

A New Blue Revolution for Inclusion, Equality, and Diversity

Innovation for Inclusive Water and
Sanitation in Latin America and the
Caribbean

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A NEW BLUE

WE ARE REVOLUTION

FOR INCLUSION, EQUALITY,
AND DIVERSITY

Authors:
Nikola Neftenov, Dr. Miriam Stankovich

A NEW BLUE

REVOLUTION



FOR INCLUSION, EQUALITY,
AND DIVERSITY

INNOVATION FOR INCLUSIVE WATER
AND SANITATION

IN LATIN AMERICA AND

THE CARIBBEAN

Authors:
Nikola Neftenov, Dr. Miriam Stankovich



WITH THE COLLABORATION OF

SOURCE OF INNOVATION

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Executive Summary

While the globe reels from numerous crises following the COVID-19 pandemic, a silent yet extremely persistent crisis continues to deepen in water and sanitation sectors worldwide. As one of the most pressing challenges of our generation, access to water and sanitation services has been codified as a fundamental human right, translated into a call to action by the United Nations' Sustainable Development Goals (SDG). In order to ensure the availability and sustainable management of water and sanitation for all (SDG6), governments across Latin America and the Caribbean (LAC) must find innovative solutions to provide accessible, reliable, and affordable water and sanitation services. While the region has made good progress, adequate access to water and sanitation continues to plague traditionally underserved populations in remote and low-income areas.

Access to clean water, sanitation, and hygiene (WASH) is crucial for poverty reduction, equality, and health. As a result, this paper has been designed to make a compelling case for a blue revolution for inclusion, equality, and diversity spurred by the uptake of innovative solutions and practices that can be critical in helping stakeholders in LAC strengthen inclusive and sustainable practices in the provision of water and sanitation sector services.

The paper's first chapter provides an overview of the global population's issues in accessing WASH services. The chapter has been divided into two sections, i.e.:

- The section titled Abundance and scarcity: WASH in Latin America and the Caribbean provides the reader with an overview of freshwater access and access to quality sanitation across the region. Furthermore, it introduces a call for action to better track LAC's progress toward achieving water and sanitation for all in the Decade of Action by including highly vulnerable groups in datasets.
- The following section – The human right to water and sanitation – introduces readers to the globe's decades' long mission of providing access to safe, affordable, and dependable drinking water and sanitation for all through codification of the rights to water and sanitation as a basic human right. It further builds on this momentous decision and aligns it with SDG6.

The second chapter highlights the obstacles in providing access to clean water and sanitation services for all, especially vulnerable and underprivileged groups. This chapter provides readers with deep dives into five different population groups relevant to this paper, i.e., women and girls, LGBTQ+ and gender non-conforming people, people with disabilities, Indigenous people, and Afro-descendants. These vulnerable, marginalized, and underprivileged groups face unequal, unsafe, and inadequate access to WASH services in varying degrees, and interact with the WASH sector in different ways. Therefore, this paper's main objective is to emphasize the need for the development of new and better approaches to addressing the needs of vulnerable population groups.

The subsequent third chapter offers a snapshot of the inclusive practices employed in the WASH sector across countries in the LAC region. Despite countries in the region having relatively high access to improved water services for urban areas, the same cannot be said for water access in rural areas. Additionally, access to improved sanitation in LAC is significantly lower. As a result, WASH initiatives that address cultural, gender, and sustainability concerns and foster inclusiveness for equitable WASH access have begun to develop.

The paper's fourth chapter highlights the need to address current water and sanitation problems faced by marginalized and underprivileged groups through methods that go beyond the conventional approaches taken thus far. Technology in the SDG era has frequently been emphasized and has played a crucial role in addressing some of the WASH-related challenges. However, addressing the needs of the underserved, underprivileged, and marginalized groups who live in extreme poverty, crowded slums, and remote rural locations requires a more nuanced, creative approach to innovation. Therefore, this chapter provides readers with real-world use cases of innovative solutions, approaches, technologies, and practices being deployed across the globe to address the WASH needs of each vulnerable group.

The final chapter of the paper is a call to action for inclusion, equality, and diversity, as they are essential components of well-being, upward economic movement, and equal opportunities for the underserved, underprivileged, vulnerable, and marginalized groups in LAC.

Abbreviations

2030 Agenda	2030 Agenda for Sustainable Development
CBS	Container-Based Sanitation
CBT	Container-Based Toilet
COVID-19	Coronavirus
CRPD	Convention on the Rights of Persons with Disabilities
CSO	Civil Society Organization
DINEPA	National Water Directorate
ECLAC	Economic Commission for Latin America and the Caribbean
GLAAS	Global Annual Assessment of Sanitation and Drinking Water
ICF	International Classification of Function, Disability and Health
IDB	Inter-American Development Bank
JMP	Joint Monitoring Program
LAC	Latin America and the Caribbean
LGBTQ+	Lesbian, Gay, Bisexual, Transgender, and Queer
MHH	Menstrual Health and Hygiene
MHM	Menstrual Health Management
NGO	Non-Governmental Organization

SDG	Sustainable Development Goal
SST	Solar Septic Tank
SWE	Small Water Enterprise
TWT	Tiger Worm Toilets
UN	United Nations
UN OHCHR	United Nation Office of the High Commissioner for Human Rights
UNECE	United Nations Economic Commission for Europe
UNFPA	United Nations Population Fund
UNICEF	United Nations Children’s Fund
UTI	Urinary Tract Infection
WASH	Water, Sanitation, and Hygiene
WHO	World Health Organization
WWT	Wastewater Treatment

1



**The call for
inclusion,
equality,
and diversity
in WASH**

1. The call for inclusion, equality, and diversity in WASH

“Currently, 2.2 billion people worldwide still lack safely managed drinking water, and 4.2 billion lack access to safely managed sanitation services.”

Water, sanitation, and hygiene (WASH) services are still out of reach for a significant portion of the world’s population due to a lack of infrastructure or, in some cases, poorly maintained infrastructure. Despite water covering 71% of the Earth’s surface, access to this precious resource is one of humanity’s most pressing challenges of the 21st century. Currently, 2.2 billion people worldwide still lack safely managed drinking water, and 4.2 billion lack access to safely managed sanitation services (Fisher Ingraham et al., 2021). This means access to water and sanitation services is a precious commodity not extended to one in four people who lack safely managed drinking water and nearly half of the world’s population that lacks safely managed sanitation (Fisher Ingraham et al., 2021).

The United Nations (UN) has recognized access to water and sanitary facilities as fundamental human rights, highlighting its importance in the daily lives of all humankind. More than two billion people worldwide suffer from water stress, while 30% of the world’s population lacks safe, easily accessible water at home (Advocates for International Development) (A4ID, 2022). The well-being, dignity, and prosperity of billions of people globally are severely harmed by a lack of access to safe, ample, affordable and clean WASH services. Adverse effects of poor water quality and lack of sanitation infrastructure inflict deep wounds on various aspects of society, not only threatening the environment but affecting public health and safety significantly.

“Many nations struggle to provide these essential requirements, putting people at risk of contracting diseases from insufficient access to WASH services”

The importance of safe, reliable, affordable, and adequate water and sanitation services was underlined during the COVID-19 pandemic. Global access to clean water, sufficient sanitation, and hygiene education can lower illness and disease-related deaths, improving health, reducing poverty, and fostering socioeconomic growth. However, many nations struggle to provide these essential requirements, putting people at risk of contracting diseases from insufficient access to WASH services. Timely and sufficient water availability of suitable quality is crucial in preventing and protecting human health during infectious disease outbreaks. Therefore, access to water can be a powerful conduit to tackle the negative impacts the COVID-19 crisis has had on society, including poverty, economic downturn, food and energy insecurity, and political instability.

1.1 Abundance and scarcity: WASH in Latin America and the Caribbean

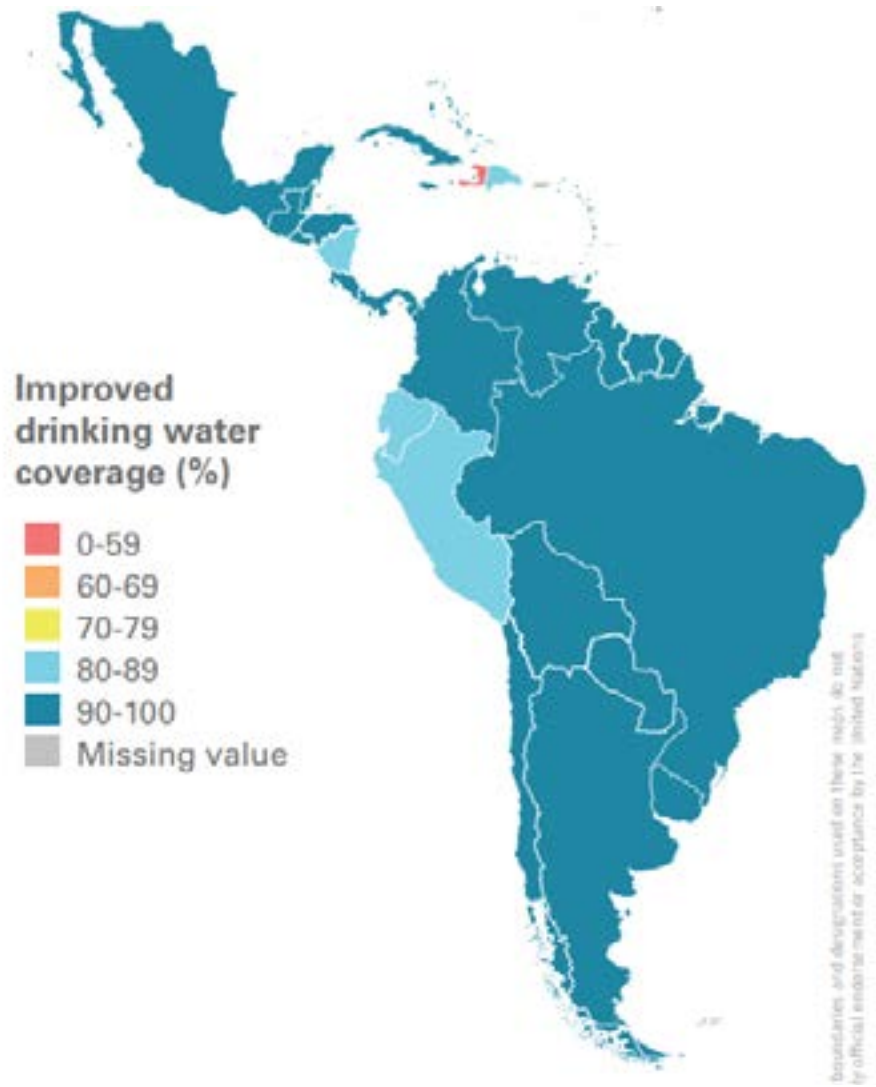
“Despite having the highest freshwater resources per capita, freshwater can be infinitely scarce and inaccessible, as one-third of the people in LAC lack sustained access to safe potable water.”

