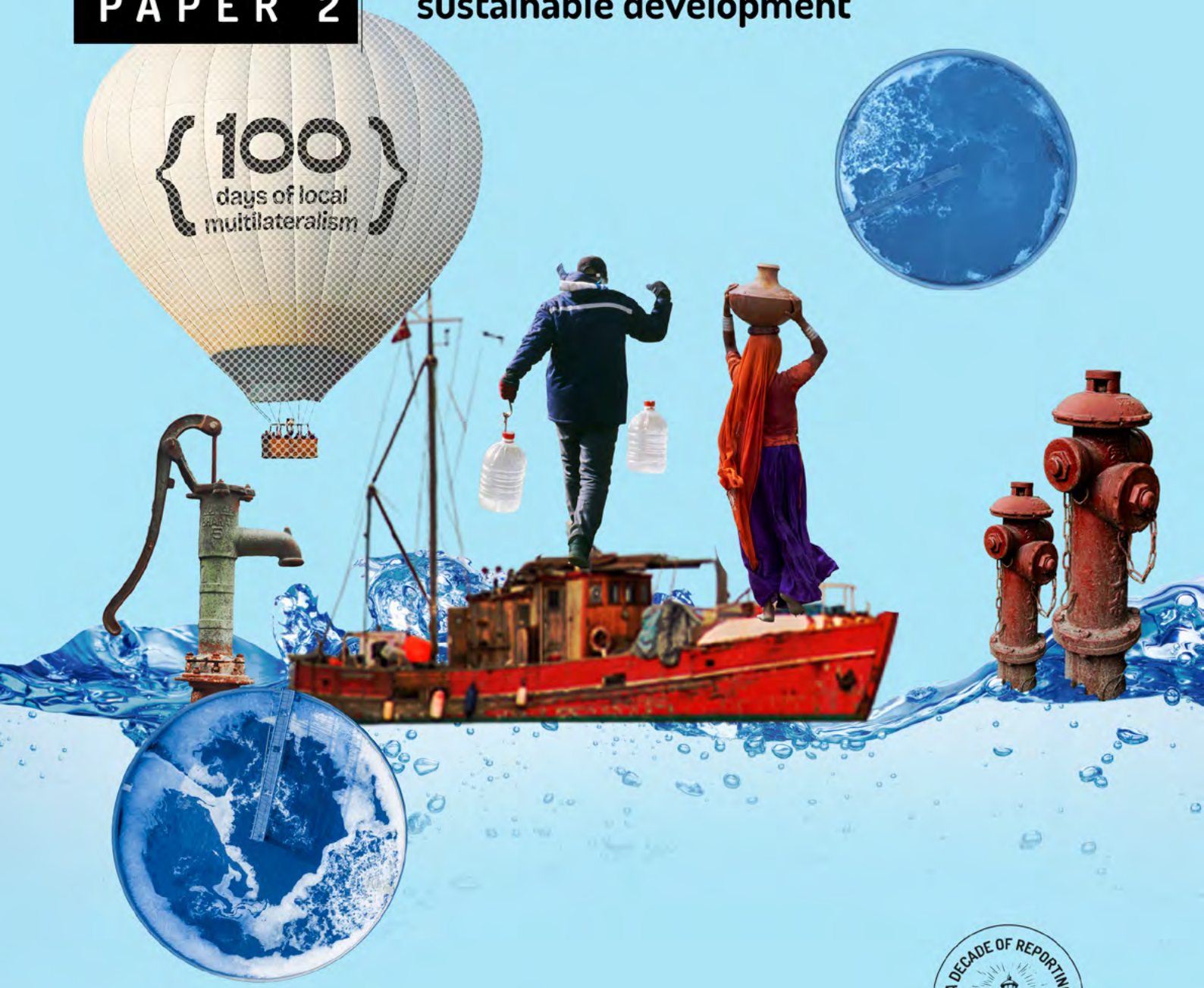
SDG 6

PAPER 2

# LOCAL AND REGIONAL GOVERNMENTS TOWARDS SDG 6

## Localizing water and sanitation for sustainable development




A DECADE OF REPORTING
2017 2026
ON LOCAL SDG ACTION

6 CLEAN WATER AND SANITATION

#HLPF2026
#Listen2Cities

GLOBAL TASKFORCE OF LOCAL AND REGIONAL GOVERNMENTS

Facilitated by:

UCLG United Cities and Local Governments

ICLEI Local Governments for Sustainability

**2026 UCLG**
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We dedicate this report to the memory of our esteemed colleague Sara Höflich. Her energy, generosity and unwavering commitment will continue to inspire us all. She held a profound belief in the power of learning and capacity strengthening to advance justice and equality through strong local governments. Her legacy will live on in UCLG's work.

# T.C.

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# 1. Localizing human rights and public services through SDGs 6, 7, 9 and 11

**With only three years until 2030, achieving the 2030 Agenda requires a radical shift towards large-scale, impactful local implementation of projects and policies aligned with the Sustainable Development Goals (SDGs).** Despite the current political instability, climate crisis and growing inequalities affecting the world, the 2030 Agenda provides a solid and actionable pathway for collective action based on common values. National and international hesitations and mistrust are offset by local and regional governments' (LRGs') steadfast commitment to creating a more sustainable, prosperous and equal world for all people through good governance and quality local public services.

The world is not on track to achieve **SDG 6 (Clean Water and Sanitation)** by 2030. While access to clean drinking water, basic hygiene services, and sanitation has improved compared to 2015 levels, an estimated 2.1 billion people still lack access to safely managed drinking water and 3.4 billion to safely managed sanitation. The data on wastewater, water quality and water management show little to no progress, and regional disparities reflect higher water stress in regions such as North Africa and West Asia. Picking up momentum requires better monitoring, accessible and localized financing, water-related cooperation, multi-stakeholder partnerships for water management and a more inclusive multilateral system.

**SDG 7 (Affordable and Clean Energy)** is one of the most on-track SDGs, with global electricity access reaching 92% in 2023. Nevertheless, the global community should redouble its efforts to meet the targets for indicators such as access to clean cooking, renewable energy consumption and production, and international financial support for clean and renewable energy. Fully achieving this SDG requires targeted work to foster renewable energy and energy efficiency at scale to meet climate targets. Consistent investments adapted to local and regional realities can help continue the current positive trend and achieve universal access.

Notable advancements have been made around **SDG 9 (Industry, Innovation and Infrastructure)** too. Global infrastructure is expanding in parallel with industrial growth and innovation. Internet coverage is steadily growing, although significant regional disparities persist. Manufacturing growth shows a similar pattern, with least developed countries especially far from achieving SDG 9 industry-related targets. Meanwhile, global CO2 emissions from fuel combustion and industrial processes reached an all-time high in 2024, marking an 8.3% increase from 2015. This situation jeopardizes the achievement of not only SDG 9 but the whole agenda. Urgent measures such as more inclusive financing for small enterprises, green innovation, and accessible, sustainable and resilient infrastructure are required to move closer to achieving the targets.

Amid ever-increasing urbanization, achieving **SDG 11 (Sustainable Cities and Communities)** is more important than ever. Nowadays, housing

affordability and tenure security are among the most pressing issues to tackle in most parts of the world, with up to 3 billion people experiencing affordability difficulties and 1.1 billion living in informal settlements. Strengthening and equalizing access to land, transport and inclusive public spaces are key actions to foster positive transformations. Urban policy increasingly addresses climate adaptation and disaster risk mitigation, while the use of participatory mechanisms to include citizens in decision-making processes is growing.

Multilevel governance, participatory budgeting and better climate planning frameworks can help future proof our communities and build sustainable cities. Overall, stable and reliable financing lays the foundation for transforming urban and local policies into impactful and transformative actions. Greater fiscal devolution from national governments and improved local access to funding opportunities from international organizations, development banks and private stakeholders can accelerate progress in this regard. Wide spending gaps also hinder achieving SDG target 11.4 on cultural and natural heritage: the global median public expenditure was only USD 21.22 per person in 2023.

**LRGs demonstrate consistent commitment to the 2030 Agenda, regardless of national and international vacillations.** Through self-organized networks such as the Global Taskforce of Local and Regional Governments (GTF), they are taking multilateral cooperation into their own hands and fostering tight collaborations to achieve the SDGs. In their ongoing efforts to lead the localization of the 2030 Agenda based on values of democracy, equality, inclusiveness, care and sustainability, LRGs are using local public service provision to deliver sustainable development in practice, to real communities and individuals. As a consequence of their actions, not a prerequisite, they call for better recognition as active decision-makers and crucial stakeholders for achieving the 2030 Agenda.

The three papers that are part of the 10th Towards the localization of the SDGs report analyze how LRGs are localizing the SDGs under review at the 2026 High-Level Political Forum. They highlight their actions and policies on water and sanitation, energy, infrastructure, industry and innovation, culture, and sustainable and inclusive communities. They showcase how LRGs' efforts around these SDGs contribute to advancing human rights–based governance that reduces inequalities and fosters care, democracy and inclusive development for all.

Specifically, the three papers focus on the following:

- Paper 1 analyzes how LRGs localize SDG 7 (Affordable and Clean Energy), SDG 9 (Industry, Innovation and Infrastructure) and SDG 11 (Sustainable Cities and Communities) through local public service provision. It emphasizes the interconnectedness of the SDGs and LRGs' cross-cutting action and leadership on key issues such as housing, mobility and energy.
- Paper 2 describes LRGs' crucial role in advancing SDG 6 (Clean Water and Sanitation), noting that accelerating progress requires bottom-up innovations as well as national and international efforts to ensure appropriate institutional and financial conditions for localization.
- Paper 3 focuses on the crucial target 11.4 ("Strengthen efforts to protect and safeguard the world's cultural and natural heritage"), showcasing how localization of culture and heritage permeates all policy sectors, people's lives and the planet.

The findings presented in these papers stem from thorough secondary and primary research conducted by UCLG/GTF. Key collaborations within the GTF – including with ICLEI (paper on SDG 6); with think tanks, experts and academia (paper on SDGs 7, 9 and 11); and with the UCLG Culture Commission (paper on SDG 11.4) – made these papers' production possible. The papers also benefitted from firsthand, bottom-up insights collected directly from LRGs and LGAs. Their contents offer not only a comprehensive state-of-the-art review on localization of the selected SDGs but also precious tools for advocacy, policy-making and peer learning.

*Source: Johnnathan Tshibangu, Unsplash*

# 2. Introduction: Key milestones shaping the global water agenda

Since the first United Nations (UN) Water Conference in Mar del Plata, Argentina, in 1977, the international community has developed a shared understanding of the central importance of access to safe drinking water and sanitation for public health, human dignity and socio-economic development.[1] Yet, long before this, cities in Europe and North America responded to cholera, typhoid and other waterborne epidemics in the 19th century by investing in modern waterworks and sewerage systems. The British physician John Snow famously demonstrated in London that contaminated water was the source of cholera outbreaks. His work helped trigger a broad movement in which municipalities assumed responsibility for water supply, sanitation and hygiene as a core public health function. Urban waterworks, sewerage systems and sanitation departments were established to control infectious disease, manage urban crowding and industrial pollution, and establish basic living conditions.

**Over time, these municipal successes influenced national policy.** As improved water supply, sanitation and hygiene reduced mortality, national development strategies embedded these services. By the 1960s and 1970s, rapid urbanization in Africa, Asia and Latin America had further elevated water and sanitation as global priorities, setting the stage for the Mar del Plata conference, which placed local realities on the global political agenda.

The Mar del Plata conference recognized access to safe drinking water as a basic human need and underlined the importance of ensuring access to water supply and sanitation for public health. **The conference's resulting action plan also marked an early step towards recognizing water as a human right.**[2] The consensus led the UN General Assembly to proclaim the International Drinking Water Supply and Sanitation Decade (1981–1990), mobilizing commitment, coordinating international support and scaling up investments to expand service coverage. Much of the latter was implemented through municipal utilities, local infrastructure programmes and decentralized providers.

Successive international initiatives – from the second dedicated decade, known as the International Decade for Action, "Water for Life" (2005–2015), to the inclusion of water and sanitation in Millennium Development Goal target 7.C (2000–2015) – further elevated domestic water supply and sanitation on the global development agenda. They culminated in the adoption of Sustainable Development Goal (SDG) 6 as a comprehensive stand-alone goal in the 2030 Agenda.

