country. Basin committees at the federal or state level submit charging plans for approval to the federal (*Conselho Nacional de Recursos Hídricos*, CNRH) or state (*Conselhos Estaduais de Recursos Hídricos*, CEHRs) water resources councils. Federal (ANA) or state water management agencies (e.g. executive bodies of State Secretariats for the Environment) take responsibility for charge collection, and institutions that act as water agencies (in the form of private organisations, associations, foundations, consortia) manage revenues, which are spent in the basins according the river basin plans (OECD, 2017[21]).

Demand on water resources

Brazil, due to its large population (Table 2.1), is inevitably a large water resource user, withdrawing 67.2 Gm^3 per year, more than double the volume of France or Colombia (Table 2.2). However, withdrawal per capita is much lower than both neighbouring countries (Argentina and Colombia) and OECD reference countries (France and the United States) (FAO, 2020[22]).

Table 2.1. Overview of Brazil's regions

Region	Number of municipalities	Number of states	Total population	Urban population (% of total)
North	450	7	18 906 962	13 970 531 (74%)
North-East	1 794	9	57 667 842	42 450 593 (74%)
South-East	1 668	4	89 632 912	83 473 545 (93%)
South	1 191	3	30 402 587	26 041 942 (86%)
Central-West	467	4	16 707 336	14 887 828 (89%)

Note: More recent population estimates are available (e.g., www.ibge.gov.br 2023 census data), however, this data is presented for consistency with SNIS metrics and calculations cited throughout.
Source: (SNIS, 2021[2]). Data extracted April 2023.

Table 2.2. Benchmarking water withdrawal

Country	Total water withdrawal (all purposes) (Gm^3 per year)	Water withdrawal per capita (l/inhab./day)	Municipal water withdrawals per capita (l/inhab//day)
Brazil	67.2	865.6	207.7
Argentina	37.8	2288.7	354.3
Colombia	29.1	1566.7	200.4
France	26.3	1102.0	222.7
United States	444.3	3675.0	482.9

Note: All data for 2020. The indicator used to calculate comparative per capita consumption per day for municipal/domestic uses is based on the measure of municipal withdrawal as a percentage of total water withdrawal per country. The total withdrawal per country does not discount losses due to evaporation in storage tanks or informal connections. Municipal withdrawal, on the other hand, includes drinking water, municipal use or supply, and use for public services, commercial establishments, and homes (World Bank – DataBank).
Source: AQUASTAT, Food and Agriculture Organization of the United Nations. Data extracted in May 2023.

The level of demand for water in Brazil, for all uses, including drinking water supply and sanitation services, varies by region and state, and depends on the distribution of the population between urban and rural locations. Daily water consumption in Brazil is estimated at 150.7 litres per inhabitant per day (4.5 m^3 per month), but ranges from 117.2 litres in the North-East, to 171 litres in the South-East – the region with the largest population and greatest degree of urbanisation (Table 2.1). On balance, consumption, and therefore overall water withdrawal, is driven by agricultural needs for irrigation and livestock (77.9%), followed by urban and rural population needs (10.9%) (Table 2.3).

Water withdrawal and consumption are not always equal, and the discrepancies between the two can vary within country and between countries, due to their economic characteristics, the efficiency of the network, and other factors. In the case of water supply for human consumption, an example is water losses in transportation, which can result in the volume reaching consumers differing from the volume withdrawn at source. In Brazil, typically, the greatest differences between withdrawal and consumption, due to the impact of losses or flows, are found in human-use and power generation.[7]

Table 2.3. Water consumption in Brazil by region

Region of Brazil	Average per capita consumption (l/hab./day)	Share of consumption (%)				
		Human use (of which urban)	Power generation	Industrial uses	Agriculture (Irrigation & livestock)	Mining
North	142.5	21.1 (14.6)	0.6	2.5	69.9	5.8
North-East	117.2	10.4 (6.8)	0.4	9.0	80.1	0.1
South-East	171.0	15.6 (*14.1*)	0.2	15.4	67.1	1.6
South	147.0	5.8 (*4.5*)	0.4	4.7	88.7	0.4
Central-West	147.8	6.0 (*5.2*)	0.05	11.0	82.5	0.3
Brazil	150.7	10.9 (*8.7*)	0.3	9.8	77.9	1.0

Source: (SNIS, 2021[2]); ANA - Base Nacional de Referência de Usos Consuntivos da Água no Brasil, 2021. Data extracted May 2023.

Regarding the quality of available water resources in Brazil, approximately 71% of monitored bodies of water had good ambient water quality in 2020 according to UNEP data gathered to evaluate progress on SDG 6. This level is similar to Paraguay (72%) and Uruguay (76%), above Argentina (18%) and Peru (25%), but below Chile (84%) (UN-WATER, 2020[23]).

Water supply and sanitation services

Brazil's water supply and sanitation service sector is characterised by its scale and variety of actors and operation, with federal, state, and municipal level authorities and providers interacting to produce a wide range of outcomes across geographies. Brazil withdraws a huge volume of water to supply urban and rural communities and meet consumption needs, including for sanitation service provision, but due to low purchasing power and water losses, consumption per capita remains comparatively low. The sector is dominated by state-owned companies and contractual and tariff structures vary widely across state boundaries, as do the levels of service provision, service quality and costs. At the time of writing, the sector shows significant gaps to legislated targets for universalisation, as well as international targets (e.g., the United Nations SDG 6).

Sector size and scale

Brazil's 213 million inhabitants, nearly half of the total population of South America, make Brazil's water supply and sanitation market the largest in South America and the fifth largest in the world.[8] More than 7 300 service providers were estimated to be operating in the sector in 2021 across all service areas

(IBGE, 2018[24]) (SNIS, 2021[2]). Summary data on the size, coverage and value of water supply and sanitation services for Brazil's population is provided in Table 2.4, by service area.

Table 2.4. Summary of water supply and sanitation services in Brazil

	Serviced population (millions)	Coverage of potential serviced population[1]	Serviced urban population (millions)	Coverage of urban population	Estimated number of service providers	Of which private providers	Annual reported system investment, BRL bn
Drinking water supply	177.0	84.2%	167.5	93.5%	1 342	9.02%	7.76
Sewage collection and treatment	117.3	55.8%	114.8	64.1%	3 347	3.7%	7.35
Solid urban waste	191.3	89.9%	177.8	98.3%	-	-	-
Urban drainage and rainwater treatment	143.0[2]	81.7%[2]	143.0[2]	-	-	-	6.44

Note: Data is not available for all municipalities and is self-reported. The sample size (as a % of the total population) is as follows for each service area: water supply, 98.6%; basic sanitation, 95.1%; solid urban waste, 95.5%; and urban drainage, 93.2%.
1. Percentages calculated based on the total urban or urban and rural populations in Brazil (2021 figures), for the relevant service area (e.g., urban drainage only applies to the potential urban population).
2. Aggregated figures for urban drainage are constructed based on SNIS data relating to separate urban drainage management or treatment systems.
Source: (SNIS, 2021[2]). Data extracted April 2023.

Considering demand for water supply, despite a relatively high proportion of demand coming from urban and rural population centres (Table 2.2), municipal water withdrawal per capita, a proxy for household and human consumption, in Brazil is relatively low (207 litres per inhabitant per day), versus neighbouring Argentina (354 litres /inhab./day) or the United States (483 litres/inhab./day). Municipal water withdrawal in Brazil is much closer to that of Colombia (200 litres/inhab./day), but also France (223 litres/inhab./day), which is considered a more efficient manager of demand and resource within the sector (OECD, 2017[21]). In Brazil, low purchasing power results in a lower overall municipal or household demand relative to countries where purchasing power is higher.[9]

In sanitation services, there are significant differences between regions in Brazil, in terms of the existing coverage of services and the level of un-met demand.

The demand for sewage collection and treatment will naturally increase as the water network is extended and as water supply coverage reaches universality. However, the situation is unequal across regions with the proportion of the population lacking sewage services (Table 2.5) ranging from 18.3% in Brazil's South-East region, to 86% in the North.

This is the case in other sanitation services too (Table 2.5). For solid waste collection, the estimated[10] unserved demand in terms of both waste not collected or population unserved also varies significantly by region. On average, around 10% of Brazil's population, or 12.3 million people, are not covered by a regular solid waste collection service. There are meaningful differences between regions in the average amount of urban solid waste collected per inhabitant, which ranges from 0.67 Kg per day in the South, to 0.86 Kg per day in the North-East. When considering these differences alongside regional populations, estimates can be extrapolated which also show difference across regions in the level of unmet demand. The total mass of solid waste in Brazil remaining uncollected is estimated at 17 kilotons per day summing all regions, or an additional 0.09 Kg per day per urban inhabitant (SNIS, 2021[2]).

For urban rainwater drainage and treatment, demand and investment need is assessed from a risk perspective, i.e., exposure to flood risk, since demand for this service ultimately depends on the volume and severity of rainfall received by each urban area, as well as the area's topography and physical characteristics (e.g., urban density and the existence and capacity of natural reservoirs) (SNIS, 2021[2]). Differences between regions in this service area are somewhat justified, since not all regions receive the same amount of rainfall and so do not face the same levels of risk, nor require the same level of investment in infrastructure for rainwater capture and storage. Though minimising risks for the worst affected regions remains important (5.3% of the population in the North regions are considered at risk of flooding).

Table 2.5. Demand-side indicators for sanitation, by service and region

Region of Brazil	Sewage collection and treatment	Urban rainwater	Solid waste collection (urban only)		
	Proportion of population remaining unserved[1]	Share of households at risk of flooding	Proportion of population served	Total collected mass (per inhabitant served, per day)[2]	Estimated total mass remaining uncollected daily[3] (millions)
North	86%	5.3%	79.02%	0.68 Kg	2.7 Kt
North-East	69.8%	2.9%	82.30%	0.85 Kg	8.7 Kt
South-East	18.3%	4.6%	95.77%	0.76 Kg	2.9 Kt
South	51.6%	3.8%	91.57%	0.67 Kg	1.7 Kt
Central-West	28.1%	3.5%	90.87%	0.75 Kg	1.1 Kt
Brazil	44.2%	4%	89.93%	0.76 Kg	17 Kt

1. Calculated based on SNIS Basic Sanitation Panel available at: Sanitary Sewage — Ministry of Integration and Regional Development (www.gov.br).
2. Based on the RDO mass indicator, rather than total collected mass.
3. Calculated based on SNIS Solid Waste Indicators Map available at: Collection indicators (mdr.gov.br) and the regional/total urban population figures (1 Kiloton = 1 million Kg).

Source: (SNIS, 2021[2]). Data extracted May 2023.

Sector structure

As in other countries of South America, the structure of the water supply and sanitation services sector in Brazil is dominated by state-owned companies[11] (or SOEs), especially in urban areas, even though municipalities are legally responsible for the delivery of services to consumers. Of Brazil's 27 states (including the federal district), 25 have state water and sanitation companies (i.e., companies where the state owns a majority share), most of which have benefitted from long-term, automatically renewing contracts with individual or "blocks" of municipalities. However, this situation is changing following the 2020 Sanitation Law reform. Where service delivery contracts for water supply and sanitation have not been delegated to state companies, a mix of private companies, public-private partnerships, or other municipal public bodies may hold contracts and be active in provision at the municipal, or inter-municipal level (Smiderle et al., 2020[25]).

However, private sector provision is increasing. Recent reporting on municipal auction data shows the number of municipalities served by the private sector increased by a third from 2020 to 2021, with private concessionaires holding 199 signed contracts, ranging from full and partial concessions (88%) to PPPs (10%) and sub-delegations (ABCON SINDCON, 2022[26]). The level of private sector provision varies from service to service, from 4% in wastewater collection and treatment to 9% in water supply services (SNIS, 2021[2]).

Despite a changing mix of operators in the sector, the new legal framework remains focused on promoting regionalisation, that is, the procurement and provision of services at the inter-municipal level to "blocks" of

municipalities, in the interest of capturing economies of scale. Once states have initiated regionalisation, they will be able to move on with competitions and concessions, following the models available under the new legal framework (see Box 2.1).

Box 2.1. Concessions, sub-concessions, and Public-Private Partnerships (PPPs)

Full or partial concessions

Concession contracts allow the operation and maintenance of the water supply and basic sanitation systems to be transferred from the legally responsible entity (in Brazil normally the municipality) to a new provider. The contracted provider, which may be a public or private entity, typically takes on responsibility for both service provision and any necessary investments for the period, whilst collecting revenue by charging regulated tariffs to customers. Regulatory agencies may be involved in monitoring the fulfilment of the terms of contracts at the municipal or state level. Full concessions typically describe contracts for both water and basic sanitation. Partial concessions describe contracts for one of these services (water or basic sanitation). Full or partial concessions may be municipal or regional (more than one municipality). Concessions are awarded following a competitive bidding or auctioning process.

Sub-delegations or sub-concessions

Sub-concessions describe a transfer of responsibility for the delivery of part of an existing concession contract to a third-party provider (subdelegated company). This contractual model is allowed under Law No. 8.987/85 (Concessions Law). The third-party provider takes on all the rights and obligations of the primary concession holder, within the limits of the sub-concession. Sanitation services are currently provided in the Brazilian States of Goiás and Piauí by third-party companies under sub-concessions.

Public-Private Partnership (PPP) and sub-concessions

Private provision of water supply and basic sanitation services is enabled through different contractual models. Public-private partnership, based on an administrative contract between a private provider and public entity (usually municipality) is a popular option. The term of this contract can be as long as 35 years, in accordance with Law No. 11.079/2004 (the PPP Law), which imposes certain limitations on the total value of the contract. Sanitation PPPs are in operation in the Brazilian states of Pernambuco, Alagoas, Amapá, São Paulo, Rio de Janeiro, Minas Gerais, and Bahia, with other states studying their potential application under future auctions. As with concessions, PPP contracts are awarded following a competitive public bidding process.

Source: OECD analysis of noted legislation; ABCON SINDCON (2022).

Tariff structure and affordability

Tariffs for water supply and sanitation services[12] are generally set by state regulatory agencies and consortia via four-year or extraordinary revisions, which focus on cost recovery and investment allowances, with annual tariff adjustments made to ensure tariff levels remain in line with variable inflation and performance.[13]

Tariff structures depend on category of use (i.e., residential, commercial, industrial, or public), and within these categories there are special tariffs for users with lower purchasing power, or for social assistance and public administration entities that may sign special contracts.[14] Typically, tariffs are structured with both a fixed and variable element to the fee. The fixed fee, or basic rate, covers the cost of water supply infrastructure maintenance, and is often based on the connection (i.e., the size of the water meter installed),

whereas the variable fee covers variable consumption, and is charged per cubic meter of water used. Data for seven of the nine largest Brazilian cities suggests contracts typically price variable consumption according to an increasing block tariff structure (GWI, 2021[27]), which can be socially regressive (Leflaive and Hjort, 2020[28]).

In addition to the fixed and variable fees that make up the consumer tariff, there is a connection fee charged for any new connections to access the serviced water network. Where these connection fees are high, they can act as deterrents to connect and subsidising these fees can be as effective as subsidising consumption via social tariffs (described below).

Some water utilities in Brazil may also charge consumers a sanitation fee, which covers the cost of treating and disposing of wastewater and is calculated as a percentage of the total water bill. However, more often, the cost of sanitation is structured as an "availability tariff" and is charged by the sanitation service provider to the local government or municipal authority, which recuperates costs via local taxation. For combined water-sanitation bills, the variable costs can account for anywhere between 36% and 88% of the total bill (GWI, 2021[27]).

In addition to consumption levels and the quality of infrastructure, tariff levels are driven by factors such as population density, water availability and the management practices of utilities. Basin-level water charges relating to withdrawal for water supply and sanitation may be another component when these costs are passed on to end-consumers. However, recent assessment suggests they are a minor contributing factor (OECD, 2017[21]).[15]

Since tariffs, both fixed and variable components, are regulated at the state level, prices for the same level of consumption can vary (Table 2.6 and Table 2.7).[16] For water-only and combined water-sewage tariffs, average prices are much higher in the South region than in the North, the most costly and cheapest regions respectively. For separate sewage services, tariffs are highest in the Central-West region, and again lowest in the North.

Analysing selected examples of the water bill structure in Brazil, we find differences between providers in terms of the level of fixed charges and the use of a fee allowance. Taking the GWI benchmark[17] consumption level to assess the available Brazilian cities, the cheapest monthly bill is in São Paulo ($52 BRL) and is characterised by a medium-level fixed charge, a relatively generous free allowance for the first 10m^3 consumption, and a medium-level rate for the second block of consumption, which covers up to 20m^3 consumption. In contrast, the highest monthly bill ($87 BRL) is in Curitiba, characterised by a high standing charge and a less generous free allowance. In this case, a low second block rate is applied but only up to 10m^3 consumption, which the benchmark household exceeds exposing it to a more costly third block rate.

Table 2.6. Average tariff levels, by region

Location	Average Water/Sanitation tariff (BRL/m³)	Average Water Tariff (BRL/m³)	Average Sanitation tariff (BRL/m³)
North	3.84	3.88	3.66
North-East	4.49	4.70	4.16
South-East	4.11	4.29	3.98
South	6.10	6.83	4.77
Central-West	5.28	5.48	5.14
Brazil	**4.51**	**4.81**	**4.17**

Source: (SNIS, 2021[2]).

Table 2.7. Indicative costs of the water bill, and fixed and variable components

City	Provider	Total monthly household bill (BRL)[1]	Change in household cost of water /m3[2]	Fixed charge (BRL)	No. variable blocks	Block 1 tariff rate (BRL/m3)	Monthly allowance at block 1 rate (m^3)	Block 2 tariff rate (BRL/m3)	Final block rate (BRL/m3)
Belo Horizonte	COPASA	76.26	0.49%	17.61	6	1.82	5.0	3.89	12.76
Brasilia	CAESB	64.47	(0.31%)	8.05	6	2.98	7.0	3.57	19.99
Curitiba	SANEPAR	86.91	11.18%	43.11	6	0.00	5.0	1.33	12.74
Recife	COMPESA	70.98	2.38%	45.13	6	0.00	10.0	5.17	19.28
Rio de Janeiro	CEDAE	68.33	-	0.00	5	4.56	15.0	10.02	12.76
Salvador	EMBASA	76.47	-	29.90	8	0.00	6.0	1.18	13.55
São Paulo	SABESP	51.70	10.75%	29.00	4	0.00	10.0	4.54	12.48

Note: Survey conducted at the city level, only these Brazilian cities available (7 of the nine largest by population).

1. Based on GWI calculation for a benchmark household consumption level of 15 m^3/month (per capita consumption in Brazil for 2021 as measured by SNIS is 150.7 l/inhabitant/day, or 4.521 m^3/month).
2. Comparing 2021 versus 2020 for the same GWI benchmark household.

Source: GWI Global Tariff Survey (GWI, 2021).

Subsidies and social tariffs

The consumers who benefit from tariff subsidies may be individuals or businesses, since policies often aim to address multiple challenges: ensuring affordability and the universalisation of service access, reducing informal ("clandestine") access, boosting economic growth by supporting small businesses, and reducing risks relating to water-based emergencies and critical events.

Social tariffs describe a sub-instrument focused on redistribution, which targets the issues of affordability and access among more vulnerable residential consumers. However, social tariffs are financially enabled and managed by the service providers themselves, therefore, they represent a form of cross-subsidisation between consumers. State governments and regulators set expectations and have traditionally stepped in to support SOEs when issues of sufficiency arise.

How social tariffs and subsidies are applied varies significantly across Brazil. Although the law[18] provides a framework for the tariff subsidisation, the determination of the criteria for granting subsidies, as well as verification methods and implementation, varies significantly by region, state, and by service provider (Box 1.2.). Despite inconsistencies across states, most providers do have mechanisms for granting social tariffs based on different consumer categories, but since the definition and measurement of consumer categories also differs by region, outcomes are varied across Brazil. It is also important to note that any subsidies that do apply, may apply to tariffs for water only, water and sanitation combined, or sanitation services only, though the latter case is rare for residential customers (Law No. 14.026, 2020[15]).

In general, social tariffs are granted to the lowest-income segment also falling within the lowest consumption range, or with some consideration for consumption rate and suitability. Sometimes other socio-economic variables, geographical location or eligibility for other state social programmes are considered. Meanwhile, the benefits range from a full exemption (free service provision), to a reduction in the fixed fee component, variable component, or both. It remains up to the provider (which may be a public or private entity covering the local, municipal, or regional level) to establish and implement its own criteria.

Box 2.2. Examples of social tariffs and consumer subsidies in Brazil's WSS sector

Sao Paulo (Sabesp)

In the case of the State of São Paulo, *Companhia de Saneamento Básico do Estado de São Paulo SA* (Sabesp) targets single-family homes, unemployed people, and residential users in collective housing or at risk of removal. The specific criteria used to categorise users are financial, spatial, or consumption-based: a family income of up to 3 times the minimum wage; a living space of up to 60 square meters; electricity consumption of up to 170kWh/month; with no debts for the property. Users meeting all the target criteria receive a full exemption for 24 months. Unemployed users receive a 12-month exemption.

Pernambuco (Compesa)

In the State of Pernambuco, in north-eastern Brazil, *Companhia Pernambucana de Saneamento* (Compesa) has a social tariff program offered to low-income customers who meet specific criteria. In order to qualify for the discount, customers must prove their average consumption of water and electrcitiy, have a paycheck, social benefit or social security benefit up to the amount of one minimum wage, be the owner of a single property, and live in a property with a standard compatible with the family income. If these criteria are met, the user receives a proportional discount of around 80% of the water tariff and a full exemption from sanitation costs.

Minas Gerais (Copasa)

In the state of Minas Gerais, provider *Companhia de Saneamento de Minas Gerais* (COPASA MG), intervenes to limit the tariff applied to low-income residential users. Users have to prove their status as a residential user, enrolment in the *Cadastro Único para Programas Sociais,* and provide income statements that prove one household member earns an amount less than or equal to half the minimum wage. Once the criteria have been met, users access a residential social tariff which reduces both the fixed rate and the tiered consumption charges by approximately 50%, up to 20m^3 of consumption.

Note: This list of examples is not comprehensive, the selection is based on the size of the customer base to provide an indication of the consumer experience and availability of social tariffs for the population.
Source: Provider websites (Sabesp, Compesa, Copasa) and state-level regulatory agency websites (ARSAE-MG). Accessed May 2023: https://www.sabesp.com.br/site/interna/Default.aspx?secaoId=772; https://servicos.compesa.com.br/perguntas-frequentes/; http://www.arsae.mg.gov.br/wp-content/uploads/2022/10/Tabela_Tarifaria_Copasa_2023_Publicacao.png.

Overall sector performance

Access and coverage

Data indicates that the market is far from delivering on the ambition of universal access as defined most recently in the 2020 Sanitation Law (see Water supply and sanitation reform) and the ambitions of agreed international goals.[19] Operational data show a gap of 17 and 30 percentage points respectively in water supply and basic sanitation coverage to legislated universalisation targets (Table 2.8).

The analysis of tariff structures and levels above also indicates the widespread use of social tariffs, suggesting that even if universal access is technically achieved, affordability may still present barriers to some households. Therefore, continued encouragement of the provision of social assistance, or extending this action to direct social policy intervention, may be required to ensure basic needs are met.

Table 2.8. Service provision and associated costs in Brazil, by service area

Water supply		Sewage collection and treatment		Urban rainwater			Solid waste collection	
Provision (% of population)	Expenditure per capita (annual)	Provision (% of population)	Proportion of collected sewage treated	Proportion of urban areas with minimum drainage system[1]	Proportion of municipalities with pavement or underground drainage	Expenditure per capita (annual)	Provision (% of population)	Expenditure per capita (annual)
84.2%	BRL 233.16	55.8%	80.8%	81.7%	83.3%	BRL 26.13	89.9%	BRL 147.44

1. Aggregated figures for urban drainage are constructed based on SNIS data relating to separate urban drainage management or treatment systems.

Source: (SNIS, 2021[2]). Data extracted May 2023.

Quality, efficiency and sustainability

Levels of expenditure vary across services areas, with the highest expenditure associated with water supply, based on the total costs of provision for the year to consumers. The estimated value of distribution losses (non-revenue water) relative to expenditure is high at $40.25 BRL ($8.30 USD), though overall cash sufficiency is maintained (Table 2.9). As in many other countries, the financial viability of water utilities in Brazil is seriously impacted by lost revenue[20] and increased operational costs, with tariffs rising as a result (World Bank, 2022[29]). Recent research focusing on the sustainability of state-owned water and sanitation companies (SOEs) concluded that nine of the twenty-five assessed SOEs were sustainable on purely economic grounds, but after introducing social and environmental considerations, only two companies – Sanepar and Sabesp – were considered sustainable across all dimensions[21] (Gonçalves et al., 2022[30]).

For water and sanitation services, Brazil's economic recovery is a key factor in maintaining quality, affordability and access, due to its potential impacts on credit and redistribution. Furthermore, willingness to pay for water, and the social acceptance of charging for water, was already limited in Brazil (OECD, 2022), and the economic crisis experienced from 2015 onwards has undermined acceptance amongst consumers to pay rising bills. As a result, public and private actors need to balance several potentially conflicting objectives:[22] ensuring affordability for vulnerable consumers and mitigating informal connections; investing to deliver universal access and maintain quality standards; increasing access to sanitation services; and, generally, operating efficiently to reduce the burden on municipal, state, and federal budgets and cost to consumers.