Freshwater in LAC can be immensely abundant as about 30% of the world’s freshwaters flow through the Amazon, the Parana-Plata, and the Orinoco watershed (Sempris, n.d.). However, despite having the highest freshwater resources per capita, freshwater can be infinitely scarce and inaccessible, as one-third of the people in LAC lack sustained access to safe potable water



(ibid). Prior to a few years ago, inequitable natural distribution, inadequate funding for water infrastructure, substandard freshwater governance, or a mix of the three have primarily been attributed as the causes of freshwater problems. Since 2015, 95% of the population in LAC has used an improved drinking water source, yet 34 million people still use unimproved drinking water sources (Figure 1) (WHO/UNICEF JMP, 2016).

Figure 1. Improved drinking water coverage (%) in LAC



Source: WHO/UNICEF JMP (2016).

According to the Economic Commission for Latin America and the Caribbean (ECLAC), the region is lagging behind in providing access to quality sanitation, as seven out of ten people in LAC have no access to safely managed sanitation (ECLAC, 2021). While there have been improvements across LAC in the provision of sanitation services, open defecation is still practiced by 18 million people (Figure 2) (ECLAC, 2021). Improved urban sanitation coverage in LAC increased to almost 90% between 1990 and 2015. However, improved rural sanitation coverage peaked at 64% in 2015, from 36% in 1990 (WHO/UNICEF JMP, 2016).

Figure 2. Improved sanitation coverage (%) in LAC



Source: WHO/UNICEF JMP (2016).

Tracking LAC's progress toward achieving water and sanitation for all in the Decade of Action¹ by monitoring and evaluating the sector's performance is crucial to ensuring the solutions and strategies implemented are viable and attainable. Standardized measures that can help track all types of access are needed to assess collective progress toward achieving SDG 6 (Gómez Vidal et al., 2021). However, the region suffers from a lack of adequate data by excluding highly vulnerable groups, thus posing a threat to sustainable and equitable development in LAC. Therefore, access to clean WASH is crucial for poverty reduction, ensuring the human right to water and sanitation, achieving gender equality, and empowering the most marginalized, disadvantaged, and underprivileged groups of society in LAC.

1.2 The human right to water and sanitation

“Many calls to action to ensure equal access to water and sanitation services have reverberated across the globe for decades.”

Safeguarding global health and ensuring prosperity for all cannot be achieved without concerted and targeted efforts to provide universal WASH services. As a result, many calls to action to ensure equal access to water and sanitation services have reverberated across the globe for decades. These calls to action to provide access to safe, affordable, and dependable drinking water and sanitation services began with the adoption of the United Nations Economic Commission for Europe's (UNECE) Protocol on Water and Health in 1999 (UNECE, 1999). **The Protocol was the first transnational agreement of its kind, specifically adopted to achieve a satisfactory supply of safe potable water and sanitation for everyone.** Following this, the United Nations proclaimed the International Decade for Action “Water for Life” in 2003. The primary objective of the “Water for Life” Decade was to endorse efforts to fulfill international pledges made on water and water-related issues between 2005 and 2015 (UNECE, 1999).

The most important call to action came in 2010 when the UN's General Assembly and the Human Rights Council adopted a resolution codifying the human right to water and sanitation. This resolution defined the right to safe and clean drinking water and sanitation as a human right that is crucial for the enjoyment of life and all human rights (UN, 2010). With this resolution, access to water and sanitation became recognized as a basic human right fundamental to everyone's health, dignity, and prosperity. Moreover,

¹ The Decade of Action calls for accelerating sustainable solutions to the world's biggest challenges — ranging from poverty and gender to climate change, inequality and closing the finance gap.

since 2015, the Human Rights Council and General Assembly have recognized the right to clean, safe, and adequate water and sanitation as separate but connected human rights (UN OHCHR, n.d.).

International human rights law requires all countries to guarantee that everyone has access to clean water and sanitation without discrimination while prioritizing those who need it most. The Committee on Economic, Social, and Cultural Rights General Comment No. 15 and the work of the Special Rapporteur on the Human Right to Safe Drinking Water both highlight significant parts of the rights to water and sanitation that countries should follow while implementing them (UN OHCHR, n.d.):



Availability. The water supply for each person must be sufficient and continuous to cover personal and domestic uses, which comprise water for drinking, washing clothes, food preparation and personal and household hygiene. There must be a sufficient number of sanitation facilities within or in the immediate vicinity of each household, and all health or educational institutions, workplaces and other public places to ensure that all the needs of each person are met.

Accessibility. Water and sanitation services must be physically accessible and within everyone's safe range while also considering the needs of specific populations like the elderly, women, children, and people with disabilities.

Affordability. Water services must be affordable to all. No individual or group should be denied access to safe drinking water because they cannot afford to pay.

Quality and safety. Water for personal and domestic use must be safe and free from micro-organisms, chemical substances and radiological hazards that constitute a threat to a person's health. Sanitation facilities must be hygienically safe to use and prevent human, animal and insect contact with human excreta.

Acceptability. All water and sanitation facilities must be attentive to gender, lifecycle, and privacy concerns and acceptable and appropriate from a cultural perspective.

Building on these momentous decisions and initiatives, and the global community's commitment to addressing the water crisis, the UN launched the 2030 Agenda for Sustainable Development (2030 Agenda) in 2015 (UN, 2015a). The 2030 Agenda acknowledged the integrated and indivisible nature of its 17 SDGs to “Leave no one behind” by ending poverty, protecting the planet, and bringing peace and prosperity. As a result, ensuring the availability and sustainable management of water and sanitation for all (SDG 6) links across all other SDGs.

SDG 6. Ensure access to water and sanitation for all

SDG 6 goes beyond drinking water, sanitation and hygiene to also address the quality and sustainability of water resources, which are critical to the survival of people and the planet. The 2030 Agenda acknowledges the importance of water resources for sustainable development as well as the critical role better access to drinking water, sanitation, and hygiene play in other areas of development, such as the improvement of health and education, and poverty reduction. SDG 6 is comprised of eight targets:

1

SDG 6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all

2

SDG 6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

3

SDG 6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

4

SDG 6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

5

SDG 6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate

6

SDG 6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

7

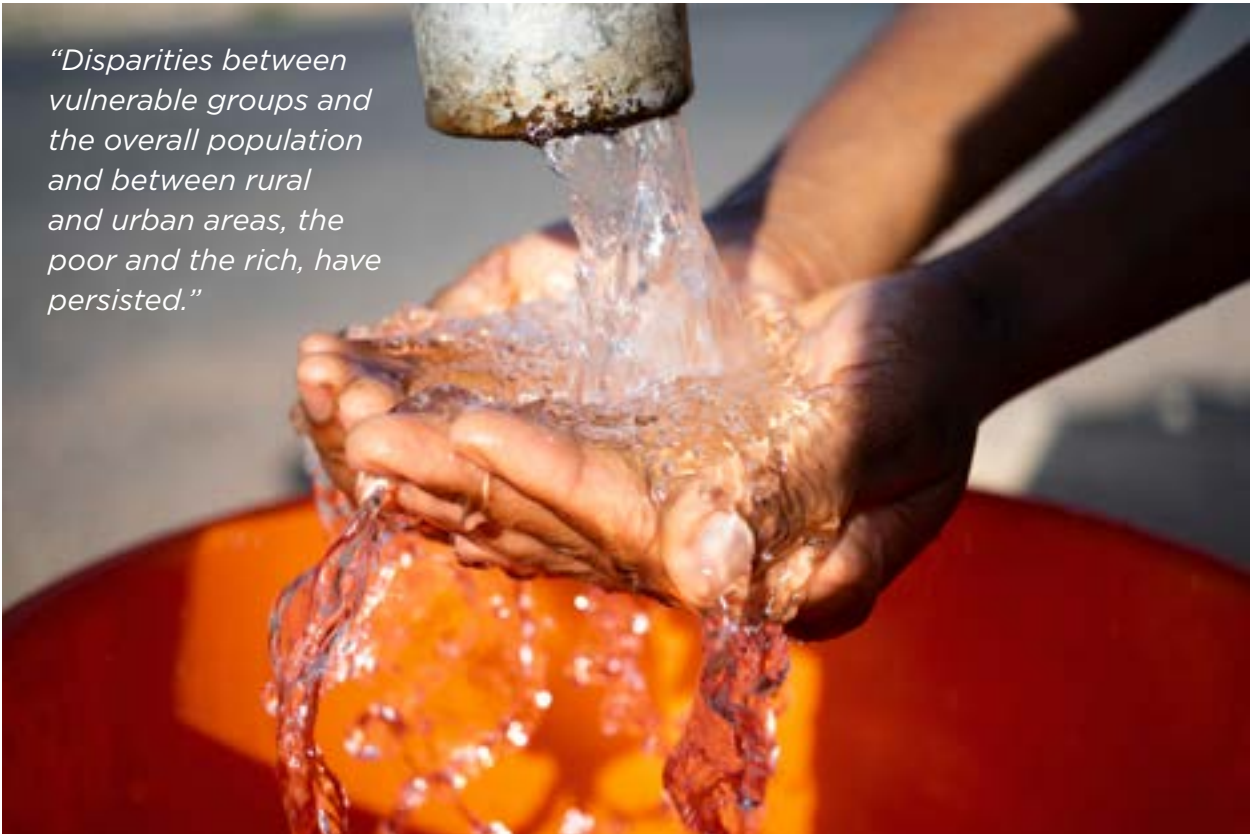
SDG 6.7 By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programs, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies

8

SDG 6.8 Support and strengthen the participation of local communities in improving water and sanitation management

Source: United Nations (2015b)

“Disparities between vulnerable groups and the overall population and between rural and urban areas, the poor and the rich, have persisted.”