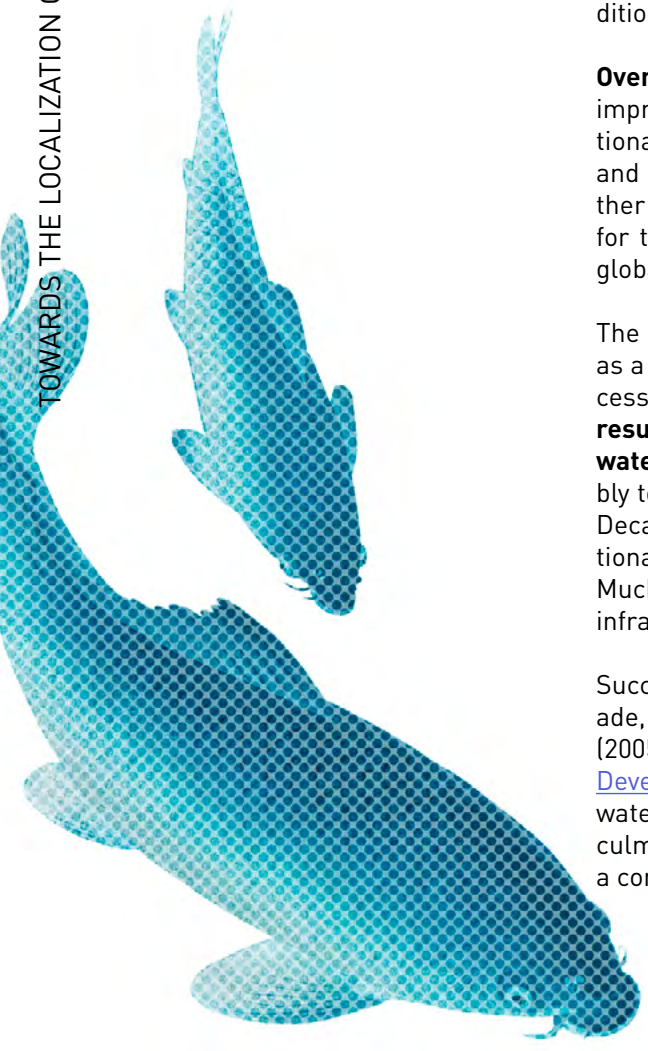


**Table 1 Key milestones shaping the global water agenda**

| Milestone | Description |
|---|---|
| 1977: UN Water Conference (Mar del Plata, Argentina) | Established water and sanitation as global development priorities and laid the normative foundation for international action |
| 1981–1990: International Drinking Water and Sanitation Decade | Converted political commitment into large-scale national programmes and local action, significantly expanding global access to water and sanitation |
| 2000–2015: Millennium Development Goals, including target 7.C | Introduced time-bound measurable targets, institutionalizing global monitoring and accountability |
| 2002: CESCR General Comment No. 15 | Operationalized the human right to water by clarifying State obligations and strengthening equity and accountability frameworks |
| 2010: Formal recognition by the UN General Assembly and Human Rights Council of the human right to safe drinking water and sanitation | Provided global political support for legal principles and embedded them within the procedures of the Human Rights Council |
| 2015–present: SDGs, particularly SDG 6 | Reframed water as a finite, interconnected and climate-sensitive resource requiring integrated and sustainable management |

*Source: Authors*

Water and sanitation gained further prominence on the global agenda through developments in human rights law. In 2002, the UN Committee on Economic, Social and Cultural Rights (CESCR), the body responsible for monitoring the implementation of the International Covenant on Economic, Social and Cultural Rights (ICESCR), reviewed articles 11 and 12 of this covenant and issued General Comment No. 15 on the right to water. The CESCR recognized water as an essential element of both the right to an adequate standard of living and the right to the highest attainable standard of health. By defining normative criteria – *availability, quality, accessibility and affordability* – it translated broad treaty obligations into a practical framework to guide policy, regulation and accountability in the water and sanitation sector. General Comment No. 15 clarified that the right to an adequate standard of living under the ICESCR includes a distinct human right to sufficient, safe, acceptable, physically accessible and affordable water.

Building on this interpretation, the UN General Assembly and the Human Rights Council adopted landmark resolutions in 2010 recognizing the human right to safe drinking water and sanitation and establishing the mandate of a UN Special Rapporteur on the human right to water and sanitation to promote implementation, clarify State obligations and monitor progress. **Together, these developments helped shift global discourse from access as a policy aspiration to access as a legal entitlement, reinforcing accountability, equity and non-discrimination as central principles in water and sanitation governance. They also underscored the need for governance arrangements capable of translating legal commitments into effective service delivery at the local level.**

**The adoption of SDG 6 marked a fundamental shift from the Millennium Development Goals era: it recognized water as not only a social service but also a finite and interconnected natural resource requiring integrated and sustainable management.** This goal's inclusion in the 2030 Agenda reflected growing recognition among Member States that population growth, urbanization, rising economic demands on water, and mounting environmental pressures – including water scarcity, pollution and climate-related stress – were intensifying the challenge of universal access. Whereas Millennium Development Goal 7.C located water and sanitation within a broader environmental goal, SDG 6 elevated water to a stand-alone goal central to human development, environmental integrity and economic activity. Nevertheless, localizing SDG 6 has emerged as a defining challenge of the 2030 Agenda. **Local and regional governments (LRGs) stand at the centre of efforts to translate global commitments into tangible improvements in people's daily lives.**

Altogether, the milestones shaping the global water agenda reflect substantial normative progress in the recognition of water and sanitation as global priorities. At the same time, they raise important questions regarding implementation. Localization requires alignment between global commitments and subnational financial and operational capacities.

## PROGRESS AND BOTTLENECKS IN SDG 6 IMPLEMENTATION

**Since 2015, the world has made significant progress on implementing SDG 6.** An estimated 961 million people have gained access to safely managed drinking water services and 1.2 billion people to safely managed sanitation services. **Despite these achievements, major challenges persist across several SDG 6 targets and indicators.**

In 2024, an estimated 2.1 billion people still lacked safely managed drinking water (SDG 6.1), and 3.4 billion lacked safely managed sanitation services (SDG 6.2). Progress has been highly uneven across regions: while many countries in Europe, North America and East Asia have achieved near-universal access to basic water and sanitation services, large parts of Sub-Saharan Africa and South Asia continue to experience substantial access gaps.

Only 56% of global domestic wastewater is safely treated before discharge (SDG 6.3), a figure unchanged since the baseline estimate in 2015. Overall water-use efficiency (SDG 6.4) increased by 23% between 2015 and 2022, but overall water stress levels have remained broadly unchanged. Several regions in North Africa and West, Central and South Asia continue to experience critical stress levels exceeding 75%, while around 10% of the global population lives under conditions of high or critical water stress. These figures illustrate that, despite progress, structural bottlenecks persist across multiple dimensions of SDG 6 implementation.

On target 6.5 (integrated water resources management at all levels, including transboundary cooperation), implementation increased from about 49% in 2017 to 57% in 2023. While this reflects measurable progress, it remains insufficient to meet the 2030 target. On transboundary cooperation, on average countries report that 59% of their transboundary basins are covered by an operational arrangement. At the current pace, progress may be too slow to support the joint strategies needed to address the intensifying impacts of droughts and floods in a changing climate.

On target 6.6 (protecting and restoring water-related ecosystems), global data suggest that freshwater ecosystems are declining: 50% of countries report that one or more water-related ecosystem types are in a state of degradation. However, monitoring methodologies for this target remain under development, and many countries still lack comprehensive data on the extent, quantity and health of water-related ecosystems. Therefore, these statistics still need to be treated with some caution.

SDG 6 also has two targets related to the means of implementation: target 6.a, which aims to expand international cooperation and capacity building, and 6.b, which aims to support and strengthen participation of local communities. Indicator 6.a.1 measures the amount of water- and sanitation-related official development assistance in national spending plans. Recent reporting shows very low or near-zero values, meaning that no reliable global estimate is currently available due to limited reporting and data inconsistencies. Indicator 6.b.1 – proportion of local administrative units with operational community participation procedures – relies heavily on data from LRGs to support national reporting to UN-Water. Available data remain limited, and global estimates are not yet robust because many countries have not reported comprehensive data across LRGs. These limitations highlight **the importance of strengthening institutional coordination and data flows between national and subnational levels**.

Overall, progress is certainly insufficient to achieve SDG 6, and discussions on acceleration mechanisms that have been underway since 2020 are very much warranted. **Across countries and regions, LRGs are the frontline actors for most SDG 6 targets**, including drinking water and sanitation service delivery (6.1, 6.2); wastewater collection and treatment (6.3); water-use efficiency, including urban water demand management (6.4); local implementation of integrated water resources management (6.5); protection of local water-related ecosystems (6.6); and community participation and accountability (6.b). **Arguably, where progress is happening, it is often happening locally, and where progress is stalling, local constraints – often linked to capacity, finance or institutional frameworks – frequently explain part of the delays.**

## WHAT CAN YOU EXPECT IN THIS PAPER?

As the international community strives to achieve SDG 6 and begins considering the post-2030 development agenda, it faces a growing need to rethink how global water goals are framed, measured and governed. The institutional realities of service delivery warrant more explicit recognition within global water and sanitation frameworks, highlighting LRGs' central role in providing, operating and maintaining water and sanitation services. **Accelerating progress towards global water and sanitation goals largely depends on the enabling environment for LRGs to fulfil their mandates.**

In this context, this paper, included in the 10th edition of the Global Taskforce of Local and Regional Governments' *Towards the Localization of the SDGs* report, aims to contribute to the global discussion on concrete pathways to achieve SDG 6 – which inevitably require LRGs' active involvement. The paper begins by analyzing the global state of progress on SDG 6 (Section 3.2.2), before examining why LRGs are essential to achieving this goal (Section 3.2.3). It then explores how LRGs are responding to current trends through service provision, innovation and human rights-based approaches (Section 3.2.4), followed by an assessment of the main challenges they face (Section 3.2.5). The paper concludes with key findings and policy recommendations (Section 3.2.6).

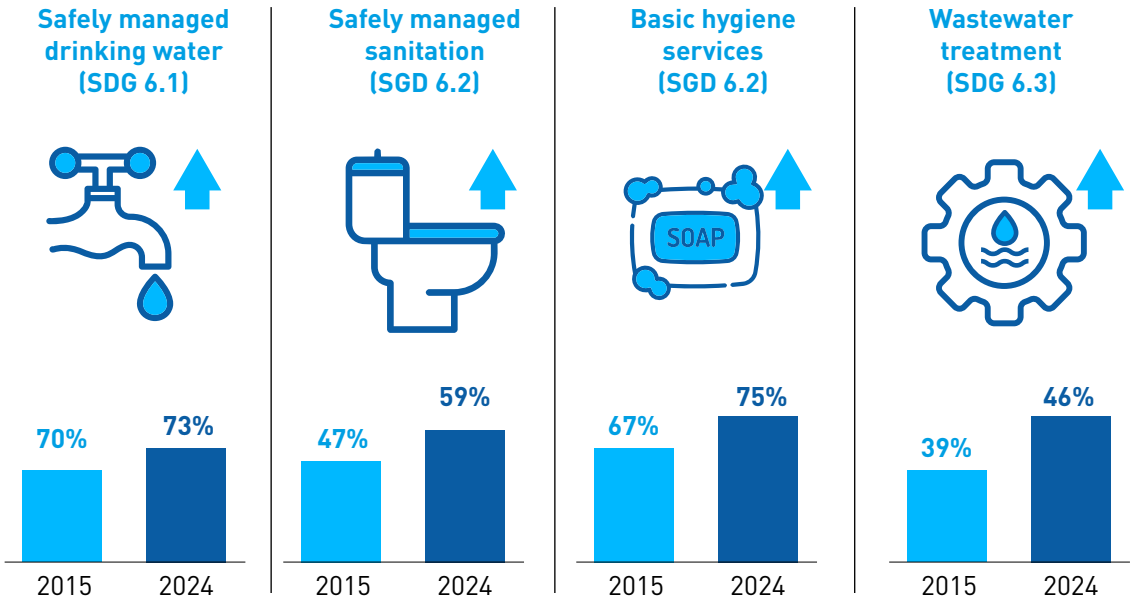
The analysis builds on existing data, reports and other secondary sources, as well as on a collection of inspiring practices from LRGs, gathered through a survey disseminated by United Cities and Local Governments (UCLG) among its members in 2025.

*Source: Mega Caesaria, Unsplash*

# 3. The global state of SDG 6 at a glance

The section above briefly summarized the key achievements and bottlenecks in SDG 6 implementation. In this section, we unpack several of these, highlighting issues of central importance to LRGs.

**Figure 1 Global progress in WASH services (as a percentage of the population), 2015–2024**




*Source: Authors, based on UN-Water's Sustainable Development Goal 6: Synthesis Report on Water and Sanitation (2018) and the World Health Organization (WHO) / United Nations Children's Fund (UNICEF) Joint Monitoring Programme for Water Supply, Sanitation and Hygiene's Progress on Household Drinking Water, Sanitation and Hygiene 2000–2024: Special Focus on Inequalities report (2025)*

Figure 1 presents a concise overview of progress on targets 6.1, 6.2 and 6.3, which have advanced significantly since 2015. Nevertheless, the pace of progress between 2015 and 2024 is insufficient to achieve the target of universal access by 2030: for example, global access to safely managed drinking water and safely managed sanitation has increased, respectively, by just 3 and 12 percentage points.

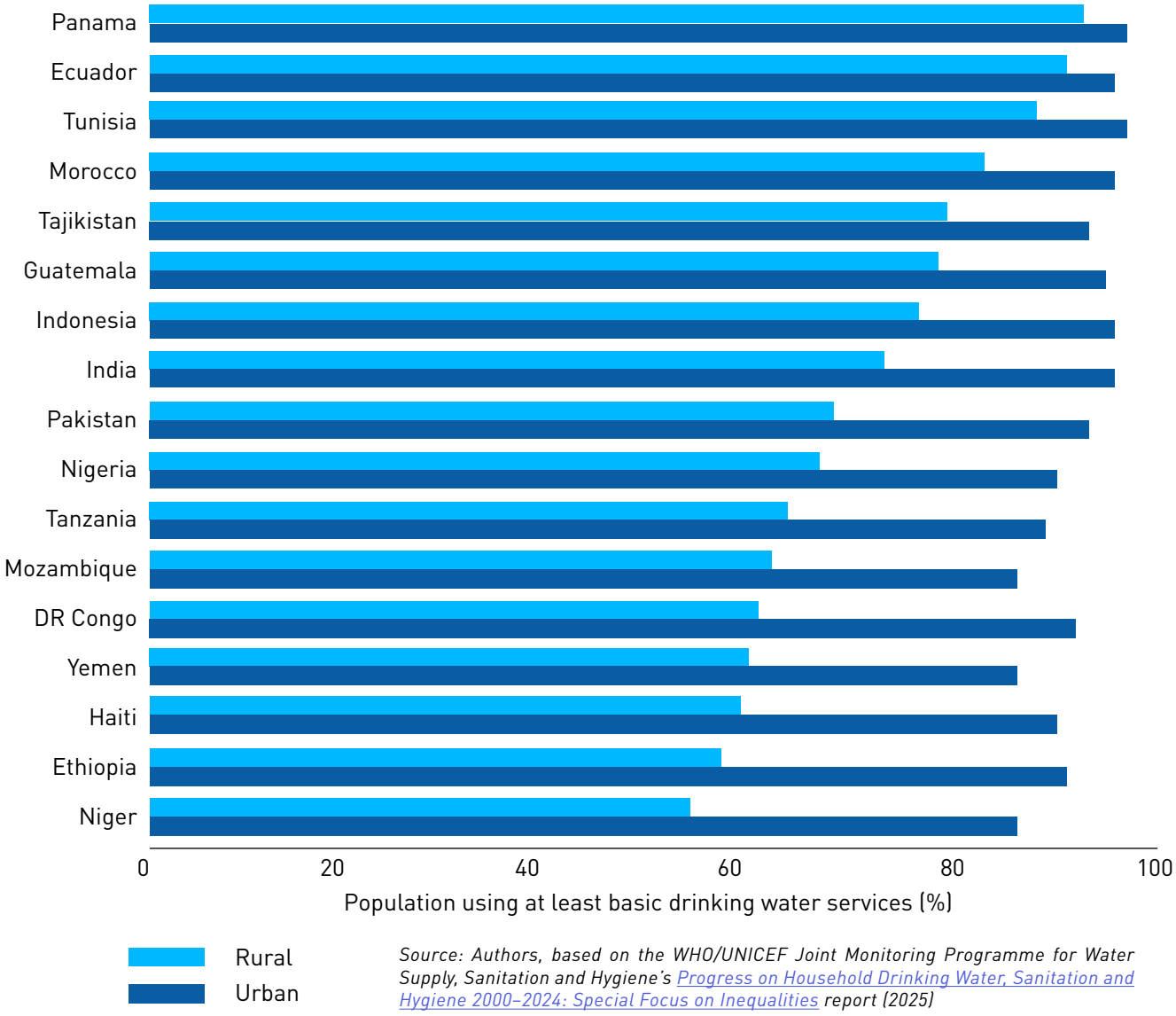
## TERRITORIAL DISPARITIES AND INEQUALITIES IN ACCESS TO SERVICES

Global statistics on SDG 6 progress mask both marked differences between regions and deep and persistent inequalities. These inequalities only become visible – therefore opening the possibility to act on them – through disaggregated national and subnational data.