Table 2.9. Service quality and sustainability in Brazil, by service area

Water supply			Basic sanitation[1]	Urban rainwater		Solid waste collection
Value of distribution losses (per inhabitant per year)	Cash sufficiency[2]	Proportion of bodies of water with good ambient water quality	Registered leakages/ Km network	Population impacted by hydrological events[3]	Relocated population (per 100 000)	Recovery rate of collected recyclable mass
40.25 BRL	115.3%	71%	2.5	0.2%	302	2.35%

1. For basic sanitation services, cash sufficiency matches the figures shown for water supply.
2. Cash sufficiency illustrates the ratio, expressed as a percentage, of collected revenues to expenditure (sum of operating expenditure, taxes, debt servicing costs, and debt repayments).
3. Proportion of urban populations displaced or made homeless by hydrological events (flooding).

Source: (SNIS, 2021[2]); (UN-WATER, 2020[23]). Data extracted June 2023.

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Notes

[1] Following the 2022 elections, the former duties of the Ministry of Economy have been split between Ministries of Finance (MR), of Planning and Budget (MPO), of Management and Innovation in Public Services (MGISP), and of Development, Industry, Trade and Services (MDICS).

[2] The revenues from which should be redirected to the basin to fund initiatives which improve basin management or ensure sustainability and conservation.

[3] For example, Law 12.058/2009 provides for ANA's duties to regulate and supervise the provision of public irrigation services, when under concession, and bulk water adduction, which is not listed as a major item of sector reform in this Chapter but is covered by ANA's mandate (see Chapter 3).

[4] For more information on the Pact and the detailed objectives applying to each sector, please refer to the following web page and ANA's primer: Pact for Water — National Agency for Water and Basic Sanitation (ANA) (www.gov.br).

[5] Under the “Union’s domain” is commonly cited legal terminology for rivers crossing state boundaries within Brazil or international boundaries between Brazil and neighbouring countries, which are then managed by federal rather than individual state-level institutions.

[6] It is important to note that the charges are calculated considering each type of use: abstraction, consumption, and discharge. Pollution charges apply generally to the discharged volume and so there may be some differences between users in the composition of the charges received. See Water Charges in Brazil: The Way Forward for a fuller discussion (OECD, 2017[21]).

[7] In power generation, due to the discharge of the bulk of water withdrawn, water consumption levels appear low, this differs from the transportation or leakage losses witnessed in water supply.

[8] Derived using data from the Joint Monitoring Programme for Water Supply, Sanitation and Hygiene available at: www.washdata.org (WHO/UNICEF, 2021[31]).

[9] Lower demand may also be a result, in addition to the low purchasing power of households, of clandestine, non-metered water use and the recourse to alternative water sources

[10] Using SNIS data on service coverage, and figures for the average amount of waste collected per inhabitant.

[11] State-owned here refers to ownership by one of the 26 Brazilian states, or the federal district, not the Union.

[12] The focus of this section is on the tariffs charged to end-consumers by service operators for water and sanitation services, rather than water charges levied on water rights holders for pollution or abstraction, for example for power generation.

[13] Following a sliding-scale, or “earnings sharing” price control approach.

[14] These special contracts may stipulate conditions on the rational use of water (i.e., required efficiency measures).

[15] Water supply and sanitation is just one sector requiring water abstraction, which may be liable to water charges at the basin level within each state, or at the federal level, depending on the location of the basin in question. Other sectors driving water abstraction in Brazil include power generation, industry, and agriculture. Importantly, water charging at the basin level for water supply and sanitation, to the extent that charges are passed-on to end-consumers, can contribute to tariff levels, though in most cases water charges are a very small component of the final bill (OECD, 2017[21]).

[16] The GWI (Global Water Intelligence) Global Tariff Survey data covers tariffs wastewater and stormwater besides the water tariff data presented here (GWI, 2021[27]).

[17] The GWI benchmark dataset assumes behind-the-meter (residential) consumption of 15m^3/month, which is slightly above the SNIS estimate of 4.52m^3/month/per capita, given an average household size in Brazil of 2.77 persons.

[18] Article 31 of Law 11.455/2007 (modified by Law 14.026/2020).

[19] Brazil's national objectives are reinforced in the UN 2030 Agenda for Sustainable Development, of which Brazil is a signatory, in the international goal (SDG) to establish the availability and sustainable management of water and sanitation for all.

[20] Due to a combination of non-revenue water (distribution losses and clandestine, non-metered use) and low purchasing power (which leads both to unpaid bills and the necessity to provide social assistance via social tariffs).

[21] Researchers at FGV CERI assessed SOEs on economic, social, and environmental components. They utilised SNIS operational data, but with a focus on urban populations, and incorporated return on equity (ROE) as an economic indicator. Access to continuous water supply and sanitation services and drinking water safety were the key variables for the social dimension. Indicators on water distribution losses and wastewater treatment were the key variables for the environmental dimension.

[22] Ensuring affordability for vulnerable consumers and mitigating informal connections involves offering subsidised tariffs. Investing to deliver universal access and maintain quality standards involves significant capital costs and operating expense. Increasing access to sanitation services increases costs for municipalities and regions. Generally, operating efficiently to reduce the burden on municipal, state and federal budgets and cost to consumers, which can be unsustainable or unachievable within short time periods, particularly when economic growth is stagnant. Brazil's economy is projected to grow 1.2% in 2023, and 1.4% in 2024, a deteriorating outlook following growth of 2.8% in 2022 (OECD, 2022[1]).

3 Governance of ANA

The Performance Assessment Framework for Economic Regulators (PAFER) was developed by the OECD to help regulators assess their own performance. The PAFER structures the drivers of performance along an input-process-output-outcome framework. This chapter applies the framework to the governance of Brazil's National Agency for Water and Basic Sanitation (*Agência Nacional de Águas e Saneamento Básico* – ANA) and reviews the existing features, the opportunities and challenges faced by ANA.

This chapter describes the internal and external governance arrangements of Brazil's national water and sanitation agency (*Agência Nacional de Águas e Saneamento Básico*, ANA). The OECD's performance assessment framework for economic regulators (PAFER) criteria, which describes roles and objectives, inputs, processes, and outputs and outcomes, provides the structure of the chapter. The first section therefore describes ANA's roles and objectives, including the organisation's mandate, functions and powers, strategic objectives, how ANA interacts with other institutions and its level of independence. Next, a section on input looks at ANA's organisational structure, financial and human resources, and management of those resources. Processes for decision-making, regulatory quality assurance, inspections and enforcement, complaints and appeals, and stakeholder engagement are summarised. Finally, the chapter describes ANA's outputs and outcomes from two perspectives: the performance of the regulated sector, and the performance of ANA itself.

Role and objectives

This section describes ANA's role, covering ANA's mandate and the agency's functions and powers provided by legislation. The section distinguishes ANA's mandate as it relates to water resource management (WRM), water supply and sanitation (WSS), or dam safety, and the corresponding differences between ANA's function, powers, and objectives in these areas. In connection with ANA's role, the section describes ANA's strategy, the strategic planning process and the various co-ordination and co-operation mechanisms ANA has in place with public and private entities. Finally, the section summarises ANA's role in policy and arrangements governing its independence.

Mandate

ANA has a broad mandate to support the efficient, sustainable, and equitable use of Brazil's water resources by implementing the National Water Resources Policy (PNRH), strengthening the National Water Resource Management System (SINGREH), managing bulk water supply and public irrigation services when under concession, and regulating dam safety (Law No. 12.334, 2010[1]). ANA is also responsible for establishing reference standards for the regulation of public sanitation services by relevant subnational regulatory agencies and supervisory bodies (Law No. 9.984, 2000[2]). ANA's reference standards relate to four sanitation service areas defined in legislation: drinking water supply; the collection and treatment of sewage;[1] urban cleaning and solid waste management; and urban rainwater management and drainage (henceforth denoted as "water supply and sanitation services") (Law No. 11.445, 2007[3]).

In exercising its mandate, ANA must both consider principles set out by legislation and act in accordance with the Regulatory Agencies Act, which establishes rules for federal agencies relating to decision making, accountability, shared competencies, and collaboration (Law No. 13.848, 2019[4]). ANA's establishing legislation (Law No. 9.984, 2000[2]), built on by the 2010 National Dam Safety Policy (Law No. 12.334, 2010[1]) and 2020 Sanitation Law (Law No. 14.026, 2020[5]), details ANA's full competencies. ANA's main duties can be summarised as follows:

1. **Implement the National Water Resources Policy** (PRNH): ANA supervises, controls, and evaluates activities relating to water resource management. This involves the implementation, operationalisation and evaluation of instruments defined in the National Water Resources Policy, granting authorisations for, or revoking, the right to use water resources, supervising the use of water resources, including the operation of reservoirs, and collecting and distributing revenues from water use charges in the Union's domain. Regarding reservoir operations, ANA defines and supervises the conditions of operation of multiple-use reservoirs to ensure water resources are used in accordance with established water resources plans, which ANA supports basin committees to develop. ANA also defines operating conditions for hydroelectric reservoirs together with the national electricity system operator (ONS).

2. **Strengthen and support the National Water Resource Management System** (SINGREH): ANA supports initiatives to create hydrographic basin committees and supports the implementation of water use charges in the Union's domain by providing technical studies to the National Water Resource Council (CNRH) based on inputs from basin committees. ANA also provides support to states in the creation of water resource management bodies, conducts research, and delivers initiatives aiming to build the capacity of WRM bodies.
3. **Regulating the provision of public irrigation services under concession and bulk water adduction:** ANA directly regulates bodies of water in the Union's domain used for irrigation, where concessions have been granted, and bulk water supply, and manages the provision of these services by setting standards, tariffs and conducting audits.
4. **Plan, monitor and supervise critical hydrological events**: ANA should plan and promote actions to prevent and minimise the effect of droughts and floods in co-ordination with the National Civil Defence System and in support of states and municipalities. Furthermore, ANA declares critical scarcity situations and subsequently establishes and supervises compliance with water use rules for the duration of the critical event.
5. **Co-ordinate and manage the hydrological network and other information systems:** ANA promotes the co-ordination of the national hydrometeorological network and develops and manages the National Water Resource Information System (SNIRH).
6. **Regulate and monitor the safety of dams:** ANA manages the National Dam Safety Information System (SNISB), co-ordinates dam inspections and dam safety enforcement agencies, and prepares dam safety reports for the CNRH, in accordance with the National Dam Safety Policy (Law No. 12.334, 2010[1]). This activity focuses on the maintenance of structural and operational integrity of the dams and the preservation of life, health, property, and the environment within the impacted areas.
7. **Establish reference standards for water supply and sanitation services:** ANA can establish reference standards for the regulation of services including drinking water supply, sewage collection and treatment, urban solid waste management, and urban rainwater drainage and treatment. Thirteen reference standard topics are defined in legislation to be developed, which shall promote the adequate provision of services, stimulate efficiency and economic sustainability, build co-operation between federative entities, and encourage the regionalisation of service provision. Legislation also details the processes through which ANA should establish reference standards, which include best practice evaluation and public consultation.
8. **Support and monitor reference standard adoption:** ANA will periodically verify reference standard adoption and publish a list of regulatory bodies[2] complying with the national standards, thus enabling compliant bodies to access federal public resources. ANA is responsible, as necessary, and as ANA sees fit, to guide service providers and regulatory bodies, as well as prepare technical studies, guides, and manuals, and promote human resource training, all in aid of encouraging reference standard adoption. To ease the adoption process, ANA will detail minimum parameters of compliance when establishing reference standards and consider local and regional conditions when designing methods and processes. ANA may also mediate disputes between subnational regulatory agencies, supervisory bodies, and service providers when invited to do so by the conflicting parties.

Functions and powers

ANA's functions and powers differ between the three areas – water resource management (WRM), dam safety, and water supply and sanitation (WSS) services – in which it exercises its legislated duties and mandate (Table 3.1). In water supply and sanitation, ANA's function is that of standard-setter and capacity-builder, developing national reference standards, and overseeing and supporting their adoption by

subnational regulatory agencies. In water resource management, where ANA's role and responsibilities are more established, ANA's regulatory functions relate primarily to the granting of water rights, but only in relation to bodies of water in the Union's domain – meaning rivers crossing state boundaries within Brazil, or international boundaries between Brazil and neighbouring countries.

Due to the nature of Brazil's constitution and the extent of delegated power to states and municipalities, in both the WRM and WSS context, ANA's regulatory powers can be limited. Frequently, decision-making is devolved to groups of stakeholders who are required to collaborate and reach a consensus before acting. Additionally, ANA's ability to gather information or enforce best practice may depend on other regulatory agencies at the subnational level.

ANA communicates decisions and directions through the publication of Resolutions (*Resoluções*), which cover regulatory actions such as the granting of use rights, the issuing reference standards, and the publishing ANA's regulatory agenda. For internal policies and decisions, ANA publishes Ordinances (*Portarias*).

ANA does not have the power to propose secondary legislation, audit businesses, impose or ban a particular technology, impose structural remedies, veto the investment plans of operators, or to conduct market investigations without prior direction from the executive, judiciary, or by delegation from a relevant authority.

Table 3.1. Overview of ANA's independently held or shared powers

Sector	Functional area	Description of ANA's powers	Shared powers with other bodies?
Water resource management and dam safety	Water-use regulation	Regulates water-use (abstraction) via the granting of water rights and use of enforcement powers. Proposes incentives for the conservation and proper use of water resources.	Water-use regulation is ANA's responsibility for water bodies in the Union's domain, though powers may be delegated. Yes, proposed incentives considered by the CNRH.
	Reservoir operations	Regulates the conditions of operation of reservoirs.	Yes, shared duties in the case of reservoirs for hydroelectric power generation (with ONS).
	Dam safety	Regulates and monitors dam safety via inspections, reporting and use of enforcement powers. ANA's powers apply to multi-use dams primarily in the federal domain, excluding large dams involved in hydroelectric power generation.	ANA may co-ordinate with the CNRH and other agencies at national or state level to conduct monitoring (which may also be delegated) and consider enforcement action.
	Water charging	Supports basin committees to define and implement water charges (with specific duties for collection distribution of revenues).	Yes, shared duties with basin committees and the CNRH.
	Inspection	Inspects water-use rights holders, the provision of public irrigation services, when under concession, and bulk water supply, reservoir operations and dam safety.	Yes, reservoir operation and dam safety inspection, and duties relating to water use rights may be shared or delegated by ANA.
	Enforcement	Applies sanctions for infractions defined by ANA resolution.	ANA independently applies sanctions or delegates it to states.
	Data collection and management	ANA can mandate information provision at the federal level. ANA co-ordinates the national hydrometeorological network and manages the SNIRH and SNISB.	ANA may depend on the voluntary co-operation of state-level actors or bi-lateral contracts for certain data.
Water supply and sanitation services	WSS regulation	ANA establishes reference standards for subnational regulatory bodies to adopt on a voluntary basis.	No, the establishment of reference standards is ANA's sole responsibility.

Sector	Functional area	Description of ANA's powers	Shared powers with other bodies?
	Dispute resolution	Mediator/arbitrator in disputes between granting authorities, regulatory bodies, and public sanitation service providers.	Yes, ANA is one party which may act as mediator, upon request.
	Monitoring and evaluation	ANA can monitor adoption of reference standards and establish the evidence required to prove adoption. ANA can evaluate regulatory impact and compliance and publish results.	No, but depends on information from other parties.
	Enforcement	Receipt of federal funding is tied to ANA's evaluation of compliance with reference standards. No other direct incentives or sanctions are available to ANA under WSS regime, though ANA may also enact sunshine regulation to encourage transparency and information provision.	No, ANA independently evaluates compliance based on pre-determined public criteria.

Source: Information provided by ANA, 2023.

Reference standard development

ANA was placed at the centre of reforms to the water and sanitation services sector with the introduction of the 2020 Sanitation Law (Law No. 14.026, 2020[5]). Although the decentralised, multi-level system created by the 1997 Water Law, valued for its alignment with the principles of the democratic transition, is still intact, ANA's new responsibilities granted under the 2020 Sanitation Law are symbolic of a shift in authority within the water supply and sanitation ecosystem. Subnational regulatory agencies and supervisory bodies are envisaged to adopt ANA-issued standards, though compliance is formally voluntary, and certain standards and constraints will be applicable to local authorities that were previously not subject to federal oversight and had historically defined their own regulatory frameworks.

Since 2020, ANA has introduced three reference standards, relating to the provision of urban solid waste management services (SMRSU),[3] the standardisation of amendments to concessions and contracts for the provision of drinking water supply and sanitary sewage services, and asset compensation. Five further standards on quality and efficiency indicators, regulatory governance, risk management, defining regulatory models for tariff regulation, and progressive targets for universalisation are undergoing public consultation at the time of writing.

Although legislation identifies 13 reference standard topics (Law No. 14.026, 2020[5]), ANA is working to publish up to 16 reference standards during the 2023-24 period. This work is detailed in ANA's published "Regulatory Agenda" for the 2022-24 period (ANA, 2022[6]). Standards can focus on more technical matters, such as tariff-setting, or the construction of governance arrangements (Table 3.2).

Table 3.2. Reference standards included in ANA's regulatory agenda, 2022-24

Theme	Description	Status
Regulatory governance	Establish a normative act that governs the requirements and procedures to be observed by subnational regulatory entities (ERIs) of public basic sanitation services, to prove the adoption of reference standards (NRs).	Completed ANA Resolution No. 134, 11/18/2022.
	Establish a reference standard on regulatory governance for subnational regulatory entities.	Delivery in 2023 (Due for consultation Q4 2023).
Universalisation of access to basic sanitation	Establish a reference standard with guidelines for progressive targets for the universalisation of water supply and sanitary sewage services and an evaluation system.	Delivery in 2023 (Due for consultation Q4 2023).
	Establish a reference standard on quality and efficiency standards	Delivery in 2023.

Theme	Description	Status
Quality of service provision	and indicators and evaluation of efficiency and effectiveness for water supply and sanitary sewage services.	
	Establish the general conditions for the provision of services, customer service and measurement, billing and collection of water supply and sewage services.	Delivery in 2023 (Under consultation).
	Establish the general conditions for providing urban solid waste management services.	Delivery in 2023 (Under consultation).
	Establish a reference standard on standards and indicators of quality and efficiency and assessment of efficiency and effectiveness for urban solid waste management services	Delivery in 2024.
Urban rainwater drainage and management services	Establish a reference standard with guidelines for defining drainage regulation models and urban rainwater management.	Delivery in 2024.
Tariff regulation	Establish a reference standard with guidelines for defining regulatory models for water supply and sewage services.	Delivery in 2023 (Due for consultation Q4 2023).
	Establish a reference standard with the tariff structure for water supply and sanitary sewage services.	Delivery in 2023.
	Establish a reference rule on tariff readjustments for water supply and sewage services.	Delivery in 2023.
	Establish a reference rule on tariff review of water supply and sanitary sewage services.	Delivery in 2024.
Standardisation of trading instruments	Establish a reference standard on the contract risk matrix for water supply and sanitary sewage services.	Delivery in 2023 (Due for consultation Q4 2023).
	Establish a reference standard for the standardisation of concession contracts for water supply and sanitary sewage services.	Delivery in 2023.
Regulatory accounting	Establish a reference standard for the indemnification of assets for water supply and sanitary sewage services.	Completed ANA Resolution No. 1616, 03/18/2023.
	Establish a reference standard on the criteria for private regulatory accounting for water supply and sewage services.	Delivery in 2024.
Normative procedures	Establish procedures for mediation and arbitration.	Delivery in 2023 (Due for consultation Q3 2023).

Note: Consultation status current at time of writing – November 2023.
Source: (ANA, 2022[6]).

Besides defining the basic sanitation reference standards, ANA is working on a host of other regulatory measures, relating to hydrological monitoring, the operation of reservoirs, fiscal oversight, and other themes, which are due to be drafted and introduced as part of the 2022-24 Regulatory Agenda (ANA, 2022[6]).

Institutional co-ordination

Delivery of ANA's duties in water resource management and water supply and sanitation requires significant collaboration and the effective co-ordination of various actors. A mix of public and private actors at the municipal and state levels hold responsibility for the governance, procurement, and provision of services. The sector matrix and ANA's own stakeholder map are complex, even if considering interactions between only public sector entities.

To complicate the picture further, Brazil's recent elections have created some instability and uncertainty around the assignment of ministerial duties. First, responsibility for policy in the WRM and WSS sectors are led by two different ministries, the Ministry of Integration and Regional Development (MIDR) and the Ministry of Cities, respectively. Second, during the first six months of 2023 and the new government,

ministerial oversight of ANA shifted twice, from the MIDR to the Ministry of Environment and Climate Change, and then back to the MIDR. Newly formed Ministries of Planning and Budget and Management and Innovation in Public Services are responsible for scrutinising or authorising ANA's budget and human and financial resource management. Several other ministries remain important for the WRM and WSS sectors due to cross-sectoral linkages or dependencies.

ANA enjoys a degree of discretion in how it interacts and collaborates with the other public bodies active in the sector. Many of these relationships are a function of each institution independently working to fulfil their legislated roles, with most sector legislation encouraging policy integration, regulatory coherence and collaboration (Law No. 9.984, 2000[2]) (Law No. 14.026, 2020[5]) (Law No. 9.433, 1997[7]). However, primary legislation is often not explicit as to how inter-institutional arrangements should work in practice, nor if co-ordination mechanisms should be formalised, for example by technical agreement or memoranda. ANA has the option to develop joint normative acts with other regulatory agencies, where problems arise from the actions of economic agents who are subject to multiple sectoral regimes, as well as the option to delegate some competencies to subnational regulatory agencies, though in limited circumstances and according to strict criteria (Law No. 13.848, 2019[4]).

Table 3.3. ANA's co-ordination with public entities at the national level

Institution	Type	Role and mandate	Interaction with ANA
Ministry of Integration and Regional Development (MIDR)	Executive	Sets government policy relating to regional and urban development programmes, including housing, mobility, water resources and irrigation.	Provides ministerial oversight for ANA's duties and develops primary legislation shaping ANA's role relating to water resource management and water use regulation.
Ministry of Cities (MCIDADES), including the National Secretariat for Environmental Sanitation (SNSA)	Executive	Sets government policy in relation to urban development. Within MCIDADES, the SNSA co-ordinates the Federal Basic Sanitation Policy and National Plan for Basic Sanitation.	Develops primary legislation shaping ANA's role relating to basic sanitation and water supply services regulation.
Ministry of Planning & Budget (MPO)	Executive	Sets government policy relating to strategic and budgetary planning. Proposes initial federal budget allocations.	Budgetary oversight and approval of any resource needs. ANA frequently engages with MPO on budgetary proposal and execution.
Ministry of Management and Innovation in Public Services	Executive	Sets government policy and planning for innovation, digital transformation and process improvement.	Approves civil service entrance examinations, influencing ANA's hiring activity.
Office of the Comptroller General of the Union (CGU)	Executive	Promotes integrity and transparency and holds responsibilities for supervising the offices of government part of the SISCOR – conducting public audits, fraud deterrence procedures and other internal control activities.	Technically supervise ANA's internal audit, through annual planning (PAINT) and results (RAINT). (See also Table 5 – ACT)
Casa Civil (Interior Ministry)	Executive	Administrative and procedural function ('Chief of Staff of the Presidency') with regard to cabinet requests and negotiations between Congress and state governors involving the President's office.	Casa Civil decides the final federal budget allocation in the cases of competing demands from federal public bodies. ANA consults Casa Civil on legislative proposals which may impact ANA's functions or budget.
Inter-ministerial Committee for Sanitation (CISB)	Executive	Under the presidency of MCIDADES, ensures the implementation of federal-level basic sanitation policy and co-	ANA periodically updates the CISB on matters of interest and relevant analytical reporting, related to the implementation of the basic sanitation policy.

Institution	Type	Role and mandate	Interaction with ANA
		ordinates the actions of federal bodies. Assesses the use of federal funding in the sector and the federal management of the National Sanitation Plan (every four years).	
National Congress of Brazil (*Congresso Nacional do Brasil*)	Legislature	Congress is the bicameral legislative body, composed of the Chamber of Deputies and the Federal Senate. It approves new laws and can also initiate them.	Congress is responsible for the external control of ANA's actions, and can request TCU to carry out inspections into ANA's actions. Congress (including congressional committees) may send information requests to ANA, or invite ANA to provide explanation in public sessions. Congress is responsible for approving ANA's budget, and ANA is obliged to send an annual report to Congress.
Federal Court of Accounts (TCU)	Independent body	Supreme audit institution responsible for examining Brazil's public accounts.	TCU provides external control of ANA and other public entities. It scrutinises ANA's use of resources and can review and challenge decisions by ANA, based on their merits in terms of efficiency, effectiveness and ANA's legal competences. The TCU recently provided recommendations for ANA and other entities in the sector.
National Water Resource Council (CNRH)	WRM sector institution	Representative body including the Ministry of Integration and Regional Development, State Water Resource Councils, water resource users and civil society. Holds deliberative duties under the National Water Resources Policy within SINGREH.	ANA supports the Secretariat of the Council on technical matters, and also interacts with the Council as an administrative member of the CNRH. ANA currently does not hold voting rights in the CNRH plenary or technical chambers.

Source: OECD analysis of ANA inputs, June 2023.

Co-ordination with subnational entities

A particular characteristic of the regulatory environment in Brazil's WRM and WSS sectors is the prominent role played by subnational entities, thanks to delegated powers under the constitution and the devolved, participative decision-making processes included in subsequent sector legislation (see Chapter 2). There are a range of subnational entities involved in governance, supervision, and service provision (Table 3.4).

In relation to WRM, ANA interacts with state and basin-level entities, including state governments, who are responsible for the development of WRM policy at the state level, state water resource councils (CERHs) and executive management bodies (OGERHs), and basin-level management agencies and committees (CBHs). ANA does not tend to interact with municipalities in the context of water resources management. There are 27 CEHRS, 27 OGERHs, and 242 basin committees, of which 232 relate to state river basins and 10 to federal river basins. ANA holds direct powers to regulate water resources within the Union's domain, however at the state level, regarding the management of state rivers and bodies of water, ANA is required to co-ordinate closely with state water management agencies and basin committees to strengthen the SINGREH system and deliver the PNRH.