Therefore, access to safe drinking water and sanitation for all is a legal commitment that must be fulfilled by countries across the globe (UNECE, 2019). As a result of codifying the right to water and sanitation on an international level by the UN, recent official estimates demonstrate that access to WASH has dramatically increased in recent years. Tracking WASH progress at the international level has primarily centered on monitoring specific inequities and evaluating their elimination. To achieve this, two monitoring initiatives have been developed: the Joint Monitoring Program (JMP) and the Global Annual Assessment of Sanitation and Drinking Water (GLAAS). JMP is the official custodian agency for SDG 6 Targets 6.1 and 6.2, collecting disaggregated data to monitor disparities based on three stratifiers, i.e., urban-rural, wealth, and subnational regions. GLAAS monitors the means of implementation targets for SDG 6, seeking to ascertain the degree to which vulnerable and marginalized groups are actively incorporated into national WASH policies, programs, and targets (UN Water/World Health Organization, 2022). The findings from

these two initiatives can be useful in highlighting global patterns and pinpointing substantial gaps in the availability of WASH services. Nonetheless, ensuring that “no one is left behind” necessitates going beyond monitoring worldwide inequalities and detecting the various forms of discrimination in access to WASH, with a focus on the most disadvantaged members of society (Ezbakhe et al., 2019).

Despite these efforts, there have been gaps in progress, and the data collected by JMP and GLAAS illustrate disparities between and within nations. Disparities between vulnerable groups and the overall population, between rural and urban areas, the poor and the rich, have persisted. The era of SDGs has made addressing and eliminating these inequalities a top priority through SDG 10, which has the specific goal of “reducing inequality within and among countries,” which is also evident across numerous other SDGs, such as “ensuring availability and sustainable management of water and sanitation for all” (SDG 6) (Ezbakhe et al., 2019).



**Barriers
to leaving
no one behind
in WASH**

2. Barriers to leaving no one behind in WASH

Water is necessary for life and has a wide range of essential uses, including industry, agriculture, drinking, sanitation, and hygiene. Yet many obstacles stand in the way of the world's ambitious goal of providing access to clean water and sanitation services for all. According to the JMP, among the least developed nations, 35% lack access to basic water needs (i.e., water from an improved water source that could be retrieved in a roundtrip of 15 minutes), 65% lack access to basic sanitation (i.e., a toilet or latrine that prevented contaminants from leaching into the soil), and 73% lacked access to basic hygiene (i.e., a handwashing facility with soap and water) (Pouramin et al., 2020). Similarly, GLAAS reported that the menstrual health and hygiene (MHH) needs of menstruating people (women, girls, and LGBTQ+) are largely unmet due to gender inequality, cultural taboos, poverty, and a lack of safe WASH. Despite the needs of 1.8 billion menstruating people, only 60% of the nations surveyed by GLAAS have a WASH policy or plan that includes measures for MHH (UN Water and WHO, 2022). These staggering statistics indicate a significant lack of human growth, particularly for vulnerable and underprivileged groups.

As a result, governments and non-governmental organizations (NGOs) have increasingly begun providing aid and undertaking initiatives to improve access to WASH services and achieve the SDGs in developing nations. However, the noble pledge of the 2030 Agenda to “leave no one behind” requires a nuanced approach to addressing the unique difficulties that vulnerable and marginalized populations face. Global patterns of marginalization and discrimination have persisted even though disparities manifest in various ways among and between nations. Therefore, it is vital to bring attention to the requirements of the most marginalized population groups when receiving WASH services.

“Leaving no one behind” can only be accomplished when the needs of the most marginalized and vulnerable groups are recognized and met.”

Non-discrimination and equality “underscore the need for monitoring inequities” and are arguably the most critical standards in the human rights framework. To ensure that “no one is left behind,” it is necessary to go beyond observing these worldwide disparities and identify the many forms of discrimination in access to WASH, focusing on the most marginalized sections of society. While tailored measures must be designed and implemented to overcome the unique challenges encountered by those without access to water and sanitation, “leaving no one behind” can only be accomplished when the needs of the most marginalized and vulnerable groups are recognized and met. However, choosing which vulnerable and marginalized groups should be assessed is difficult because they vary depending on the sector and context.

Equitable access to WASH services requires particular attention to the most disadvantaged, vulnerable, and marginalized societal groups. While access to safe and clean WASH services is essential for every woman, man, girl, boy, LGBTQ+, the inclusion of people with disabilities, Indigenous people, and Afro-descendants is particularly important in the context of LAC. Therefore, countries in the region must make a concerted effort to provide these vulnerable groups with adequate access to safe and clean WASH, thus allowing them to live a life of health and dignity, upholding human rights, and ensuring equality.

2.1 Women and girls’ struggle for WASH equality

Gender-based inequalities exist in every country and in all aspects of social life. They are echoed in the vast gender divides and their ability to access, manage and benefit from water, sanitation, and hygiene. A growing body of studies suggests that



women and men often have differentiated access, use, experiences, and knowledge of water, sanitation, and hygiene.

Understanding and accounting for the needs of women and girls are fundamental to achieving equitable access to water and sanitation. Significant evidence and decades of experience have shown how women and girls are disproportionately affected when communities lack clean water, decent toilets, and good hygiene.



Women and girls are generally responsible for fetching water, which requires them to allocate significantly more time to such a task than their male counterparts. Today, women and girls worldwide collectively spend 200 million hours collecting water (Myers, 2017). Water collection is a physically taxing task that exposes women and girls to threats of violence and health hazards. Additionally, this task frequently prevents women and girls from working or attending school. Lack of access to water has adverse effects on women's well-being and affects their ability to contribute to agricultural production, food security, and business opportunities.

The lack of safe sanitation coverage in private dwellings and public spaces disproportionately affects women and girls because it affects their daily activities, can lead to unsafe hygienic practices and illness, and contributes to work and school absences. The feeling of security for women using a toilet depends on many factors, including the location of the toilet, the proximity of female toilets to male toilets, the structural design of cabins, water supply, sanitary disposal units, adequacy of lighting, and presence of an appropriate caretaker, among other factors (Elledge et al., 2020).

“Many women and girls who lack access to latrines become “prisoners of daylight,” only using the night as privacy.”

Access to sanitation is a matter of personal safety for many women and girls. This is especially true for women and girls from impoverished backgrounds disproportionately affected by inadequate access to sanitation and hygiene because they frequently deal with issues like menstrual hygiene, personal safety, sexual harassment, and violence. Without access to latrines, many women and girls become “prisoners of daylight”, using only the night as privacy. Night-time trips to fields or roadsides expose them to risk of physical attack and sexual violence (Chawene & Mafuru, 2016).

Safety issues in accessing WASH services raise the likelihood of women and girls developing health issues like urinary tract infections (UTIs), long-term constipation, and mental stress. The hygiene requirements of women and girls differ from those of men. Hence, for women and girls to manage menstrual hygiene and pregnancy, they require access to sanitary products and disposal systems in a clean, practical, lockable, and gender-segregated spot. Hundreds of millions of women face an increased risk of infection by care in health facilities that lack basic necessities, including WASH and healthcare waste services (WHO/UNICEF, 2019). Access to WASH at health facilities

will encourage women to give birth at health centers, likely reducing maternal and infant mortality.

Menstrual health and hygiene are essential to achieving gender equality and empowering all women and girls (SDG 5) and ensuring universal access to sexual and reproductive healthcare services (SDG 3.7). Leaving no one behind requires tackling the issue of menstrual health management (MHM) for an estimated 500 million women and girls who lack access to menstrual products and adequate facilities (World Bank, 2022). Girls and women need access to WASH facilities, inexpensive and suitable menstrual hygiene products, information on good practices, and a supportive environment where they can manage their menstruation without embarrassment or stigma.



Menstrual hygiene management was first defined by the Joint Monitoring Program sponsored by the World Health Organization (WHO) and the United Nations Children’s Fund (UNICEF) in 2012. MHM is defined as “Women and adolescent girls using a clean menstrual management material to absorb or collect menstrual blood, that can be changed in privacy as often as necessary, using soap and water for washing the body as required, and having access to safe and convenient facilities to dispose of used menstrual management materials. They understand the basic facts linked to the menstrual cycle and how to manage it with dignity and without discomfort or fear.”

Further interlinkages exist between water, gender, and health-worsening WASH-inequities among women, causing associated health burdens. When women and girls have access to safe and affordable WASH services and sanitary materials to manage their menstruation, they lower their risk of infections. Such access can have positive cascading effects on women’s overall sexual and reproductive health, including reducing teen pregnancies, maternal outcomes, and fertility (World Bank, 2022). However, poor MHM practices can significantly negatively impact women’s and girls’ health, leading to

serious health risks. Among some of the burdens women and girls face, poor WASH and MHM practices can increase the risk of contracting and spreading waterborne diseases, such as cholera, a bacterial infection transmitted by polluted water, and poor sanitation and hygiene practices (Pouramin et al., 2020), and hepatitis B contracted through neglecting to wash hands after changing menstrual products (World Bank, 2022).