The UN's 2018 *Synthesis Report on Water and Sanitation* reminded readers that the 2030 Agenda's opening paragraphs pledge "no one will be left behind," a central moral and political principle of the agenda. The report emphasized that inequality is multifaceted: access to water and sanitation is influenced by factors such as a country's gross national income, government stability, urban–rural disparities, inequalities *within* urban areas and differences in service provision across ethnic and cultural groups.

Figure 2 below shows urban–rural disparities in access to basic drinking water facilities for selected countries, using the latest available disaggregated national estimates.

**Figure 2 Urban–rural disparities in access to at least basic drinking water for selected countries**

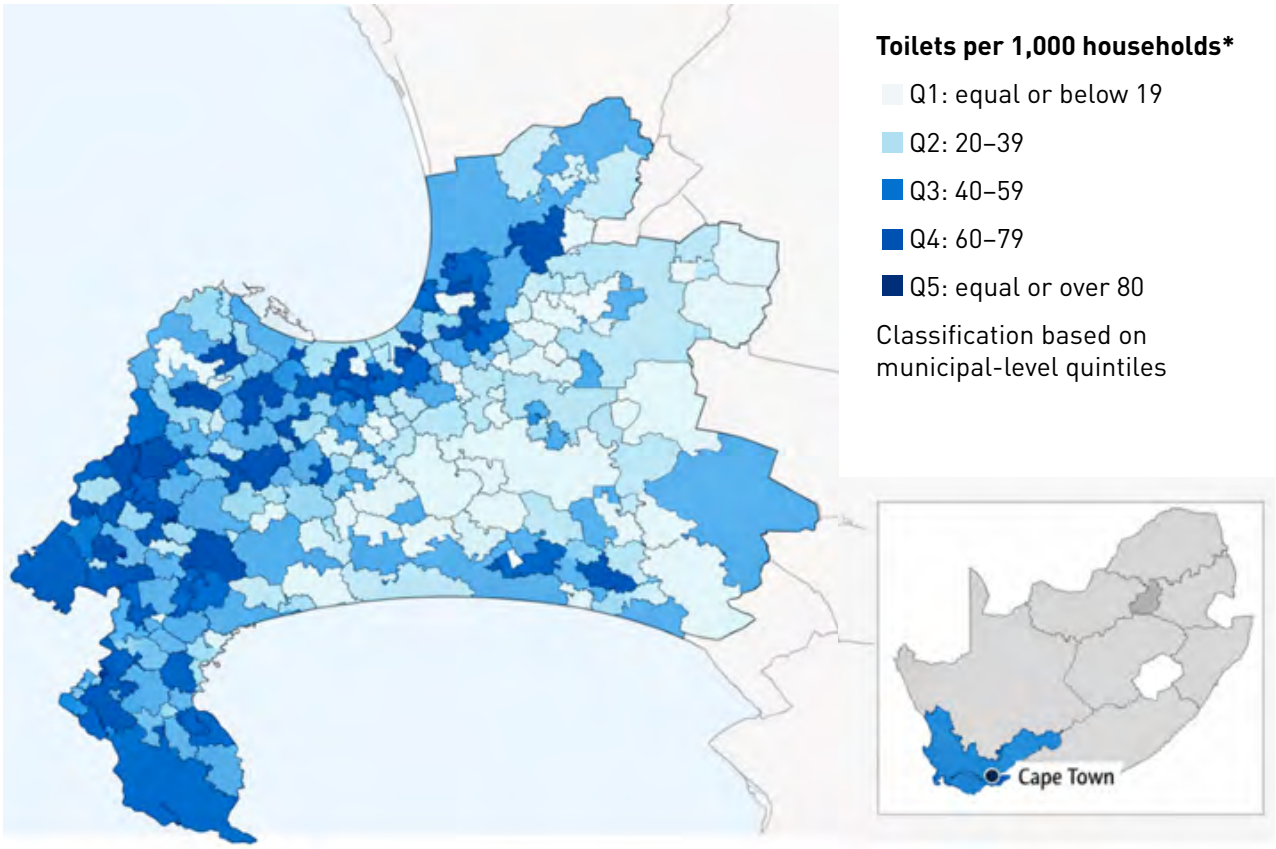



*Source: Authors, based on the WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene's Progress on Household Drinking Water, Sanitation and Hygiene 2000–2024: Special Focus on Inequalities report (2025)*

**Based on national averages, access to basic drinking water services clearly varies widely between urban and rural areas.** Such urban–rural disparities remain significant across income groups, highlighting the territorial nature of inequality and LRGs' critical role in extending services to underserved rural and peri-urban areas. Addressing these disparities requires targeted territorial policies and adequate fiscal and administrative capacity at the local level.

Similar disparities also occur within administrative areas, with residents often experiencing different levels of access to water, sanitation and hygiene (WASH) services. **Targeting service provision to marginalized communities depends on the availability and quality of service data**: disaggregated data enables mapping patterns of vulnerability. For instance, Figure 3 below shows spatial differences in access to toilets in a municipality.

## Figure 3 Inequalities in access to toilets in Cape Town, South Africa




*Toilets per 1,000 households = Number of toilets in pocket / Number of households in pocket x 1,000

*Source: Authors, based on the City of Cape Town's Open Data Portal, dataset on basic services in informal settlements (2023)*

## THE IMPACT OF CLIMATE CHANGE ON THE WATER CYCLE FOR LRGs

The water cycle has become increasingly erratic and extreme. **As climate change accelerates hydrological extremes, LRGs are increasingly acting as frontline responders to water-related risks, confronting the combined challenges of water scarcity, flooding and deteriorating water quality.**

During the 2015–2018 drought, the City of **Cape Town** (South Africa) demonstrated how local government leadership can mitigate acute water scarcity. Facing the prospect of "Day Zero" (when the city would have to switch off water services amid dwindling resources), the municipality implemented aggressive demand-management measures, public communication campaigns, pressure management, tariff reforms and diversification of water sources. These actions significantly reduced per capita water consumption and stabilized supplies, illustrating the critical role of city leadership in managing climate-related water crises.

In flood-prone cities such as **Semarang** (Indonesia), LRGs have led responses to increasingly frequent and severe flooding through integrated urban measures including improved drainage systems, retention basins, coastal protection, land use planning and community-based early warning systems. These interventions address both riverine and coastal flooding risks intensified by sea-level rise, land subsidence and extreme rainfall.

In Brazil, many municipalities have improved deteriorating water quality by expanding wastewater collection and treatment, supported by national frameworks but implemented locally. Investments in municipal wastewater infrastructure have reduced pollution loads in urban rivers and reservoirs, highlighting LRGs' central role in addressing water quality challenges linked to urban growth and public health.

### BOX 1 BUILDING FLOOD-RESILIENT URBAN WATER SYSTEMS IN BOR, SOUTH SUDAN

Since 2017, the town of Bor has been severely affected by recurrent flooding, leading to internal displacement and the loss of homes and crops. In response, the LRG treated water supply not as a humanitarian add-on but as an urban service responsibility, even under crisis conditions. Working together with national ministries and international development partners, the LRG incorporated climate resilience into the design of the Bor urban water supply system.

The project, launched in November 2025, includes several climate-resilient design features intended to ensure continued service during flooding events. These include the construction of a conventional water treatment plant with a capacity of 4,800 cubic metres per day built above the projected flood line, elevated storage and pumping infrastructure, and an expanded piped distribution network of approximately 53 kilometres. The system also includes 28 water kiosks to ensure equitable access for low-income neighbourhoods, a tanker filling station to support emergency distribution during disruptions, a water quality laboratory and a 750-cubic-metre steel storage tank to improve system reliability for the town's rapidly growing population.

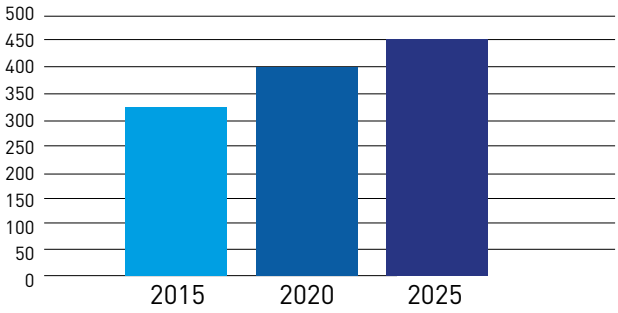
**All these interventions respond directly to the needs of local residents, often in close proximity to local political leaders.** Globally, LRGs are taking increasingly proactive steps to protect their communities from the impacts of too little, too much or too dirty water. However, they face a recurrent challenge: access to adequate technical skills and finance. This challenge particularly affects mid-sized or smaller cities and towns that struggle to attract specialized skills and have more limited revenue.

## WATER AND SANITATION IN FRAGILE CONTEXTS

Fragility is a territorial condition resulting from the interaction of conflict, weak governance, climate stress and infrastructure vulnerability, rather than a fixed national characteristic. **In such contexts, water and sanitation infrastructure is both highly exposed to disruption and central to sustaining public health, livelihoods and social stability.**

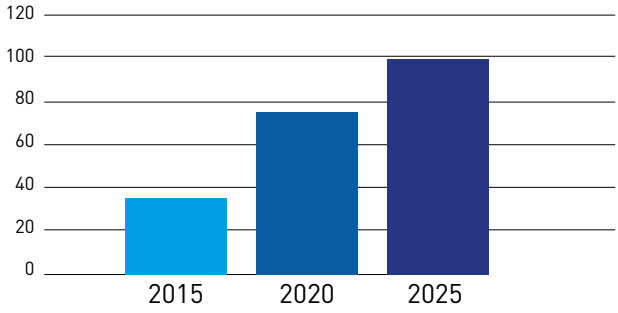
*Source: This is Engineering, Unsplash*

### Figure 4 Number of water-related disasters per year (droughts, floods, storms), 2015–2025



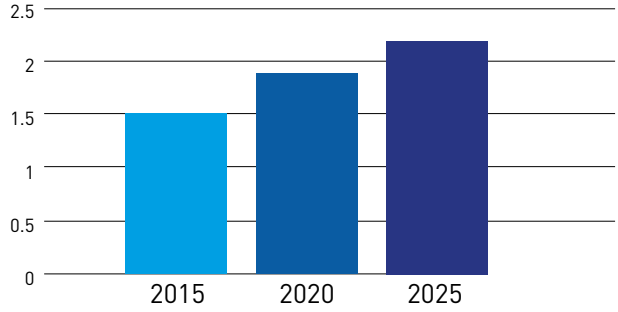

*Source: Authors, based on the UN Office for Disaster Risk Reduction's The Human Cost of Disasters: An Overview of the Last 20 Years (2000–2019) report (2020) and the World Meteorological Organization's "Weather-Related Disasters Increase Over Past 50 Years, Causing More Damage but Fewer Deaths" article (2021)*

### Figure 5 Water conflicts, 2015–2025



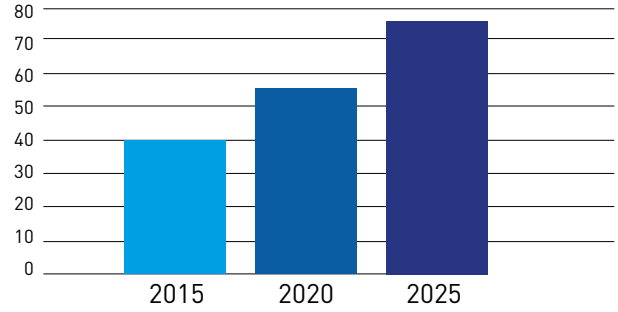

*Source: Authors, based on the Pacific Institute's Water Conflict Chronology*

### Figure 6 Population in fragile and conflict-affected settings (in billions), 2015–2025




*Source: Authors, based on the World Bank's FY 2024 list of fragile and conflict-affected situations*

### Figure 7 Number of people internally displaced (in millions), 2015-2025



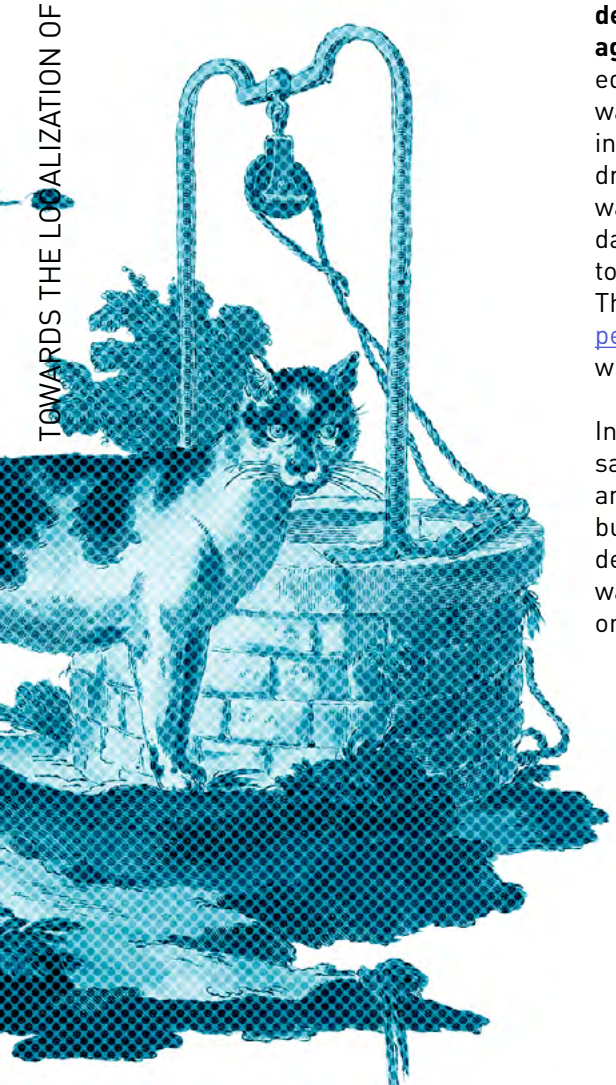

*Source: Authors, based on the Internal Displacement Monitoring Centre's Global Report on Internal Displacement 2025*

According to the Organisation for Economic Co-operation and Development's (OECD's) *States of Fragility* 2025 report, in 2025, 2.1 billion people, equal to 25% of the world's population, were living in 61 contexts with high or extreme fragility. These contexts accounted for 72% of the world's extreme poor in 2024 and have affected humanitarian WASH needs. Over the last 15 years, and especially since 2019, the number of people in need of humanitarian assistance across the world has risen rapidly. According to the UN Office for the Coordination of Humanitarian Affairs' 2025 humanitarian overview, by 2024, 307 million people needed humanitarian assistance – almost a fivefold increase. Forty-seven percent of these were living on the African continent. An estimated 173 million people require WASH-related humanitarian assistance, representing 56% of the global total.