In relation to its roles in WSS, ANA interacts with states and municipalities directly, with government representatives and executive management agencies, in addition to the state and municipal level regulatory agencies responsible for water supply and sanitation.

Brazil has a large number of subnational regulatory agencies involved in water supply and sanitation: a total of 89, including 47 municipal, 16 inter-municipal, and 26 state regulators.[4] Importantly, whilst ANA

dedicates significant resource to capacity-building at the subnational level and acts to co-ordinate and collaborate with subnational actors, ANA cannot impose its national reference standards on state and municipal agencies, adoption is voluntary.

Table 3.4. ANA's co-ordination with subnational bodies

Sector	Institution	Type	Role	Interaction with ANA
Water resource management	State Water Resource Councils (CERHs)	WRM sector institution	Advises and assists state governments on water resource management. Supervises and manages appeals relating to the decision of basin committees.	ANA interacts with the CEHRs as the state-level institution within SINGREH to implement the National Water Resources Policy. ANA may collaborate with CERHs on the development and management of basin committees.
	State government	Executive	Responsible for the development and implementation of water resource management policies for rivers under the state's domain[3].	ANA interacts directly with state executives and with representatives via Congress.
	State water resource management body (OGERHs)	Dedicated body within executive	Oversees and regulates water resource management and manages critical events as state-level executive branch.	ANA provides support to states in the creation of water resource management bodies or supervisory bodies and ongoing financial support for capacity-building via the National Pact for Water Management Program (PROGESTÃO).
	Hydrographic Basin Committees (CBHs)	WRM sector institution	Stakeholder representative body with specific functions in the decision-making structure under the National Water Resources Policy and within SINGREH, approve and implement the river basin plan, set water charges, and determine how the resources will be used.	Through contracts with State Water Resource Management Bodies (OGERHs), ANA provides financial support, technical expertise, guidance, and capacity-building to basin committees through the National Programme for Strengthening Basin Committees (PROCOMITES). ANA co-ordinates and collaborates with basin committees on basin water resources plans and monitors their implementation.
	Basin water resource management agency	Basin-level agency	Act as the executive secretariat for the respective basin committee.	ANA may interact with the executive secretariat during its work with basin committees on basin water resources plans elaboration and implementation.
Water supply and sanitation services	State and municipal water supply and sanitation regulatory agencies	Regulatory agency	Oversees and regulates water supply and sanitation service provision at the subnational level. Responsible for adopting ANA's national reference standards.	ANA establishes reference standards for water supply and sanitation services in consultation with subnational regulatory agencies provides support for capacity-building and monitors adoption by those agencies.
	State and municipal government or "executive agencies"	Executive (including dedicated branches or "agencies" for water and sanitation)	Responsible for the development and implementation of water supply and sanitation policies at the state or municipal level.	ANA establishes reference standards for water supply and sanitation services in consultation with subnational government and executive agencies. ANA interacts directly with state and municipal governments, including Governors and Mayors, or with other representatives in Congress.

Other co-operative arrangements and international projects

In addition to the arrangements listed above, ANA has established several co-operative arrangements. These include technical co-operation agreements (ACTs), Terms of Decentralised Execution (TEDs), Memoranda of Understanding (MoUs), and contracts with a range of national and international entities to aid co-operation, some relating to capacity building initiatives around the new regulatory framework, others relating to more technical aspects of delivery, or to conduct research to provide inputs for regulatory activities involving ANA and subnational entities.

Table 3.5. Selected examples of ANA co-operation agreements with other entities

Institution	Type of agreement	Role	Interaction with ANA
Instituto Rui Barbosa (IRB)	ACT	Civil association tasked with assisting with the development of the activities of the Court of Auditors.	Agreement to provide capacity building and create initiatives relating to the implementation of the sanitation framework, especially where ANA and state accountant courts are interacting.
Brazilian Agency for Industrial Development (ABDI)	ACT	Non-profit agency focused on digital transformation and the diffusion of new technologies and business models in the productive sector.	Agreement to develop "innovation awards" (funding) for technological initiatives. The agreement is active and involves three ANA divisions (SSB, SAF and ASGOV).
Comptroller-General of the Union (CGU)	ACT	Promotes integrity and transparency and holds responsibilities for supervising, managing, and regulating the offices of government.	Agreement in place to share findings from a CGU-led maturity assessment of subnational, cross-sectoral regulatory agencies.
University of Lavras (UFLA)	TED	Academic institution with specialist or technical capability.	Contract to develop innovation projects related to basic hydrology, water resource management, reservoir operation, enforcement, and data governance
University of Brasilia (UnB)	TED	As above.	Contract to research and develop a study on the price of water transferred from the Sao Francisco River to the Integration Project and propose a tariff system for the states to pay for the water received. Partnership on study to investigate the application of a responsive regulation approach by ANA.
University of Ceará (UFC)	TED	As above.	Contract to build a database for the "Drought Monitor", owned by ANA. To increase the understanding around drought, its mapping, details, data gathering, creation of indicators, and local impacts.

ANA is an active participant in many cross-border initiatives and international fora for the exchange of knowledge. ANA can negotiate and sign its own international co-operation agreements, many of which are with neighbouring countries with responsibilities for shared water resources. ANA participates in regional networks and initiatives, such as the Conference of Ibero-American Water Directors (CODIA), World Water Council (WWC) and the CPLP Directors of Water Resources (DRHs). ANA has systematic engagement with the Amazon Cooperation Treaty Organisation (ACTO) and with the Inter-governmental Co-ordinating Committee of the La Plata Basin Countries (*CIC Plata*).

ANA engages internationally to gain input and understand how it can improve its own performance, but also co-operates with institutions to provide support, especially in developing country contexts. ANA does not represent Brazil on the international stage from a policy perspective, in relation to WRM or WSS policy. Executive bodies, particularly the Ministry of Foreign Affairs and, for regulatory policy issues, the Ministry of Development, Industry and Foreign Trade, hold this responsibility on the international stage.

There are a number of international organisations that provide advice and services to ANA under contract or via other arrangements, these include: an International Technical Cooperation Project (PRODOC) with the United Nations Development Program (UNDP); a protocol of intent with the UK embassy in Brazil for technical co-operation; an MoU with the Australian Department of Foreign Affairs and Trade for co-operation in the field of water management; a Brazil-France technical co-operation programme (HIDROSAT) to improve satellite imaging and telemetry for hydrological monitoring; and other capacity building and training programmes with the United States Geological Survey, US Army Corps of Engineers, the Inter-American Development Bank, the IRD (*Institut de Recherche pour le Développement*) of France, and Spain's Directorate General of Water.

Input to policy

At the national level, policy development and approval in the areas of water resource management and water supply and sanitation are the responsibilities of the relevant executive and legislative bodies (see Table 3.3, or Chapter 1 – Institutional and Sector Context). Committees in both the executive (inter-ministerial) and legislative branch (congressional), for example the Inter-Ministerial Committee on Basic Sanitation (CISB) or the Senate Environment and Sustainable Development Committee, are important fora discussing policy approaches.

ANA maintains regular contact with individual representatives and committees via bi-lateral meetings and formal responses to calls for evidence, or requests to attend public hearings. ANA's parliamentary affairs unit (ASPAR) co-ordinates ANA's representation in Congress and monitors the progress of legislation. In most cases, ANA's Director-President, or other board members, together with relevant technical experts (Superintendents), represent the Agency in policy discussions or provide evidence.

There are areas where ANA has legal requirement to review regulation or provide support, for example, to conduct a review of the regulatory stock to test coherence within two years of the appointment of a new President of the Republic, or to support the CNRH in the review of the National Water Resources Plan every four years.

At the subnational level, in exercising its legislative duties and engaging with basin committees, subnational regulatory agencies and supervisory bodies, and other stakeholders, and through its capacity-building projects, ANA can provide meaningful input to policy development. ANA is respected for its technical expertise and may also be invited to provide guidance through more informal channels with state or municipal level actors.

Independence

The autonomy of regulatory bodies has traditionally been a political and controversial topic in Brazil. Brazil returned to democracy in 1985, with a constitution in force from 1988, and Brazil's economy experienced hyperinflation and recession in the following years until 1994. As Brazil's economy moved to a state of greater openness in the 1990s and market operations adjusted, there was a lack of political consensus on the organisation of the state apparatus. The notion of delegating significant regulatory powers to independent bodies, independent of direct executive supervision, was therefore not without opposition (OECD, 2021[8]).

Despite this earlier context, a framework law for national regulatory agencies was enacted in 1999, amending earlier legislation which governed existing regulators in Brazil, for example ANEEL in the electricity sector. The 1999 law reaffirms the autonomy of regulators and the absence of tutelage or hierarchical subordination. The framework law sets out a decision-making process that involves accountability to the National Congress, with assistance from the TCU (Law No. 13.848, 2019[4]). The key elements of external control outlined under the framework law are requirements for annual planning and activity reporting, and considerations or parameters to guide the decision-making process and regulatory agenda. However, these parameters remain high-level and allow regulatory agencies significant flexibility for designing their own internal processes. ANA can receive guidance from the government regarding its long-term strategy, but not its work programme, individual decisions, or appeals. Only a court can overturn decisions of ANA as part of a judicial process.

As for all independent regulatory authorities, there can be a discrepancy between *de jure* independence by law and *de facto* independence in practice. Given the context of significant public ownership and social policy intervention in the sector, there may be moments of increased political or societal scrutiny of ANA's decision-making. There are two areas, to a greater and lesser degree, where there is executive oversight,

these are in the approval of ANA's operating budget and the approval of human resource management decisions.

To date, there have been no significant modifications by the Ministry of Planning and Budget (formerly Ministry of Finance) to ANA's budget proposals, which were presented to the legislature and approved as proposed in each of the last five budget rounds. It is a legislative requirement, more formality, that ANA submits their budget proposal to the executive, which forwards the proposal for voting and approval to Congress. However, at the current time, ANA also engages frequently with executive bodies to design the budget proposal, understand fiscal limitations, and agree discretionary budget prior to submission, and therefore uncertainty is a constant source of risk for ANA's long-term projects and capacity-building (see Input). Despite uncertainties around long-term funding, ANA executes its budget independently, allocating funds to its strategic projects based on its own prioritisation. The successful launch of four "payment-on-delivery" projects at the national level illustrates this autonomy: *Progestão, Qualiágua, Procomitês* and *Produtor de Água*.

Regarding human resources management, the executive has, over the past financial year, taken precautionary steps to limit the hiring of permanent civil servants by ANA and other regulatory agencies by rejecting requests to hold civil service examinations, a mandatory part of the recruitment process. This was due to general budget limitations rather than the performance of regulators or the merits of their request, but still, this constraint substantially impacted ANA's business continuity. At the time of writing, the executive has authorised ANA to conduct examinations for 40 permanent civil service positions, which represents a lifting of the constraint, but this hiring will still not be sufficient to fill all vacancies caused by retirements. Permanent civil servants have certain capabilities under law due to their position, and so cannot be easily replaced by temporary or outsourced staff (see Input).

Strategic planning and objectives

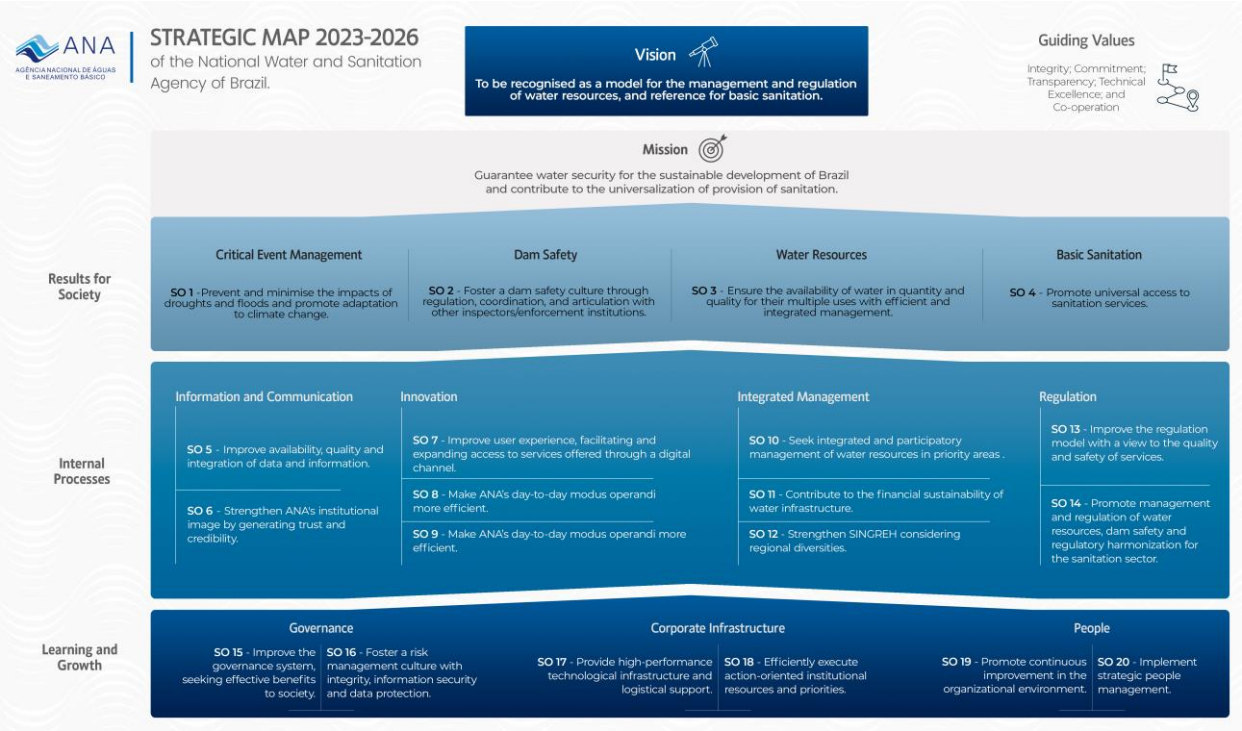
As is the case for other federal regulatory agencies in Brazil, legislation requires ANA to define a strategic plan for a four-year period, detailing the objectives, goals and expected results for the agency, considering any relevant managerial, supervisory, or regulatory responsibilities (Law No. 13.848, 2019[4]). ANA publishes the strategic plan on its website following approval by ANA's Board of Directors and notifies the legislature and Federal Court of Accounts.

Mission, vision, and values

Following the assignment of new roles under the 2020 Sanitation Law, ANA updated its strategic objectives, including its mission and vision statements. ANA's vision is to "be recognised as a model for the management and regulation of water resources, and reference for basic sanitation", whilst ANA's mission is to "guarantee water security for the sustainable development of Brazil and contribute to the universalisation of provision of sanitation."

ANA's new strategic plan, which covers the period 2023-2026, uses a balanced scorecard (BSC) model which aims to ensure that components of the strategy – objectives, indicators, goals, and initiatives – remain consistent and aligned to the organisation's mission. The implementation of the strategic plan is guided by the organisation's values of integrity, commitment, transparency, technical excellence, and co-operation, as well as a set of public service values (ANA, 2023[9]).

Figure 3.1. ANA's Strategic Map, 2023-26



Source: ANA (translated from original).

Strategic and operational objectives

ANA's strategic plan sets out 20 strategic objectives, which are organised into 11 strategic "themes" and three "perspectives", or output areas (Table 3.6). Each strategic objective has at least one quantitative strategic indicator or measure defined which can be tracked on an annual basis (Table 3.7), as well as operational targets and strategic initiatives for the period which may be assessed on a more qualitative basis. Each indicator, operational target and strategic initiative is assigned to a divisional unit (Superintendency) within the organisation. In many cases, the operational targets are informed by the National Water Plan (2022-2040), whilst the strategic objectives incorporate other legislated requirements relating to ANA's role in WRM and WSS (ANA, 2023[9]).

In addition to the objectives, targets, and mission and vision statements, ANA's planning identifies a series of supporting processes and enabling factors, which are presented as a "value chain", essential for achieving the institutional mission in line with public values. These enabling factors cover high-level management processes, outcome processes and support processes, such as institutional relations and legal compliance (management), the standardisation of basic sanitation regulations (outcome), and IT and people management (support). ANA also identifies and considers six public values in parallel to its legislated objectives when designing the strategy (ANA, 2023[9]):

1. a strong, decentralised and participative National Water Resource Management System;
2. an adequate, safe and stable regulatory environment to promote the universalisation of basic sanitation;
3. multiple-use dams in adequate safety conditions;
4. integrated, reliable and accessible hydrometeorological services, data, and information for users;
5. reduced risk and impact of droughts and floods; and

6. ensuring the multiple uses of water.

Planning and review

To develop the strategic plan, objectives and targets, ANA followed a participative design process involving all ANA staff, including the board, as well as external stakeholders. The planning process for the 2023-2026 strategy lasted approximately two months, starting with an organisational diagnostic, then moving through a series of validation meetings and workshops before the final strategy was drawn-up and signed-off by Directors and Superintendents (senior managers with responsibility for technical portfolios). The organisational diagnostic involved both internal and external surveying, SWOT analysis, and the analysis of reference documents, such as the National Water Plan (2022-2040), the Federal Development Strategy (2020-2031), and previous analytical work including the OECD/ANA report on "*Fostering Water Resilience in Brazil*" (2022). The board was involved from the start of the development process, providing guidelines and direction following the diagnostic and taking part in workshops directly.

In addition to the four-year strategic plan, the board and senior management approve an annual management plan (*Plano de Gestão Anual*, PGA), a regulatory agenda (*Agenda Regulatória*, AR) which is approved separately but incorporated in the PGA, a risk management plan (Plano de Gestão de Riscos, PGR) and an institutional strategic plan (*Plano Estratégico Institucional*, PEI), in accordance with the framework legislation.

There is no legal requirement for the strategic plan to be reviewed at a certain frequency, only that the plan should remain adequate and compatible with the programme outline in the government's Multiannual Plan (PPA) and coherent with ANA's annual management planning. ANA's Directors may adjust the plan at any point during the four-year period to ensure it remains fit-for-purpose. The AR and PGA provide another opportunity to revisit the strategic objectives, operational targets and overall ambition communicated in the four-year strategic plan on a more frequent basis.

Table 3.6. ANA's strategic objectives, 2023-2026

Output area	Theme	Strategic objective
Results for society	Critical event management	1 - Prevent and minimise the impacts of droughts and floods and promote the adaptation to climate change
	Dam safety	2 - Foster a dam safety culture through regulation, co-ordination, and articulation with other inspectors/enforcement institutions
	Water resources	3 - Ensure the availability of water in quantity and quality for their multiple uses with efficient and integrated management
	Basic sanitation	4 - Promote universal access to sanitation services
Internal processes	Information and communication	5 - Improve availability, quality and integration of data and information
		6 - Strengthen ANA's institutional image by generating trust and credibility
	Innovation	7 - Improve user experience, facilitating and expanding access to services offered through a digital channel
		8 - Make ANA's day-to-day modus operandi more efficient
		9 - Promote a regulatory environment favourable to development and innovation
	Integrated management	10 - Seek integrated and participatory management of water resources in priority areas
		11 - Contribute to the financial sustainability of water infrastructure
		12 - Strengthen SINGREH considering regional diversities
	Regulation	13 - Improve the regulation model with a view to the quality and safety of services
		14 - Promote management and regulation of water resources, dam safety and regulatory harmonization for the sanitation sector
	Governance	15 - Improve the governance system, seeking effective benefits to society

Output area	Theme	Strategic objective
Learning and growth		16 - Foster a risk management culture with integrity, information security and data protection
	Corporate infrastructure	17 - Provide high-performance technological infrastructure and logistical support
		18 - Efficiently execute action-oriented institutional resources and priorities
	People	19 - Promote continuous improvement in the organizational environment
		20 - Implement strategic people management

Table 3.7. ANA's strategic quantitative indicators

Strategic objective	Quantitative indicator	Accountable	2023	2024	2025	2026
1 - Prevent and minimise the impacts of droughts and floods and promote adaptation to climate change	Number of prioritised water systems with defined operating conditions	SOE	1	3	4	5
	% of prioritised municipalities with flood vulnerability studies carried out	SOE	25%	50%	75%	100%
	% of local water systems with special rules established	SRE	35%	36%	37%	38%
2 - Foster a dam safety culture through regulation, co-ordination, and articulation with other inspectors/enforcement institutions	Number of dam incidents and accidents	SRB	37	34	30	27
	% of ANA-regulated dams classified according to the framework to the PNSB	SRB	40	60	80	100
	% of dams, at the national level, classified according to the framework to the PNSB	SRB	60	65	70	75
	Number of dams inspected by ANA with PSB elaborated	SFI	75	82	86	90
3 - Ensure the availability of water in quantity and quality for their multiple uses with efficient and integrated management	% of grant requests by purpose analyzed	SRE	91	91	91	91
	Km of federal rivers with terrible quality	SHE	83 000	80 000	78 000	75 000
4 - Promote universal access to sanitation services	Attendance index of the total population with water network	SSB	84%	85	87	88
	Treated sewage index	SSB	51%	56	61	66
	Percentage of adherence to the ANA reference standards by the subnational regulatory authorities	SSB	20%	25	30	35
	Attendance index of the total population with the sewage network	SSB	55	58	62	65
5 - Improve availability, quality and integration of data and information	Number of accesses to ANA data and information in SNIRH and in the open data portal	SHE	Baseline	TBD	TBD	TBD
	% of stations in operation in the National	SGH	70%	73	76	80

Strategic objective	Quantitative indicator	Accountable	2023	2024	2025	2026
	Hydrometeorological Network operating regularly					
6 - Strengthen ANA's institutional image by generating trust and credibility	% engagement on ANA's digital platforms (portal and social networks)	ASCOM	Baseline	TBD	TBD	TBD
	Institutional image research	ASCOM	Baseline	TBD	TBD	TBD
	Number of positive guidelines inserted in national instruments	ASCOM	12	12	12	12
	Number of events that have ANA as a protagonist in the SINGREH and sanitation sector	ASCOM	8	8	8	8
7 - Improve user experience, facilitating and expanding access to services offered through a digital channel	Number of services digitized in an integrated digital channel (mobile application "ANA Digital")	STI	20	Increase by 20% compared to the previous year	Increase by 20% compared to the previous year	Increase by 20% compared to the previous year
	Number of frequent users in the integrated digital channel (ANA Digital App)	STI	Reach 20 000 users	Increase by 20% compared to the previous year	Increase by 20% compared to the previous year	Increase by 20% compared to the previous year
	User satisfaction score regarding the integrated digital channel.	STI	4.0	4.2	>4.5	>4.5
8 - Make ANA's day-to-day modus operandi more efficient	Number of processes improved and digitised	STI	3	3	3	3
9 - Promote a regulatory environment favourable to development and innovation	Number of initiatives using innovative regulatory instruments	SFI	1	1	1	1
10 - Seek integrated and participatory management of water resources in priority areas	Percentage of implementation of action plans for priority basins	SPP	TBD	TBD	TBD	TBD
11 - Contribute to the financial sustainability of water infrastructure	Number of contracts signed with recipients	SRB	1	1	1	1
	Number of initiatives proposed to promote financial sustainability	SRB	2	1	1	1
12 - Strengthen SINGREH considering regional diversities	Number of units of the federation that sign the contract of the 3rd cycle of PROGESTÃO	SAS	18	23	27	27
	Percentage of Delegated Entities of water agency functions with a general grade higher than 9 (nine) in the annual evaluation made by CAV	SAS	100	100	100	100
	Number of technical studies and subsidies for approval or revision of the mechanisms and amounts of collection for the use of water	SAS	2	1	1	1

Strategic objective	Quantitative indicator	Accountable	2023	2024	2025	2026
	resources made available to SINGREH entities					
13 - Improve the regulation model with a view to the quality and safety of services	Percentage of volume of water supplied in relation to the planned in the regulated services	SFI	70%	75	80	85
14 - Promote management and regulation of water resources, dam safety and regulatory harmonisation for the sanitation sector	Percentage of adherence of the Infra-national Regulatory Authorities to the reference standards	SSB	20	25	30	35
	Percentage of implementation of basin plans	SPP	TBD	TBD	TBD	TBD
	Number of people trained in the management and regulation of water resources, basic sanitation and dam safety	SAS	25 000	30 000	35 000	40 000
15 - Improve the governance system, seeking effective benefits to society	Integrated Index of Public Governance and Management (IGG TCU)	ASGOV	76%	TBD	83%	TBD
16 - Foster a risk management culture with integrity, information security and data protection	Index of awareness in risk management, integrity and information security - internal research	ASGOV	Baseline	10% over the previous year	10% over the previous year	10% over the previous year
17 - Provide high-performance technological infrastructure and logistical support	Information and Communication Technology Infrastructure provided	STI	70% of the priority demands planned for the exercise met	70% of the priority demands planned for the exercise met	70% of the priority demands planned for the exercise met	70% of the priority demands planned for the exercise met
18 - Efficiently execute action-oriented institutional resources and priorities	Percentage of Hiring of the PCA - Annual Hiring Plan	PURE	Execute, at least, 80% of the planned hires by October of the current year	Execute, at least, 80% of the planned hires by October of the current year	Execute, at least, 80% of the planned hires by October of the current year	Execute, at least, 80% of the planned hires by October of the current year
	Financial budget execution	PURE	Commit at least 90% of the allocation of descriptive expenses, made available by the SOF until October of the current year	Commit at least 90% of the allocation of descriptive expenses, made available by the SOF until October of the current year	Commit at least 90% of the allocation of descriptive expenses, made available by the SOF until October of the current year	Commit at least 90% of the allocation of descriptive expenses, made available by the SOF until October of the current year
	Percentage of reduction of remains to be paid - RAP	PURE	Reduce the RAP by 5% compared to the previous year.	Reduce the RAP by 5% compared to the previous year.	Reduce the RAP by 5% compared to the previous year.	Reduce the RAP by 5% compared to the previous year.
	IGov (IGG TCU)	ASGOV	0.62	0.72	0.82	0.82
19 - Promote continuous improvement in the organisational environment	People's satisfaction index	PURE	Baseline	Increase the satisfaction rate by 10% compared to the previous year	Increase the satisfaction rate by 20% compared to the previous year	Increase the satisfaction rate by 25% compared to the previous year

Strategic objective	Quantitative indicator	Accountable	2023	2024	2025	2026
20 - Implement strategic people management	IGest People (IGG TCU)	PURE	0.46	0.56	0.66	0.76

Input

This section of the chapter provides an overview of ANA's organisational structure, providing information on the responsibilities of individual organisational units ahead of later sections focused on the processes and interactions involving these units. Following this overview, the section describes the financial and human resources available to ANA and the ways in which the agency manages these resources, including details on hiring processes and budget management.