“We risk undermining the 2030 Agenda by neglecting women and girls.”

The lack of adequately managed water and sanitation is a problem of equality. Poorly equipped facilities and unsafe WASH services disproportionately negatively impact women and girls. This is further exacerbated by the fact that the needs and voices of women and girls are frequently ignored in the planning and execution of improvements to these services, assuring prolonged marginalization. For example, gender diversity in utility management according to the World Bank’s Women in Water Utilities: Breaking Barriers report is at an unsatisfactory level, as only 18% of water utility workers are women (UN Water, WHO, 2022). Including women in local WASH planning and programming is vital for developing sustainable WASH facilities and services. Less than two-thirds of nations participating in the GLAAS 2021/2022 survey said that national laws and policies make express reference to women’s participation. This number is greater for issues linked to hygiene, with 39% of nations stating that women’s participation is high or very high; this may be attributable to women’s involvement in MHH. In addition, less than one-third of countries reported high levels of women’s participation in rural drinking-water planning and management, showing that women are not firmly represented in participatory procedures in most countries (World Bank, 2022).

As a result of all the abovementioned barriers and challenges women and girls face, we risk undermining the 2030 Agenda by neglecting women and girls. Codification of the human right to water and sanitation in international law and its implementation in practice has been jeopardized, severely affecting millions of women and girls worldwide. Where women are denied these rights, their health is severely harmed, which limits their possibilities for education and employment and prevents them from playing their full role in society.

2.2 Beyond the binary: LGBTQ+ and gender non-conforming persons

“The understanding of gender in the WASH sector is predominantly binary, i.e., male vs. female.”

The WASH sector has a good understanding of the interrelation between gender and WASH. The disproportionate impact of the lack of access to toilets on women and adolescent girls is a well-documented phenomenon, as are the differences between men and women regarding sanitation preferences, decisions, and behaviors. While women’s and girls’ empowerment are subject to and interwoven into many of the UN’s SDGs, the understanding of gender in the WASH sector is predominantly binary, i.e., male vs. female. As a result, it lacks the understanding of how WASH affects people with non-normative gender identities, i.e., people that identify as lesbian, gay, bisexual, transgender, and queer (LGBTQ+) (Benjamin & Hueso, 2017). Intersectional issues such as gender identity and sexual orientation exacerbate existing socioeconomic inequalities. By approaching the provision of water and sanitation services through a gender-sensitive lens, we can better understand the intersecting issues experienced by transgender and gender non-conforming people, as well as other LGBTQ+ people.

The Special Rapporteur on the Human Rights to Water and Sanitation presented a report on gender equality and the rights to water and sanitation to the Human Rights Council in 2016, where he addressed gender inequality through the lens of the human right to water and sanitation. The report laid out several gaps (such as existing discriminatory legislation affecting freedom of expression, social discrimination, gender stereotyping, and menstrual hygiene) The report laid out several gaps (such as existing discriminatory legislation affecting freedom of expression, social discrimination, gender stereotyping, and menstrual hygiene) (OHCHR, 2016), addressing several elements of the human right to water and sanitation, addressing several



elements of the human right to water and sanitation as they pertain to LGBTQ+ persons, with a particular focus given to transgender and gender non-conforming persons. Following this, the Independent Expert on Sexual Orientation and Gender Identity at the UN emphasized “the need of LGBTQ+ persons to access sanitation services in a safe manner has led to deeply divisive and stigmatizing public debates on objectively innocuous issues such as access to gender-neutral bathrooms in public spaces, education, and work settings,” in his 2019 report (UN OHCHR, 2019).

LGBTQ+ persons can face specific challenges in accessing WASH services, including an increased risk of violence and legal discrimination. Laws, policies, and regulations can lead to gender disparities in access to water and sanitation. This is particularly true for LGBTQ+ individuals. Violations and discrimination exist in all aspects of life as lesbian, gay, bisexual, transgender, and gender non-conforming persons are frequently viewed as sick or disordered. Discrimination affects these individuals’ access to sanitation, menstrual hygiene, and public restrooms. Despite governments designing laws to protect general safety and ensure people’s rights against abuses by the specific WASH needs of the diverse LGBTQ+ community are lacking. Furthermore, restrictive gender recognition laws not only severely impede the capacity of transgender individuals to enjoy their rights to basic water and sanitation services but also hinder them from living safely, free from violence and prejudice (Heller, 2018). Legislation that appears gender-neutral will disguise significant gender gaps and benefit some individuals more than others regarding water and sanitation. Therefore, providing legal guarantees on gender equality and non-discrimination can contribute to developing political legitimacy to support the enforcement of LGBTQ+ rights to WASH.

Additionally, LGBTQ+ persons often suffer from socioeconomic discrimination. They may find it harder to access work or public services, including access to drinking water and sanitation. An intersectional approach highlights how this discrimination and inequality may be compounded when other socioeconomic factors are present: homeless LGBTQ+ persons may suffer additional discrimination and risks when accessing water and sanitation (Heller, 2018).

“Continued threats and violence may lead transgender or gender non-conforming persons to avoid using facilities.”

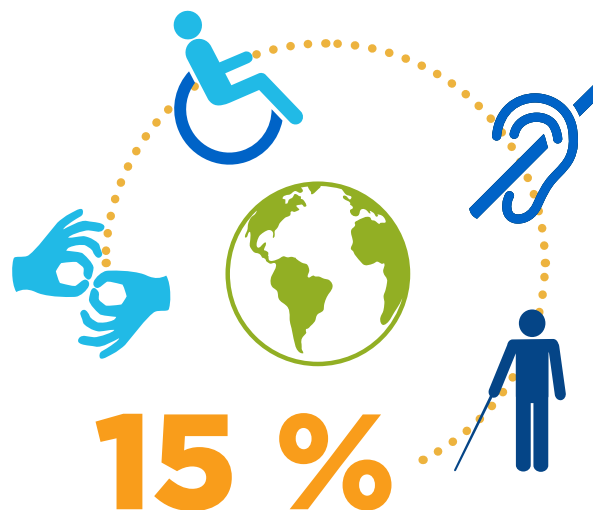
People who do not conform to a fixed idea of gender may experience violence and abuse when using gender-segregated sanitation water, sanitation, and hygiene facilities. This puts individuals at risk in public spaces, workplaces, schools, hospitals, and other

shared spaces. Continued threats and violence may lead transgender or gender non-conforming persons to avoid using facilities in these areas, sometimes leaving school or work entirely. As a result, the difficulties transgender and intersex persons have in using public toilets should be considered a violation of several human rights, such as the right to privacy, the right to sanitation, and the right not to be discriminated against.

“The struggle for identity and dignity is central to the efforts of transgender activists and groups.”

However, there is no one-size-fits-all solution. While creating an additional category of toilets – transgender toilets (also called third-gender toilets) – seems to have been prioritized in some areas already, some within the transgender community are critical of this approach. Although designing transgender restrooms might make them safer, there are significant drawbacks, including the possibility that they will increase stigma and even forbid users from using restrooms that correspond to their gender identity. Therefore, the struggle for identity and dignity is fundamental to the efforts of transgender activists and groups.

2.3 The world’s largest minority: People with disabilities



More than a billion people across the globe have disabilities, accounting for approximately 15% of the world’s population (World Bank, 2017).

“One in seven persons has a condition that prohibits them from living a normal, dignified life in a world designed by and for people who do not share the same limitations.”

85 million

people in LAC with disabilities currently reside in the region

(García Mora et al., 2021).

To translate this into layman’s terms, one in seven people has a condition that prohibits them from living a normal, dignified life in a world designed by and for people who do not share the same limitations. Of the “world’s largest minority,” 80% live in developing countries (World Bank, 2017). Disease, war and conflict, natural disasters, and road traffic injuries, in addition to genetic and chromosomal conditions, are expected to increase the prevalence of disability.

In the context of LAC, approximately 85 million people with disabilities currently reside in the region (García Mora et al., 2021). They constitute a highly heterogeneous population but share a history of invisibility and exclusion. In recent decades, statistical visibility, poverty reduction, access to schools, and acknowledgment and engagement in public and private areas of people with disabilities have improved. Despite this, they are still more likely to live in poor households, are overrepresented among the vulnerable, continue to face unequal opportunities, have a lower accumulation of human capital, and have limited voice and agency to incorporate their development aspirations into decision-making (World Bank, 2017).

A litany of good intentions and renunciations of unequal treatment for people with disabilities resulted in proclamation of the annual observance of the International Day of Disabled Persons by the United Nations General Assembly Resolution 47/3 in 1992 (UN, 1992). This UN resolution aimed at promoting persons with disabilities rights and well-being at all levels of society and development. Increasing awareness of their situation in every facet of political, social, economic, and cultural life was the building block of the disability rights movement.

The most comprehensive definition of disability came in 2001 when the WHO approved the International Classification of Function, Disability, and Health (ICF). According to the ICF,

disability is “a limitation in a functional domain that originates from the interaction between a person’s intrinsic capacity and environmental and personal factors, which can be permanent or temporary, from birth or developed later in life, and visible or invisible” (Fee, 2019). Building on this, the Convention on the Rights of Persons with Disabilities (CRPD) was adopted in 2006, with the purpose of promoting, safeguarding, and guaranteeing full and equal enjoyment of all human rights and basic freedoms by all persons with disabilities, and advancing respect for their inherent dignity (UN OHCHR, 2006).

A range of legislative texts handle disability issues throughout LAC. Most countries in the region have incorporated the principle of full and effective participation for people with disabilities into their national laws. While this is officially stated in the Constitutions of Ecuador and Venezuela, the remaining countries have equivalent provisions, i.e., disability laws (García Mora et al., 2021). Some of these laws mandate that government agencies apply this principle to all their programs and plans, and implement affirmative action measures. Yet in most countries in LAC, there is still a notable gap between national legal frameworks and their execution, particularly when regulating how individuals with disabilities can participate in, and be advised on, matters affecting them.