The OECD's report emphasizes that fragility manifests through failures in the social contract between citizens and the State; these failures are usually felt most directly through local service delivery, very often in the hands of LRGs. Furthermore, conflict and disasters frequently lead to rapid population movements into cities and secondary towns, creating intense pressures on local services.

*Source: Kenshi Kingami, Unsplash*

# 4. Why LRGs are essential to achieving SDG 6



**In most national legal frameworks for water and sanitation, primary responsibility for service delivery is delegated to LRGs, while policy development, overall regulatory frameworks and bulk water management remain national or regional competences.** Municipalities or equivalent LRGs are typically mandated to ensure access to drinking water and sanitation services; manage local distribution networks; and in many cases, oversee wastewater collection, treatment and urban drainage. Higher tiers of government usually retain responsibilities for water resource management, standard-setting, financing frameworks, data collection and monitoring, and oversight, while LRGs manage day-to-day operations, infrastructure maintenance and service continuity. This multilevel allocation of mandates means that achieving SDG 6 depends fundamentally on LRGs' capacity, resources and accountability within nationally defined legal and institutional arrangements.

In France, municipalities are legally responsible for water supply and sanitation services, while river basin agencies manage water resources and quality. In South Africa, water resources are a national competence, but local municipalities are responsible for water and sanitation service delivery. In Brazil, municipalities hold constitutional responsibility for water and sanitation services, with states often playing a coordinating or regulatory role.

**Table 2 Allocation of water and sanitation responsibilities among different tiers of government**

| Function | National | Regional | Local |
|---|---|---|---|
| Drinking water supply | National standards; financing frameworks; national regulation; consumer protection | Oversight of utilities in some countries; regional planning; intermunicipal coordination | Primary responsibility for service provision; operation and maintenance of distribution networks; local tariffs/bylaws (within national standards) |
| Sewage collection | National standards for sanitation; environmental regulation | Regional coordination where networks cross municipal boundaries | Core responsibility for collection systems; network expansion and maintenance |
| Wastewater treatment | National discharge standards; permitting frameworks | Larger regional treatment plants; technical oversight | Operation of local plants in many countries; connection policies; local enforcement |
| Drainage/stormwater | National design guidelines in some countries; disaster risk policy | Flood management planning in some contexts | Primary responsibility for urban drainage systems; maintenance; local flood mitigation |
| Water security (service continuity, drought resilience) | National water security strategy; emergency frameworks | Regional drought planning; interbasin coordination | Local contingency planning; demand management; leak reduction |
| Water resources management | Legal ownership of water; allocation regimes; national planning; transboundary waters | River basin or catchment management in many countries | Local catchment protection; groundwater protection zones; land use planning |
| Bulk supply infrastructure (dams, interbasin transfers, trunk mains) | Typically national leadership; major capital investment; regulation | Co-financing and regional planning in some countries | Limited role (except where municipal utilities operate bulk assets) |

*Source: Authors*

Table 2 above shows how responsibilities for water and sanitation management are typically distributed across different tiers of government. The allocation of these responsibilities varies from country to country and depends on some fundamental aspects of State law such as whether it is a unitary state, a federal government or a strongly decentralized government. Roles are not mutually exclusive: national, regional and local competences frequently overlap and intersect, with shared responsibilities for planning, regulation, financing and implementation.

Water touches upon the three pillars of sustainable development: economic, social and environmental. According to the *United Nations World Water Development Report 2015*, "Water resources, and the essential services they provide, are among the keys to achieving poverty reduction, inclusive growth, public health, food security, lives of dignity for all and long-lasting harmony with Earth's essential ecosystems." Researchers have pointed out water's central role in achieving the SDGs. For example, a group of researchers reviewed 120 academic publications and found that water security positively contributed to all SDGs, especially SDG 3 (Good Health and Well-Being) and SDG 2 (Zero Hunger).

Not only are responsibilities for SDG 6 implementation largely held by LRGs, but international soft law also reinforces this principle. In line with the underlying principles of the 2030 Agenda, the 1992 Dublin Statement on Water and Sustainable Development sets out four principles that have strongly influenced national water law and policy worldwide. Principle 2 (participation) states that "water development and management should be based on a participatory approach, involving users, planners and policy-makers at all levels." The accompanying text further emphasizes that decisions should be taken at the lowest appropriate level (the principle of subsidiarity), with full public consultation and user involvement.

The Dublin Statement served as an input to the UN Conference on Environment and Development in

1992, which led to three major conventions – the Convention on Biological Diversity, the UN Framework Convention on Climate Change and the UN Convention to Combat Desertification – and to Agenda 21. Chapter 18 of Agenda 21 calls for delegating water resources management and services, where appropriate and legal, to lower levels of government. These principles and international instruments collectively reinforce the legitimacy of decentralized and territorially anchored water governance.

It follows from the principle of subsidiarity that LRGs are foundational to water governance. In many different respects, LRGs lie at the core of SDG 6 implementation. This section highlights four interrelated dimensions of LRG action in water governance: resource management, equity, service delivery and financing.

## CATCHMENT MANAGEMENT, DISASTER RISK REDUCTION AND RESILIENCE

Over time, LRGs' water-related role has expanded from a primary focus on service provision (water supply and sanitation) to more integrated responsibilities spanning urban water systems, catchment stewardship and climate risk reduction. For integrated water resources management to balance competing needs for water at the basin level, these needs must be articulated through dialogue with local stakeholders. Catchments are lived spaces, and LRGs operate within subcatchments, regulating land use, settlements and infrastructure, while experiencing water risks such as water scarcity, floods and pollution directly. **They play a role in clarifying water needs across urban, peri-urban, rural and agricultural areas and in mediating between households, farmers, utilities, industries and ecosystems.**

SDG 6 implementation also depends on effective coordination across administrative and hydrological boundaries, including in transboundary and inter-jurisdictional river basins. While LRGs rarely hold formal mandates for basin-wide or transboundary water management, they play a critical role in ensuring coherence across jurisdictions through planning, service delivery, land use regulation and local risk management. LRGs contribute local knowledge, articulate territorially differentiated needs and implement agreed measures that give practical effect to basin-level strategies. In this way, subsidiarity does not conflict with basin-scale governance but underpins it: basin-wide objectives rely on coordinated local action to translate shared commitments into operational outcomes for water supply, sanitation, ecosystems and climate resilience.

A clear example of this is the Quito Water Fund in Ecuador. Established in 2000 by the municipal utility of Quito together with nongovernmental organizations and private users, it operates as a trust fund that finances conservation of the upper Andean watersheds supplying the city. Contributors include the city water utility, hydropower companies, breweries and other water users, and the funds are invested in ecosystem protection, restoration, land stewardship agreements and watershed monitoring.

## SOCIAL AND TERRITORIAL EQUITY AND THE GENDER AND ENVIRONMENTAL DETERMINANTS OF WATER SECURITY

Addressing inequality is central to SDG 6 and the 2030 Agenda's commitment to "leave no one behind." LRGs play a decisive role in translating this ambition into practice. **As service authorities, LRGs are often responsible for extending water and sanitation services across entire supply areas, including low-income and informal neighbourhoods** where cost recovery is challenging but public health imperatives are strongest.

Many have therefore adopted a range of tools such as differentiated tariffs, cross-subsidies and other pro-poor financing mechanisms to balance financial sustainability with universal access. In sanitation, approaches such as citywide inclusive sanitation enable LRGs to combine diverse service models – networked and non-networked, public and private – within a single territorial framework, reflecting varied settlement patterns and income levels.

Gender considerations underscore the importance of local action as women and girls disproportionately bear the burden of inadequate water access and face heightened risks in unsafe sanitation environments. Finally, environmental determinants of water security – such as safe wastewater and faecal sludge management – depend on local oversight to ensure that services are not only accessible but safely managed and environmentally sustainable.

## BOX 2 STRIVING FOR EQUITY AT THE CITY LEVEL: THE CASE OF DAKAR, SENEGAL

The municipality of Dakar exemplifies an effective approach to integrating social and territorial equity within a broader framework focused on environmental health. Since the mid-2010s, Dakar has progressively adopted a citywide inclusive sanitation approach to address persistent inequalities in access to safely managed sanitation across formal and informal neighbourhoods. Recognizing that a single service model could not meet the needs of the entire urban population, local and national authorities combined networked sewerage, on-site sanitation systems and faecal sludge management services within a unified territorial framework. Financing arrangements blended user tariffs, cross-subsidies and public investment – supported by development partners including the World Bank – to extend services to low-income areas where full cost recovery would otherwise be unattainable.

Equity considerations were central to this approach, with targeted measures to improve service coverage in underserved communities while reducing environmental and public health risks associated with untreated wastewater and faecal sludge. Dakar's experience illustrates how LRGs can operationalize the "leave no one behind" principle for SDG 6 through differentiated, financially sustainable and environmentally protective sanitation strategies.

## LRGs, SDG 6.3, WASTEWATER TREATMENT AND DIGITAL MONITORING

SDG 6.3, which focuses on improving water quality through wastewater treatment and pollution reduction, often places LRGs at the centre of implementation. In many countries, LRGs are responsible for wastewater collection, treatment operations and compliance with discharge standards, even where national authorities retain regulatory oversight.

Beyond infrastructure provision, they increasingly monitor water quality through treatment plant data, effluent sampling, and in some cases, digital monitoring systems that support real-time reporting and performance management. These systems enable LRGs to track treatment efficiency, identify pollution hotspots, support regulatory compliance and contribute data to national monitoring frameworks. Wastewater treatment facilities are an important entry point for implementing circular economy approaches locally, enabling nutrient recovery and renewable energy generation.

For instance, as Section 3.2.4 will describe in more detail, Singapore's national water agency, the Public Utilities Board, uses a network of real-time sensors and digital monitoring systems to track water quality across reservoirs, treatment plants and distribution networks. **Singapore treats wastewater as a resource, not waste, reusing reclaimed water to fuel industries and blend into drinking water supplies.**

## LRGs' ROLE IN FINANCING WATER AND SANITATION

As the authorities responsible for water and sanitation infrastructure, LRGs play a central role in planning investments and managing long-term operational and financial risks, but access to capital may involve national governments, utilities or development partners. Bringing in capital includes blending user revenues with public transfers, grants and concessional finance, as well as engaging with development banks and private operators where appropriate to fund infrastructure and long-term operations. Cities are responsible for service delivery across multiple sectors such as energy, transport and telecommunications, which opens up possibilities for cross-subsidization and co-development of infrastructure. LRGs also play a key role in designing tariff structures, cross-subsidies and affordability measures that reconcile financial sustainability with universal access.

In this way, **progress on SDG 6 depends not only on the availability of national or international finance but also on LRGs' institutional capacity to mobilize, combine and manage financial resources over the full life cycle of water and sanitation assets**.[3] Where institutional mandates are not matched by adequate fiscal autonomy or access to appropriate financial instruments, SDG 6 implementation risks remaining fragile.

# 5. Global trends in SDG 6 localization: LRG responses and innovations

LRGs across the world are already playing a decisive role in translating SDG 6 from global commitment into local action. A growing body of comparative research – including analytical work by organizations such as the OECD and the World Bank, and practice-based knowledge generated through networks such as UCLG, ICLEI, C40 and Regions4 – shows how LRGs are adapting water and sanitation targets to territorial realities. **Localization extends beyond service delivery to integrated planning, climate resilience, watershed stewardship, social inclusion, institutional innovation and strengthened multilevel governance arrangements.**

In this process, LRGs act as key intermediaries between global goals and everyday governance, aligning SDG 6 objectives with local development strategies, infrastructure investment and community engagement. However, **innovations' scale and sustainability depend on the broader governance and financing environment including the alignment between institutional mandates and local fiscal capacity where LRGs operate**.

The following subsections build on this emerging evidence base to examine how each SDG 6 target is being localized in practice, illustrating the diverse ways in which LRGs contribute to water security, equity and sustainability across different regional and institutional contexts.[4]

## SDG 6.1: ACCESS TO SAFE AND AFFORDABLE DRINKING WATER FOR ALL

At the local level, progress towards SDG 6.1 is driven largely by LRGs' capacity to expand and manage drinking water systems. This effort includes extending supply networks into underserved areas, improving water quality and reliability, and addressing territorial inequalities affecting health and wellbeing. In this context, **LRGs play a central role in the progressive realization of the human right to water, ensuring that services are accessible, safe and non-discriminatory**.