Organisational structure

ANA's organisational structure consists of three main functions or sub-structures: first, the decision-making function, which consists of the Board of Directors and decision support and advisory units; second, the technical superintendencies; and third, the personal advisory units[5] attached to Directors:

- Supporting the board, the decision-making support units include the general secretariat, the federal attorney's office, the internal auditor's office, and internal affairs. Special advisory units, separated in ANA's bylaws into the management support unit and representation support unit, cover advisory positions related to governance, regulatory quality, international affairs, social communications, and parliamentary affairs. The board is further supported by an internal committee structure, including the governance committee and communications and information security committee (CISC), amongst others.
- There are eleven superintendencies with responsibilities for the main technical and administrative portfolios, or the delivery of regulatory processes or projects, which include functions such as information technology and finance and personnel management.
- The direct advisory units consist of the office of the Director-President, and the Offices of Directors.
- Two independent units, the Ombudsmen and Ethics Commission, are also part of the organisational structure. These units do not formally support the board but are subject to the board's decisions, for example regarding internal rules, structure, and, in the case of the Ethics Commission, the nomination of its serving members.

ANA also displays three management levels, closely related to the organisational structure: the Collegiate Board of Directors, the superintendents (or heads of division), and team or unit co-ordinators. Superintendents are responsible for outcomes and administrative management at the division level, while the team co-ordinators are responsible for unit-level procedures, tasks, and outputs. The decision-making support units are subordinate to the board, as are superintendents, though individual directors and the Director-President take a supervisory role in relation to a portfolio of superintendencies.

The organisational structure is illustrated in Figure 3.2, whilst Table 3.8 and Table 3.9 provide an overview of the primary functions of the organisational units.

Figure 3.2. ANA's organisational chart

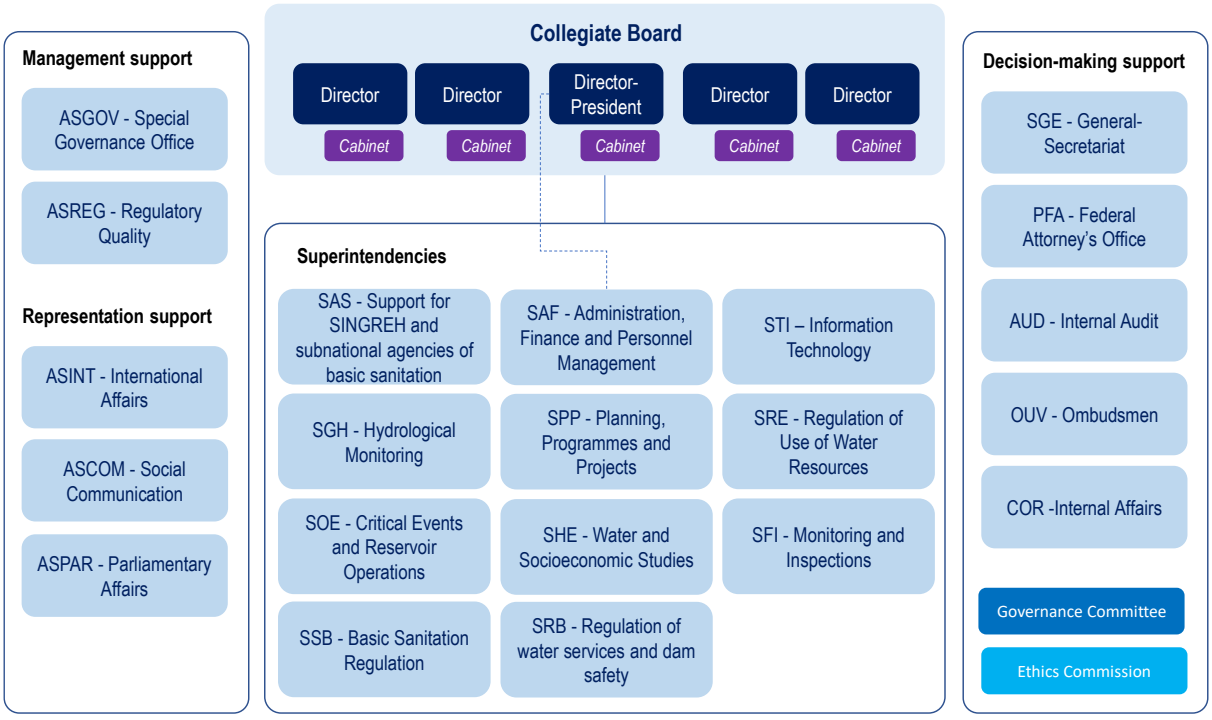


Table 3.8. Scope of functions of ANA's support and advisory units under the collegiate board

Unit	Primary functions
Decision-making support units:	
SGE – General-Secretariat	Structures the organisation and carries out secretarial activities for the Directors; internal communications around collegiate board deliberations; monitors compliance with board decisions; promotes efficiency, transparency and social participation in the decision-making process; co-ordinates advice to the board; supports consultation and public hearings; provides quality control of normative acts; supports the institutional representation of the board and institutional memory; supports delivery of the annual activity report, management report and TCU reporting; completes other activities relating to documentation, protocol, archives and library.
PFA – Federal Attorney's Office	Provides legal advice to the board; represents ANA judicially and extrajudicially as authorized; determines the liquidity and certainty of credits of any nature inherent to ANA's activities (debt collections); carries out legal consultancy and advisory activities.
AUD – Internal Audit	Assesses the suitability of the governance, risk management and internal control processes; monitors and evaluates the execution of government programmes linked to ANA; advises the board and coordinators by providing audit-related consulting services; interfaces with the Union's internal and external control bodies; examines the annual rendering of accounts by ANA and the Delegating Entities of Water Agencies; prepares the Annual Internal Audit Plan and Annual Report of Internal Audit Activities.
OUV – Ombudsmen	Carries out ANA's ombudsmen activities; monitors the quality and timeliness of services provided by ANA; monitors the internal process for investigating denouncements and complaints; monitors the holding of hearings, public consultation, and other means of participation by interested parties; keeps the board informed and prepares an annual ombudsmen report; carries out activities related to the Access to Information Law (Law No. 12.527/2011).
COR – Internal Affairs	Inspects the legality of ANA's internal functions and operating procedures; assess denouncements and representations regarding the performance of public agents and private entities; issues opinions regarding confirmations and dismissals of ANA staff; carries out corrections for the rationalization and effectiveness of services; keeps a record of ongoing procedures; consolidates data for federal internal control system (SISCOR); co-ordinates the integrity program at ANA; advises on issues related to public integrity; supports accountable divisional units with training activities on risk management, transparency and public integrity.
Management support units:	
ASGOV – Special Governance Office	Proposes and promotes guidelines and governance practices relating to the organisational strategy; works to strengthen governance and continuous improvement of the agency's leadership, strategy and control; acts as executive secretariat for ANA Governance System committees; leads the risk management and mitigation process; monitors strategic

Unit	Primary functions
	initiatives, indicators and targets; co-ordinates budget planning preparation (in co-ordination with SAF) and the online accountability process; promotes innovation and supports organisational transformations, advising the board.
ASREG – Regulatory Quality	Promotes the improvement of regulatory quality of ANA and develops strategy with the board to strengthen regulatory practices; proposes guidelines, methodologies, tools and procedures for Regulatory Impact Assessment and the monitoring and evaluation of regulatory results; proposes tools for administrative simplification and the management of the regulatory stock; supports, with the STI, data collection to enable quantitative analysis and cost-benefit analysis; co-ordinates the Regulatory Agenda process.
Representation support units:	
ASINT –International Affairs	Proposes and co-ordinates the international agenda, including MoUs, co-operation agreements, protocols, programmes, projects and other activities of bilateral, multilateral and regional technical co-operation of interest to ANA; assists the board's participation in international co-operation and missions; co-ordinates ANA's participation in the country's official co-operation with the Ministry of Foreign Affairs; co-ordinates the demands of other sectorial ministries when requested; supports ANA in its relations with international institutions and networks related to regulatory activity areas.
ASCOM – Social Communication	Co-ordinates ANA's communication activities; formulates and implements ANA's communication policy and plan; promotes ANA's mission to society; supports ANA's actions with the press, and other communications channels; co-ordinates ANA's digital communications; promotes disclosure; ensures ANA's institutional image and the correct use of its visual identity.
ASPAR – Parliamentary Affairs	Advises the board in dialogue with the legislature; establishes relations with the legislature and promotes ANA's programmes and projects; advises on ANA's participation in public hearings at the National Congress; supports analysis of bills and legislative proposals; proposes ANA's institutional positioning regarding legislative proposals to the board for consideration.
Direct advisory units:	
Office of the Director-President (GAB)	Provides direct assistance to the Director-President in supervising and coordinating ANA's activities, and his/her political, social, and administrative representation. Supporting internal communications and institutional relations of the Director-President and otherwise directing and controlling the activities assigned to the GAB, including activities assigned by the Director-President.
Offices of Directors (GAB-DIR)	Each Director's office provides direct assistance to the Director in coordinating ANA's activities, and his/her political, social, and administrative representation. Supporting internal communications and institutional relations of the Director, monitoring the publication of acts issued by ANA in the Federal Official Gazette – DOU.

Source: ANA Resolution No. 136/2022 Annex I and II ("Bylaws").

Table 3.9. The functions of ANA's superintendencies

Superintendency	Primary functions
SAS – Support for SINGREH and subnational agencies of basic sanitation	Encourages initiatives for creating and strengthening SINGREH entities, especially with respect to the State Water Resource Councils (CERHs), State Water resource management Bodies (OGERHs), and Basin Committees (CBHs); supports the implementation and operationalization of the integrated management of water resources in basins and hydrographic regions; conducts or encourages communications, research, training and educational activities related to integrated water resource management; implements water charging with Basin Committees and prepares technical studies to define charges; co-ordinates capacity-building initiatives aimed at supporting state-level regulatory and management bodies involved in water supply and sanitation and the adoption of reference standards.
SPP – Planning, Programmes and Projects	Proposes, implements and evaluates programmes and projects to strengthen management instruments and SINGREH, water safety, dam safety, and the sanitation sector, in co-ordination with the organisational units responsible for regulatory development; co-ordinates with ASINT and other organisational units on international co-operation projects; co-ordinates ANA's actions in water resources planning; provides support to state water resource management agencies on projects and studies; identifies and proposes strategies to stimulate good practices in the management of water resources; monitors the results and indicators of water resources plans.
SHE – Water and Socioeconomic Studies	Prepares information and best practices regarding the regulatory landscape of water resources and basic sanitation; prepares economic studies and evaluations to inform decision-making on the management of water resources; prepares hydrological, water-use and socioeconomic studies; develops studies on the assessment of water quality; designs and manages databases feeding into the National System of Information on Water Resources (SNIRH); develops and maintains methodologies and parameter catalogues for use in assessments and future studies; works with units to propose adaptive measures in the face of climate change impacts.
STI – Information Technology	Co-ordinates the use of technology, specifically regarding the SNIRH and in corporate portals and systems; manages ANA's IT infrastructure and resources; manages databases of corporate information; oversees the exchange of data through IT with states and external entities; ensures alignment with federal government determinations; implements ANA's Information and Communications Security mechanisms; proposes IT standards, new technologies and IT solutions.

Superintendency	Primary functions
SRE – Regulation of Use of Water Resources	Regulates the granting of use of water resources in the Union's domain; proposes regulatory frameworks, norms and promotes national integration; proposes preventive grants and rights of use; issues declarations of regularity; promotes actions relating to priority uses and compliance; supports training and communication activities related to regulation; manages the National Registry of Users of Water Resources (CNARH).
SRB – Regulation of water services and dam safety	Proposes normative acts related to public irrigation services and raw water supply services at the federal level, including the establishment of efficiency standards and tariffs; proposes normative acts related to dam safety; co-ordinates the dam safety register and examines and classifies dams by risk category; escalates dam safety reports to the CNRH; prepares guides, manuals and training; proposes actions and processes relating to the regularisation of dams, operational sustainability, and operational decentralisation of activities in the Union's domain; examines proposals from the São Francisco River Integration Project operator with the Northern Northeast Basins.
SFI – Monitoring and Inspections	Monitors the use of water resources within the Union's domain; inspects the operating conditions of reservoirs and the compliance with dam safety obligations; inspects the efficiency standards of the provision of public irrigation services (under concession) and raw water delivery services; reacts to complaints with inspections; applies disciplinary action and eventual penalties in relation to use of water resource, public irrigation services under concession, dam safety, and bulk water supply; co-ordinates inspection activities with other institutions; communicates emergency situation in dam safety to the civil protection and defense agency.
SGH – Hydrological Monitoring	Co-ordinates activities carried out in the scope of the National Hydrometeorological Network (RHN); promotes the integration of hydrometeorological monitoring networks, within Brazil and for border and cross-border rivers; promotes the modernisation of the RHN and development of technologies and processes related to hydrological monitoring; providers the SNIRH with hydrological data; promotes the standardisation of hydrometeorological data collection and analysis; supports training on RHN and the National Water Quality Network (RNQA).
SOE – Critical Events and Reservoir Operations	Works to prevent and minimize the effects of droughts and floods within the scope of SINGREH in co-operation with the bodies of the National Civil Protection and Defense System; defines operating conditions for water systems and reservoirs with regional or national impact to ensure water security; monitors operating conditions in the interests of water security and co-operates with SFI and SRE on critical events; co-ordinates the ANA Situation Room in case of critical hydrological events, and supports state, district and partner institution situation rooms; articulates ANA's roles in critical events; co-ordinates the Drought Monitor Program.
SSB – Basic Sanitation Regulation	Develops reference standards or "norms" relating to quality and efficiency in the provision, maintenance and operation of basic sanitation systems for the components of drinking water supply, sanitary sewage, urban cleaning and solid waste management and drainage and management of urban rainwater; develops further reference standards relating to tariff regulations, standardisation of negotiation instruments, universalisation of service provision, regulatory accounting, goals for the reduction and control of water losses, the calculation of indemnities, and the expiry of public provision, amongst other topics; monitors compliance with federal legislation for the regulation of basic sanitation services and the adoption of reference standards; supports regionalisation in the provision of services for technical and economic benefits.
SAF – Administration, Finance and Personnel Management	Co-ordinates ANA's activities with regard to federal systems and budget, financial administration, accounting, general services, personnel and external resources; develops ANA's budgetary, financial and accounting programme; consolidates the budget proposal elaboration process; supports ASGOV in reporting to the board for resourcing matters; controls the receipt of any fines from inspection activities; promotes bidding for the acquisition of goods and contracting of services; prepares ANA's accounts and supports ASGOV in the preparation annual reporting; represents ANA in acts of foreign trade; acts as business partner to all organisational units regarding resource-use. Different to other superintendencies, SAF reports directly to the Director-President of ANA. The joint responsibility design, where SAF manages financial administration and human resources, is typical of regulatory agencies in Brazil. The human resources function itself is divided into two broad workstreams: first, the administration of active and inactive personnel, which includes the administration of payments (payroll), benefits, pensions, and the organisation of retirements; and second, the co-ordination of training and development, which includes some aspects of personnel and programme monitoring for capability-building purposes.

Source: ANA Resolution No. 136/2022 Annex I and II ("Bylaws") (ANA, 2022[10]).

Financial resources

ANA's revenues come from both fees and national budget. The first and largest source of revenue (91%) is derived from water-use charging or industry fees, which consists of two revenue sub-streams: charges levied on hydroelectric powerplant operators, and charges levied on other water users active in basins under the Union's domain.[3] The second source of revenue is the discretionary budget allocation received from the federal government (9%). These two main revenue streams have occasionally been supplemented by small donations from national or international entities for specific projects, and revenues from sanctions (fines) following enforcement action.

Certain revenues are earmarked under legislation for certain uses, making it important to distinguish revenues based on their source. In practice, one complicating factor is that the federal government is involved in allocating elements of both revenue streams – national budget and industry fees – to ANA due to the design of the collection cycle. For example, fees levied on hydroelectric power producers flow through the Ministry of Planning and Budget to ANA.

In the case of water charges levied at the basin level, ANA, or delegated management agencies, collect charges, but these funds are earmarked to enable the execution of river basin plans, and therefore flow in their entirety back to basin committees (through the delegated management agencies), via the Treasury without any contingency withheld. In 2022, these funds represented 36% of ANA's total revenues (Table 3.10) and ANA cannot redirect these funds from basin committees to other priorities.

Charges levied on hydroelectric power producers, which represented 55% of total revenues in 2022, are earmarked for two main uses: the implementation of the National Water Resources Policy; and the development and maintenance of the National Hydrometeorological Network. ANA receives these funds from federal government and has some discretion to allocate these funds between projects within these two overarching areas as it sees fit, as part of its annual budget execution. In practice, this earmarking aligns with ANA's water resource management duties under establishing legislation, and still allows ANA to invest in strategic projects as far as they relate to ANA's mandate in the water resource management sector. Much of this funding flows into projects run by ANA to support and strengthen the SINGREH system, develop and maintain information systems, and to third parties involved in the maintenance and running of the meteorological stations which make up part of the national network.

Finally, ANA's national budget allocation, which covers operating costs, including staffing costs, is fully discretionary. Upon receipt of the federal budget allocation, which represented 9% of total revenues in 2023 (Table 3.10), ANA's Board may approve the reallocation of these funds across budget lines, or the withholding of funds for contingency purposes. Importantly, funding for the implementation of ANA's new duties in water supply and sanitation, of which the development of reference standards and monitoring of their adoption is mandatory, must be taken from ANA's federal budget allocation. ANA's allocation rose by 63% in 2022 to account for ANA's new duties, two years after the introduction of the 2020 Sanitation Law. However, the large proportional increase masks the relatively small scale of the budget allocation for these new duties relative to existing projects in water resource management, and after two years of fiscal latency, delayed workstreams within ANA are competing for discretionary resources.

Table 3.10. ANA's annual revenue and budget, 2020-23

R$	2020		2021		2022		2023 (estimates)	
	Amount (BRL)	% of total revenue	Amount (BRL)	% of total revenue	Amount (BRL)	% of total revenue	Amount (BRL)	% of total revenue
Industry fees	298 400 938	94%	316 079 664	94%	340 243 252	91%	356 734 213	91%
…of which fees levied on hydropower operators	206 783 910	65%	175 909 796	52%	205 584 978	55%	214 174 213	55%
...of which other water charges levied at the basin level	91 617 028	29%	140 169 868	42%	134 658 274	36%	142 560 000	36%
Sanctions/fines	676 141	0%	460 677	0%	1 140 665	0%	402 898	0%
National budget allocation (from taxation)	18 466 347	6%	21 063 322	6%	34 364 092	9%	34 172 822	9%
Total revenue	**317 543 426**	**100%**	**337 603 663**	**100%**	**375 748 009**	**100%**	**391 309 933**	**100%**
Estimated operating budget (all sources)	*303 445 714*		*312 425 404*		*411 075 522*		*391 309 933*	

R$	2020		2021		2022		2023 (estimates)	
	Amount (BRL)	% of total revenue	Amount (BRL)	% of total revenue	Amount (BRL)	% of total revenue	Amount (BRL)	% of total revenue
Actual operating budget (all sources)	**303 445 714**		**317 543 426**		**375 748 009**		**391 309 933**	
Operating budget/industry fees (%)	**98%**		**99.5%**		**91%**		**91%**	

Source: ANA (June 2023).

ANA has successfully negotiated a budget adjustment to increase the amount of its discretionary funding, amounting to 0.75% of the value of the energy generated by hydroelectric power producers multiplied by a reference tariff (TAR), to supplement the national budget allocation. This arrangement is temporary and requires approval on an annual basis, every budget cycle. It would require a change in primary legislation for ANA to be guaranteed the availability of these revenues over the longer-term, for the purpose of delivering its duties under the 2020 Sanitation Law.

There can be a mismatch between the forecast revenues (the proposed budget) and the realised monies collected or received. The cash flows relating to water charges and electricity sector charges must remain in balance and do not involve contingencies, but this is not the case for other revenue sources, which can be adjusted in the interest of fiscal consolidation and rebalancing. In 2021 the actual operating budget exceeded the initial estimation, and in 2022 the reverse.[6]

The proportion of ANA's budget allocated to internal organisational units varies significantly and the value of allocations has changed over time (Table 3.11). The largest allocations, excluding staff salaries, are received by the divisional units responsible for the national hydrometeorological network (SGH) and implementing the pillars of ANA's duties under the PNRH (SAS and STI), which aligns with earmarking rules on budget execution. For 2023, the SGH budget incorporates the cost of maintaining the RHN and the continuation of the *Qualiágua* programme. Whilst the allocation to SAS includes some funding for capacity-building projects relating to the adoption of reference standards in WSS and related promotion of regionalisation, the core development of reference standards is conducted by SSB, which is projected to receive 4% of allocated funds in 2023 and is facing a reduction in absolute budget relative to 2022. A large portion of SSB's budget has already been allocated to preliminary studies on reference standard guidelines, conducted under contract with the United Nations Development Programme (UNDP).

Meanwhile, from 2022 to 2023, large increases are projected in the allocations to the social communications unit (ASCOM), to meet needs for outsourcing, and monitoring and inspections (SFI), to cover contracts for fieldwork relating to water-use monitoring, dam safety inspection, and user registration, and related tools and training. After receiving a large allocation in 2020, the budget available for the programmes, project and planning unit (SPP) dropped and has remained relatively low, this is due to difference in the demand for resource between periods of contracting (high demand) and contract execution (low demand).

Table 3.11. Internal allocation of ANA's budget, by divisional unit

Divisional unit / ($ BRL)	2020	2021	2022	2023 (estimates)	Share 2023 budget
SAF – Finance & Human Resources	33 865 365	35 614 287	33 952 965	30 245 091	12%
ASCOM – Social Communications	2 896 525	5 720 000	2 900 000	5 578 706	2%
SGH – Hydrometeorological Network Management	66 591 610	58 976 506	64 466 590	75 000 000	30%
SOE – Operations & Critical Events	1 869 391	1 775 372	1 930 900	1 949 900	1%
SAS – support for SINGREH and subnational agencies for basic sanitation	44 029 452	35 628 383	35 415 558	45 737 069	18%
SPP – Planning, Projects & Programmes (previously SIP/SPP, with Integrated Water Management)	11 575 761	3 709 310	3 516 311	3 500 000	1%
STI – Information Technology	41 667 092	35 058 217	37 032 930	45 966 706	18%
SHE – Hydrological & Economic Studies	12 791 598	9 600 000	9 000 100	8 500 000	3%
SFI – Monitoring & Inspections	7 087 133	6 871 856	6 164 343	17 952 875	7%
SRE – Water Use Regulation	3 453 547	3 780 633	1 754 486	3 335 874	1%
SRE/SRB – Water Use, Dam Safety & Emergency Regulation	N/A	N/A	N/A	1 800 000	1%
SSB – Basic Sanitation Regulation	98 924	941 010	13 792 692	9 183 712	4%
Total	225 926 398	197 675 574	209 926 875	248 749 933	
Contingency internal reserve	-	615 130	31 162 860	-	

Note: Figures above do not include revenues from charges levied on water rights holders as these revenues are channelled directly to basin committees. Divisional units not included in the table derive their budget directly from SAF: ASGOV, ASPAR, ASINT, ASCOM, SGE, PFA, AUD, OUV, COR, GAB.
Source: ANA.

Research and training

A portion of ANA's budget, which is internally allocated to SAS, is earmarked for research and external training for water resource managers across the country. In-person and remote training initiatives are also in place, either short or medium term, all free of charge. More than 260 000 people have been trained in these initiatives over the last 20 years.

Part of the budget allocated to support the SINGREH is used for a joint initiative between ANA and CAPES (Coordination for the Improvement of Higher Education Personnel) to provide incentives to students to pursue studies related to water resource management through research projects and professional master's degrees, such as the Professional Master's in Environmental Sciences – ProfCiamb and the Master's Professional in Management and Regulation of Water Resources – ProfÁgua. ANA also incentivises specialisations in specific themes, such as dam safety. ANA's permanent civil servants have access to all trainings provided by SAS.

In addition to this external training initiative, ANA directs resources to complete specific research to deliver data on river basins, for example relating to contamination, or the impacts of COVID-19. The research budget is allocated to the Hydrological and Economic Studies Unit (SHE).

Funding of external entities

Since ANA and its core staff are physically based in Brasilia, ANA has chosen to outsource certain tasks to management agencies or other third-party service providers. One example is the monitoring of water management in areas of recognised water scarcity, such as the Pianco-Prinhas-Açu, São Marcos and Grande River basins.