“WASH services and infrastructure are less likely to be accessible, a chronic challenge that significantly negatively affects persons with severe disabilities.”

While people with disabilities have the right to participate in society on equal terms with others, they encounter numerous challenges in accessing WASH services. These vulnerable members of society tend to live in areas where WASH services and infrastructure are less likely to be accessible, a chronic challenge that significantly negatively affects persons with severe disabilities. In many cases, persons across the disability spectrum, regardless of their country, are less likely to inhabit households with access to improved water and sanitation, creating difficulties for those who experience mobility problems in locating the bathroom and waiting in line. Furthermore, people with disabilities have trouble accessing toilets outside their homes, as many public restrooms are not accessible to wheelchair users.

Access to water and sanitation infrastructure is vital for all persons across the spectrum of disability when it comes to attending school, obtaining education, working, and participating in society. Economic, social, cultural, and geographical contexts, coupled with the type of disability a person may have, are some of the root causes of the

persistence of physical inaccessibility to public WASH services (Sandoval Rincón, 2021). Beyond the altruistic motives of doing the right thing, creating WASH services and infrastructure that are accessible makes economic sense because it benefits not only the people who are disabled but the family members who look after them, freeing up their time and resources (Galeza & Raja, 2017).



Women and girls with disabilities face gender- and disability-related barriers to WASH. If girls with disabilities cannot access decent MHM facilities, they may drop out of school. Even if their facilities are inaccessible, women and girls with disabilities may be expected to fulfill their household WASH responsibilities. Those who care for disabled family members face additional WASH issues, such as increased effort in water collection and hygiene tasks.

Source: UN OHCHR (2020).

“In principle and by law, people with disabilities have the right to access WASH services, but they must work continuously to claim this right.”

Fulfillment of the right to water is crucial for people with disabilities. The lack of access to water and sanitation services globally causes diseases such as diarrhea, cholera, and polio, making the provision of these services an immediate priority. External barriers that limit equal access could be eliminated through reasonable accommodation or universal design at a considerably lesser cost than the effects of excluding and affecting this population (Sandoval Rincón, 2021). Yet despite the disability rights movement contributing much toward recognizing the plight of people on the disability spectrum, people with disabilities still face challenges to equally participate in society. In principle and by law, people with disabilities have the right to access WASH services, but they must work continuously to claim this right.

2.4 Indigenous people – keepers of sustainable water management knowledge

“Many countries have denied the existence of Indigenous peoples living within their borders.”

Indigenous peoples inhabit their ancestral lands across 90 countries around the globe, representing 18.7% of the extremely poor and around 33% of those living in extreme poverty in rural areas. The territories where Indigenous peoples cohabit with nature comprise about 25% of the world’s land surface, including approximately 40% of all protected land areas and ecologically intact ecosystems (UN OHCHR, 2022). Despite this, many countries have denied the existence of Indigenous peoples living within their borders. This rejection of their existence has resulted in denying the right to self-determination to 476 million Indigenous people, or 6.2% of the world’s population (UN OHCHR, 2022).

By denying the very existence of Indigenous peoples within their borders, governments have turned a blind eye to international agreements (UN OHCHR, 2022), limiting or outright denying them access to and management of water under the pretext of national sovereignty to exploit water systems. Social bias stemming from many countries’ colonial past has ingrained beliefs that deem Indigenous peoples as more primitive and the tendency to view Indigenous cultures as static (Jiménez et al., 2014).

“Indigenous people believe that water belongs to everyone and should remain available to all as a common good.”

Yet the worldviews of Indigenous people do not see water as a luxury item coveted and kept only for one person’s use.



Indigenous people believe that water belongs to everyone and should remain available to all as a common good. This belief provides a valuable illustration of how to maintain and manage access to safe drinking water and sanitation on a communal scale. Indigenous peoples' philosophy and practices offer a genuine expression of the modern-day concept of sustainability in the planning and management of water (UN OHCHR (2022)).

Indigenous peoples' territories are abundant in clean, safe, and potable water due to the sustainable practices employed by these communities. However, many Indigenous peoples no longer have access to safe, drinkable water under international human rights standards due to the effects of extractivism on natural resources combined with those of climate change. According to the UN OHCHR report, large hydroelectric dams are being built, agribusiness is expanding, and there are more mining operations, logging operations, and tourism developments, all of which violate the rights of indigenous peoples and harm or contaminate their water sources. As a result, land and water are being taken from Indigenous peoples' territories (UN OHCHR, 2022).

“Systemic land and water grabbing have encroached on ancestral lands, making Indigenous communities, who already suffer a higher burden of disease as they have higher mortality rates than comparable non-indigenous groups, vulnerable.”

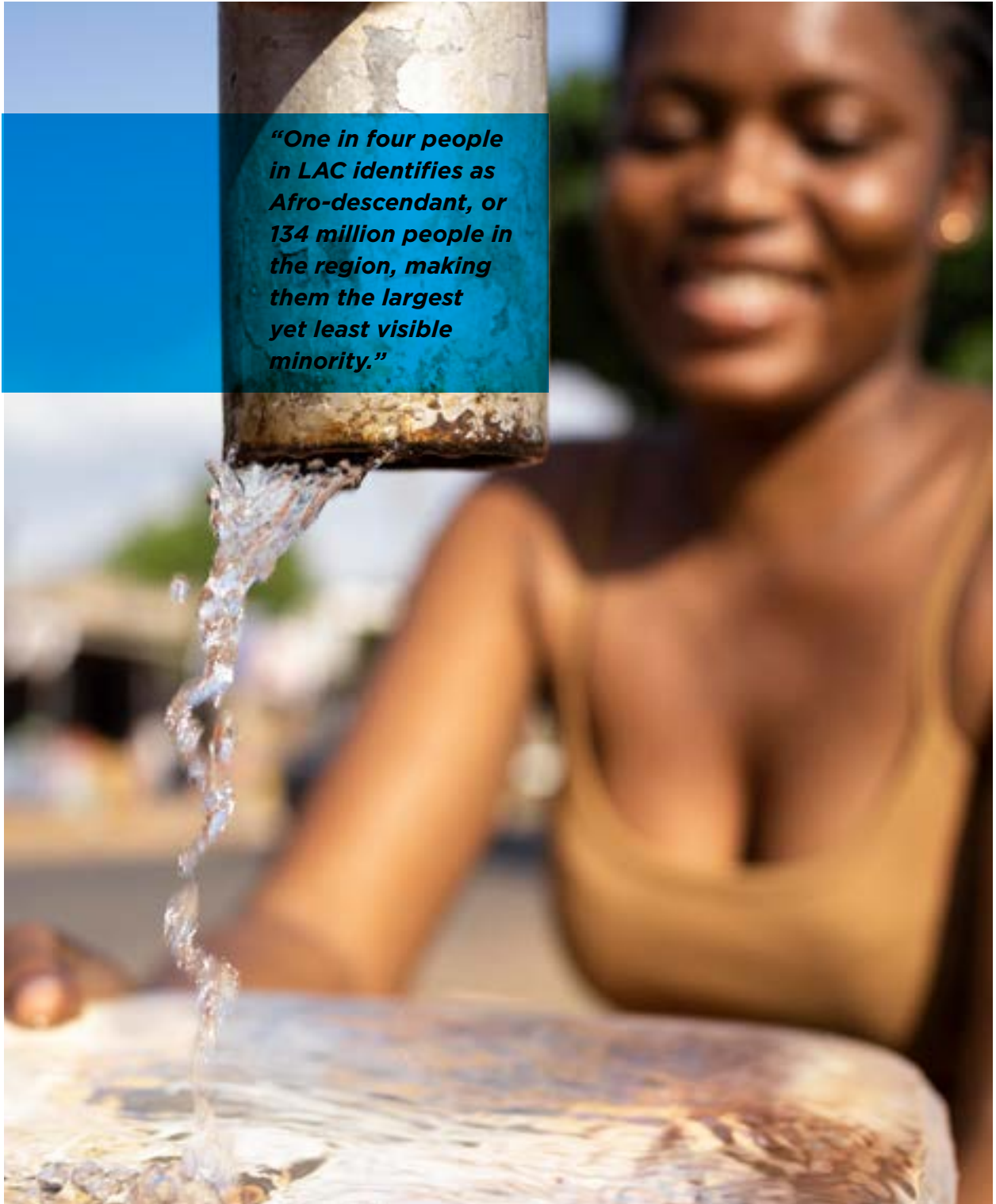
Water contamination in remote Indigenous lands, coupled with marginalization and lack of funding to combat it, has exposed Indigenous people to significant risk (The Indigenous Foundation, 2021). Systemic land and water grabbing have encroached on ancestral lands, making Indigenous communities, who already suffer a higher burden of disease as they have higher mortality rates than comparable non-Indigenous groups, vulnerable. This, coupled with non-existent water and sanitation infrastructure close to Indigenous communities' ancestral lands, means these rural communities must travel great lengths to receive contaminated water because of the lack of safe water nearby. A “subset” of the Indigenous population is at particular risk: Indigenous women and girls are unduly affected by the lack of safe water and sanitation access (UN OHCHR, 2022). Rural and Indigenous women have a “triple role” in water use, usually for productive, reproductive, and community activities. When water is scarce, their workload increases, and their quality of life deteriorates. Illnesses caused by poor water quality and distribution also increase their workload and deteriorate their quality of life as care for the sick falls on women.



In many Indigenous cultures, women have a sacred spiritual connection to water, and are revered as the keepers of specific water knowledge. In addition to the close relationship between water, fertility, and childbirth, women are primarily responsible for managing domestic water use and afterlife cleansing in some cultures.

Water encroachment, pollution, and excessive extraction, coupled with climate change, exacerbate the situation in which Indigenous people find themselves (Ervin, 2019). Despite being keepers of invaluable knowledge for preserving water, Indigenous peoples have been repeatedly excluded from the dialogue that can help solve present-day problems humanity faces with the global water crisis. It is, therefore, paramount for Indigenous people to contribute to the development of policies regarding water and sanitation.