While national regulators typically define service standards and benchmarks, LRGs translate these into operational practice through infrastructure investment and day-to-day management. Beyond capital expenditure, sustainable progress requires adequate financing for operation and maintenance, supported by stable revenue streams that underpin the financial viability and bankability of water service providers.

***LRGs translate national service standards into practice through infrastructure investment and day-to-day management.***

Effective asset management enables LRGs to reduce non-revenue water – losses from leaks, theft or metering inaccuracies that represent water produced but not billed – and modernize ageing distribution systems. Advances in smart metering, artificial intelligence and leak detection can reduce water losses and improve water quality across service areas. Through these interconnected functions, LRGs ensure that water services move up the SDG service ladder towards safely managed, reliable and equitable supply.

*Source: Wietse Jongsma, Unsplash*

## BOX 3 EXTENDING EQUITABLE WATER SERVICES IN BUENOS AIRES, ARGENTINA

In Buenos Aires, efforts to extend water and sanitation services to underserved informal settlements have driven progress towards SDG 6.1. While citywide coverage is high – 97.8% for piped water and 96.2% for sewerage – inequalities persist in low-income neighbourhoods. Over the past 15 years, the city has implemented upgrading programmes in areas such as Barrio Mugica, Barrio 20 and Rodrigo Bueno.

Interventions include the extension of water, sewerage and stormwater networks; housing improvements; and land regularization. In neighbourhoods such as Rodrigo Bueno, where many households had informal connections, regularization has improved service quality, enabled monitoring and reduced environmental and public health risks. By integrating infrastructure provision with social policy, the city illustrates how LRGs can address territorial inequalities and advance towards safely managed and equitable water access.

## BOX 4 MIXED URBAN WASH STRATEGY IN SEMARANG, INDONESIA

The city of Semarang has pursued a mixed urban WASH strategy combining water supply expansion, sanitation upgrading, faecal sludge and wastewater management, water quality monitoring, and community campaigns for a clean river and end to open defecation. To extend safely managed water supplies, the West Semarang Water Supply Project initiated a public–private partnership to both expand clean water provision and reduce pressure on groundwater extraction.

## BOX 5 ACCESS TO SAFELY MANAGED DRINKING WATER IN GHANA'S DISTRICTS AND MUNICIPALITIES

According to UN-Water's 2023 SDG 6 country acceleration case study on Ghana, Ghana had the fastest improvement in safely managed drinking water coverage in Sub-Saharan Africa since 2000, reaching 41% in 2020 (up from 13% in 2000). Water supply is coordinated through Ghana Water Company Limited for urban areas and through the Community Water and Sanitation Agency for rural areas.

While these institutions coordinate action at the national level, implementation outcomes are strongly shaped at district and municipal levels. Metropolitan, municipal and district assemblies conduct local planning and coordination for WASH investments and service expansion, particularly outside major city networks. In rural and small town areas, district assemblies support service delivery through locally established water and sanitation management teams, which manage facilities, engage communities and support tariff-setting and oversight. These local arrangements help translate national targets into on-the-ground expansion and day-to-day functionality – key determinants of safely managed services. Recent assessments highlight the need to strengthen local capacity and accountability systems (including risk-based water quality management) to sustain gains.

*Source: Jeff Ackley, Unsplash*

In conflict-affected settings, delivering safely managed drinking water becomes more challenging, as infrastructure may be damaged, deliberately targeted, or disrupted by displacement and insecurity. In such contexts, LRGs often adopt adaptive, decentralized strategies to sustain minimum service levels, including temporary supply systems, emergency water trucking, localized treatment solutions and community-based management. **Protecting and restoring critical water infrastructure is both a humanitarian and public health priority, while maintaining basic operation and maintenance capacity helps to prevent system collapse.**

## SDG 6.2: ACCESS TO ADEQUATE AND EQUITABLE SANITATION AND HYGIENE FOR ALL

Achieving SDG 6.2 largely depends on efforts by LRGs, which are closest to households and service realities. In many municipalities, conventional sewer networks cover only part of the urban area, leaving large populations dependent on on-site sanitation such as pit latrines and septic tanks. This makes it essential for cities to adopt locally tailored faecal sludge management systems – including safe pit emptying, transport, treatment and reuse or disposal – rather than relying solely on centralized infrastructure.

**In this context, LRGs play a key role in the progressive realization of the human right to sanitation, ensuring services are safe, accessible, affordable and non-discriminatory, while guaranteeing dignity and safety of women and girls.**

***LRGs play a pivotal role in sanitation as the level of government closest to households and the everyday realities of service delivery.***

**LRGs must also address the sanitation and hygiene challenges of informal settlements, where land tenure, density and poverty limit conventional service delivery models.** In dense neighbourhoods with limited space, tenure security and road access, municipalities may support shared or communal sanitation blocks, simplified sewers or container-based sanitation services with off-site treatment. As many households depend on on-site systems, cities are increasingly developing proactive faecal sludge management approaches – including licensing and regulating emptying services, establishing transfer stations, investing in treatment facilities and introducing scheduled desludging services to prevent unsafe disposal. Effective sanitation governance therefore requires regulatory authority, enforcement capacity and sustained operational financing at the municipal level.

**In climate-vulnerable areas, sanitation planning must respond to flooding, high water tables, drought and storm damage, often through integration with local land use planning and risk management.** This effort may include promoting raised or flood-resilient toilets, sealed pits or tanks to prevent leakage, dry toilets in water-scarce contexts, and decentralized or nature-based systems such as constructed wetlands and gravity-fed membranes.

Approaches such as citywide inclusive sanitation support LRGs in planning a mix of technical solutions and service models across urban areas, ensuring that all residents – regardless of income level or settlement type – are progressively reached with safe, equitable and sustainable sanitation and hygiene services.

### BOX 6 COMMUNITY-LED TOTAL SANITATION BY THE ASSOCIATION OF LOCAL AUTHORITIES OF TANZANIA

The Association of Local Authorities of Tanzania (ALAT) has promoted community-led total sanitation (CLTS) as a transformational approach for achieving SDG 6, particularly in sanitation, hygiene behaviour change and community empowerment. CLTS is a participatory approach that enables communities to analyze sanitation risks, trigger collective behaviour change and take local action to end open defecation. Emphasizing community ownership, social norms and self-investment rather than top-down infrastructure provision, it is widely applied by LRGs in rural and peri-urban settings. CLTS has a positive gender impact, particularly by involving women and girls in planning and implementation, including attention to menstrual hygiene.

Since adopting CLTS in 2012, Njombe District Council has emerged as a leading example. Under the national sanitation campaign, it implemented CLTS with strong political backing and structured monitoring from subvillage to council level. Reported outcomes show household coverage of improved latrines rising from 7.5% (2011) to 99.8% (September 2018) and functional handwashing facilities from 5.1% to 94%.

## SDG 6.3: WASTEWATER TREATMENT

While national governments set standards and policies, LRGs are the frontline actors responsible for implementing SDG 6.3 on the ground. Their responsibilities span the entire wastewater chain – from collection and treatment to safe discharge or reuse. LRGs plan, finance and oversee sewerage networks and drainage systems that collect domestic, and in many cases, industrial wastewater.

***LRGs' responsibilities extend throughout the entire wastewater chain, from collection and conveyance to treatment and the safe discharge or reuse of effluents.***

In areas without full sewer coverage, they are also responsible for regulating and supporting on-site sanitation and faecal sludge services, ensuring that waste from septic tanks and pit latrines enters a managed system rather than being discharged into drains, rivers or open land. **By improving wastewater treatment and reducing pollution, LRGs help protect public health and contribute to the progressive realization of the human rights to water and sanitation.**

### BOX 7 WASTEWATER AND ENVIRONMENTAL REHABILITATION IN ATYRAU, KAZAKHSTAN

Atyrau has implemented integrated measures to address environmental pressures linked to industrial activity and inadequate wastewater management. Rapid development of the oil and petrochemical sector has contributed to water pollution, groundwater impacts and the accumulation of untreated waste.

In response, the city has prioritized rehabilitation of wastewater infrastructure. Key interventions include reconstructing municipal treatment facilities, introducing biological treatment and disinfection, and consolidating sewage flows into a modernized system with a capacity of over 30,000 cubic metres per day. Treated wastewater is reused for technical purposes, reducing environmental discharge.

At the same time, the "Tazalyq" project at the oil refinery is upgrading industrial treatment systems and replacing open evaporation fields with closed channels, reducing pollution of air, soil and groundwater. Complementary measures include reclamation of evaporation ponds and modernization of solid waste management.

Together, these efforts show how LRGs can address water quality challenges under SDG 6.3 by linking wastewater treatment, industrial regulation and environmental remediation.

### BOX 8 IMPROVED WASTEWATER MANAGEMENT AND MANGROVE PROTECTION IN SANTA ROSA, ECUADOR

The canton of Santa Rosa, located in the southern coastal province of El Oro in Ecuador, has undertaken an integrated approach to advancing SDG 6 at the local level. The canton's jurisdiction includes part of the ecologically significant Archipiélago de Jambelí, which contains extensive mangrove ecosystems. The municipal government has prioritized the expansion, renovation and maintenance of sanitary sewerage and wastewater treatment systems, working in partnership with national financing institutions such as the Ecuador Development Bank, in order to reduce pollution loads entering rivers and coastal waters. These investments directly contribute to SDG 6.3 by improving wastewater management and safeguarding water quality.

Complementing infrastructure development, the canton has implemented reforestation and environmental restoration programmes in the upper Santa Rosa River Basin and in mangrove ecosystems within the Archipiélago de Jambelí, strengthening watershed protection and coastal resilience in line with SDG 6.6 on water-related ecosystems. Importantly, the municipality has coupled these measures with community outreach and dialogue processes – including awareness-raising sessions to build consensus around the special improvement levy (a local tax) following the execution of public works. These efforts have promoted transparency, local ownership and participatory decision-making consistent with SDG 6.b on community participation in water and sanitation management.

LRGs typically own or regulate wastewater treatment plants, either directly or through public utilities or contracted operators. They determine treatment levels based on environmental sensitivity, public health risks and financial capacity. Pollution control is often governed through partnerships linking LRGs with private operators, industrial zones and community groups for monitoring, compliance and source reduction.

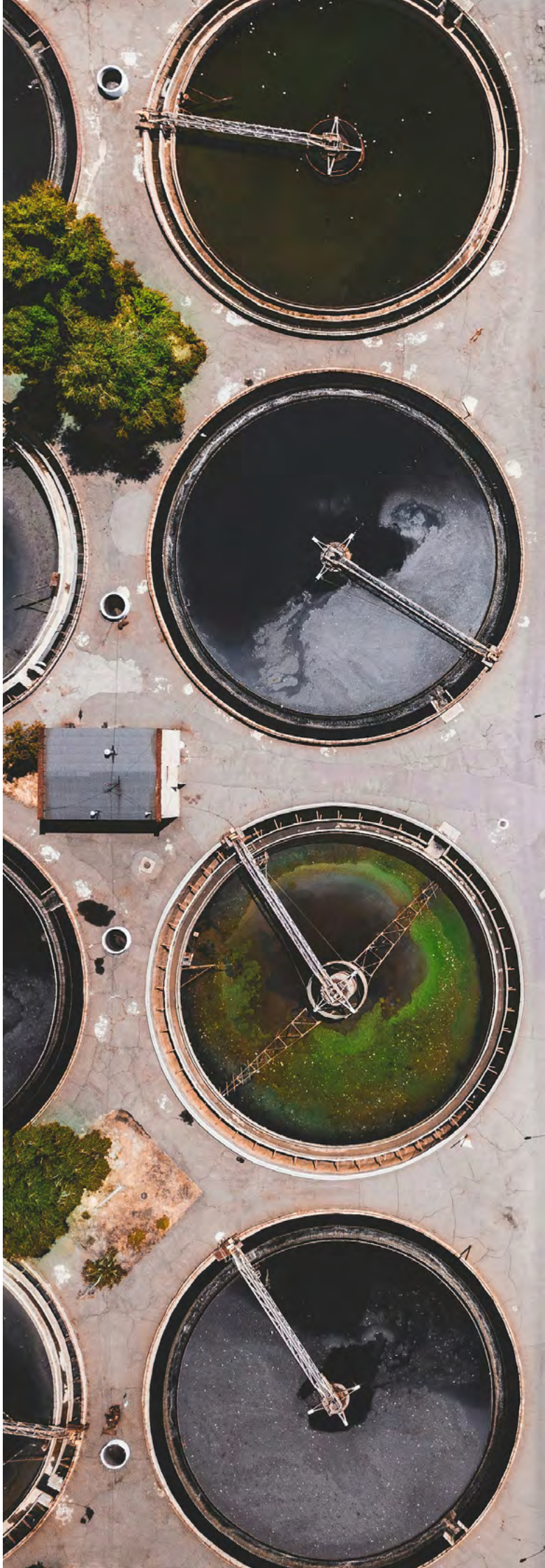
Regional governments may also play a role where treatment facilities serve multiple municipalities, particularly in shared river basins. Effective governance requires adequate financing for operation and maintenance, staff capacity and performance monitoring – without which infrastructure quickly fails.

## BOX 9 WASTEWATER TREATMENT AND REGIONAL SERVICE PROVISION IN PONTE DE LIMA, PORTUGAL

In Ponte de Lima, sustained investment in wastewater treatment and participation in the regional utility Águas do Alto Minho has driven progress on SDG 6.3. Through a multimunicipal system, the municipality has expanded treatment capacity and improved effluent quality in line with national and European standards.

Complementary measures include water quality monitoring in recreational waters and drinking water catchments, as well as the use of alternative water sources for irrigation and environmental awareness programmes. These actions contribute to pollution control and resource efficiency beyond the wastewater system itself.

This case illustrates how regionalized service provision, combined with local monitoring and environmental management, can support progress on SDG 6.3 while strengthening overall water governance.