Additionally, ANA sponsors some civil society organisations, whose functions align with ANA's responsibilities to promote and disseminate the national water resources policy and regulatory best practices. Some institutions with recurring partnerships are the Brazilian Association of Water Resources (ABRHidro), the Brazilian Association of Sanitary Engineering (ABES), the National Forum of River Basin Committees (FNCBH) and, more recently, the National Confederation of Industries (CNI).

Managing financial resources

Annual budget planning and management process

ANA operates within an annual budgeting cycle where revenues from all sources are foreseen to be collected and executed within the financial year. In practice, ANA's budget availability, and hence execution, is dependent on several factors, such as water availability for hydropower generation and fiscal consolidation by federal government, meaning in-year budget transfers are rarely distributed evenly over the year.

Aside from achieving balance from a revenue and cost perspective, the annual budget should align with ANA's objectives, and not breach any of the principles and guidelines outlined by legislation. The laws relating to the Union's budget planning and the governance of regulatory agencies in Brazil, as well as ANA's founding legislation the National Water Resources Policy, act together to establish a framework to govern both revenue collection and expenditure (Law No. 13.971, 2019[11]) (Law No. 14.535, 2023[12]) (Law No. 13.848, 2019[4]).

ANA has an internal budget management system – SISPLANA – in place, which SAF and ASGOV use to construct the annual budget proposal (Annual Budget Law Projection, PLOA). As part of the pre-budget proposal phase, ANA's divisional units contribute their estimates of revenues and costs for their areas of work, identifying priority projects and submitting budget availability requests. ANA also estimates the value of charges levied on water users, from water rights or hydroelectricity production[7] respectively, as well as other supplementary revenues, which are provided to the Ministry of Planning and Budget (MPO) in advance. Using these estimates, ANA constructs an annual budget and analyses the expenditure required to cover existing and foreseen contracts and projects.

Whilst the Ministry of Integration and Regional Development and Ministry of Cities are responsible for many of the key elements of the water resource management and water supply and sanitation policy portfolio which relate to ANA's duties, it is the Ministry of Planning and Budget (MPO) that deals with ANA's budget proposal, without involving other Ministries. Following any adjustments, the budget proposal is presented to Congress, and ANA enters into direct engagement with Congress to ensure that the funds are allocated as proposed and not restricted, either due to contingency planning, delays or other justifications for non-execution. To date, while there have been attempts to reduce ANA's operational budget, budgets have been approved as proposed. ANA frequently engages with the MPO, with bi-monthly evaluation meetings, to first develop the budget, then track its execution. ANA may send a request for budget expansion during the budget year to the MPO using a federal system – the Integrated Planning and Budget System (SIOP).

The Annual Budget Law (Law No. 14.535, 2023[12]) does allow for "balances payable", a budgetary tool where expenses committed in previous years which were not fully paid can be paid in the following financial year, but only if they are included and approved as part of the following budget.

Internal management and transparency

ANA's Board, supported by the SAF and ASGOV, approve the final budget proposal and allocation of federal funds between internal divisions. The internal SISPLANA system is utilised to co-ordinate the budget planning operations and feedback of the divisional units. Units use the SISPLANA system to log requests for funds and schedule expenditure execution.

To ensure alignment between ANA's expenditure, the strategic objectives of the organisation, and policy aims, ANA's Special Governance Advisory (ASGOV) assess all contracts, partnerships, agreements, and other forms of budget execution, in accordance with ANA resolutions and ordinances (ANA, 2023[13])). Currently, ANA does not adhere to any international quality standards for budgetary or financial management and is not required to do so under federal legislation.

To meet ANA's stated ambition for its activities to be transparent, accessible, and understandable to the public, with regards to their budgetary process, ANA regularly publishes information relating to its budget, revenues, contracts, and agreements on its website. The agency's expenditure data is also made available through the federal government's Integrated System of Financial Administration (SIAFI).

Human resources

In 2023, ANA's workforce totals approximately 559 people, including 373 civil servants, 285 of which (76%) are permanent civil servants approved and appointed following open competitive examinations, and 186 outsourced staff. Of the total workforce, around 5% are senior managers, 33% are technical staff and 62% are support staff.

The total workforce has increased over time since 2019. The number of civil servants in 2023 is 5% higher than in 2019, whereas outsourced staff numbers have increased 11% over the same period. The total headcount of federal regulatory agencies (considering only civil servants) is capped by law, however ANA's current headcount is currently well below this cap.

Table 3.12. ANA workforce headcount by category, 2019-2023

Year	Civil servants	Outsourced staff	Total workforce
2023	373	186	559
2022	360	186	546
2021	352	182	534
2020	348	168	516
2019	343	168	511

Source: ANA (June 2023).

Looking at the division of staff by department, the numbers of civil servants and outsourced staff are evenly shared across superintendencies. There appears to be a higher concentration of civil servants in the decision-making function and Director's Offices, however these two departments combine multiple organisational units, including the decision support and advisory units (see Organisational structure). There is a high concentration of outsourced staff also in the decision-making function and Director's offices, as well as in the SAF.

Table 3.13. ANA workforce headcount by department, 2023

Department	Civil servants		Outsourced staff		Total
	Support activities	Main activities	Support activities	Main activities	
Decision-making function and Director's Offices	83		53		136
SAF	32		88		120
SAS		31		7	38
SPP		32		4	36
SOE		18		3	21
SGH		31		4	35
SHE		27		3	30
STI		19		5	24
SFI		29		5	34
SRE		30		6	36
SSB		32		4	36
SRB		9		4	13
Sub-totals	***373***		***186***		***559***

Note: In this table, support activities, or "non-business" activities, are provided by the decision-making function and director's offices, including SAF. Main activities, those relating to ANA's core regulatory business and functions, are provided by the superintendencies (excluding SAF).
Source: ANA (June 2023).

Most of ANA's civil servants, 285 of 373 (or 76%), are permanent "career" civil servants who have passed open competitive examinations to enter the civil service in Brazil. Civil servants who join ANA without completing a competitive examination are known as "commissioned" or temporary civil servants. The permanent civil servants can only be dismissed if they violate certain laws and hold specific regulatory duties that cannot be performed by other classes of employee at ANA. Permanent civil servants join "career" categories following examinations, and each public sector employer defines its own career paths for civil servants. It is possible that civil servants from other careers, defined by public bodies other than ANA, join ANA via transfer and are administratively integrated into ANA's system, but they remain within their original career path. The only way to join one of ANA's career paths is to pass the specific entrance examinations. Currently, ANA's civil servants fall under four "careers", which are differentiated based on role focus and the level of educational attainment:

1. Administrative technicians have at least a high school education. This category of civil servants conducts administrative and logistical activities on an intermediate level.
2. Administrative analysts have at least a university education. This group exercises functions related to administrative and logistical activities on a higher level than the category of administrative technician.
3. Specialists in water resources and sanitation, from a regulatory, policy or scientific perspective, have attained higher (university-level) education. This category has attributions focused on the technical regulatory and research activities of ANA.
4. Specialists in geoprocessing also have a higher level of education and meet attributions related to the technical and research activities of ANA.

Permanent civil servants are divided into classes (A, B and "special") and grades (I-V), which denote the basic salary and allowable performance bonus defined in law. Managers (including superintendents) and senior managers (including directors) at ANA are also divided into classes (CD, CGE, CA, CAS, and CCT) and grades (I-V), though not all these classes are represented at ANA (Law No. 13.326, 2016[14]).

The civil servants that make up the bulk of ANA's workforce tend to have attained a high level of education and experience (Table 3.14). For example, to hold a class B position, the civil servant must have more than 5 years of relevant experience and 360 hours of specialised training, or 8 years of experience and 240 hours of training. For "special" class positions, which are held by the majority, the civil servant must have at least 14 years of experience and have completed a specialisation course of at least 360 hours, hold a master's degree and at least 12 years of relevant experience, or hold a doctorate and have at least 10 years of relevant experience.

Table 3.14. Distribution of ANA career civil servants by salary band and ANA career

Salary band	Technical Administrative	Administrative Analysts	WRM and WSS Specialists	Geoprocessing Specialists	Total
A I-V	1	1	5	1	**8**
B I-V	30	16	29	2	**77**
S I-III	0	28	148	24	**200**
Totals	**31**	**45**	**182**	**27**	**285**

Source: ANA (June 2023).

Table 3.15. Staff gender balance

Category	Male	Female	Total
Senior Managers	17	10	**27**
Outsourced Staff	60	126	**186**
Support Staff Civil Servants	217	129	**346**
All categories	**294**	**265**	**559**

Note: In this table, senior managers include superintendents, deputy superintendents, advisors, and directors.
Source: ANA (June 2023).

Women make up 47% of the total workforce, but are a majority within the technical staff category, whilst men make-up the majority for support staff (Table 3.15). Women are under-represented at a senior level, making up 37% of senior positions.

There is a broad range of professional and specialist roles within ANA (Table 3.16), but there is a clear focus on scientific and engineering experience, with only 18% of the workforce specialising in law, economics, administration, or accountancy roles.

Table 3.16. ANA workforce by professional/specialist area

Professional area	Staff numbers	Percentage (%)
Civil engineering	80	21.6
Biological sciences	34	9.2
Law	23	6.2
Administration	20	5.4
Economic sciences	17	4.6
Geology	14	3.8
Agriculture/agronomy	13	3.5
Agronomic engineering	11	3.0
Agricultural engineering	9	2.4
Accounting sciences	7	1.9
Chemical engineering	7	1.9
Geography	7	1.9
Environmental engineering	6	1.6
Surveying	6	1.6
Other professional areas	62	31.5

Source: ANA (June 2023).

Looking ahead, given ANA's new duties relating to the development of reference standards in sanitation, ANA has stated that it will target personnel with a technical understanding of water supply and sanitation services regulation for recruitment efforts. ANA foresees that it will need to develop and expand their regulatory and technical capabilities and will require resources from supporting professions, for example economics, law, accountancy, and engineering. ANA also anticipates the need for skilled IT professionals, data engineers, data scientists and technologists to increase over time.

The rate of turnover in civil servants has averaged 5% annually in the last 4 years, and amongst outsourced staff, the turnover is slightly higher at an average 5.5%. Given anticipated turnover and confirmed retirements in 2023/24, ANA already has plans to recruit profiles with engineering, agronomy, biology, and administration expertise, to maintain existing capabilities.

Recruitment of staff

Different rules and processes apply to the recruitment of different categories of staff at ANA: permanent civil servants, temporary "commissioned" civil servants, outsourced staff, managerial positions, and the board (see Board selection and dismissal).

For permanent civil servants, approval for new positions and the scheduling of civil service entrance exams requires prior authorisation from the Ministry of Management and Innovation in Public Services. Thus, as for other regulatory agencies in Brazil, ANA is subject to federal guidelines and rules which can limit headcount, or delay recruitment activities. Requests by ANA to conduct examinations to recruit permanent civil servants were rejected up until recently, when the Ministry approved examinations for 40 positions. However, this hiring will not be sufficient to fill all vacancies caused by retirements during the period of the hiring freeze.

The selection procedure for permanent civil servants includes a written exam testing knowledge of Portuguese and English, computer skills, sector regulation and technical knowledge, and skills of public administration. Post-graduate qualifications and relevant experience are also assessed as part of the process, but candidates are not subject to any competency-based assessments or in-person interviews. ANA, through an internal hiring commission, initially defines the desired candidate profiles and basic requirements, such as educational background and technical qualifications, but is not directly involved in the assessment of candidates, which is centrally managed by government and outsourced providers. To conclude the selection process, the results of the selection are published, including the name and scores for the selected applicants.

An individual who passes the civil service entrance examinations and is appointed is guaranteed a permanent position following a probationary period of thirty-six months. Civil servants are able to rotate within the public administration and maintain their permanent contract status.

The recruitment of "commissioned" staff is less formal. Civil service entrance examinations do not apply, although ANA must still submit a proposal outlining the recruitment need for ministerial approval, in accordance with legislation (Law No. 8.745, 1993[15]). Commissioned staff may be appointed following a selection and interview process, or may be nominated directly by the board of directors. As noted, there are some tasks and functions that commissioned staff are not permitted to do, and which only permanent career civil servants may carry out. Requirements to become a commissioned staff member are good moral character and reputation and a professional profile or education related to the position. Legislation defines other criteria for ineligibility, including illiteracy, conviction of certain crimes, and dismissal from the public service because of administrative or judicial proceedings (Complementary Law No. 64, 1990[16]).

Non-civil servant outsourced and internship positions follow internal recruitment procedures only, except in the cases of some leadership appointments (see later sections). ANA typically runs a competitive bidding process in line with federal procurement rules to find an appropriate provider for different types of profile, for example secretarial staff. The successful bidder then secures a contract to source ANA with relevant

staff when required during the contracted period. Outsourced professionals are ultimately the responsibility of the contractor. ANA may also hire consultants to fill roles when suitable civil services profiles received through the standard application procedure are not available. At the current time, ANA has 16 interns and 186 outsourced staff, of which 141 are support staff working in the decision-making function, Director's Offices, or the SAF. Outsourced staff may hold contracts of up to five years duration.

Within the public administration, ANA can request staff resource from other institutions and can loan its own civil servants to other institutions. When this happens, the civil servant can opt to remain attached administratively to his/her original institution or be integrated into ANA's systems. Civil servants remain in their original career path, according to their initial appointment, unless they pass the specific entrance examinations for a new career. Therefore, ANA cannot use the transfer process to recruit specialists in geoprocessing, for example, for the long-term benefit of the agency. At the current time, there are 45 civil servants from other institutions working at ANA, of which 17 are ANA's administrative responsibility. ANA has loaned out 16 civil servants and has requested a further 35 civil servants on loan from other institutions.

The managerial staff category, also known as "free provision" positions, covers superintendents, special advisors, Heads of Division, and general co-ordinators. In terms of class and grading, these positions at ANA correspond to classes CGE III, CGE IV and CCTV, and are distinguished from higher CGE I, CGE II and CD roles held by the senior leadership (primarily Directors). ANA's establishing legislation provides an effective cap on headcount for senior managers by specifying the number of CD, CGE, CAS and CCT positions available (Law No. 9.984, 2000[2]).

Managers must meet the same standards established in law for commissioned staff. Appointments for these positions, which are open-ended, are decided by the Board of Directors. Typically, managerial posts are advertised externally immediately, though there will sometimes be a period where internal candidates can express their interest. Equally, the Board of Directors may decide at any time to dissolve a position or dismiss an appointed individual within the role. There is no set timeline for the revision of open-ended appointments and positions within ANA. Generally, positions are reviewed as part of wider organisational transformation, at which point all positions and functions are reviewed against the agency's mandate and objectives. Any decisions made regarding appointment or dismissal are publicly communicated. It is common for civil servants from within ANA's career paths to be appointed as managers. At the current time, 69 out of 111 managers at ANA are civil servants from one of ANA's four careers, 28 managers were appointed from other institutions and other civil service career paths, and 13 managers are non-career civil servants.

All civil servants, commissioned and permanent, are subject to general public service requirements set in law. Civil servants must 1) possess Brazilian nationality, 2) enjoy political rights,[8] 3) not be limited by military and electoral obligations, 4) possess the education level required for the position, 5) be at least eighteen years old, and 6) be physically and mentally able to fulfil their functions.

All vacancies, temporary or permanent, are made public by ANA, together with relevant details such as salary, job description, career development, and recruitment process, though this is not a legal requirement for temporary positions. Vacancies are promoted via ANA's website and the federal government's communications channels, including the *Diário Oficial da União* (DOU) and SouGov – an online public sector employment portal.

Senior manager and Directors at ANA face post-employment restrictions. These restrictions are detailed in legislation and involve, most notably, a six-month cooling-off period, counted from the date of dismissal, which addresses potential conflicts of interest. Managers of a certain level[9] must submit details of their new position in a petition to the federal ethics commission, who will determine the necessary cooling-off period, which is paid. After the cooling-off period, directors and senior managers may hold appointments within the regulated industry (Law No. 9.986, 2000[17]) (Law No. 12.813, 2013[18]).

Remuneration and benefits

ANA has to follow government remuneration policy with regards to its staff, and the remuneration regime for civil servants working in federal regulatory agencies is set-out in legislation (Law No. 10.871, 2004[19]) (Law No. 13.326, 2016[20]). To date, ANA asserts that the fixed salary ranges have not presented any difficulties for finding suitable and qualified staff. With the 2016 legislation, ANA's civil servants received an effective increase in salaries. Prior to 2016, there were large differences between salaries at federal regulatory agencies and other government departments, which has now been addressed, and salaries at ANA are now viewed as competitive. Relative to the regulated industry, salaries at ANA tend to be higher for the same role and level of qualifications, except for senior management roles, where the private sector provides higher remuneration.

Renumeration tends not to be a reason for turnover amongst staff, the most common reason for leaving the organisation is retirement, with 90% of staff serving for ten years or more.

Civil servants receive additional benefits beyond salary, including job security, paid leave, paid vacation days, social security, transportation allowance, nursery assistance, and health care. The key benefit that distinguishes a civil service career from the private sector is job security. The benefits package is established by legislation and can be updated periodically but is consistent across federal public bodies (Law No. 8.112, 1990[21]). Access to benefits is not dependent on the category of civil servant, only salaries and responsibilities change in relation to class, grade, or status (commissioned or permanent). Additionally, ANA has adopted a management and performance programme that enables flexible working amongst participants, who can opt-in based on preference.

The remuneration of outsourced staff is not fixed by legislation, but, as part of the bidding process and in line with federal procurement rules, SAF conducts a market survey to benchmark the cost of the roles being procured and ensure contracts reflect value for money.

Training

Civil servants at ANA, whether in a technical or support role, have the opportunity to complete short or long-term training courses and apply to receive financial support from the agency. Short-term training describes any courses up to three months in duration. Staff approved to complete courses of this kind continue to receive their salaries. During the 2023 fiscal year, 13 civil servants at ANA have taken short-term courses with this arrangement. This opportunity is not open to all ANA staff, only civil servants. Civil servants may utilise this benefit once every 5 years (i.e., 3 months paid training every 5 years).

Long-term training refers to more substantial academic qualifications, such as postgraduate masters and professional doctorate programmes, which ANA may authorise civil servants to complete with or without leave (i.e., on a full-time or part-time basis). ANA runs a competition amongst internal civil servants interested in completing postgraduate studies to receive fully paid leave. At the current time, 6 employees are completing doctoral studies with a full ANA salary. The 2023 competition for this type of academic support was recently approved by the board and will cover four postgraduate courses, two professional doctorates and two PhDs. For part-time support, ANA can sponsor tuition up to the cost of R$20 000 (around USD 4 000) for specialised training or an MBA, and R$30 000 (around USD 6 100) for professional master's programmes. In 2022, two civil servants completed part-time studies of this kind with support.

More generally, ANA civil servants are part of an institutional Personal Development Plan (PDP), which establishes some mandatory and voluntary short-term trainings for staff. The 2023 design of the PDP has recently been approved by the board. One central component of the PDP is the investment in language training, with 44 civil servants following English courses and 27 following Spanish courses. The SAS, as part of its role in supporting capacity-building in the WRM and WSS sectors, has developed many short programmes and platform-based trainings, which are also easily accessible to ANA staff.

Performance assessment

Federal legislation provides a framework for the evaluation and promotion of ANA's civil servants (Decree No. 6.530, 2008[22]), but the tools and mechanisms by which ANA's staff are evaluated are designed internally, primarily by the SAF, subject to approval of the board. This framework applies only to civil servants.

Under legislation, ANA's civil servants should be evaluated on their performance with respect to the following minimum criteria: productivity at work, based on quality and efficiency standards previously established; capacity for the initiative; compliance with the procedural rules and conduct when performing their duties; attendance; punctuality; and discipline (Decree No. 6.530, 2008[22]).

ANA's internal system for evaluating the performance of civil servants involves the use of digital tools and in-person meetings, between the staff members and their respective immediate superiors. The digital tools used also serve the purpose of monitoring progression and promotion, as well as storing information related to training, capacity building and career development, to be reviewed by each employee and supervisor.

As part of the evaluation processes of a staff member, feedback is given from the staff's supervisors and managers, but is not sought from other colleagues outside of the reporting line, clients, or external partners. Staff are not invited to systematically comment on the performance of their supervisors and managers. Staff have also not formally evaluated the internal systems and processes for performance evaluation, in terms of their implementation, or where they depart from the minimum legal requirements.

To achieve a promotion to a new role, class and grade, a civil servant must show good performance against each of the criteria listed above and have completed any required trainings. Finally, promotion is allowable: annually; when suitable competence and professional qualifications is evidenced; and when a suitable vacancy exists (Decree No. 6.530, 2008[22]).

Process

This section of the chapter describes the processes ANA has put in place, due to legal requirements or voluntarily, to manage and deliver the agency's roles and objectives and improve performance. A core focus of the section is the decision-making and internal governance processes of ANA, including supporting regulatory processes relating to risk management, regulatory quality, inspections and enforcement, and complaints and appeals management. Finally, ANA's processes to enable stakeholder engagement increase transparency, and maintain accountability are described.

Decision-making and governance structure

At ANA, decision-making power is concentrated in the board, but internal committees and organisational units play an important role in developing and assessing regulatory or administrative proposals before deliberation. Risk management and quality control procedures are in place to support the board's decision-making.

The Board

ANA's Collegiate Board of Directors ("the board") is composed of five members – four Directors and one Director-President (Table 3.17). Its composition, terms of appointment, competences, and measures to mitigate conflict of interest are established in legislation (Law No. 9.986, 2000[17]) (Law No. 13.848, 2019[4]). Board members should be appointed for non-coinciding terms of five years, where one Director is renewed

each fiscal year, although this has not been the case in recent years. The immediate renewal of a Director's mandate, following completion of a five-year term, is prohibited.

The board is responsible for examining, discussing, deciding and approving matters falling under ANA's mandate, which are listed in full in the organisation's bylaws (ANA, 2022[10])and derive from ANA's founding legislation (Law No. 9.984, 2000[2]). Its main functions are: setting strategic direction and developing policy; monitoring organisational performance; ensuring compliance with the law and the organisation's internal rules and policies; administering contracts, reviewing appeals; and representing the organisation nationally and internationally.

Table 3.17. ANA's Board of Directors

	Role	Term start	Term end	Portfolio
Veronica Sánchez da Cruz Rios	Director-President	13 April 2022	15 January 2026	SAF
Mauricio Abijaodi Lopes de Vascomcellos	Director	13 April 2022	15 January 2024	SAS; SPP
Filipe de Mello Sampaio Cunha	Director	13 April 2022	15 January 2025	SFI; SOE; SRE
Ana Carolina Argolo Nascimento de Castro	Director	13 April 2022	5 July 2026	STI; SGH; SHE
Nazareno Marques de Araújo	Acting-Director (replacing Vitor Eduardo de Almeida Saback)	(16 October 2023)	(12 April 2024)	SSB; SRB

Note: Current as of October 2023. Acting-Director's receive a mandate for 180 days, after which a new acting-Director is appointed. A new Director may be nominated by the President and appointed to relieve the acting-Director at any time.
Source: ANA Resolution No. 151/2022 (ANA, 2023[23]).

Board selection and dismissal

Directors of regulatory agencies in Brazil are nominated by the President of the Republic and their appointment is considered and approved in the federal Senate by public hearing.

There are a number of requirements and prohibitions to be considered when appointing a Director or Director-President according to legislation (Law No. 13.848, 2019[4]). Directors must be Brazilian and will have an unblemished reputation, university degree and high reputation in their field of specialty, their academic background must be compatible with the position. Article 5 of the Law 9.986/2000 specifies a minimum level of professional experience for appointees, which may be 10 years of experience in the field of activity of the regulatory agency, at least 4 years holding a management or senior management position in a company in the field of activity, or equivalent level in the public sector or academia, or 10 years of practitioner experience in the field of activity (Law No. 9.986, 2000[17]).

Furthermore, they cannot be an acting Minister of State, Secretary of State, Municipal Secretary or leader of a political party, or a holder of a mandate in the Parliament of any Brazilian state. Directors also cannot hold a position in a union or represent labour interests, have any interested in the regulated sector or regulated entities, or have worked in the last 36 months for a political party or campaign (Law No. 13.848, 2019[4]). ANA's bylaws (ANA, 2022[10]), which aim to transpose these legislative requirements for Directors and clarify how they apply in the context of ANA's day-to-day activities, also specify a set of "common attributions" for ANA's Directors and the Director-President, which could, if deemed applicable, be used by the President of the Republic or Senate during the nomination and confirmation process.

During their term, board members are bound by additional employment restrictions, which can serve as the basis for termination (Law No. 12.813, 2013[18]). They cannot exercise any other professional activities apart from teaching. In addition, members of the board:

- Cannot act as a director, trustee, manager, administrative board member, board of auditors member or representative, in any company or society;
- Cannot exercise any union or political activity, participate in any company, issue an opinion on matters of their position or act as a consultant, or be in any other situation with a conflict of interest as defined in law (Law No. 9.986, 2000[17]);
- Cannot receive any fees, share or dividends.

Directors cannot be in a situation of conflict of interest during their term, defined by law as:

- Disclosing or making use of privileged information for personal or third-party benefit, obtained in as a result of activities in public sector employment;
- Activities implying the provision or services or the maintenance of a business relationship with an individual or legal entity with interest in the decision of the regulator;
- Exercising, directly or indirectly, activities that are incompatible with the duties of the position, even in related areas or matters;
- Acting, even informally, as a proxy, consultant, advisor or intermediary of private interests in the public administration;
- Acting in the interest of a legal entity that may benefit the public employee, spouse, partner or relatives (by blood or other), participate, up to the third degree;
- Receiving gifts from anyone interested in decisions by the public employee or the regulator outside of the limits and conditions established in regulations;
- Providing services (even occasionally) to companies whose activities are supervised, controlled, or regulated by the regulator.