2.5 Afro-descendants: LAC's least visible minority



Afro-descendants are a unique heterogeneous societal subgroup that is highly prevalent across countries in LAC, sharing a common and long history of displacement and exclusion. As a result of systemic discrimination and institutional racism, stigmatization, social and economic disadvantages, and gender inequalities, Afro-descendants across LAC face numerous disparities. One in four people in LAC identifies as an Afro-descendant, or 134 million people (Pan American Health Organization) (PAHO, 2021), 2021), making them the region's largest yet least visible minority. Afro-descendants continue to be disproportionately represented among the poor and underrepresented in positions of power in public and business sectors, despite substantial progress over the past decade (World Bank, 2018).

The stark disadvantages Afro-descendants face manifest themselves from an early age resulting in increased health risks, fewer opportunities for social mobility, and limited access to essential services. Their circumstances and requirements remained mostly unknown or disregarded until a few decades ago, as they were not frequently included in most countries' statistics in LAC. However, the last two decades have seen the emergence of a dramatic change from the past (World Bank, 2018). Due to the tenacious efforts of their leaders and representative groups, Afro-descendants are now more visible and heard than ever before. Therefore, a significant portion of how much LAC can eradicate severe poverty and increase shared wealth will depend on how well Afro-descendants are integrated into society and how access to essential services is made equitable and inclusive.

Afro-descendant populations are distributed across national territories of various countries in LAC. The largest proportion of the Afro-descendant population in the region, or 43% of the total Afro-descendant population, can be found in Brazil, Venezuela, and Colombia (UNFPA 2020). In contrast, countries like Costa Rica, Uruguay, Panama, Mexico, Honduras, and Peru have reported smaller proportions of Afro-descendants within their borders. However, the population density of Afro-descendants is different in the Caribbean, with 95% of Haiti's total population identifying as Afro-descendants (UNFPA 2020). Although there are no official statistics on the number of people of African descent in the Dominican Republic, according to the United Nations Population Fund (UNFPA) 2019 national ethnic-racial self-perception survey, 33% of the country's population self-identifies as having African ancestry, which is in line with Latinobarómetro data (UNFPA 2020).

Unlike Indigenous peoples who live in isolated rural areas with limited access to water and sanitation infrastructure, data shows that 82% of Afro-descendants in LAC reside in urban areas (Libbertun et al., 2022). One benefit of their large urban concentration is that gaps in access to essential services are not as severe. However, there are significant discrepancies in the actual situation between services and between and within nations, even though these variations cannot be directly linked to racial issues.

“The likelihood of Afro-descendants residing in underprivileged, poor, and informal neighborhoods is double that of non-Afro-descendant households.”

Despite living in urban areas, inequalities in access to water and sanitation services persist. Cities in LAC are plagued by informal settlements lacking basic infrastructure, contributing to the development trap. Besides residents of these impoverished neighborhoods having fewer opportunities for economic mobility, they also battle health-related issues due to a lack of essential services, such as electricity, water, and sanitation, and are exposed to higher levels of pollution, crime, violence, and natural disasters (World Bank, 2018). The likelihood of Afro-descendants residing in underprivileged, poor, and informal neighborhoods is double that of non-Afro-descendant households (Libbertun et al., 2022). As a result, these households are thus frequently discriminated against due to being stuck in a vicious cycle of poverty, which lessens their chances of overcoming their precarious position.

The severity of the social inequalities that affect the Afro-descendant population in WASH was highlighted during the COVID-19 pandemic. In some countries in LAC, Afro-descendant communities in urban and rural areas faced challenges such as the lack of access to water and sanitation services, which made it impossible to follow the sanitary measures required to fight the pandemic. In Haiti, for example, the water supply is highly deficient, and it has even been reported that the National Water Directorate (DINEPA) meets less than 70% of the country’s needs (UNFPA, 2020).



**LAC and WASH
inclusiveness:
A snapshot**

3. LAC and WASH inclusiveness: A snapshot

The availability of water and sanitation is vital for enhancing the quality of life, health, social and gender inclusion, productivity, environmental sustainability, and economic growth of a population, especially in light of the COVID-19 pandemic. While access to improved water services is relatively high, at around 90% or higher, in the urban areas of countries in LAC, this is not an absolute figure. Generally, the statistical data collected by the IDB in 2021 on the access to water piped to dwellings showed that only 72% of consumers in urban areas receive water to their premises (Gómez-Vidal et al., 2021). This figure was significantly lower for access to piped water in rural areas. According to the same data, access to improved sanitation was considerably lower than improved water. The rate of improved sanitation exceeds 60% in all urban and most rural areas in LAC (Gómez-Vidal et al., 2021). However, the rate of the population connected to a sewage network is much lower, especially in urban areas where this sort of system is most appropriate. Therefore, solutions in LAC should consider the population's expectations and the deployment of innovative solutions that address cultural, gender, and sustainability concerns (IDB, 2021).

“Aggregate statistics collected by LAC countries obscure water access disparities between regions in the same country.”

The region faces three fundamental inequalities in providing access to drinking water, i.e., urban-rural, socioeconomic, and Indigenous and Afro-descendant populations. Aggregate statistics collected by LAC countries obscure water access disparities between regions in the same country. Gaps are concentrated in peri-urban and rural areas, which contain a sizable portion of the population in the lowest socioeconomic strata, while access increases nationally. At the regional level, there is a nearly 30% variation in access to securely managed water between urban and rural communities. Only 53% of people live in rural regions, compared to 81% of urban residents with access to safely regulated water. Drinking water delivery is typically more expensive, and coverage is even lower in isolated settlements than in rural areas that are more densely populated. For instance, coverage is 20 percentage points better in rural areas around the coast of Peru than in more remote rural forest areas (IDB, 2021). These numbers obscure the reality of unofficial urban colonies in urban regions.

WASH initiatives can help close the inequality gap and promote inclusion. Compared to men and boys, women and girls suffer more from ineffective WASH systems. This is a result of both biological (such as the need for a private bathroom with soap and water for menstrual hygiene) and social (such as the fact that in many countries, women are in charge of fetching water, cleaning, and tending to ill family members) considerations. Because of this, ensuring access to water services typically benefits women the most, lowering their rates of poverty and eliminating gender inequities.

“Only 46% of the Indigenous people of Paraguay have access to better water sources, compared to 90% of the rest of the population.”

The divide between Indigenous and Afro-descendant peoples and the general population in terms of access to water services is wider in rural areas. The IDB estimates that in Bolivia, Ecuador, Mexico, and Panama, the difference in access to water and sanitation between Indigenous and non-Indigenous groups is nearly 15 percentage points. Only 46% of the Indigenous people of Paraguay have access to better water sources, compared to 90% of the rest of the population (categorized according to the language spoken by the head of the household) (IDB, 2021). Even when infrastructure is offered to these people, it is frequently done in a manner that is culturally incorrect and may lead to nonuse or abandonment.

The Afro-descendant community and the general population, particularly in rural regions, have significantly different levels of access to the water delivery network, according to household survey data from many nations in the region. Rural families headed by Afro-descendants in Colombia and Ecuador had between 10 and 20 percentage points less access to water than rural households headed by non-Afro-descendants or non-Indigenous people. Due to inadequate infrastructure in the most impoverished metropolitan areas they have migrated to or a lack of coverage in their remote rural towns, the Garifuna people in Honduras, for example, grapple with a persistent lack of access to basic water and sanitation services (IDB, 2021).

According to available data from the last census round in 21 countries across LAC, people with disabilities are not equitably distributed among social categories in the region. Living in a rural area, being poor, female, Indigenous, or of Afro-descent increases the likelihood of developing a disability and the severity of its exclusionary consequences, especially as they pertain to WASH. Furthermore, while the World Bank’s “Disability Inclusion in Latin America and the Caribbean: A Path to Sustainable Development” report does not specifically delve deep into the issues faced by LGBTQ+ people with

disabilities, it does state that they experience higher levels of exclusion (García Mora et al., 2021).

Access to safe sanitation requires water and sanitation facilities that are not shared with other households, as well as treatment of excreta in situ or elsewhere that avoids threatening health. In LAC, 17% of dwellings have access to septic tanks, and 67% of households have sewer services. Latrines are used by 9%, while 5% have unimproved access and 2% practice open-air defecation. Coverage in the region increased from 28% in 2015 to 34% in 2020, leaving over 430 million people without access to this service, primarily due to insufficient levels of wastewater treatment (IDB, 2021). Measuring safe sanitation access in LAC is difficult due to inadequate information regarding wastewater management by households and wastewater treatment.

Accessibility disparities exist between urban and rural areas. Although there are no data on access to safe sanitation in rural regions, the gap in basic access is 20 percentage points throughout LAC. Nearly 10 million individuals still practice open defecation in LAC, of which 7.4 million live in rural areas. Haiti, Peru, Bolivia, Colombia, and Venezuela account for 79% of these households (IDB, 2021). Particular attention must be paid to sanitation in the informal settlements across LAC.

“Addressing the service gaps across LAC’s water and sanitation sectors and ensuring a common future for all requires the removal of racial, ethnic, and gender-based obstacles.”

While the water and sanitation sector across the urbanized LAC region has been relatively well-documented, the measurement of WASH access to small and remote areas has been challenging (Gómez-Vidal et al., 2021). However, while some form of data can be found on the provision of WASH services in urban and rural areas as they relate to the general population, a vast portion of the region’s population – the vulnerable, underprivileged, and marginalized – has largely been left out of these datasets. Addressing the service gaps across LAC’s water and sanitation sectors and ensuring a common future for all requires the removal of racial, ethnic, and gender-based obstacles (IDB, 2022). By developing frameworks that collect data sensitive to the difficulties faced by vulnerable groups, governments, policymakers, and other relevant stakeholders can act as drivers of change in aiding these groups to achieve equal access to opportunities. This will have profound favorable effects on these individuals’ ability to escape poverty and contribute to regional economic growth and overall sustainable development.