*Source: Ivan Bandura, Unsplash*

## SDG 6.4: PROGRESS ON WATER-USE EFFICIENCY

**LRGs contribute directly to SDG 6.4 by improving water-use efficiency and supporting sustainable withdrawals at the territorial level.** A key lever is reducing non-revenue water, addressing both physical losses from leakage and commercial losses from metering gaps and billing inefficiencies, thereby improving system efficiency and financial sustainability. An estimated 30% of water is lost as non-revenue water across the world. This situation presents a major opportunity for LRGs to improve operational efficiency and potentially increase revenue by gaining more control over administrative systems and physical losses.

***LRGs are central to water demand management through public awareness campaigns, pricing policies and incentives for wise water reuse.***

Beyond supply-side measures, LRGs play a central role in demand management through public awareness campaigns, pricing policies and incentives that encourage responsible water use. **In water-scarce regions, they also support diversification and resilience of supply, often in coordination with basin or national water authorities**, through measures such as managed aquifer recharge, stormwater capture and reuse – helping stabilize groundwater levels and buffer variability. In this way, local water management contributes to the sustainable use of water resources, supporting the long-term realization of the human rights to water and sanitation. Together, these actions show how urban and regional water management can align operational efficiency with broader basin-level sustainability goals.

*Source: Tyler Rutherford, Unsplash*

## BOX 10 WASTEWATER REUSE, SMART LEAK DETECTION AND SPONGE CITY APPLICATION IN SINGAPORE

Confronted with limited natural freshwater resources and rising industrial demand, Singapore has developed an integrated urban water strategy that combines technological innovation with sponge city principles, using nature-based urban planning to absorb, store and reuse water. . Through its NEWater programme, led by the Public Utilities Board, wastewater undergoes advanced membrane treatment, reverse osmosis and UV disinfection, enabling large-scale reuse for industrial and indirect potable purposes. Advanced oxidation processes further address complex industrial effluents, contributing directly to SDG 6.3 on wastewater treatment and reuse.

At the same time, universal metering, real-time monitoring and smart leak detection have reduced non-revenue water to below 5%, advancing SDG 6.4 on water-use efficiency. Complementing these technological measures, Singapore's ABC (Active, Beautiful, Clean) Waters Programme integrates green roofs, restored waterways, rain gardens and multifunctional flood retention spaces into urban design. By enhancing stormwater capture, improving water quality and restoring aquatic ecosystems, these sponge city interventions contribute to SDG 6.6 while strengthening urban climate resilience. Together, these measures illustrate how dense Asian cities can combine circular water reuse with nature-based infrastructure to secure long-term water sustainability.

## BOX 11 WATER TREATMENT AND REUSE COMBINED WITH WATER DEMAND REDUCTION IN MARRAKECH, MOROCCO

Marrakech offers a compelling example of water demand management and wastewater reuse in a context of increasing climate stress. Facing declining precipitation, rising temperatures and overexploited groundwater resources, the city has adopted a circular approach to water management. Since 2010, 1.5 million cubic metres of treated wastewater from its municipal treatment plant have been reused each year to irrigate golf courses, public parks (covering 414 hectares) and palm groves, reducing pressure on potable water supplies.

The regional utility, Société Régionale Multiservices Marrakech-Safi (SRM-MS), has formalized agreements for reclaimed water use and operates a solar sludge drying facility covering 40,320 square metres, with dried sludge reused in cement and brick manufacturing. In parallel, the regional water authority, Tensift Water Basin Authority (ABHT), and SRM-MS have pursued water demand reduction measures. These included water audits in more than 100 public and private buildings in 2022 and infrastructure upgrades such as drip irrigation and leak detection. Combined with the preservation of traditional khettara groundwater channels, these measures illustrate how LRGs can integrate water reuse, demand management and circular resource recovery to advance climate-resilient implementation of SDG 6.

## BOX 12 DEMAND MANAGEMENT AND WASTEWATER REUSE IN WINDHOEK, NAMIBIA

Windhoek has implemented an integrated water management strategy combining demand reduction, reuse and managed aquifer recharge to address chronic water scarcity. The city has long promoted water conservation through pricing policies, public awareness campaigns and strict demand management, maintaining relatively low per capita consumption. At the same time, treated wastewater and surface water are recharged into aquifers to store water for use during drought periods. Some 20% of the total water supply of the city comes from reclaimed wastewater. Efforts to reduce system losses and improve operational efficiency complement these measures: non-revenue water in Windhoek is less than 20%, exceptionally low by world standards. Together, these approaches illustrate how LRGs can enhance water-use efficiency and resilience under SDG 6.4.

## BOX 13 SMART METERING AND WATER DEMAND REDUCTION IN TORONTO, CANADA

The City of Toronto implemented a citywide smart water meter programme, enabling real-time monitoring of water consumption and early detection of leaks. Following the rollout, per capita water use declined substantially – from approximately 440 litres per person per day in the late 1980s to about 270 litres per day, representing a reduction of nearly 40%. Smart metering allowed the utility to identify losses, improve billing accuracy and promote conservation among consumers. The resulting reduction in water demand improved overall water-use efficiency and enabled the city to defer costly infrastructure expansion. This case illustrates how local government adoption of digital water management technologies contributes directly to SDG 6.4 by improving the productivity and sustainability of water use.

*Source: Lisa Marie Theck, Unsplash*

## SDG 6.5: INTEGRATED WATER RESOURCES MANAGEMENT

**LRGs make an essential contribution to integrated water resources management under SDG 6.5.1 by linking basin-scale planning with territorial realities.** They frequently participate in catchment or river basin committees, providing technical data on local water resources, land use, infrastructure and service demands. LRGs also support water allocation and licensing by integrating these into spatial planning and service provision. Through their oversight of urban growth, agriculture and industry, they help anticipate evolving water demand and pressures on resources.

***LRGs connect basin-level water governance with territorial planning, translating integrated water resources management into practice.***

## BOX 14 COLLABORATIVE WATER GOVERNANCE AND INTEGRATED WATER RESOURCES MANAGEMENT IN LUSAKA, ZAMBIA

In Lusaka, efforts to localize SDG 6 have increasingly emphasized decentralized governance and multistakeholder coordination as key elements of integrated water resources management. Recognizing the importance of local engagement, authorities have promoted participatory decision-making and cooperation across communities, neighbouring jurisdictions and sectoral stakeholders.

These approaches align with broader initiatives such as the Lusaka Water Security Initiative, which brings together public institutions, utilities, private actors and civil society to address groundwater protection, pollution control and water security in a rapidly growing urban context. Given Lusaka's reliance on a vulnerable karst aquifer, coordination across administrative and hydrological boundaries is essential.

By strengthening local governance, fostering partnerships and promoting shared responsibility, Lusaka demonstrates how integrated water resources management can be operationalized through collaborative, decentralized approaches that link urban service delivery with basin-level water management.

**LRGs are important drivers of transboundary water cooperation (SDG 6.5.2) and collaborative projects** on shared water systems, infrastructure and risk management on the ground, particularly where they depend on bulk water supplies from distant sources.

### BOX 15 THE LESOTHO HIGHLANDS WATER PROJECT

The Lesotho Highlands Water Project, the world's largest international water transfer scheme, supplies urban areas around Johannesburg, South Africa. Its development contributed to the establishment of basin-wide governance arrangements, including the Orange-Senqu River Commission.

## SDG 6.6: PROTECTION AND RESTORATION OF WATER-RELATED ECOSYSTEMS

LRGs play a significant role in protecting and restoring water-related ecosystems, as they often hold responsibilities for land use planning, watershed management and environmental regulation. **Through spatial planning decisions, LRGs can prevent encroachment on wetlands, safeguard riparian zones and integrate nature-based solutions into urban and rural development.**

***By embedding ecosystem considerations into territorial planning, LRGs contribute directly to maintaining natural systems that sustain water availability, quality and resilience.***

They also oversee local conservation initiatives, river restoration projects and green infrastructure that enhance water retention, reduce pollution runoff and protect biodiversity. In many regions, **LRGs collaborate with basin organizations, farmers, community groups and environmental agencies to balance ecological protection with economic activities.** By embedding ecosystem considerations into territorial planning and service provision, LRGs contribute directly to maintaining the natural systems that sustain water availability, quality and resilience, including being involved in catchment management outside their territory.

### BOX 16 IMPROVED WATER SERVICES AND ECOSYSTEM PROTECTION IN SAN VICENTE, ECUADOR

The canton of San Vicente (Manabí Province, Ecuador) has pursued both institutional and ecosystem-based approaches to advance SDG 6. To strengthen water supply governance, the canton participates in a regional initiative – supported by national and international partners – to assess and improve water treatment infrastructure and ensure a more reliable potable water supply for local communities.

In parallel, San Vicente legislatively established and expanded the Municipal Conservation and Sustainable Use Area. This area covers tens of thousands of hectares, including forests, mangroves, riparian corridors and watershed recharge zones to protect ecosystems that sustain water resources. These conservation measures enhance hydrological resilience and safeguard biodiversity, while municipal authorities continue to prioritize water access improvements through partnership with external development actors. Together, these efforts contribute to SDG targets 6.1, 6.3, 6.6 and 6.b by improving water governance, protecting water-related ecosystems and building participatory, locally tailored management frameworks.

### BOX 17 URBAN ECOSYSTEM RESTORATION AND WETLAND MANAGEMENT IN ROSARIO, ARGENTINA

Rosario has advanced the protection and restoration of water-related ecosystems through an integrated programme known as the Environmental Triptych. This initiative brings together three major green areas – Los Tres Cerros Municipal Reserve, Bosque de los Constituyentes and Regional Sur Park – covering over 2,000 hectares of wetlands and peri-urban ecosystems linked to the Paraná River Delta.

These areas have been restored and managed to enhance ecological functionality, support biodiversity and improve urban resilience. As wetlands, they play a key role in regulating stormwater runoff, reducing flood risks and filtering pollutants, while also contributing to climate mitigation through carbon sequestration.

## BOX 18 MANAGED AQUIFER RECHARGE AND DESALINATION FOR CLIMATE RESILIENCE IN PERTH, AUSTRALIA

The city of Perth has developed one of the world's most advanced groundwater replenishment schemes based on managed aquifer recharge. Highly treated wastewater is purified using ultrafiltration, reverse osmosis and ultraviolet disinfection before being injected into deep confined aquifers for long-term storage and later recovery. Commissioned in 2017 and expanded in 2022, the scheme now has the capacity to recharge up to 28 million cubic metres of purified recycled water per year, contributing approximately 5% of the city's drinking water supply and helping to restore depleted aquifers.

At the same time, Perth has rapidly diversified its water supply through seawater desalination: two large reverse-osmosis desalination plants now supply around 40–50% of the city's drinking water, providing a rainfall-independent source that significantly reduces vulnerability to drought.

## SDG 6.A: WATER- AND SANITATION-RELATED COOPERATION AND CAPACITY

**Although indicator 6.a.1 focuses on national-level coordination of international support, LRGs often translate this assistance into tangible improvements on the ground.** Many externally financed water and sanitation projects are implemented subnationally, where LRGs are responsible for planning, service delivery and asset management. Their capacity to prepare investment plans, manage infrastructure and ensure inclusive service provision influences how effectively international funds are used. In addition, decentralized cooperation initiatives – including partnerships between municipalities and regional authorities across countries – contribute to technical exchange, institutional strengthening and city-to-city peer learning in the water sector.

UN-Water's *Global Analysis and Assessment of Sanitation and Drinking Water 2025* (GLAAS) report found that despite the USD 9.1 billion in water- and sanitation-related official development assistance disbursed in 2022, financial and technical assistance must be more effectively aligned with national and subnational priorities. Ensuring such alignment requires meaningful involvement of LRGs in planning and investment decisions.

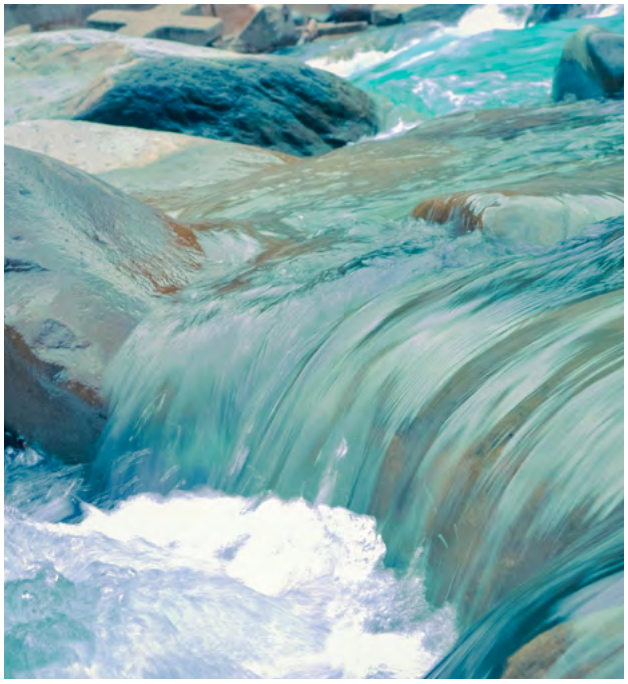
***LRGs convert official development assistance into results on the ground. Their capacity to prepare investment plans, manage infrastructure and ensure inclusive service provision influence the effectiveness of international funds.***

*Source: Gowtham Agma, Unsplash*

## BOX 19 DECENTRALIZED COOPERATION: A WATER OPERATOR PARTNERSHIP IN BAHIR DAR, ETHIOPIA

A practical example of decentralized cooperation under SDG 6.a is provided by the water operators' partnership facilitated by the Global Water Operators' Partnerships Alliance in Bahir Dar, Ethiopia. In a context where low-income households without private connections paid significantly higher prices for water from public standpipes, the partnership focused on strengthening the operational and social performance of the local water utility, Bahir Dar Water and Sewerage Service.

Through peer-to-peer technical assistance and capacity building, the partnership supported developing a pro-poor financing mechanism enabling access to household connections via affordable, interest-free loans. Adopted and funded by the municipality in 2024, this mechanism enabled 100 low-income households – representing over 500 people – to secure improved and more equitable access to water services. The case illustrates how locally anchored, solidarity-based partnerships can translate international cooperation into tangible service delivery outcomes for marginalized populations.