Directors lose their mandate in the case of resignation, in the event of a final judicial conviction or conviction by administrative disciplinary proceedings, and for infringements related to the conflicts of interest and forbidden activities noted above.

Decision-making by the board

The board meets once a week in two modes, in a deliberative and administrative capacity. Administrative meetings cover internal management issues, such as procurement decisions and human resource management, and can be held in person or virtually. Deliberative meetings focus on regulatory decision-making, for example decisions on grants for water rights and the review of reference standards, or actions that may have an external or public component, or otherwise have a potential impact on the regulated WRM and WSS sectors, SINGREH, or the interests of “economic agents”.

Deliberative meetings are broadcast live, recorded, and published, and the agenda is shared at least three days in advance for interested parties via the ANA website. Recordings of the session are published via ANA’s social media channels within five working days, with meeting minutes published within 15 working days on ANA’s website. Subject to confidentiality and classification rules, the documents discussed at the board, such as consultation responses and impact assessments, are also made available to the public.

Decisions must be formed by an absolute majority of the votes of its members. Meetings of the board must take place with at least three Directors present, including the Director-President, and the Attorney General must also be present. The regulatory decision-making process is itself the subject of regulation in Brazil, with legislation targeting regulatory agencies (Law No. 13.848, 2019[4]), general public authority decisions with economic impacts (Law 13.874, 2019[24]), and the use of regulatory impact analysis (Decree No. 10.411, 2020[25]). ANA has developed more than 14 Ordinances and Resolutions relating to the functioning of the deliberative meetings, approval procedures, and other internal procedures and processes relating to the Agency’s decision-making.

Directors are assigned to oversee portfolios of two to three technical superintendencies, which are rotated every year, except in the case of SAF which remains supervised by the Director-President (Table 3.17). However, the Directors remain detached to some extent from the superintendencies, and do not, for example, present reports for vote on proposals made by their respective portfolios. Instead, there is a lottery to determine which board member will bring a matter or report to the board for consideration.

Quality control

The Secretary-General (SGE), together with the Offices of Directors and the Director-President, which consist of three advisors per Director, two of which are career civil servants, accompany the board and keep them informed of future issues for deliberation as they develop. Decisions are informed by various available data sources, for example the National Water Resource Management System (SNIRH) or National Information System on Dam Safety (SNISB)[10]. It is the SGE's role to assure the quality of the board's regulatory decision-making process and, supported by the Attorney-General, the procedural correctness and legality of the board's deliberations.

The board may request superintendencies to revisit and revise proposals in cases where they are not satisfied with quality, for example in relation to the regulatory impact assessment, or require further information and analysis to be conducted.

Internal committees and organisational unit co-operation

Recent legislation has required ANA to develop an internal Governance Committee, in addition to other commissions or committees (Decree No. 9.203, 2017[26]). The Governance Committee is currently composed of the board members, supported by ASGOV as secretariat. The Governance Committee is not a deliberative forum but allows for an open discussion on governance issues raised by internal teams. Issues may relate to risks associated with the PEI, PGA and PGR, the results of internal auditing, and other proposals for improving ANA's processes, instruments, systems, and projects. A communication and information security committee (CISC) is also required by law and was set-up in 2023, comprising members of the Information and Communication Security Management team (GSIC) within STI, and members of SGE, ASGOV, PFA and SAF. The CSIC advises on the implementation of information and communications security actions, sets up working groups, and propose changes to internal policies and norms relating to information and communications security.

ANA is proposing (via the Governance Committee) to develop further sub-committees on data governance (to be combined with the information security commission), digital governance, and regulatory quality. Driving the creation of sub-committees is an understanding a new governance structure could provide a new forum for discussing transversal issues and mitigating the issue of similar problems being solved in different ways in silos across the organisation.

Some competencies and functions are shared by all organisational units, aligned with the overall organisational mandate and strategy. These common competencies are listed and formalised in ANA's bylaws (ANA, 2022[10]). The bylaws encourage organisational alignment and co-ordination, all units should: support inspections actions; participate in the preparation and monitoring of ANA's annual planning; establish goals compatible with the PEI and PGA as well as monitor them; co-ordinate human resources and the use of technical and material resources; express opinions about regulatory impact assessments; adopt risk management, internal control and integrity practices; propose topics for the Regulatory Agenda; and support the participation processes that inform the decision-making of the board (ANA, 2022[10]). Furthermore, the bylaws clarify the interaction that should occur between units for certain internal and external processes – where given, these clarifications are summarised in Table 3.8 and Table 3.9 under the unit's primary functions.

Organisational risk management

ANA has an organisational risk management policy which promotes the identification, analysis, and assessment of risks, and the adoption of risk control measures (ANA, 2019[27]). The methodology, which is set out by ordinance (ANA, 2019[28]) is a 3-level, 3-step process, requiring each organisational unit, as the first level, to classify and evaluate risks, develop a risk management plan, and monitor. The second level of co-ordination and monitoring is ASGOV, and the third level the AUD (Internal Audit), which evaluated the controls implemented by the organisational units. Internal audit carries out its work based on risk assessment, considering evaluations in its annual planning and when determining the scope of its auditing. ANA has established a risk management plan to guide implementation, and an internal IT solution, the SIGEST application, to allow units to conduct follow-up and monitoring more easily.

Risk management processes at the superintendency level are most developed within the SOE and SGH, where risk assessment is a traditional focus for the specialisation. In addition, risk assessment has been incorporated in *ex ante* regulatory impact assessments for new reference standards in basic sanitation but, still, implementation of risk assessment is inconsistent across superintendencies.

Regulatory management tools

ANA has a number of decision-making and management support units, who work to ensure the quality of decision-making across the organisation, particularly in deliberative board meetings. A key unit in this regard is the Special Advisory for Regulatory Quality (ASREG), which supports the delivery of RIA by superintendents by conducting workshops and has established a regulatory quality programme and manual for the preparation, implementation, and review of the Agency's regulatory agenda. This unit also proposes strategies to strengthen regulatory practices, guidelines for impact assessment, and administrative simplifications, and will advise the board and superintendencies on suitable methodologies to employ to address different regulatory problems.

The Office of the Director-President and Offices of the Directors also play an important role in providing quality checks and ensuring the formal internal processes are adhered to, whilst the internal audit function (AUD) assesses the suitability of the governance, risk management and internal control processes.

Internal procedures are informed by federal legislation on regulatory policy, assessment, and evaluation, which are undergoing a period of review and development in Brazil. Most recently, decrees supporting international regulatory co-operation (Decree No. 11.092, 2022[29]) and greater regulatory oversight of independent agencies by the executive (Decree No. 11.243, 2022[30]) have been enacted. The latter Decree expands the Secretariat of Competitiveness and Regulatory Policy's role to co-ordinating Brazil's regulatory system, promoting collaboration in the interests of simplification, reducing burden, enhancing competitiveness, and establishing common approaches and expectations for stakeholder engagement and *ex ante* and *ex post* analysis.

The key institutions acting to organise and implement Brazil's regulatory policy include the Secretariat of Competitiveness and Regulatory Policy (Ministry of Development, Industry and Foreign Trade), the Civil House (Interior Ministry), the Secretariat of Digital Government, the Inter-Ministerial Council of Governance (CIG), the Council for Monitoring and Evaluation of Public Policies (CMAP), the National School of Public Administration (ENAP) in a consulting and educational capacity, and the Office of the Comptroller General (CGU). In addition to the CGU, which acts as the government's internal control unit, the Federal Court of Accounts (TCU) provides external control, scrutinising and making recommendations on regulatory quality and regulatory effectiveness.

Assessing and evaluating regulation

ANA is required by legislation to conduct both *ex ante* assessment and *ex post* reviews when certain criteria are met, however, the application of *ex ante* assessments is more systematic and is supported by more established and sophisticated internal procedures.

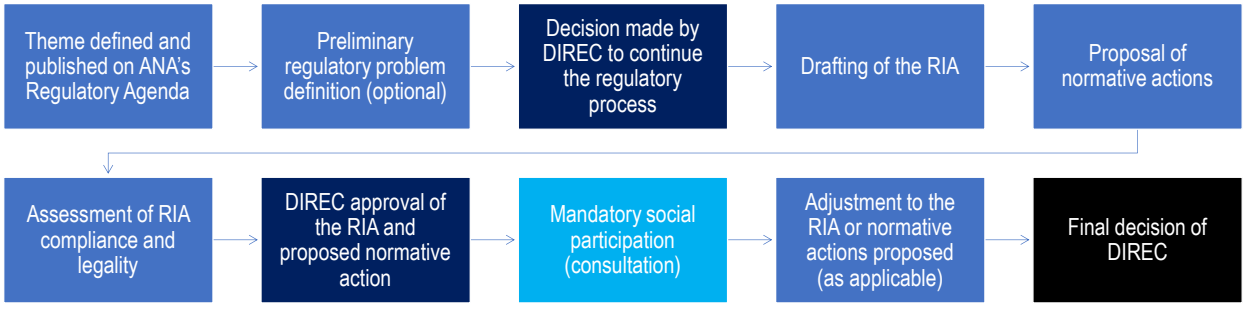
Ex ante assessment

ANA systematically applies *ex ante* regulatory impact assessment (RIA) in accordance with the relevant federal legislation, which requires assessment as part of the development of any normative act which may impact the general interest of regulated entities and users of the services provided. The law allows for certain normative acts, primarily those of an administrative and clarificatory nature not enacting substantive changes, to proceed without prior RIA. Additionally, the need for assessment can be waived by the Agency in the event of urgency, when regulatory alternatives are not allowable (for other legal or technical reasons), or when the regulation is aiming to maintain international standards, amongst other reasons (Decree No. 10.411, 2020[25]).

Together with guidance issued by the Interior Ministry,[11] legislation sets out requirements for the contents of the RIA technical note, the methodologies to be used, and the communication of the analysis. Following this guidance, ANA considers and assesses the proposal to regulate against the option not to regulate, or other non-regulatory solutions that may be available when conducting assessments. At the time of writing, ANA has not selected any non-regulatory solutions following the board's consideration of the RIA.

Assessments are initially developed by the relevant superintendency unit(s) before being considered by the board. For regulatory acts included in ANA's Regulatory Agenda, RIA is part of the decision-making process from the point when the board confirms the regulatory agenda item, if this is required, to the final point of decision. The regulatory decision process is illustrated in Figure 3.3, which shows a compliance assessment before the board considers the act and accompanying impact assessment. There is scope to revisit and adjust the assessment or act, following an obligatory stakeholder consultation process and before the final deliberation by the board. In any case, assessments are required for substantive regulatory actions and must be considered by the board before they can make a final decision.

Figure 3.3. RIA and ANA's process for regulatory decisions



ANA's *ex ante* assessments tend to consider costs and benefits in a qualitative fashion, whereas formal quantitative techniques are less commonly used and under development. ANA has signed a co-operation agreement with USACE[12] to provide ANA staff with training on the application of cost-benefit analysis.

However, there are examples where ANA's technical teams have employed multi-criteria analysis during assessments, with estimations of the costs of regulatory burden included as one set of criteria. Though there is little variation in the style and complexity of assessments being carried out by ANA. In other words, once an assessment has been deemed necessary and is due to be carried out, the methodological design of the assessment is not subject to proportionality requirements under law or tailored to the level of potential

impact of the regulation being assessed. Furthermore, no distinction is made in methodological terms between the assessment of cost or benefits, primarily due to the prevalence of qualitative assessment.

A recent development at ANA is the establishment of the ASREG and SHE units, which, since the end of 2022, provides clear responsibility, and focus, within the Agency for regulatory quality advisory and the conduct of hydrological and socio-economic studies respectively.[13] The special advisory unit for regulatory quality (ASREG) leads RIA workshops with superintendencies, or otherwise provides advice, upon request. Workshops cover all stages of RIA, from defining the problem to designing the implementation and monitoring strategy of the selected alternative. The workshops follow a "learning by doing" approach, combining explanatory lectures with case study examples. The RIA report is prepared based on the results obtained from these workshops.

ASREG also supports the development of RIA by developing and communicating guidelines, methodologies, and tools for conducting RIA (and the evaluation of regulatory results). The recommendations made by ASREG to technical teams before and during assessment development are not binding, but the principles of best practice adoption, standardisation and quality improvement are now embedded in ANA's bylaws and communicated internally. Furthermore, ANA's strategic plan foresees and supports the development of guides and frameworks related to regulatory quality for ANA's purposes. The ASREG unit has already begun to train technical teams on methodologies and modelling and is active in the assessment development process at the points of scoping, calculation, and presentation to the board, but only when requested by the responsible technical teams.

Once the regulatory assessment has been completed, ASREG submits its assessment of the quality of the RIA, the Federal Prosecutor's Office assesses the legal compliance of the draft of the regulatory proposal, and both documents are submitted to the Board.

Ex post evaluation and reviews of the stock of regulation

Ex post evaluation of regulations (referred to as Regulatory Result Assessment, ARR, in Brazil) can be required by legislation under certain circumstances or may be conducted at a regulatory agency's discretion. In some cases, requirements for *ex post* evaluation may be set out in sector regulation by the responsible regulatory agency, for example ANA's Resolution No. 70/2021 requires a five-year assessment of the regulations surrounding operations in the Tocantins Water System (ANA, 2021[31]).

In Brazil, the use and application of *ex post* evaluation is still under development. However, recent legislation requires federal regulatory agencies to create and publish a schedule of reviews, and to conduct an ARR within three years in those cases when an *ex ante* assessment was waived for reasons of urgency.

The law defines *ex post* review as "the verification of the effects arising from the setting in motion of a normative act, considering the original intended objectives and the impacts on the market and society, resulting from its implementation". Whilst the legislation focuses on outcome evaluation, there are no restrictions on agencies conducting other types of evaluation, for example *ex post* cost-benefit analysis. Legislation does not go so far as to define the quantitative or qualitative criteria to be included in a review, but some guidance documents have been produced by government for regulatory agencies to refer to[14] (Decree No. 10.411, 2020[25]).

For ANA, the first Regulatory Result Assessment following the new legislative requirement was completed and published in 2022, which covered ANA's normative acts (resolutions) relating to QualiÁgua – ANA's programme to stimulate the dissemination of water quality data. The review of QualiÁgua took the form of an implementation and outcome evaluation (ANA, 2022[32]). A larger set of 14 normative acts will be subject to *ex post* reviews under ANA's ARR Agenda for the period 2023 to 2026.[15]

ANA manages the regulatory stock under its mandate in accordance with the earlier (Decree No. 10.139, 2019[33]) which defines the frequency of the review and consolidation of regulation and has been supplemented, in (Decree No. 10.411, 2020[25]), by a set of criteria to be considered when choosing the normative acts to include in the agenda for *ex post* reviews.

ANA's strategic plan identifies the need to integrate requirements to monitor impact and conduct ARRs into new regulation at the time of its development, to promote the use of ARRs overall. Preparation, led by ASREG, to develop bespoke guidance for ANA teams on the execution of ARRs is underway. Whilst internal guidance is being developed, ANA uses external guides published by Ministries and federal agencies as reference tools.[16]

ANA's internal processes for the governance and delivery of ARRs are not defined and enabled by resolution in the same way as *ex ante* processes, nor has any budget allocated for the purpose. As with *ex ante* assessment, ANA's ASREG unit organises ARRs workshops in collaboration with superintendencies, aiming to enhance the quality and compliance of any ARRs. However, it will be the responsibility of the superintendency or technical team that waived the RIA requirement or proposed the inclusion of an ARR requirement in regulation, to complete the ARR. Superintendencies also play a role in suggesting regulation or aspects of regulation to be included in the ARR agenda for scheduled review.

There is no requirement for *ex post* analysis to be subject to public comment. The technical areas and the board will define in each case whether the ARR report will be submitted to a stakeholder engagement process.

Public consultation

Legislation requires draft regulatory acts with an expected impact on the regulated market or general consumers to be subject to public consultation prior to the board's decision, and for any consultation responses received to be published. ANA provides transparency in this regard by making available on a dedicated section of its website[17] all draft regulatory acts for consultation, in addition to subsequent consultation responses and the final response of the agency.

Where proposed regulatory decisions or consultation documents include a regulatory impact assessment, ANA also makes available the full assessment and any research, technical guides or data used to construct the baseline for proposed intervention and its alternatives. All these resources are made available on ANA's website, and the RIA templates require plain language and an executive summary, though a "simple language" review is not systematically conducted before publication.[18]

Beyond the minimum legal requirements, ANA's bylaws and "guide for drafting regulatory acts" encourage the use of supplementary stakeholder engagement earlier in the regulatory process, for example at the stages of problem definition, solution identification, data gathering and analysis.[19] Typically, a "*tomada de subsidio*", or early-stage participation process, invites stakeholders to participate in formulating key questions and share perceptions and expectations.[20]

In some cases, consultations have been arranged during *ex post* reviews, for example in ANA's ARR evaluation of the QualiÁgua programme.[21] Here, a perception survey was run in October 2020 to gather more information to help evaluate the programme's impact, based on the perspective of participants. ANA has also developed some outreach mechanisms to engage the most impacted users and explain the rationale behind decisions. For example, ANA ran webinars on the topics of solid waste management and mediation, conciliation, and arbitration procedures[22] in 2022, following topics listed in the Regulatory Agenda.

In addition to traditional public consultation documents, in summary, ANA seeks stakeholder feedback through public hearings, townhalls, expert panels, surveys, webinars, crisis rooms (specific to the management of multiple stakeholders during crisis events), and other stakeholder participation channels.[23]

ANA's stated aim during participation is to collect supporting information and data, and to provide stakeholders with the option to provide opinions and suggestions, taking as broad an interpretation as possible to the possible relevant aspects of the subject matter.

A participatory approach is mandatory for WRM processes under the PNRH, where stakeholder engagement and decision-making processes are clearly defined – ANA must co-ordinate decisions within the SINGREH system with Basin Committees, which comprise representatives from the federal, state and basin committee levels, and, if their respective areas of activity are impacted, the relevant water users, and civil entities (see Role and objectives). Regarding the development of reference standards in WSS, ANA directly notifies various entities of upcoming consultations and invites them to respond. Those stakeholders to be directly notified include subnational regulatory bodies (including any known delegated supervisory bodies), municipalities, concessionaires, public institutions and private companies, sector associations and unions, state and municipal environmental agencies, and academia.

Given the legislated requirement to consult, and ANA's internal guidance encouraging supplementary engagement, a key driver of the frequency of stakeholder engagement undertaken by the Agency is, fundamentally, the content of its own Regulatory Agenda.

Inspections and enforcement

ANA's role in relation to inspection and enforcement differs across regulated sectors, between arrangements for water resource management and for water supply and sanitation services.

Water resource management and dam safety

Regarding water resources, inspection and enforcement actions are co-ordinated between federal (ANA) and state level authorities. ANA independently inspects and enforces compliance with regulations governing water-use for river basins falling within the Union's domain[3] and is responsible for carrying out inspections of multi-use dams, excluding dams used solely for hydropower production, and concessions for public irrigation services and bulk water supply in federal domain rivers.

The National Water Resources Policy (PNRH) sets a framework of co-ordination for the various SINGREH system actors involved in monitoring and compliance, and general guidelines for penalties. However, federal and state authorities may propose their own regulations and approaches to inspection and enforcement in their own domain.

The same is true for dam safety: the National Policy for Dam Safety (PNSB) establishes objectives and guidelines which are interpreted and applied by several institutions and inspection bodies. Each body sets its own policies and guidelines and there is no legislated hierarchy within the federal-state- framework, or even between agencies at the same level, for example, between ANA and the National Mining Agency's action on, respectively, river dams and tailing dams. However, agencies may co-ordinate actions through Technical Cooperation Agreements to reduce inefficiency and harmonise approaches.

ANA has developed its own regulations regarding enforcement procedures for water use and dam safety at the federal level (ANA, 2020[34]). Furthermore, ANA's strategic plan sets out new initiatives for inspection and enforcement which aim to ensure efficient management and the maintenance of safety standards. There is a dedicated unit within ANA, the superintendency for monitoring and inspection (SFI), responsible for inspections relating to water resource management, dam safety, the operation of reservoirs and efficiency standards in the provision of public irrigation services under concession, and bulk water supply.

Inspections

Inspections relating to water resource use and dam safety are planned according to an annual timetable based on basin prioritisation and a risk assessment focusing on potential conflicts over water-use. The SFI may add additional inspections to the programme based on intelligence received, for example from

whistleblowing, public procedures, or lodged complaints. However, ANA does not typically amend the annual timetable once it is published, and so complaints received within an inspection year will be assessed first by remote means and analysis of evidence already available to ANA. If the complaint is not able to be satisfactorily assessed, the relevant basin or dam can be included in the following annual timetable. It is rare that fieldwork occurs outside of the annual schedule, though this can occur, for example if required by judicial order.

In 2022, ANA conducted 158 notified inspections. Due to the COVID-19 pandemic, field activities such as inspections were reduced, with 236 conducted in 2021, only 103 inspections in 2020, but 614 in 2019 pre-pandemic. Prompted by the impact of COVID-19, ANA's SFI division has invested in new inspection technologies and data-driven procedures to enable self-monitoring of water resources, remote monitoring using satellites and drones, applications for surveying, navigation and to facilitate the delivery and management of relevant information, which enables greater efforts in document-based compliance analysis.

Due to the command-and-control regulatory model governing water resource use, inspection and enforcement activity is primarily focused on promoting compliance within a framework of set rules and procedures, though the framework criteria to be tested may vary by basin, based on the outcome of prior negotiation between authorities and users at different levels. ANA publishes a "*conjuntura*" report and strategic assessment which provide aggregate results and data on inspections.

Inspection performance, and enforcement performance in general, is typically judged and communicated using simple indicators which monitor the number of inspections completed and penalties applied. There is no assessment of efficiency or connection made to public welfare outcomes, nor is there any distinction made in the data between different types of regulated entities, for example new business, or historical performance record. ANA have identified the need to develop indicators in this area and incorporate the use of impact assessment techniques to review the resolutions governing procedures for inspection and enforcement activities.

Inspections, especially in emergency situations, may be conducted jointly with subnational regulatory agencies and supervisory bodies. Technical co-operation agreements support this approach and provide a basis for information sharing and joint training on how to run inspections between inspection events. However, information sharing is not systematic, there is no integrated database shared and managed by inspection institutions, as there is for teams co-ordinating within ANA. In cases where ANA has delegated inspection duties, for example to the local water agency ADASA in the Federal District, reporting and data sharing is more developed. Within ANA, superintendencies share information from a system on water rights (REGLA), from the open national register of water users (CNARH) and through internal IT systems.

Sanctions

The various infractions, fine amounts, and criteria for determining the final sanction are clarified and published by ANA (ANA, 2020[34]). Sanctions range from low-level enforcement actions, such as warnings and one-off fines (applicable to dam operators and water users), to recurring daily fines, and more punitive short-term or long-term embargoes (i.e., water-use rights, if applicable). The different levels of financial penalty correspond to the levels of seriousness of infraction. No process of adjustment or proportionality is provided for based on the characteristics of the end-user or operator, except in the sense that action may be proposed to be taken over a shorter or longer timeframe, in accordance with ANA's resolutions (ANA, 2020[35]).

In the last 5 years, approximately 75% of the sanctions applied by ANA were warnings, 20% were fines (one-off or daily recurring), and approximately 5% were embargoes. Around 70% of the value of applied fines were paid by the non-compliant parties and collected by ANA. About 60% of the fines issued were to users located in Brazil's semi-arid regions (Piranhas Açu and São Francisco) and in basins experiencing

water criticality (such as the Rio Pardo and Rio Verde Grande). The scope of ANA's planned inspection and monitoring activity, and other analytical work, is not sufficient to know at this time if the sanctions applied, and more generally the fee levels and sanction design, are sufficient and effective.

As detailed in its Regulatory Agenda for 2022 to 2024, ANA is hoping to design and test a different enforcement approach which is closer to the principle of "responsive regulation", that is, signalling to users the regulator's commitment to escalate their enforcement response whenever lower levels of intervention fail, but beginning with an assumption of virtue (Braithwaite and Ayres, 1992[36]). Under this approach, ANA will seek to interact more closely with regulated entities in water resource management, instructing and guiding more than punishing. However, before this approach can be operationalised, ANA has identified the need to better understand users, and to build up profiles and indicators that allow remote monitoring in real-time, as well as ramp-up engagement activities. ANA intends to secure agreements with the University of Brasília and *Fundação Getulio Vargas* (FGV) to complete further studies in this area to better understand the strategic opportunities and any potential legal barriers to implementing a responsive regulation approach.

Water supply and sanitation

ANA's tasks under the 2020 Sanitation Law to develop and promote the adoption of reference standards in water supply and sanitation is accompanied by responsibilities for monitoring the compliance of subnational regulatory agencies. The legislation requires ANA to publish and maintain a list of regulatory and supervisory bodies that adopt the national reference standards and periodically verify their adoption, at the same time evaluating the regulatory impact and compliance of those bodies. This verification is mandatory when financing is contracted with federal resources (Law No. 14.026, 2020[37]). Water supply and sanitation service providers are out of the scope of this monitoring exercise, which is focused only on the regulatory and supervisory bodies positioned to transpose and implemented reference standards at the subnational level.