Although there are no data on access to safe sanitation in rural regions, the gap in basic access is 20 percentage points throughout LAC.

3.1 Fostering inclusiveness for equitable WASH access

- **Including underrepresented voices in decision-making processes**

Historically, the government and international development partners have viewed persons with disabilities as beneficiaries rather than implementing partners. Hence, they have not included them from project inception. Therefore, including underrepresented voices in the decision-making process is essential in promoting inclusive practices in the WASH sector in LAC. Decision-makers should take a human rights approach that puts people at the center of programming.

This can include partnering with organizations that engage with and represent marginalized groups (e.g., gender equity CSOs). For these partnerships to be genuinely meaningful, they must address the gaps identified by those working on the ground and provide insights that will be helpful to and influence the processes of development, policy, and programming in the WASH sector of LAC countries.



Water for Women, Australia

Water for Women is the flagship WASH program of the Australian Government, supporting improved health, gender equality, and well-being in Asian and Pacific communities via socially inclusive and sustainable WASH projects.

The program is collaborating with ten civil society organizations to implement projects in fifteen South Asian, Southeast Asian, and Pacific nations. These collaborations actively include women, men, those with disabilities, and other marginalized groups in the development of inclusive processes.

Source: Water for Women Fund (2023).

- **Local partner knowledge is important**

Research conducted in the Solomon Islands has emphasized the relevance of gender-inclusive decision-making procedures, notably the participation of women on committees established by local chiefs in charge of water management in each community (Smith, 2021). The Solomon Islands, for example, has over 80 languages, which influence the culture and attitudes of each group. Consequently, it is critical to incorporate local people, particularly women and youth, as marginalized stakeholders in the design and collection of data (Smith, 2021). One of the most critical continuing concerns for LAC WASH professionals is regularly enabling and empowering women and young people to participate in and speak for these issues in their communities (Palacios, 2022).

For example, WaterAid projects in Papua New Guinea are developing and implementing an inclusive WASH and climate adaptation framework, and research led by the Institute for Sustainable Futures at the University of Technology Sydney supports community climate change responses for inclusive WASH in Timor-Leste and Indonesia (Baker, 2021).

- **Developing mutually beneficial partnerships for fostering WASH inclusiveness**

To support dialogue about gender and social inclusion and encourage the use of applicable self-assessment instruments, inclusive WASH committees can be formed, comprising representatives from women-led organizations and representative organizations from other underrepresented groups, as well as donors. These groups should be involved in the planning and discussion of budget allocations for WASH services so that all partners can benefit (Ervin, 2019). Furthermore, traditional approaches and behaviors towards water are important factors that must be considered when designing WASH implementation plans and policies.

- **Visual media with clear and simple messages is the most potent tool for engaging and influencing all stakeholders**

For example, using Facebook and WhatsApp to convey clear messages for inclusive WASH practices has significantly impacted Peru in metropolitan regions and even among Indigenous communities (Palacios, 2022).

- **Frameworks strengthening institutional capacity at all levels are essential for policy implementation, effective design and execution of programs, and long-term viability of WASH services for all**

According to the IDB’s Gender and Diversity Sector Framework, a fundamental goal of its activities in the area of gender and diversity is to achieve equal access to opportunity for groups whose living standards are affected by factors such as race, ethnicity, and gender. To achieve this goal, the IDB’s Gender and Diversity Sector Framework has identified the following dimensions of success: (i) promoting gender equality and the empowerment of women and children; and (ii) promoting development with identity and social inclusion for Indigenous peoples, Afro-descendants, and other diverse populations (IDB, 2022).

Additionally, the Gender and Diversity Sector Framework developed priority lines of action for each dimension of success. These lines of action were developed in response to the region’s challenges based on international evidence and best practices, the significant progress seen in the LAC region, and the lessons from operational and analytical work conducted by IDB (IDB, 2022).

IDB’s Water and Sanitation Sector Framework was developed to achieve these dimensions of success as they relate to ensuring water and sanitation access for all in LAC. This framework has five lines of action:

IDB’s Water and Sanitation Sector Framework

IDB’s Water and Sanitation Sector Framework was developed to achieve these dimensions of success as they relate to ensuring water and sanitation access for all in LAC. This framework has five lines of action:

1

Line of action 1: Promote universal access to quality water and sanitation services with equity, inclusion, and affordability

2

Line of action 2: Design policies and programs that promote water security and incorporate disaster and climate change risk management

3

Line of action 3: Improve financing and governance frameworks

4

Line of action 4: Improve management to ensure efficient, sustainable service delivery, and promote private sector participation

5

Line of action 5: Drive innovation in the sector participation of local communities in improving water and sanitation management

These lines of action guide the IDB's operational and research activities in water and sanitation that support the elimination of inequities, achieving the universalization of efficient, affordable, sustainable, and good-quality services (IDB, 2021).

The support provided by the IDB should focus on strengthening regulators' capacity, institutions that provide technical assistance, and service providers. According to previous findings, inadequate capabilities, particularly at the municipal level, impede the realization of results in LAC (IDB, 2021). Including gender and diversity concerns, climate change, and innovation on the agenda for policy reform reflects the IDB's added value. By creating particular programs and policies in these areas, gender equality and diversity has been promoted, and climate-sensitive plans have been established.

To reduce regional, socioeconomic, and ethnic disparities in service access, especially for diverse and disabled populations, the IDB promotes universal access to high-quality water and sanitation services with an emphasis on equity, inclusivity, and affordability. Regarding concerns such as the use of technologies, social engagement with a gender and diversity approach, land-use planning, legalization of land tenure, management models, and monitoring services, the WASH sector demands diverse design and implementation approaches. Therefore, countries in LAC should advocate for targeted measures to improve access in rural and peri-urban areas, which include Indigenous people and Afro-descendants. Additionally, targeting and prioritization arrangements should be created to assure support for low-income households and the most vulnerable population categories, emphasizing gender to increase their efficacy (IDB, 2021).

Furthermore, to truly achieve inclusiveness, the IDB's plans to support governments in LAC should include developing regulations and tools that reduce innovation risk aversion among public and private stakeholders in the WASH sector, as well as specific regulatory initiatives for validating innovations, promoting gender equality and inclusion, and stimulating innovation supply and demand in the sector (IDB, 2021).



**Innovation
for improved
WASH services
for all**

4. Innovation for improved WASH services for all

Inequality has been a structural and enduring aspect of LAC's history. Access to clean water and adequate sanitation are basic needs that significantly impact many dimensions of well-being. But such access is still scarce and starkly unequal for a significant share of the global population, especially those at a more significant disadvantage.

Water resources will continue to dwindle due to population growth, eroding the fragile symbiotic relationship between the interconnected WASH subsectors. These intersecting subsectors often interact among and between themselves regarding problems, actors, products, and solutions. For instance, good sanitation and hygiene are difficult to achieve without sufficient quantities of clean water, and inadequate sanitation impacts water quality. To achieve SDG 6 and ensure enforcement of the human right to water and sanitation, major development and humanitarian organizations have implemented large-scale WASH projects focusing on interconnectedness. These initiatives frequently include disease vector control, waste management, safe sanitation practices, toilets and latrines, and water supply.

“Technology in the SDG era has frequently been emphasized and has played a crucial role in addressing some of the WASH-related difficulties by offering resource-efficient solutions.”

Despite multilateral and multinational efforts, current water and sanitation problems faced by marginalized and underprivileged groups cannot be solved with conventional methods. Technology in the SDG era has frequently been emphasized and has played a crucial role in addressing some of the WASH-related difficulties by offering resource-efficient solutions for water harvesting, desalination, effective usage, treatment, and recycling. However, much focus has been given to emerging technologies that underpin the Fourth Industrial Revolution (4IR), implemented by numerous development and humanitarian organizations to address the general WASH crises of our modern world.

“Addressing the needs of the underserved, underprivileged, and marginalized groups requires a more nuanced, creative approach to innovation.”

The discourse around innovation-led WASH has revolved solely around technology. Yet innovation cannot be viewed exclusively through the technology prism. Addressing the needs of the underserved, underprivileged, and marginalized groups who live in extreme poverty, crowded slums, and remote rural locations requires a more nuanced, creative approach to innovation. Therefore, the term innovation, for the purposes of this paper, encompasses the processes of testing new ideas and cultivating a culture of learning and continual adaptation of existing solutions.

4.1 Women-led digital water microenterprises for safe water access

As with access to water, digital technology has increasingly become recognized as a crucial instrument for expanding the educational, economic, and civic potential of women. Simultaneously, digital technology has grown more popular in managing effective and trustworthy safe water services. Digital technology can facilitate community education and understanding regarding the importance of clean water for women and girls. As community mobilizers, women can effectively leverage their informal social networks by utilizing them inside communities to increase the demand for safe water. Mobilizers can receive rewards based on the number of new consumers they are able to register and the delivery of targeted marketing and sales campaigns. To improve the efficacy of their community outreach, they could put audiovisual information onto mobile tablets to explain the significance of clean drinking water for health, offer best practices for safe water management and storage, and promote safe hygiene (Winkler & Chakravarty, 2021).

Women’s involvement as water entrepreneurs can be facilitated by digital technology, even in resource-scarce regions with low literacy and technology adoption rates. Women are frequently afraid to pursue careers in community water supply because they believe they lack the necessary technical abilities. In these areas, digital troubleshooting tools can play a crucial role in ensuring that small water enterprises (SWEs) have access to supplementary services when needed (Winkler & Chakravarty, 2021).