*Source: Leo Rivas, Unsplash*

## BOX 20 DECENTRALIZED COOPERATION: A WATER OPERATOR PARTNERSHIP IN BANJARMASIN, INDONESIA

In the city of Banjarmasin, low-income neighbourhoods located alongside rivers are referred to as floating communities. Collaboration between the city's sanitation and wastewater company, Perumda PALD Banjarmasin; Malaysia's national sewerage company, Indah Water Konsortium; and Waterlinks in Indonesia enabled access to sanitation services in hard-to-reach floating communities.

Tailored desludging solutions such as mobile units, three-wheelers and floating pontoons were introduced to access the narrow pathways to floating houses in Kampung Biru and Kampung Hijau, two low-income areas in Banjarmasin, as pilots. Standard operating procedures and operational tools were co-developed and adopted to ensure effective, scalable practices in other areas. Aside from technical improvements, inclusion of low-income communities in planning and decision-making was just as critical for sustaining services. A citywide public awareness campaign on sanitation and targeted information-sharing in the pilot zones transformed public perceptions on wastewater and faecal sludge. Stakeholder engagements also helped introduce new tariff frameworks and embed sanitation into broader governance.

## SDG 6.B: COMMUNITY PARTICIPATION

Unlike technical service indicators (e.g. 6.1.1 or 6.3.1), which draw on household surveys and utility statistics, no routinely collected global dataset systematically quantifies indicator 6.b.1 for most countries. Both the UN-Water SDG 6 synthesis reports and the annual GLAAS analyses highlight that **governance indicators (including 6.b.1) suffer from patchy coverage, with many countries unable to provide comparable or complete data**. This gap helps explain weak monitoring of SDG 6's governance and enabling environment dimensions.

***Indicator 6.b.1 is the only SDG 6 indicator that explicitly refers to local participation, highlighting LRGs' central role.***

As the only SDG 6 indicator that explicitly refers to local participation, 6.b.1 highlights LRGs' central governance role. **LRGs facilitate community engagement, support local water committees and integrate stakeholder input into planning and service management.** They also supply key information on how participatory mechanisms function in practice, yet weak data flows and coordination between local and national reporting systems often limit their visibility in official SDG reporting.

*Source: Thomas Kinto, Unsplash*

### BOX 21 INSTITUTIONALIZING PARTICIPATION: THE COMMUNITY LAND TRUST IN SAN JUAN, PUERTO RICO

A notable example of SDG 6.b in practice is the Community Land Trust established along the Caño Martín Peña in San Juan, Puerto Rico. There, residents of informal settlements mobilized to address severe water pollution, flooding and lack of sanitation infrastructure. Through a sustained participatory process, residents worked with public authorities to co-develop a comprehensive land use and environmental rehabilitation plan, formalized through national legislation in 2004. Central to the model is collective land ownership and governance, enabling residents to directly shape decisions on housing, infrastructure and canal restoration while safeguarding against displacement. Community representation structures, notably the Grupo de las Ocho Comunidades (G-8), ensure ongoing citizen oversight, accountability and inclusion in implementation. The case demonstrates how institutionalized participation can empower local communities to drive equitable water and sanitation improvements while strengthening tenure security and environmental management.

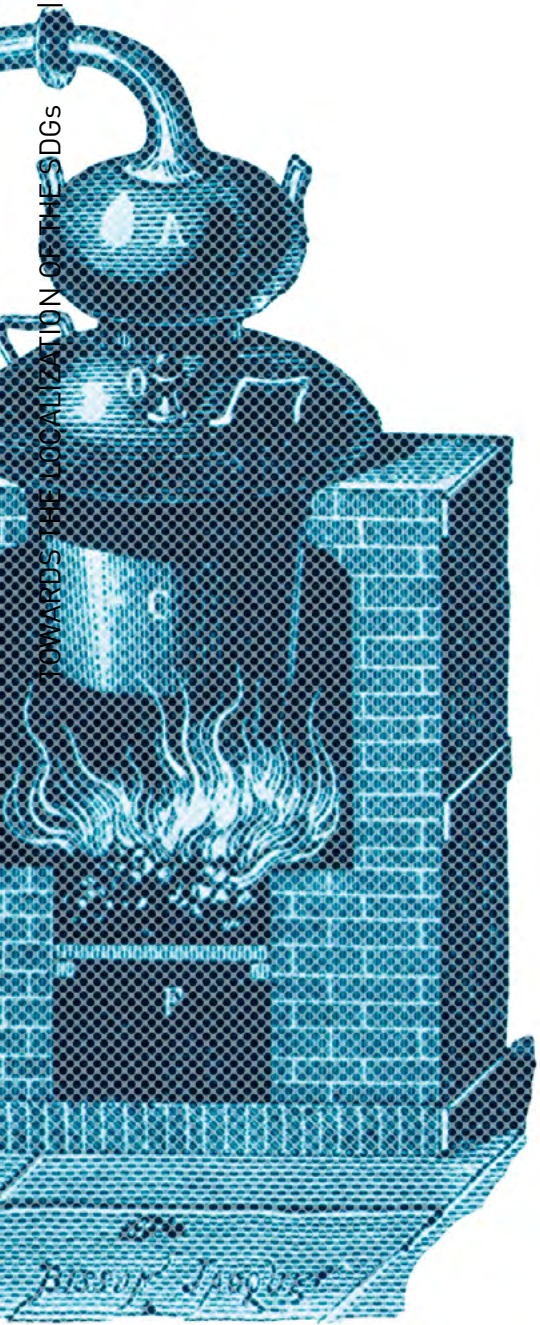
### BOX 22 A COMMUNITY-LED PATH TO FRESHWATER CARE IN OTAGO, NEW ZEALAND

A further illustration of SDG 6.b is provided by the Waiwhakaata (Lake Hayes) restoration initiative in Otago, where community participation has been central to freshwater governance. In response to longstanding water quality degradation, the local community – led by the Friends of Lake Hayes Society – played a decisive role in shaping the restoration agenda, commissioning scientific assessments and engaging directly with regional authorities.

Through a structured "listening journey," the Otago Regional Council rebuilt trust and co-developed, with community actors and mana whenua (Māori customary authorities), an updated lake management strategy adopted in 2025. Governance arrangements explicitly embed shared decision-making, with responsibilities distributed across public authorities, community groups and Indigenous representatives. Ongoing public engagement, transparent data sharing and community-led monitoring ensure accountability and sustained involvement. The case highlights how participatory governance, grounded in local stewardship and knowledge co-production, can drive long-term, inclusive water quality restoration.

# 6. Challenges faced by LRGs

In progressing towards the realization of SDG 6, LRGs face considerable challenges also linked to the SDGs' overall achievement. Many of these reflect structural gaps between delegated responsibilities and the institutional, fiscal and regulatory conditions required for effective implementation.



## UNDERFINANCING AND LIMITED REVENUE-RAISING CAPACITY

Different estimates exist regarding the total investment required to achieve SDG 6. In 2020, the World Resources Institute put the total figure at USD 1.04 trillion, while a World Bank report estimated USD 1.37 trillion. By 2023, the global community widely recognized that existing investments were insufficient and that a sixfold increase in investment was needed to achieve this objective. **Beyond the aggregate investment gap, a critical question concerns how financial flows are structured and accessed subnationally.**

LRGs play a central role in financing water and sanitation services, yet their capacity to mobilize stable revenue is often constrained. Tariffs remain the primary source of operational financing, but both physical losses (e.g. leakage) and commercial losses (e.g. metering inaccuracies and non-payment) reduce the revenue base. In many cases, revenues are also diverted to subsidize other services, underscoring the need to ringfence funds for reinvestment in operation, maintenance and network expansion. While infrastructure rehabilitation can improve cost recovery, utilities often lack the upfront capital required. At the same time, social tariffs and affordability policies – essential for ensuring equitable access – can limit cost recovery. Intergovernmental transfers and public subsidies therefore play a critical role, but these are frequently unpredictable or insufficient, constraining access to external financing.

Strengthening the financial sustainability and fiscal autonomy of local water services is therefore essential to achieving SDG 6.

## INACCESSIBILITY OF CLIMATE FINANCE

**LRGs face significant structural barriers in accessing climate finance for water and sanitation resilience, despite being at the front line of climate impacts.** First, most global climate funds, including the Green Climate Fund, operate through nationally accredited entities, limiting direct subnational access. Second, preparing climate-resilient water projects requires complex technical studies, fiduciary safeguards, and environmental and social assessments that often exceed municipal capacity.

Third, climate finance mechanisms typically require co-financing or sovereign guarantees, which many LRGs cannot provide. Fourth, funding instruments often favour large-scale national programmes, with smaller municipal projects unable to reach minimum thresholds. While some metropolitan governments access climate finance through national partnerships, many LRGs remain effectively excluded.

Similar to the challenge above, strengthening financial sustainability and fiscal autonomy of local water services is crucial for advancing climate-resilient SDG 6 implementation.

## FRAGMENTATION OF MANDATES AND INSUFFICIENT DECENTRALIZATION

LRGs often face fragmented institutional mandates and incomplete decentralization in the water and sanitation sector. Responsibilities for water resources management, drinking water supply, wastewater treatment, environmental regulation and climate adaptation are frequently distributed across multiple ministries and agencies, creating overlapping directives, inconsistent regulatory requirements and complex reporting requirements.

At the same time, decentralization reforms in many countries have transferred operational responsibilities for service provision to LRGs without fully devolving decision-making authority, fiscal autonomy or long-term planning powers. **This situation results in a misalignment between delegated responsibilities and available resources, creating unfunded or underfunded mandates, limiting LRGs' capacity to implement integrated and climate-resilient water strategies.**

Clarifying mandates, strengthening vertical coordination and aligning financial and regulatory frameworks with local responsibilities can accelerate progress towards SDG 6, consistent with the principles of subsidiarity and effective multilevel governance. Failure to address these misalignments risks slowing localization despite strong political commitments.

## WEAK INTEGRATION OF LRGs IN SDG 6 MONITORING AND REPORTING

Central ministries typically lead national SDG 6 reporting, with data consolidated through national focal points and custodian agencies. **In many cases, LRGs are consulted informally or ad hoc but not systematically integrated into decision-making or reporting frameworks. Similarly, they often lack formal recognition as key implementation partners in SDG 6 territorial delivery.** As a result, subnational data, practical implementation challenges and local innovation may be insufficiently reflected in national SDG 6 assessments and Voluntary National Reviews.

Strengthening LRGs' structured participation in national coordination platforms and formalizing their role in data collection and reporting – including through Voluntary Local Reviews, Voluntary Subnational Reviews and multilevel SDG coordination platforms – would enhance the accuracy, ownership and effectiveness of SDG 6 implementation.

## DATA GAPS AND LOCAL SDG 6 MONITORING

Progress on SDG 6 is constrained not only by financing and governance gaps but also by data limitations and insufficient local monitoring capacity. While data on access to drinking water and sanitation (targets 6.1 and 6.2) are relatively well developed through household surveys and national monitoring systems, information on wastewater treatment (6.3), water-use efficiency (6.4), integrated water resources management (6.5), ecosystem protection (6.6), and the means of implementation targets (6.a and 6.b) remains uneven and often incomplete.

**LRGs often lack the technical and financial capacity to monitor all 11 SDG 6 indicators, particularly those requiring complex environmental or financial reporting.** At the same time, they often possess detailed operational data – on service coverage, non-revenue water, infrastructure performance and local participation – that are generated through service delivery and local management systems but are not consistently integrated into national statistical or SDG reporting frameworks.

Strengthening local monitoring systems and embedding subnational data more formally into national reporting processes – including by improving interoperability between local operational datasets and national SDG monitoring systems – would improve the accuracy, ownership and policy relevance of SDG 6 assessments.

## RAPID POPULATION GROWTH IN SECONDARY CITIES AND INFORMAL SETTLEMENTS

Rapid population growth, particularly in secondary cities and expanding informal settlements, presents a structural challenge to achieving SDG 6 at the local level. Secondary cities in particular often face more

limited financial, technical and institutional capacity than large metropolitan areas, despite experiencing some of the fastest rates of urban population growth. **In many regions, urban populations are growing faster than LRGs' capacity to plan, finance and implement water and sanitation infrastructure.** As a result, service provision must continuously expand not only to close existing access gaps but also to accommodate new households entering the urban fabric.

Informal and peri-urban settlements often develop without prior infrastructure planning, increasing the cost and complexity of retrofitting water supply and sanitation systems. When demographic growth outpaces infrastructure rollout, gains in service coverage can be offset – making progress towards universal access appear slower despite substantial investment.

Addressing this challenge requires forward-looking urban planning, anticipatory infrastructure investment and stronger coordination between land use planning and water service delivery.

## A MOVING RISK PROFILE: CLIMATE CHANGE CAN REVERSE SERVICE GAINS

**Climate change poses a compounding challenge to LRGs in achieving SDG 6: they are both on the front line of climate impacts and responsible for implementing many adaptation measures on the ground.** Increasingly frequent and intense floods, droughts and extreme weather events can rapidly reverse service delivery gains by damaging water and sanitation infrastructure, contaminating water sources and disrupting hygiene systems. Flooding can overwhelm wastewater treatment plants and latrines, leading to disease outbreaks, while prolonged droughts strain water supply systems and reduce source reliability.

These shocks place significant financial and administrative burdens on LRGs, diverting resources from planned expansion to emergency response and reconstruction. At the same time, integrating climate resilience into WASH infrastructure – through flood-proof design, diversified water sources or upgraded treatment systems – adds technical complexity and cost to already constrained investment programmes. Nature-based solutions, watershed protection and ecosystem restoration can also play an important role in strengthening the climate resilience of territorial water systems. Without systematic support for local climate adaptation, progress towards universal and safely managed services under SDG 6 remains vulnerable to reversal.