However, ANA's new function is not accompanied by corresponding enforcement powers, which is at odds with OECD best practice recommendations that "all key regulatory functions are discharged by responsible authorities with enforcement powers" (OECD, 2014[38]). Instead of enforcement mechanisms, the 2020 Sanitation Law creates indirect incentives for subnational regulatory agencies to adopt ANA's national reference standards – notably that the federal government will provide municipalities with access to federal funding contingent on the adoption of standards by their subnational regulatory agencies. The incentive structure's effectiveness relies on one further element of state-municipal regulatory environment, that is the ability of municipalities to choose their regulatory agency. However, the incentive structure still only functions when federal funding is an attractive reward, which may depend on external economic factors, and it is certainly not the case that municipalities are on a level playing field in terms of financial resources.

ANA's strategic plan sets targets in water supply and sanitation that shape the institution's interactions with subnational regulatory agencies, including during inspection and enforcement activity. ANA's strategic documentation talks about the desire to "be recognised as a model of management and regulation of water resources and a reference for sanitation, and the delivery of an "adequate, safe and stable regulatory environment to promote the universalisation of basic sanitation" (ANA, 2023[9]). Indicators under ANA's strategic objective OE-04 are directly linked to the adoption of reference standard guidelines (see Outputs & Outcomes). On this basis, ANA has communicated the need to assess, via inspection, the quality of regulation, but also strengthen engagement with subnational regulatory agencies and provide training to encourage adoption and improve regulatory governance.

The process to verify the adoption of reference standards in water supply and sanitation commenced in May 2023. Data is not yet available for assessment in this review; however, the verification process has been developed and published to ensure subnational regulatory agencies are prepared. The adoption criteria, which are the main criteria being assessed during verification, will be detailed within each reference

standard, together with the format and timeline of the verification process. Subnational regulatory agencies will be required to first register on ANA's website to be subsequently scheduled for verification. ANA's evaluation results will be published, and agencies have the right to request a review in case of disagreement (ANA, 2022[39]). Since monitoring work is only just commencing, there is no enforcement related actions to report relating to ANA's duties under the 2020 Sanitation Law.

ANA may also draft sunshine regulation, aiming to increase transparency and information provision to support the sector, and which could form the basis of a new ranking or tracking index that compares compliance and celebrates adoption. However, at the current time, this approach is a proposal that remains untested.

Complaints and appeals

Any citizen can file a request before a federal institution in Brazil, whether it is to request public information, to report irregularities, to make a complaint or comment about provision of a public service, or to appeal a decision. Access to public information and consumer protection are considered fundamental rights and public institutions must act to guarantee and facilitate, in accordance with the Federal Constitution and other legislation, including the "Access to Information Law" (Law No. 12.527, 2011[40]) (Law No. 13.460, 2017[41]).

The complaints process

Like other Brazilian regulatory authorities, an embedded *Ouvidor*, or internal ombudsman, is created to hold the authority accountable to the public. The framework law for regulatory agencies in Brazil harmonised the appointment and responsibilities of the ombudsman across regulatory agencies (Law No. 13.848, 2019[4]). The ombudsman is appointed by the President of the Republic for a three-year, non-renewable term. The ombudsman must have knowledge in public administration or in the regulation of the relevant sectors.

Regarding complaints, ANA's ombudsman unit (OUV) is responsible for collecting, processing, and responding to complaints from the public regarding the services provided by ANA in accordance with the legislation. The OUV also monitors the quality and timeliness of services provided by ANA and reports internally, via board meetings and an annual Ombudsman report. The OUV's independent assessment focuses on how the agency manages complaints and appeals, providing recommendations to the board. The OUV's recommendations focus on ways ANA can improve in its handling of complaints and appeals but may also tackle topics such as ANA's stakeholder engagement or communications practices, particularly when the OUV's assessment of complaints content leads to solutions in these areas.[24]

The following mechanisms are available to citizens to file a complaint or submission to ANA:

- Via the central government web platform, Fala.BR, which links citizens to the Brazilian federal public administration.[25] Users can register a complaint which will then be forwarded to the relevant institution for processing; or
- Via the direct communications channels offered by ANA's OUV, which include a website, an institutional email, a hotline, a contact point at ANA's headquarters in Brasilia and a correspondence address for postal mail.

Upon receiving a submission by any of these means, the Ombudsman verifies the nature of the complaint and, depending on its characteristics, responds to it or redirects it to the corresponding technical unit. Of the total number of complaints received by the OUV during 2022 (2 225 complaints), only 29% corresponded to issues falling under ANA's legal competencies.[26] Most of the complaints or other requests for information relate to access to information, denunciations (whistleblowing), demonstrations of

dissatisfaction/satisfaction, and proposals for improvement or simplification. Of the complaints received not corresponding to ANA's legal competencies, most related to water supply and sanitation issues.

The appeals process

Regarding appeals, a two-tier process normally applies. First, appeals are made to ANA for an administrative decision (Law No. 9.784, 1999[42]) (ANA, 2020[35]). As noted, appeals may be lodged by any person or organisation whose interests or rights are impacted by one of ANA's decisions. Appeals must be lodged within 10 days of the publication or notification of the decision being challenged and, from that point, ANA has 30 days (extendable for up to 60 days) to address the complaint and publish the response. ANA does not receive guidance from the government during the appeal review process and no entity, only the judiciary, can overturn ANA's determinations. For the initial administrative appeal, the board makes a final determination, which may overturn the prior decision of a superintendent or director.

If the board's determination does not satisfy the appellant, the second-tier judicial process may be launched. In this case, Brazil's Constitution and federal law outline the separate classes of litigation action[27] and the judicial bodies involved in evaluating the claim. It is most common that appeals lodged for judicial review after the administrative process are registered and determined by the relevant state, federal district or regional courts within the federal justice system. To note, appeals relating to information requests follow a separate procedure (see Transparency and accountability).

Based on information provided by ANA as of May 2023, 50 judicial review processes are pending decision. Approximately half, 27 of 50 reviews, are due to public civil actions (a mechanism designed to protect collective and diffuse rights), 10 reviews have arisen after ordinary civil actions (a lawsuit filed by individuals or private entities seeking compensation or a specific action), and 1 process is the cause of popular action (a citizen-led action in the collective interest challenging public authority decision deemed harmful).

In the case of water rights, ANA implements a sunset clause which results in the automatic revocation of usage rights in the event of three years of non-use, or six years of partial use (ANA, 2023[43]). In this scenario, the former rights holders may appeal the automatic revocation, and this is one example of an area where ANA more frequently acts to repeal its determination and reinstate user rights, noting still some exceptions where there are known water shortages and decisions are typically upheld following investigation.

Transparency and accountability

Transparency

As of 2009, regulatory agencies such as ANA have been required to publish and maintain a Charter of Citizens' Services to improve transparency. The contents of ANA's charter, which include a list of ANA's services, access channels, communications channels, procedures, and maximum time for the delivery of services, are governed by legislation (Decree No. 6.932, 2009[44]). ANA published a plain language version of its Charter in 2022 and has also incorporated components of the charter, for example its list of services, as a section on its website.[28]

In accordance with the government's Open Data Policy and legislation on access to information (Law No. 12.527, 2011[45]), ANA feeds information on contracts, human and financial resources and strategic planning into a federal government Transparency Portal (https://www.portaldatransparencia.gov.br/). The data is updated in real time and is easily accessible. Most of the data feeding into the portal, particularly on financial and human resources, is collected and organised by the SAF.

Another centralised portal on access to information is maintained by the CGU,[29] which shows, from May 2012 to June 2023, ANA received nearly 4 000 information requests (54th highest of 323 public institutions), of which 99.9% have been responded to within an average time of 7.9 days (21st fastest of 323).

Appeals on denied information requests have a separate escalation process, and longer timelines, compared to the process for challenges on regulatory decisions. Appeals on information requests are escalated from the responsible superintendent to the Director-President, the Comptroller-General of the Union (*Controladoria Geral da União*), or the Joint Commission for Information Revaluation (*Comissão Mista de Reavaliação de Informações*), who may make the final determination.

In line with accountability rules issued by the Federal Court of Accounts (TCU), information relating to ANA's management and control is updated throughout the year on the agency's website.

Accountability

External control over ANA's activities is provided by the National Congress, supported by the Federal Court of Accounts (*Tribunal de Contas da União*, TCU) (Supremo Tribunal Federal, 2022[46]).

Separate from ANA's engagement with Congress for the purposes of policy development (see Input to policy), ANA is required to submit certain information to Congress as part of accountability procedures established in law, including the Constitution and framework law for regulatory agencies (Law No. 13.848, 2019[4]).

ANA must submit its annual activity report, which includes an assessment of compliance with the current strategic plan and management plan, to the Federal Senate and Chamber of Deputies separately, as well as the responsible Minister(s) of State[30] and the TCU. Once ANA's four-year strategic plan and annual management plans are approved by the board, the content of these plans must also be communicated to Congress. Based on the information received, Congress may request that the TCU carries out inspections. However, ANA's plans are not typically subject to formal congressional debate, instead, the content is more likely discussed by relevant congressional committees in the context of discussions on policy progress and development.

ANA may receive information requests directly from senators and representatives, in some cases this information is to aid policymaking, and at other times a basis for political challenges relating to competency and autonomy, which ANA addresses by also appearing at public hearings to clarify matters relating to the Agency's mandate and functions. ANA's ASPAR unit co-ordinates ANA's representation in Congress and monitors the progress of legislation, though it is usually ANA's Director-President, or multiple Directors who attend Congress to represent the agency in public hearings of congressional committee meetings.

Information sharing in these fora can lead to the media covering ANA's activities. A recent example of media pick-up was during the 2021 hydropower crisis, and decision taken around the recovery of reservoirs in the Cantareira System (SP) and Serra da Mesa hydroelectric plant (GO). In the case of Serra da Mesa, the result of the operating rule issued by the Agency (ANA Resolution No. 70/2021) was highlighted in *Jornal Nacional* on national TV in March 2023.[31]

The TCU is the supreme audit institution responsible for examining Brazil's public accounts. The TCU provides external control of ANA and other public entities. It scrutinises ANA's use of resources and can review and challenge decisions by ANA, based on their merits in terms of efficiency, effectiveness and ANA's legal competences. TCU analysis can extend to look at ANA's broader performance as a regulator. The TCU is involved in several ANA processes relating to accountability and transparency – reviewing annual accounts, scrutinizing annual activity reports and other management reporting, liaising with ANA's AUD unit. The TCU's investigation and report writing process is iterative and participatory, involving

working-level meetings with relevant ANA technical teams, in addition to external stakeholders and civil society representatives.

In exercising its control function and conducting audits of ANA's activity, the TCU may make determinations, which create mandatory actions for ANA to implement, or recommendations, which ANA may voluntarily choose to implement. The TCU recently provided a set of recommendations for ANA and connected entities (see Output and outcome).

Integrity management

ANA created an integrity programme in 2018 in line with legislative requirements and guidelines from the CGU and has since published annual integrity plans. This government-wide programme is now managed by the integrity management unit (UGI/ANA), a sectoral unit of the System of Integrity, Transparency and Access to Information of the Federal Public Administration (SITAI), established in 2023. The focus of the programme is on the prevention, detection and remediation of corruption and fraud practices, irregularities, illicit acts and other ethical and behavioural deviations, violations or disrespect for rights, values and principles that impact trust, credibility, and institutional reputation. ANA's internal affairs unit (COR) is responsible for co-ordinating the formulation, implementation and monitoring of the integrity programme at ANA and for disseminating information aiming to promote a culture of public integrity. In line with its duties, the COR unit has produced podcasts, blogs, poster campaigns, workshops, and quizzes,[32] with content primarily focused on explaining what constitutes public integrity, building awareness around the value of integrity, and steps public servants may take to develop the organisation's integrity culture. Annual planning and reporting relating to the integrity programme may include data from surveys, conducted by the CGU and UGI, tracking the awareness and perceptions of ANA's staff.

Code of conduct and conflict of interest

ANA's staff, and to a greater extent directors, are subject to several arrangements before, during and after employment, to mitigate conflicts of interest and promote ethical behaviour.

Pre-employment restrictions

Pre-employment restrictions are designed to limit conflicts of interest and the "revolving door" at the level of the board. An individual is not eligible if they or their relatives hold a position as Minister, Secretary of State, Municipal Secretary, or leader of a political party. In addition, candidates (and their relatives) must not hold a position in a trade union or in an association representing labour or employer interests in the regulated industry. Finally, a candidate may not have held a position in the decision-making structure of a political party or electoral campaign for the previous 36 months.

New directors must submit to the Public Ethics Commission a declaration of assets and income that may cause conflict with the public interest (a Confidential Information Statement) (Presidencia da Republica, 2022[47]).

Conduct during employment

Several requirements relating to the conduct of directors, specified by law, have been noted (see Board selection and dismissal). Additionally, directors must notify the Public Ethics Commission with a new Confidential Information Statement during service, whenever there are relevant changes in assets (Presidencia da Republica, 2022[47]).

In general, staff of ANA are not allowed to hold shares or other financial instruments in the regulated sector, and staff need to provide a statement on potential conflicts of interest whenever a conflict arises.

All ANA civil servants are expected to conduct themselves in accordance with Brazil's Civil Service Code of Conduct. ANA's Ethics Commission is working to elaborate a version of this code to apply to all ANA staff, but this is currently not in place.

ANA's Ethics Commission, which is staffed by volunteer members nominated by the Director-President, provides staff with a confidential channel through which to raise complaints regarding the conduct of other staff at ANA, or register other complaints, for example relating to harassment or working conditions. The volume of complaints received by the Ethics Commission rose in 2023, putting a strain on commission members to process complaints – members of the Commission perform their role alongside their full-time ANA career, and have not received special training to deliver on the Commission's duties.

Another channel to raise complaints may be the Ombudsmen service, and some staff members have used this route, though conduct issues are transmitted by the OUV to the Ethics Commission and to COR (Internal Affairs). Complaints are investigated by the Ethics Commission internally, except in the case of complaints against senior managers, which are escalated to the federal Public Ethics Commission for further investigation.

Post-employment restrictions

Senior manager and Directors at ANA face post-employment restrictions. These restrictions are detailed in legislation and involve, most notably, a six-month cooling-off period, counted from the date of dismissal, which addresses potential conflicts of interest. Managers of a certain level[33] must submit details of their new position in a petition to the federal ethics commission, who will determine the necessary cooling-off period, which is paid. After the cooling-off period, directors and senior managers may hold appointments within the regulated industry (Law No. 9.986, 2000[17]) (Law No. 12.813, 2013[18]).

Output and outcome

This section describes the arrangements in place to assess the performance of relevant regulated entities and the wider regulated sector, to assess the impact of ANA's decisions and activities, and how any assessments, measurement or indicators are used by ANA. Related processes and policies on data management and data privacy are also described.

Data collection and use

ANA's powers to collect information on the regulated sector and enforce compliance in terms of information provision vary between the WRM and WSS sectors. The division of responsibilities relating to data ownership, collection, analysis and use is summarised in Table 3.18.

Table 3.18. ANA's involvement in sector data flows

	Water resources management	Water supply and sanitation
Data ownership and initial collection	National Hydrometeorological Network (RHN)	Municipalities / States
Data consolidation and verification	**ANA** (e.g., for delivery of SNIRH) (use of AI for verifications)	Central government ministries (MCIDADES; MIDR) (e.g., for delivery of SNIS)
Data use / analytics / reporting	**ANA** (e.g., evaluation studies); Basin Committees; Water Resource Councils	**ANA**
Data process review	**ANA** (e.g., systemised review of collection and data gaps)	Central government ministries (process unknown)

Regarding water resource management, ANA has the power to request information and enforce provision of information from users holding water-use rights granted by ANA. These powers may be used in the course of ANA's planned inspections or enforcement activity, but there is no legal requirement for ANA to regularly collect information from users for these purposes. There may be times when ANA's annual activity reporting of strategic planning processes require information from regulated entities to make informed decisions or assessments.

ANA's roles in maintaining the SNIRH and SNISB systems requires more regular, often live, data capture and transmission. For these tasks, ANA may rely on its powers to request information, but in practice, due to the scale of the monitoring exercise, the regulator often manages data collection through contractual arrangements.

For example, ANA collects hydrological data in three ways:

- meteorological and hydrological variables are measured in real-time[34] via the National Hydrometeorological Network (RHN);
- fluviometric and pluviometry data, as well as other hydroelectric operational data, gathered by electric sector operators and transmitted in real-time to ANA under a Joint Resolution ANA/ANEEL (Resolution No. 127/2022);
- additional monitoring and water quality information is gathered through the QualiÁgua Programme from state-level institutions. Once data is collected, verified, and analysed by ANA's staff, it is made available in the SNIRH through various dedicated online portals.[35]

The RHN is a national monitoring system co-ordinated by ANA in collaboration with other public and private institutions at national and state-level. The data collected by this network is essential for weather forecasting, but more importantly for ANA's duties because it enhances water management strategies and enables planning and decision-making, for example on the feasibility for granting usage rights, risk management, inspections planning, and the adoption of contingency protocols to guarantee the safety of dams.

Currently, ANA reports that there is risk of contingency in the budget allocated for the acquisitions and maintenance of contracts and partnerships that enable the operation of the RHN, and the logistical challenges associated with operating and developing the network in remote regions such as the Amazon add to this pressure. ANA's RHN co-ordination team (within the SGH) consists of 25 civil servants and 20 outsourced personnel responsible for managing the hydrological database, controlling the quantity and quality of hydrological data, co-ordinating collection, analysis and development of the data flowing into the SNIRH, and overseeing ANA's contracts with monitoring stations. Team members have received specialist training in partnership with the US Geological Survey Service, boosting capabilities.

Regarding water supply and sanitation, ANA has the capability to define the evidence required of subnational regulatory agencies that will prove compliance with a given reference standard and is tasked with monitoring compliance. However, ANA does not have the power to enforce information provision from subnational regulatory agencies for compliance verification purposes. Data collection, or the processing of submissions, is only just beginning and new processes established under legislation are being tested for the first time.

Almost all superintendencies have staff with data analysis capabilities, but they are not dedicated fully to this task. Data analytical competencies are a typical attribution of staff within the technical policy units and, with certain ANA civil service careers focusing more on specific policy or scientific analytical capabilities (e.g., geoprocessing) (see Human resources).

Data governance

ANA does not currently have an operational data governance policy, but the ASGOV unit is developing a strategy and Data Governance Committee to help co-ordinate data use and sharing. ANA has identified the need to define data integration requirements, documentation, and other data management tools to increase the efficiency and effectiveness of the organisation as a whole. ANA has recently established the Data Management Coordination team, which will act as executive secretariat for the Data Governance Committee, to facilitate this work across the organisation.

As part of improving the monitoring strategy, ASGOV has two staff members dedicated to analysing data and developing dashboards in PowerBI. At an institutional level, there is currently no systematic review of data requirements and data collection activities, nor any assessment of the usefulness of the data collected and published. However, this is being done in certain areas. For example, regarding the evaluation of the use of hydrological data, ANA is conducting, together with the Institute of Hydraulic Research of the Federal University of Rio Grande do Sul, a study called *"Inventory and Evaluation of Costs and Benefits of the National Hydrometeorological Network and the National Water Quality Network".* In addition to better understand the inventory of existing hydrological network and aspects related to network costs and cost-benefit assessment, the study also aims to present a proposal for optimising the hydrological network.

Monitoring and reporting on the performance of the sector

There are a number of outputs or reports relating to the performance of the regulated sector which ANA is required to produce by law, these include:

- Water availability and water quality reports, assessing the quantity and quality of water resources in different regions and compliance with quality standards and guidelines (see QualiÁgua programme);
- Hydrological and meteorological information systems, providing reports and data for operational purposes;
- Water rights reports, assessing the impact of water-use on resources and compliance with rights;
- Dam inspection reports and risk assessments, summarising findings on dam structural integrity, operational performance and safety conditions quality reports;
- Dam safety reports to the CNRH, summarising the results of all dam inspections and other safety data gathered through document or remote analysis; and
- A public list of subnational regulatory agencies complying with ANA's reference standards for WSS.

On a more technical and operational level, the performance of hydrometeorological monitoring stations (often attached to hydroelectric power plants) is monitored using data collected by the operators of the electric sector and shared with ANA.

Additional, voluntary reporting is drafted by ANA on certain topics, such as ANA's vision report on achieving Sustainable Development Goal 6.[36] ANA's analysis of indicators relating to SDG6 are periodically published and made available on the SNIRH.[37]

As part of its reporting, ANA has developed three high-level indicators to help assess the performance of the WRM and WSS sectors (Table 3.19).

Table 3.19. Indicators of regulated sector performance

Indicator	Methodology and unit of measure	Periodicity	Baseline	2023 Target	2024	2025
Regularity of the operation of stations in the hydrological network of the electric sector (Joint Resolution ANA/ANEEL No. 127/2022)	Nº of stations operating regularly/nº stations active (%)	Annual	70	70	73	76
Fulfilment of contractual goals of QualiÁgua Program, related to monitoring the RNQA	Amount of monitoring sites/amount of monitoring sites under the contract (%)	Bi-annual	80	80	83	86
Percentage of subnational regulatory bodies adopting ANA´s reference standards	Amount of regulators who adopted the norms/total amount of regulators (%)	Annual	N/A – Assessment not yet carried out	20	25	30

Source: ANA (June 2023).

As noted, for the monitoring of subnational regulatory agency adoption of reference standards, ANA does not have the power to enforce information provision to verify compliance. Instead, once the relevant submission deadline has passed, ANA would deem the body non-compliant if no submission has been made or the information provided is inadequate. At the time of writing, this type of monitoring is only just commencing, with new processes defined under legislation being tested, and no data available yet to compile the proposed indicators.

QualiÁgua programme

The QualiÁgua programme, created in 2014, aims to incentivise the development of a National Water Quality Network (RNQA) to monitor and assess the quality of surface and groundwater resources across Brazil. The programme helps to fulfil the agency's legal requirement to disseminate data and information on the qualitative and quantitative situation of water resources in Brazil.[38]

State-level institutions can voluntarily join the programme and are then contractually obliged to monitor various water quality indicators at strategically located hydrographic basins in Brazil and forward the data to ANA for verification within 6 months. ANA currently has 5-year contracts signed with 24 states. Regarding the implementation of this programme, ANA report difficulties at the state-level, with some institutions and laboratories lacking technical staff or the equipment needed to deliver the parameters.

The *ex post* assessment (ARR) of QualiÁgua evaluated the performance of the programme through a set of indicators defined by the technical team. The ARR concluded in 2022 and was published on ANA's website.[39]

Monitoring and reporting on the performance of ANA

Institutional (strategic and operational) performance indicators have been developed during the strategic planning process and are reported in ANA's annual management reports,[40] which it publishes on its website (see Strategic planning and objectives). The board and managers can monitor progress on indicators using a dashboard available on the agency's intranet. The data flowing into this monitoring dashboard is collected via an application developed internally by the ASGOV, and the internal budgeting system, SISPLANA, is currently being migrated to Power BI to allow full integration.

There are a large set of strategic and operational indicators, both qualitative and quantitative, derived from ANA's 20 strategic objectives (Table 3.7) and in the case of ANA's Regulatory Agenda, overarching indicators of timeliness and execution are used to assess progress, i.e., the volume of resolutions implemented, within the stated deadline.

Annual reports, which includes progress reporting relative to strategic objectives, are sent to the TCU and Congress (see Accountability). The CGU also reviews the annual reports. The CGU is the federal body responsible for safeguarding public assets and promoting integrity in management, through internal control actions and public auditing, amongst other initiatives. The CGU is currently composed of six Secretariats, of which one, the Federal Secretariat for Internal Control is responsible for auditing and overseeing how federal funds are being spent. It is up to the CGU to evaluate the execution of government programs; verify the legality and evaluate the results, concerning the effectiveness and efficiency of the management of federal public administrators, including regulatory agencies.

Since 2014, as a consequence of its technical supervision of ANA's internal audit function, the CGU has made 14 recommendations relating to ANA's processes, through the annual internal audit planning (PAINT) and results (RAINT) reporting.

ANA has fully implemented 12 of these recommendations and partially implemented the remaining two.[41] The two outstanding recommendations are: first, ANA evaluates the possibility of implementing a continuous program to support states in expanding the national water quality monitoring network and improving the current network, considering, amongst other items, the greater standardisation of analyses, and second, that improvements be implemented in the Hidroweb Portal, to allow the common user more direct ways of obtaining data, including the option of viewing the system without having to use another program, thus providing more clarity and transparency.

In 2021, the TCU undertook a review of the performance of federal agencies involved in the implementation of the new sanitation framework, focusing on ANA and the then Ministry of Regional Development (now MIDR). The summary report released following the TCU's investigation provides a detailed audit of the actions taken by ANA, and the challenges the agency faces, regarding the delivery of its new duties in WSS and makes several conclusions. First, the TCU recognises ANA's efforts to adapt to meet its new duties restructure the organisation but highlights how external factors outside of ANA's control have led to the "non-effective allocation of personnel considered necessary for the timely elaboration of the norms". The report focuses on ANA's lack of suitable resources to deliver its roles and, in this context, the overly ambitious and optimistic regulatory agenda (referring to the agenda prior to the current 2022-24 schedule). However, the TCU also highlights ANA's good practice in relation to stakeholder engagement and the strong participation of stakeholders across Brazil in the public consultation and impact assessment process (TCU, 2021[48]).

Three recommendations were made by the TCU following their review: one recommendation each for ANA, the Executive Secretariat of the CISB, and the Ministry of Regional Development. The recommendation made to ANA was for the agency to adopt measures to provide greater transparency and predictability regarding the elaboration of reference standards, providing subsidies to social control to evaluate the level of implementation and compliance with the regulatory agenda for basic sanitation, as recommended by Law No. 12.527/2011 Art. 8. The TCU also recommended that the MRD, as presiding member of the CISB, act to realise a great number of meeting to increase the effectiveness of the committee, and the Executive Secretariat of the CISB promote efforts to provide institutional and technical administrative support to ANA to support ANA's impact and effectiveness (TCU, 2021[48]). Despite being conducted in 2021, many of the observations and conclusions of the TCUs review remain relevant and valid at the current time of writing (see Assessment and Recommendations).