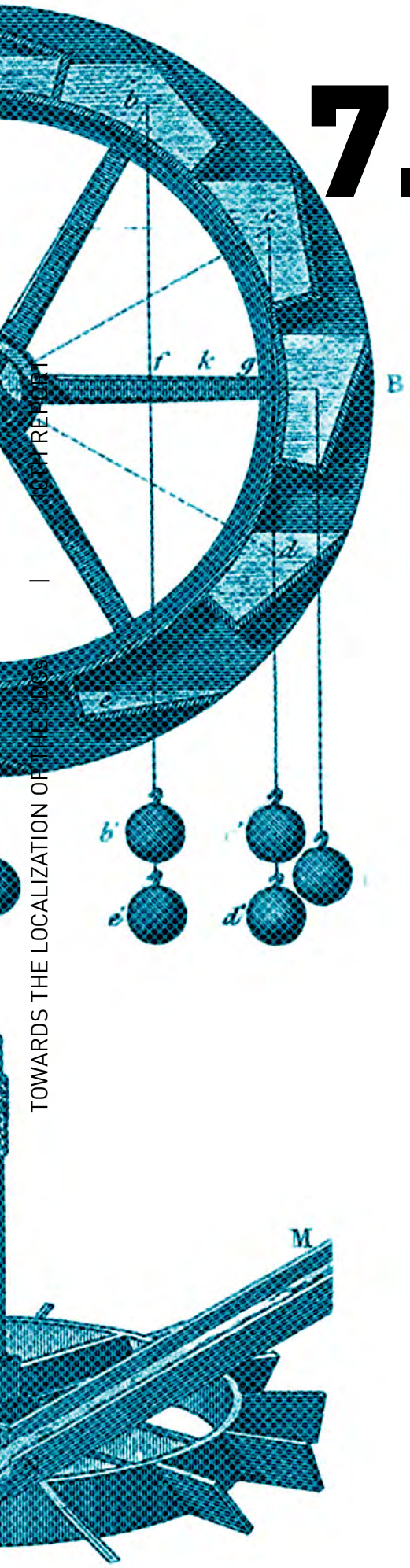
## EFFECTIVE GOVERNANCE OF PUBLIC–PRIVATE PARTNERSHIPS AND UNEVEN CONTRACTUAL POWER

Public–private partnerships are often promoted as a mechanism to mobilize private finance and technical expertise for water and sanitation infrastructure, particularly amid public resource constraints. However, **they are not a universal solution. Their effectiveness depends strongly on the regulatory, institutional and financial context in which they operate**. LRGs frequently face governance challenges in structuring, negotiating and regulating such partnerships. Effective public–private partnerships require detailed contractual provisions on service standards, tariff structures, risk allocation, investment obligations and performance monitoring.

When large international operators are involved, LRGs may face asymmetries in technical expertise, legal capacity and negotiating power, potentially leading to contracts that do not adequately safeguard public interests. These asymmetries can be particularly pronounced in smaller municipalities or secondary cities with limited access to specialized legal and financial expertise. Limited regulatory and oversight capacity can constrain authorities' ability to monitor compliance, enforce performance standards or renegotiate terms when circumstances change.

Strengthening local regulatory frameworks and contract management capacity proves critical for ensuring such arrangements contribute effectively and equitably to achieving SDG 6, including through transparent procurement processes, balanced risk allocation and strong public oversight mechanisms.

*Source: Sommai, Envato*




# 7. Conclusions and policy recommendations

To meet all the SDG 6 targets, the global community must significantly intensify efforts. Accelerating progress will depend not only on making sectoral reforms but also on strengthening the institutional and financial conditions that enable localization, including more effective multilevel governance arrangements and stronger alignment between national commitments and local implementation capacities.

## ACCELERATE SDG 6 IMPLEMENTATION THROUGH STRONGER SUBNATIONAL CAPACITY

The need for increased action led to the launch of the SDG 6 global acceleration framework in 2020 and laid the basis for the 2026 UN Water Conference, which aims to accelerate SDG 6. Often, where progress on SDG 6 is happening, it is happening locally; where progress is stalling, local constraints frequently explain part of the delays.

Local examples – whether smart metering in Toronto, managed aquifer recharge in Perth, inclusive sanitation in Dakar or water demand reduction in Marrakech – show that **SDG 6 implementation picks up speed when LRGs translate national commitments into operational systems, adapting global goals to territorial realities and service delivery contexts**.

By contrast, subnational constraints can stall progress on SDG 6; these include weak revenue bases, fragmented mandates, insufficient decentralization, limited access to climate finance, and inadequate monitoring capacity, as well as structural gaps between the responsibilities assigned to LRGs and the institutional, financial and regulatory frameworks that enable them to act effectively.

Five identified accelerators – financing, data and information, capacity development, innovation and governance – should largely be directed at regional and local implementation. Doing so in practice requires moving beyond sectoral approaches and clearly recognizing the territorial dimension of water governance and service delivery. **In other words, acceleration strategies must explicitly prioritize subnational implementation capacity.**

Financing windows, climate funds and technical cooperation programmes should be designed to reach municipalities more directly, by either simplifying access or strengthening national–local intermediation mechanisms, while ensuring national governments remain central partners in enabling coherent multilevel implementation frameworks. Without this recalibration, global commitments risk remaining structurally disconnected from the level at which implementation occurs. Each of these accelerators operates most decisively at local and regional levels, where policies, infrastructure investment and service delivery converge.

## PLACE LRGs AT THE HEART OF THE POST-2030 FRAMEWORK ON WATER

Despite delays in implementing SDG 6, the very existence of this self-standing global goal on water in the 2030 Agenda reflects UN Member States' growing recognition that demands on water resources are intensifying and both pollution and climate change are increasing stress on freshwater systems. Having SDG 6 as a self-standing goal sends an important message that water and sanitation are central to human development, environmental integrity and economic activity.

Looking ahead, the upcoming UN Water Conference in December 2026 will devote an interactive dialogue to the topic of water in multilateral processes. As the international community begins to reflect on the post-2030 development agenda, it needs to rethink how global water goals are framed, measured and governed.

The institutional realities of service delivery warrant more explicit recognition within global water and sanitation frameworks. In many countries, LRGs hold full or partial responsibility for providing, operating and maintaining water and sanitation services. **Multilateral processes need to recognize the mandate for SDG 6 implementation is largely subnational.**

Discussions on the future global water framework should place LRGs at the heart of the advisory process, while giving them an explicit operational mandate to implement global goals within a strengthened multilevel governance structure.

Doing so entails:

- Strengthened formal roles for LRGs in multilateral water dialogues
- Enhanced representation within UN-Water processes and post-2030 negotiations
- Financing instruments that recognize LRGs' mandates and improve subnational access to investment and climate finance
- Monitoring systems that embed subnational data and recognize local reporting initiatives such as Voluntary Local Reviews and Voluntary Subnational Reviews
- Capacity-building strategies aligned with local competences and support for long-term institutional strengthening at the territorial level

## SUPPORT LRGs TO LEAVE NO ONE BEHIND

LRGs play a decisive role in translating the 2030 Agenda's ambition to "leave no one behind" into practice at the territorial level, where inequalities in access to services are most visible and can be most directly addressed. **Reaching marginalized populations lies at the heart of realizing the human rights to water and sanitation.** Urban–rural disparities, intra-urban inequalities, conditions in informal settlements and marginalization of certain groups can be best addressed locally.

As service authorities, LRGs are often responsible for extending water and sanitation services across entire supply areas, including low-income and informal neighbourhoods. In these areas, cost recovery can be challenging, but public health imperatives are strongest. Many LRGs have therefore adopted a range of tools such as differentiated tariffs, cross-subsidies and other pro-poor financing mechanisms to balance financial sustainability with universal access. They use locally adapted service delivery models to operationalize social inclusion objectives.

In sanitation, approaches such as citywide inclusive sanitation enable LRGs to combine diverse service models – networked and non-networked, public and private – within a single territorial framework, reflecting varied settlement patterns and income levels. Inequality is a multifaceted problem, determined by differences in service provision between urban and rural areas, within urban areas and across different ethnic and cultural groups in society, among other factors. Such regional and local problems often have regional and local solutions.

**Multilateral frameworks must therefore move beyond aggregate national coverage figures and recognize subnational inequalities.** Doing so requires stronger territorial diagnostic and monitoring systems capable of identifying inequalities within and between territories. Targeting fragility hotspots – such as the Sahel, Horn of Africa and parts of the Middle East – requires coordination that links basin-level governance with municipal service resilience. In such contexts, strengthening local institutional capacity and protecting essential water services can contribute directly to social stability and conflict prevention. Protecting water infrastructure is not only a service function but a stabilizing public good.

## PUT THE PRINCIPLES OF PARTICIPATION AND SUBSIDIARITY INTO PRACTICE FOR WATER GOVERNANCE

LRGs are the building blocks of water governance. They operate within subcatchments, regulating services, land use, settlements and infrastructure, while experiencing water risks such as water scarcity, floods and pollution directly. **Achieving SDG 6, including its targets related to WASH, catchment management, disaster risk reduction and resilience, depends fundamentally on LRGs' capacity, resources and accountability within nationally defined legal and institutional arrangements.** This is in line with the second Dublin principle on participation – which also clarifies that decisions need to be taken at the lowest appropriate level (the principle of subsidiarity), with full public consultation and users' involvement.

LRGs are essential for clarifying different water needs across urban, peri-urban, rural and agricultural zones and mediating between households, farmers, utilities, industries and ecosystems. In this sense, they play a central role in translating integrated water governance principles into operational decisions at the territorial level. LRGs are foundational to water governance within coherent multilevel governance systems linking basin management, national regulation and territorial service provision. Likewise, through intermunicipal collaboration, basin-level coordination and decentralized cooperation initiatives, LRGs contribute to building shared responses to water scarcity, climate risks and transboundary water challenges.

## IMPROVE AVAILABILITY OF DISAGGREGATED DATA TO ACCURATELY ASSESS SDG 6 PROGRESS

When the 2030 Agenda was agreed, many SDG 6 targets and indicators were relatively new. Building monitoring and reporting systems requires considerable investment in human and technical resources. Measuring progress on some indicators has been delayed by the dual challenge of limited reporting and data inconsistencies.

For the one SDG 6 indicator that explicitly mentions the local level (6.b.1), available data suggest that measurable values for this indicator are limited. Global estimates are not yet robust because many countries have not reported comprehensive data across LRGs. However, **targeting inequalities depends strongly on the availability of disaggregated data at national and subnational levels**.

A persistent tension exists between where SDG 6 data is generated and where it is consolidated. LRGs collect granular operational data – on service coverage, wastewater treatment efficiency, non-revenue water, participation mechanisms and infrastructure performance – yet national reporting frameworks often do not systematically integrate these data streams.

**Strengthening local monitoring systems, including through capacity development and technical support, and recognizing and embedding subnational data more formally into national reporting processes, will enhance the accuracy, ownership and policy relevance of SDG 6 assessments.**

As discussions on the post-2030 water framework advance, **multilateral actors should consider embedding structured local reporting mechanisms within global monitoring architecture**. Strengthening the interface between water sector reviews, Voluntary National Reviews, Voluntary Subnational Reviews, Voluntary Local Reviews and SDG reporting that includes territorial realities could enhance accuracy, ownership and accountability.

## FINANCE SDG 6 AND CLIMATE RESILIENCE AT THE LOCAL LEVEL

Progress on SDG 6 depends not only on the availability of national or international finance but also on financial architectures that recognize the territorial nature of water service delivery and investment planning.

As the authorities responsible for water and sanitation infrastructure, LRGs are often the primary entities that plan investments, access capital and manage long-term operational and financial risks. This work includes blending user revenues with public transfers, grants and concessional finance, as well as engaging with development banks and private operators when appropriate, to fund infrastructure and long-term operations, while balancing financial sustainability with affordability and equity objectives.

LRGs' capacity to prepare investment plans, manage infrastructure and ensure inclusive service delivery influences how effectively international funds are used. In many contexts, these financial arrangements require strong coordination between national fiscal frameworks and local investment planning. Likewise, **strengthening LRGs' direct and predictable access to climate and development finance is essential to translating global commitments into territorially anchored outcomes**. Doing so may include simplified access modalities, strengthened

national–local financing channels and dedicated facilities supporting subnational investment pipelines.

Water is increasingly the public face of climate change, and LRGs are often the first responders to climate-related water risks. Drought, flood, salinization and contamination are not abstract risks; they are operational challenges for municipal utilities and local administrations. As illustrated by Cape Town's drought response, Bor's flood-resilient infrastructure and Perth's diversification through desalination and groundwater replenishment, LRGs are managing an increasingly volatile hydrological cycle. Yet climate finance remains largely inaccessible to them due to accreditation barriers, fiduciary requirements, minimum scale thresholds and sovereign guarantee constraints.

For the multilateral system, **the lesson is not merely to increase climate finance for water but to restructure access pathways to support local adaptation projects – often smaller in scale but high in impact**. Strengthening intermediary mechanisms capable of aggregating local projects and facilitating access to international finance can help bridge this gap. SDG 6 cannot be achieved without embedding climate resilience into water and sanitation infrastructure. This integration must be supported institutionally and financially at the subnational level.

*Source: Gary Mailich, Envato*

# N. NOTES

1 However, since the 1930s, experts at the League of Nations Health Organization, a predecessor of the World Health Organization, collected data on drinking water and sanitation under the organization's rural health programme. See: *Bartram, J. et al. (2014): Global Monitoring of Water Supply and Sanitation: History, Methods and Future Challenges*. In: Int. J. Environ. Res. Public Health 2014, 11, 8137-8165.

2 It states, "All peoples, whatever their stage of development and their social and economic conditions, have the right to have access to drinking water in quantities and of a quality equal to their basic needs." In: United Nations (1977). Mar del Plata Action Plan, in *Report of the United Nations Water Conference, Mar del Plata, 14–25 March 1977*. New York: United Nations.

3 See, among others, UCLG (2013), *UCLG Policy Paper on Development Cooperation and Local Government* and OECD (2016), *Water Governance in Cities (chapter 5: finance)*.

4 See GTF and UCLG (2025), *Towards the localization of the SDGs. LRGs Report to the 2025 HLPF*; OECD (2018), *Implementing the OECD Principles on Water Governance. Indicator Framework and Evolving Practices*; and ICLEI (2015), *Implementing the SDGs in cities. ICLEI briefing sheet - Urban Issues, No. 05*.

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