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Law No. 9.984 (2000), *LEI No 9.984, DE 17 DE JULHO DE 2000*, https://www.planalto.gov.br/ccivil_03/Leis/L9984.htm (accessed on June 2023). [2]

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Notes

[1] Also described as wastewater collection and treatment, or basic sanitation provision.

[2] Refers to regulatory bodies at the state, infra-municipal, or municipal levels involved in public sanitation services.

[3] Approved by ANA Resolution No. 79/2021.

[4] Please refer to: Infranational Agencies — National Water and Basic Sanitation Agency (ANA) (www.gov.br).

[5] Under ANA's bylaws Director's offices are described as a separate organisational unit with different competencies and attributes in comparison to other organisational units.

[6] ANA state this discrepancy is due to the delayed payment of water charges, which upon payment were directly reallocated by the Treasury to the management agency for the relevant basin, without flowing through ANA. Therefore, ANA's initial estimation was higher than the realised operating budget in 2022.

[7] ANEEL is also involved in the process of estimating revenues from hydropower production, providing input on electricity demand, which correlates with demand for water resource withdrawals.

[8] Citizens with "political rights" (*direitos políticos*) are able to vote and participate in the political process (Tribunal Superior Eleitoral, n.d.[145]).

[9] All civil servants that have commissioned positions of DAS 5 or 6 (in ANA´s case CCT V, CGE I, CGE II, CGE III, CA II).

[10] The main information systems and platforms used by ANA in its processes include the National Water Resources Information System (https://www.snirh.gov.br/); the Conjuntura dos Recursos Hídricos (https://relatorio-conjuntura-ana-2021.webflow.io) ; the Hydrological Monitoring of the Electric Sector (https://www.gov.br/ana/pt-br/assuntos/monitoramento-e-eventos-criticos/monitoramento-hidrologico/monitoramento-hidrologico-do-setor-eletrico); Telemetry - Hydrological real time data (https://www.snirh.gov.br/hidrotelemetria/Mapa.aspx); Hidrosat – Satellite Hydrological and Water Quality Monitoring; the Reservoir Monitoring System – SAR (https://www.ana.gov.br/sar/); the ANA Bigdata Portal (https://metadados.snirh.gov.br/geonetwork/srv/por/catalog.search#/home); Hidroweb; the Federal System for Regulation of Uses – REGLA (https://www.snirh.gov.br/cnarh/index.jsf); the National Registry of Water Resources Users (https://www.snirh.gov.br/sso/login.jsf?response_type=code&client_id=rq2a439qzx5hq5i&scope=PROFILE%20PERMISSOES%20RESTRICOES&state=IbY4m6Ow344rUcOY2roc834ITBBYdP9Tw-n_lu_I&ip=10.135.4.2&redirect_uri=http://www.snirh.gov.br/cnarh40/restrito/home.jsf); the National Information System on Dam Safety (https://www.snisb.gov.br/portal-snisb/inicio); the Registry of Dam Safety Regular Inspections – Online (https://www.snirh.gov.br/barragem_inspecao/login.jsf); and the Water right Decision Support System - SSDO ANA.

[11] Available at: General guidelines and guidance for the preparation of regulatory impact analysis - AIR (PDF) — Civil House (www.gov.br).

[12] United States Army Corps of Engineers.

[13] Studies conducted by SHE, and the qualitative and quantitative data collected due to this process, and through other surveys run by SHE, may be used by teams when applying the RIA methodologies as advised by ASREG.

[14] Guia Orientativo para Elaboração de Avaliação de Resultado Regulatório – ARR, from the Ministry of Economy; *Avaliação de Políticas Públicas: Guia prático de análise ex post*, from Interior Ministry; Monitoramento e Avaliação de Resultado Regulatório (M&ARR): Diretrizes para implementação de M&ARR na Anvisa, from Brazilian Health Regulatory Agency.

[15] ANA's ARR agenda 2023-26 is available at: Regulatory Outcome Assessment - ARR — National Water and Basic Sanitation Agency (ANA) (www.gov.br).

[16] External guidance on the conduct of ARRs includes: *Guide for the Preparation of Regulatory Result Assessment – ARR*, from the Ministry of Economy; *Evaluation of Public Policies: Practical guide for ex post analysis*, from the Ministry of the Interior; and *Monitoring and Evaluation of Regulatory Outcomes (M&ARR): Guidelines for the implementation of M&ARR* from Anvisa, the Brazilian National Health Surveillance Agency.

[17] Available at Sistema de Participação Social nas Decisões da ANA.

[18] In 2020, ANA´s civil servants joined the simple language movement, in partnership with GNOVA, the Government´s Laboratory for Innovation. After identifying the potential challenges relating to the

interpretation of ANA's regulatory communications, particularly those involving hydrological procedures and analysis, ANA began to consider the use of plain language in all communications. Two Action Plans were implemented with a set of initiatives to encourage the use of plain language. More details on ANA's plain language initiatives is available at: https://www.gov.br/ana/pt-br/acesso-a-informacao/acoes-e-programas/linguagemsimples/linguagemsimples.

[19] Please refer to ANA Resolutions Nos. 136/2022 and 102/2021.

[20] This early stage participation process is advertised on ANA's website (https://participacao-social.ana.gov.br/). Some examples include consultations on the standardisation of self-monitoring of water use by users of water resources granted in bodies of water controlled by the Union (https://participacao-social.ana.gov.br/Consulta/135) and planning the reference standard on progressive goals for the universalisation of public water supply and sanitary sewage services (https://participacao-social.ana.gov.br/Consulta/131).

[21] Please refer to ANA Resolutions Nos. 643/2016 and 644/2016.

[22] Webinar Internacional de Resíduos Sólidos, 24/08/2022 available at: https://www.youtube.com/watch?v=u6kbXdxKBfQ&t=4s. Webinário "Guide for Internal Mediation, Conciliation and Arbitration Procedures", 14/09/2022, available at: https://www.youtube.com/watch?v=3p_1hbhWeDY.

[23] Other means of stakeholder participation, such as taking contributions, crisis, monitoring and follow-up rooms, public water allocation meetings, public meetings with stakeholders, observatories and technical follow-up groups in addition to consultation and participation processes established within the scope of SINGREH.

[24] The ombudsmen's recommendations form its 2022 report can be found at: relatorio-gestao-ouvidoria-ana-2022.pdf (www.gov.br).

[25] Available at: https://falabr.cgu.gov.br/.

[26] Annual OUV report available at: relatorio-gestao-ouvidoria-ana-2022.pdf (www.gov.br).

[27] Legal action in Brazil can generally be classified as: ordinary civil action and/or compensation action; "*Mandado de segurança*" (Art. 5, LXIX of the Constitution, Federal Law 12,016 of 2009); "*Ação popular*" (Class action) (Art. 5, LXXIII of the Constitution); "*Ação civil pública*" (Public civil action) (Art. 129, III of the Constitution); "*Ação direta de inconstitucionalidade*" (Direct action of unconstitutionality) (Art. 102 of the Constitution).

[28] The 2022 plain language edition (amending the 2020 version) of ANA's Charter of Citizen Services is available at carta_relatorio_ana_2020_v6.pdf (www.gov.br), and the website version is available at Serviços — Agência Nacional de Águas e Saneamento Básico (ANA) (www.gov.br).

[29] Available at: Central de Painéis (cgu.gov.br).

[30] At the current time of writing this would include the Minster of State for Cities and the Minister of State for Integration and Regional Development.

[31] Available at: https://g1.globo.com/jornal-nacional/playlist/jornal-nacional-ultimos-videos.ghtml#video-11488525-id.

[32] Further information is available on ANA's integrity portal: Integrity — National Agency for Water and Basic Sanitation (ANA) (www.gov.br).

[33] All civil servants holding commissioned positions of DAS 5 or 6 (in ANA´s case CCT V, CGE I, CGE II, CGE III, CA II).

[34] Whilst all stations collect data in real-time, approximately 23% of the network is capable of transmitting data in real-time for processing. The remaining stations log data and transmit periodically.

[35] The Hidroweb Portal, available at https://www.snirh.gov.br/hidroweb/serieshistoricas ; the Hidrotelemetria Portal, available at https://www.snirh.gov.br/hidrotelemetria/Mapa.aspx ; data referring to the top bathymetric surveys necessary to update the elevation – area – volume curves of the electric sector's reservoirs, carried out in the context of Joint Resolution ANA and ANEEL nº 127/2022, are available on the ANA Metadata https://metadados.snirh.gov.br/geonetwork/srv/api/records/b8f0487a-df73-4f8d-8b22-bb49cf9f3683. It should be noted that ANA Bigdata Portal (https://metadados.snirh.gov.br/geonetwork/srv/por/catalog.search#/home) also provides data in different formats, on different topics related to water resources.

[36] Relatório de Conjuntura dos Recursos Hídricos do Brasil https://www.snirh.gov.br/portal/centrais-de-conteudos/conjuntura-dos-recursos-hidricos; Relatório Anual de Segurança de Barragens https://www.snisb.gov.br/relatorio-anual-de-seguranca-de-barragem; Relatório Visão da ANA sobre Indicadores ODS6 https://www.gov.br/ana/pt-br/centrais-de-conteudos/publicacoes/ods6/ods6.pdf.

[37] Available at: https://metadados.snirh.gov.br/geonetwork/srv/api/records/c93c5670-f4a7-4de6-85cf-c295c3a15204/attachments/ODS6_Brasil_ANA_2ed_digital_dupla.pdf.

[38] See Law No. 9.984/2000, article 4; and Law No. 9.433/1997, article 27.

[39] The Qualiágua Programme's performance indicators can be found in its ex-post Assessment (ARR) Report published by ANA in 2022, available at https://www.gov.br/ana/pt-br/assuntos/governanca-regulatoria/avaliacao-de-resultado-regulatorio/ARR_QualiAgua_Final.pdf/view.

[40] Available at: https://www.gov.br/ana/pt-br/todos-os-documentos-do-portal/documentos-aud/relatorio-de-gestao.

[41] The CGU's recommendations for ANA can be found in the following reports: https://eaud.cgu.gov.br/relatorios/download/862135; https://eaud.cgu.gov.br/relatorios/download/860421; https://eaud.cgu.gov.br/relatorios/download/857391; https://eaud.cgu.gov.br/relatorios/download/857811; https://eaud.cgu.gov.br/relatorios/download/979630.

Annex A. Methodology

Measuring regulatory performance is challenging, starting with defining what to measure, dealing with confounding factors, attributing outcomes to interventions and coping with the lack of data and information. This annex describes the methodology developed by the OECD to help regulators address these challenges through a Performance Assessment Framework for Economic Regulators (PAFER), which informs this review. It first presents some of the work conducted by the OECD on measuring regulatory performance. It then describes the key features of the PAFER and presents a typology of performance indicators to measure input, process, output and outcome. It finally provides an overview of the approach and practical steps undertaken for developing this review.

This Annex summarises the methodology developed by the OECD to assess regulatory authorities' governance arrangements, drivers of performance as well as their performance measurement matrices. The methodology was prepared based on the experience of regulators participating in the OECD Network of Economic Regulators and the present report constitutes its fourteenth application to a regulatory body. Other reviews spanning a number of sectors and countries include: Colombia's Communications Regulation Commission (OECD, 2015[1]); Latvia's Public Utilities Commission (OECD, 2016[2]), Mexico's three energy regulators (OECD, 2017[3]), (OECD, 2017[4]), (OECD, 2017[5]), (OECD, 2017[6]); Ireland's Commission for Regulation of Utilities (OECD, 2018[7]); Peru's Energy and Mining Regulator (OECD, 2019[8]); Peru's Telecommunications Regulator (OECD, 2019[9]), Peru's Transport Infrastructure Regulator (OECD, 2020[10]) Ireland's Environmental Protection Agency (OECD, 2020[11]), Portugal's Energy Services Regulatory Authority (OECD, 2021[12]), Brazil's Electricity Regulatory Authority (OECD, 2021[13]), and Peru's Water and Sanitation Services Regulator (OECD, 2022[14]). The methodology has been adapted since its first application to learnings throughout the review process and is adjusted to take into account specific needs and contextual characteristics of each regulator, sector and jurisdiction.

Analytical framework

The analytical framework that informs this review draws on the work conducted by the OECD on measuring regulatory performance and the governance of economic regulators. OECD countries and regulators have recognised the need for measuring regulatory performance. Information on regulatory performance is necessary to better target scarce resources and to improve the overall performance of regulatory policies and regulators. However, measuring regulatory performance can prove challenging. Some of these challenges include:

- *What to measure*: evaluation systems require an assessment of how inputs have influenced outputs and outcomes. In the case of regulatory policy, the inputs can focus on: i) overall programmes intended to promote a systemic improvement of regulatory quality; ii) the application of specific practices intended to improve regulation, or, iii) changes in the design of specific regulations.
- *Confounding factors*: there is a myriad of contingent issues that have an impact on the outcomes in society which regulation is intended to affect. These issues can be as simple as a change in the weather, or as complicated as the last financial crisis. Accordingly, it is difficult to establish a direct causal relationship between the adoption of better regulation practices and specific improvements to the welfare outcomes that are sought in the economy.
- *Lack of data and information*: countries tend to lack data and methodologies to identify whether regulatory practices are being undertaken correctly and what impact these practices may be having on the real economy.

The OECD (2014[15]) *Framework for Regulatory Policy Evaluation* starts addressing these challenges through an input-process-output-outcome logic, which breaks down the regulatory process into a sequence of discrete steps. The input-process-output-outcome logic is flexible and can be applied both to evaluate practices to improve regulatory policy in general, and also to evaluate regulatory policy in specific sectors, based on the identification of relevant strategic objectives. It can be tailored to economic regulators by taking into consideration the conditions that support the performance of economic regulators (Box A A.1).

The OECD Best Practice Principles for Regulatory Policy: The Governance of Regulators (OECD, 2014[16]) identifies some of the conditions that support the performance of economic regulators. They recognise the importance of assessing how a regulator is directed, controlled, resourced and held to account, in order to improve the overall effectiveness of regulators and promote growth and investment, including by supporting competition. Moreover, they acknowledge the positive impact of the regulator's own internal

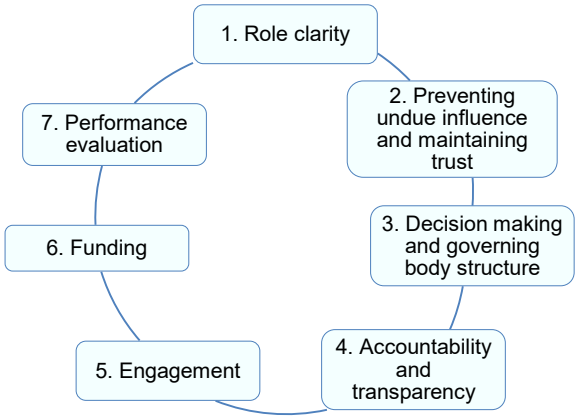
process on outcomes (i.e. how the regulator manages resources and what processes the regulator puts in place to regulate a given sector or market) (Figure A A.1).

Box A A.1. The input-process-output-outcome logic sequence

- **Step I. Input**: indicators include for example the budget and staff of the regulatory oversight body.
- **Step II. Process**: indicators assess whether formal requirements for good regulatory practices are in place. This includes requirements for objective setting, consultation, evidence-based analysis, administrative simplification, risk assessments and aligning regulatory changes internationally.
- **Step III. Output**: indicators provide information on whether the good regulatory practices have actually been implemented.
- **Step IV. Impact of design on outcome (also referred to as intermediate outcome):** indicators assess whether good regulatory practices contributed to an improvement in the quality of regulations. It therefore attempts to make a causal link between the design of regulatory policy and outcomes.
- **Step V. Strategic outcomes**: indicators assess whether the desired outcomes of regulatory policy have been achieved, both in terms of regulatory quality and in terms of regulatory outcomes.

Source: (OECD, 2014[15]).

Figure A A.1. The OECD Best Practice Principles on the Governance of Regulators



Source: Adapted from (OECD, 2014[16]).

The two frameworks are brought together into a Performance Assessment Framework for Economic Regulators that structures the drivers of performance along the input-process-output-outcome framework (Table A A.1).

Table A A.1. Criteria for assessing regulators' own performance framework

References	Strategic objectives	Input	Process	Output and outcome
Best Practice Principles for the Governance of Regulators	• Role clarity	• Funding	• Maintaining trust and preventing undue influence	• Performance evaluation
			• Decision making and governing body structure	
			• Accountability and transparency	
			• Engagement	
Institutional, organisational and monitoring drivers	• Objectives and targets	• Budgeting and financial management	• Strategy, leadership and co-ordination	• Performance standards and indicators
	• Functions and powers	• Human resources management	• Institutional structure	• Performance processes and reports
			• Management systems and operating processes	• Feedback or outside evidence on performance
			• Relations and interfaces with Government bodies, regulated entities and other key stakeholders	
			• Regulatory management tools	

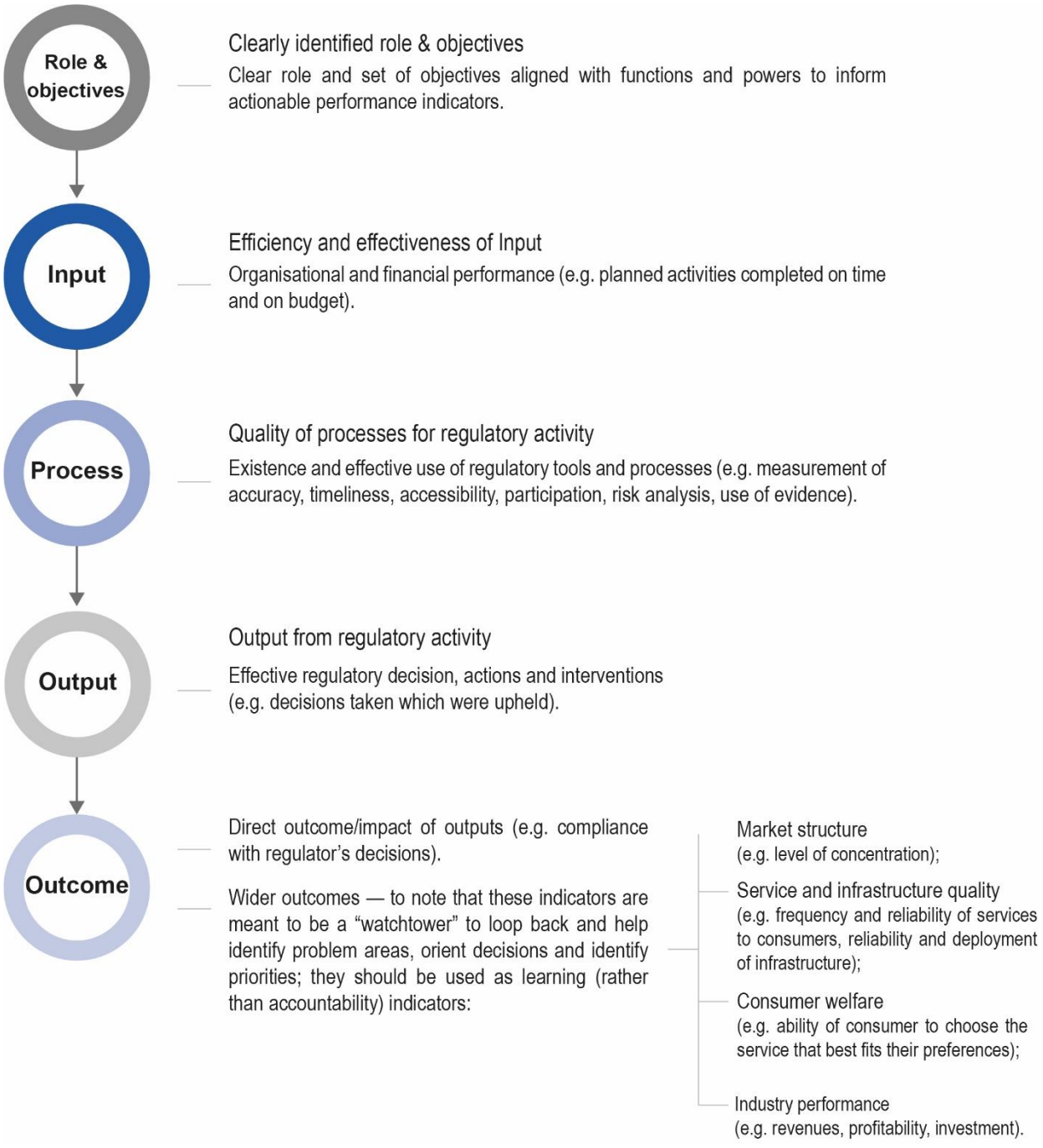
Source: OECD Analysis.

Performance indicators

For regulators, performance indicators need to fit the purpose of performance assessment, which is a systematic, analytical evaluation of the regulator's activities, with the purpose of seeking reliability and usability of the regulator's activities. Performance assessment is neither an audit, which judges how employees and managers complete their mission, nor a control, which puts emphasis on compliance with standards (OECD, 2004[17]).

Accordingly, performance indicators need to assess the efficient and effective use of a regulator's inputs, the quality of regulatory processes, and identify outputs and some direct outcomes that can be attributed to the regulator's interventions. Wider outcomes should serve as a "watchtower", which provides the information the regulator can use to identify problem areas, orient decisions and identify priorities (Figure A A.2).

Figure A A.2. Input-process-output-outcome framework for performance indicators



Notes: This framework was proposed in the initial methodology for the performance assessment framework for economic regulators (PAFER) discussed with the OECD Network of Economic Regulators (NER). It has been refined to reflect feedback from NER members and the experience of other regulators in assessing their own performance.
Source: (OECD, 2015[1]), Figure 3.3 (updated in 2017).

Approach

The analytical framework presented above informed the data collection and the analysis presented in the report. The report looks at the internal and external governance arrangements of Brazil's National Agency for Water and Basic Sanitation (ANA) in the following areas:

- ***Role and objectives***: to identify the existence of a set of clearly identified objectives, targets, or goals that are aligned with the regulator's functions and powers, which can inform the development of actionable performance indicators;
- ***Input***: to determine the extent to which the regulator's funding and staffing are aligned with the regulator's objectives, targets or goals, and the regulator's ability to manage financial and human resources autonomously and effectively;
- ***Process***: to assess the extent to which processes and the organisational management support the regulator's performance;
- ***Output and outcome***: to identify the existence of a systematic assessment of the performance of the regulated entities, the impact of the regulator's decisions and activities, and the extent to which these measurements are used appropriately.

Data informing the analysis presented in the report was collected via a desk review, a fact-finding mission and a peer mission:

- ***Questionnaire and desk review:*** ANA completed a detailed questionnaire which informed a desk review by the OECD Secretariat. The Secretariat reviewed existing legislation and ANA documents to collect information on the *de jure* functioning of the regulator, and to inform the fact-finding mission. This questionnaire was tailored to ANA, based on the methodology already applied by the OECD to other regulators since 2015 and on the participation of ANA in former OECD research such as the 2022 *Fostering Water Resilience in Brazil: Turning Strategy Into Action* publication (OECD, 2022[18]).
- ***Fact-finding mission:*** a mission focused on fact-finding was conducted by the OECD Secretariat between 19– 23 June 2023 in Brasilia, with meetings held with internal ANA teams and external stakeholders. This mission was the key tool to collect and complete the *de jure* information obtained through the questionnaire with the *de facto* state of play. The work of the fact-finding mission tailored the PAFER methodology to ANA's features. Information collected was completed and checked with ANA for accuracy.
- ***Peer mission:*** the peer mission took place between 29 August – 1 September 2023 in Brasilia, and included peer reviewers from Denmark, Canada, and the United Kingdom, in addition to the OECD Secretariat. This mission met with key stakeholders in ANA as well as externally. At the end of the mission, the team discussed preliminary findings and recommendations with ANA's Board of Directors and senior management to test their feasibility.

During the fact-finding and peer missions, the team met with ANA leadership team as well as a number of staff from across the institution. In addition, the team met with government institutions and external stakeholders, including:

- Ministry of Integration and Regional Development (MIDR)
- Ministry of Cities (MCIDADES)
- Ministry of Planning and Budget (SOF/MPO)
- Ministry of Development, Industry and Foreign Trade (MDIC)
- Federal Court of Accounts (TCU)
- Supreme Federal Court (STF)

- Representative of the Chamber of Deputies – Agricultural Committee
- Representative of the Federal Senate – Environment Committee
- Comptroller General of the Union (CGU)
- Water and Climate Agency of Pernambuco State (APAC)
- Regulatory Agency for Water, Energy and Basic Sanitation, Sao Paulo (ARSESP)
- Water Basin Committee of Paranapanema
- Brazilian Association of Water, Sanitation and Environmental Engineering (ABES)
- Brazilian Association of Water Resources (ABRHidro).

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The Governance of Regulators

Driving Performance at Brazil's National Agency for Water and Basic Sanitation

As "market referees", regulators contribute to the delivery of essential public utilities. Their organisational culture, behaviour, actions and governance are important factors in how they, and the sectors they oversee, perform. The OECD Performance Assessment Framework for Economic Regulators (PAFER) looks at the institutions, processes and practices that can create an organisational culture of performance and results. This report uses PAFER to assess both the internal and external governance of Brazil's National Agency for Water and Basic Sanitation (ANA). The review offers recommendations for the regulator to build upon its strong technical reputation and good practices. It proposes an integrated set of recommendations to help ANA best fulfil its roles relating to water resource management and water-use regulation, dam safety, and water supply and sanitation.

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