For example, Saha Global, an SWE implementer in Ghana (Saha Global, 2023), collaborates with women in rural villages to develop microenterprises that filter and treat contaminated water using low-tech solutions with the assistance of regional customer care teams. The mission of Saha Global is to expand access to safe water. Adequately improving the capacity of its female entrepreneurs to manage and employ

digital technology in their day-to-day operations would necessitate a substantial financial commitment, which would increase the cost of doing business and undermine the long-term viability of the water service. Instead, Saha Global employs digital and mobile tools where they may be utilized most effectively. This entails Saha Global utilizing technology to assist customer care staff in optimizing their operations to deliver field support to individual businesses (Ezbakhe et al., 2019).

4.2 Software-based safe and accessible sanitation services

Mobile technologies have become indispensable tools for a large portion of humanity. The notion that mobile telephony was linked with a highly developed economy ceased to be the case years ago. With the proliferation of smartphones and tablets, people across the globe have the unique ability to access vast amounts of information. As a result, mobile application development has become a booming industry that employs millions of developers devoted to keeping up with industry demand. The initial “boom” in mobile application development disregarded the needs of the marginalized and underserved (Jansen Reventlow, 2021). However, mobile technology has begun to find its applications as a tool for empowerment, activism, and socioeconomic progress in poorer regions of the world in the digital age.

Not surprisingly, mobile applications are increasingly at the forefront of the developmental push as society transitions toward a mobile-centric one. Initial mobile application technologies aimed at addressing the needs of underserved populations focused on mobile transfer and payment systems. One such example can be found in Kenya, where Vodafone launched M-PESA, a mobile transfer and payment system intended for people without access to traditional financial services (Yanes, 2019). While mobile applications that aid the process of lifting people out of poverty by providing them with access to finance have become a staple in developing nations across the globe, a shift is needed to develop other mobile technologies that improve the overall quality of daily life for the marginalized and underserved. This is particularly true in the case of the provision of safe WASH services.

Efforts to provide software-based safe and adequate sanitation services for specific groups of the population – women and girls, transgender, intersex, gender non-conforming individuals, and people with disabilities – have permeated the mobile technology sector in recent years. One such example is Wolo, an Indian startup that has developed a mobile application that tackles the provision of safe access to hygienic public sanitation services for women. Wolo’s vision to provide hygiene dignity brings a tech-enabled public toilet discovery platform app that helps women locate the nearest washroom that follows a standard protocol to ensure safety, cleanliness, and hygiene

Woloo, 2023). The application is available on Android devices and has identified over 13,000 safe toilets for women in 11 cities in India and 30,000 toilets in Singapore (The Economic Times, 2022).

Restrooms are one of the main arenas where the battle for transgender rights is fought daily. To aid in this, a web application called *Refuge Restrooms* seeks to provide safe public toilet access for transgender, intersex, and gender non-conforming individuals (Refuge Restrooms, 2023). The US-based trans-led startup aims to create a community focused on finding existing safe washroom access and advocates for the safety of transgender, intersex, and gender non-conforming people. *Refuge Restrooms* has a database of 4,500 gender-neutral, safe restrooms, and is continuously expanding by adding new listings from users (Refuge Restrooms, 2023).

A bid to address the needs of people with disabilities who need accessible toilets has resulted in the development of a mobile application called *Accessaloo* (Accessaloo, 2023). This user-based content application from Barcelona, Spain, helps users find, add, and share accessible toilets. The database for the application is user-generated, and accessibility of public toilets is validated by the users (IZ Adaptive, 2021).



An accessible toilet is a toilet that has been designed to accommodate people living with physical disabilities, including, but not limited to, wheelchair users, people with reduced mobility, people with weak legs, people with multiple limb amputations, and people experiencing a variety of other circumstances.

Another mobile application that aims to aid people with disabilities in finding clean, accessible toilets is *WheelMate* (Coloplast, 2023). This interactive application is available on Android and iOS and provides a dynamic overview of the nearest public amenities to help people with disabilities plan their days. The application currently maps over 35,000 locations across 45 countries and has been downloaded by nearly 17,000 users worldwide (Coloplast, 2023).

4.3 Simple innovation for water collection

Access to clean water saves lives. However, people need to be able to safely transport and store it to fully reap its benefits. This is particularly important to families who must walk long distances daily to fetch clean water. Because it is an undeniable necessity, carrying water is an everyday work task. Women and girls bear the brunt of this task, as they are the water carriers of the developing world, spending hours every day walking back and forth to the nearest water source. The physical burden of water carrying is directly related to women's higher emotional distress and reduced functioning in other daily activities besides water carrying (Tomberge et al., 2021).

To address the water needs of so many women and girls, the Water Wheel was developed to allow an easy way to fetch water from the nearest drinking water source. One need not carry the weight on top of their head; instead, it can be pulled, pushed, or rolled on the ground, eliminating the physical strain of carrying water containers. The water wheel also allows women to carry more water in a single trip since each water wheel can carry 45 liters (Patwardhan, 2017). For example, in many villages in India, women transport water for long distances, and the tedious process culminates in several health-related issues. The concept of the Water Wheel was developed by Habitat for Humanity India to improve the efficiency of water transport and storage across difficult terrains. The cylindrical plastic drum is made from food-grade, human-safe, high-density polyethylene, which can hold 45 liters of water, three to five times more water than traditional containers. It is fitted with a plastic or metal handle, allowing the user to roll it down the road without lifting weight (Patwardhan, 2017). The success stories of the Water Wheel reinforce that even the most uncomplicated innovations can genuinely change lives when implemented correctly.

Similarly, Oxfam has developed and improved upon its Jerry Bucket used for safe water transportation and storage. This 14 L capacity, heavy-duty, UV-resistant plastic water bucket has a tight-fitting lid, robust flat handle, and clip-on cap (Pell, 2019) that can easily be used in rural areas across LAC to help women and girls fetch water. Made from polyethylene, the bucket offers a safe solution for water storage, protecting it from pollution and further contamination. It has become established worldwide as a standard safe water container and is used by many other relief agencies, including the UN and the Red Cross (Pell, 2019).

4.4 Eco-friendly, affordable, and long-lasting sanitation

Negligent fecal waste disposal has detrimental long-term effects on health and well-being. According to water and sanitation experts, tiger worm toilets, which convert human waste into fertilizer, may prove to be an affordable and long-lasting sanitation solution for the growing number of slums and refugee camps around the developing world (Guilbert, 2017). The earthworm-filled latrines are smaller than pit latrines, need much less maintenance, pose fewer health risks, and can give communities rich compost for agriculture. In rural areas and countries with prevalent open defecation, attitudes toward water and sanitation must be challenged.

Tiger Worm Toilets (TWTs), also referred to as “Tiger Toilets” or “vermifilter toilets,” utilize composting worms inside the pit to break down the feces and digest them in situ, turning the raw sludge into vermicompost and considerably increasing the lifespan of the toilet (Oxfam WASH, n.d.). Use of TWTs eliminates the need for conventional desludging because the vermicompost is easier to remove and sludge accumulates more slowly. As well as eliminating the need for costly desludging and sludge treatment infrastructure, this can lower long-term operational costs. As long as the ideal environmental conditions are preserved, a worm colony can survive inside the toilet indefinitely.

Unlike pit latrines, which require frequent, time-consuming, and expensive cleaning, TWTs only need to be cleaned out once every three to five years (Think of the Pandas, 2022). The compost level can be swiftly emptied with a spade, and the shape of the toilets generally makes them easier to empty. Due to the aerobic digestion process, the TWTs do not have the same unpleasant odor as other sanitation solutions, making them less foul-smelling and unhygienic than a normal pit latrine, a common sanitation solution. The absence of an offensive smell makes using the restroom more appealing and reduces the number of disease-carrying flies in the area (Think of the Pandas, 2022). These types of toilets could be implemented in rural and informal urban settlements across LAC.



4.5 Container-based toilets for low-income urban settlements

In many developing countries, urban population growth is outpacing sanitation access and service improvements. For many people living in informal, low-income settlements, access to safe sanitation facilities presents a challenge. Traditional urban sanitation strategies based on expanding sewerage networks and constructing wastewater treatment (WWT) plants are inadequate to provide citywide sanitation services for everyone in these situations (World Bank, 2019).

Conventional approaches to addressing the sanitation crisis have proven insufficient due to constraints posed by high population densities, scarce land, the short lifespan of latrines, cost, and safety issues. Generally, latrines are not open at night and require frequent manual desludging, which frequently ends up in rivers and open drains, further exposing residents to public health risks. As a result, residents are often forced to resort to open defecation or use of makeshift commodes in their homes, emptied into open drains and rivers.

Container-based sanitation (CBS) is an additional option to address sanitation needs where conventional means are inappropriate. One such example of CBS is the container-based toilet (CBT) developed by Oxfam to address issues of convenience, safety, hygiene, privacy, and dignity. Oxfam's CBT is a "closed loop" solution as feces and urine are safely and separately contained prior to disposal at an agreed site, ensuring public health risks are safely managed (Oxfam WASH, n.d.).

4.6 Innovative solar-powered wastewater treatment solution for informal settlements

LAC's water supply and sanitation systems are marked by successes and difficulties. Greywater management and lack of drainage in informal settlements around the world negatively affect human and environmental health (Charlesworth, 2022). In the case of Brazil, one difficulty is the continued presence of many poor people living in rural areas and informal urban settlements (or favelas)² without access to piping for water or sewage. Brazilian favelas are mostly settled by underprivileged Afro-descendants who must build their own sanitation systems. Additionally, because there is frequently only one garbage collection location for the entire community, residents of the favelas in Rio de Janeiro are forced to throw waste into the streets, typically in the gutters and drainage systems of the communities. Hence, the city's sanitation system poses a health hazard and is highly inefficient (Water in Brazil, n.d.).

² A favela (or slum) is a settlement near a large city, generally housing migrants and the poor. Numerous inhabitants live in the houses or shacks they build for themselves with what materials they can find. They also have to jerry-build their own sanitation services and often connect themselves to the city's drinkable water source.

To address the issues of wastewater treatment in an efficient and cost-effective way, the Asian Institute of Technology in Thailand has developed a solar septic tank as an innovative technology for domestic wastewater treatment (Polprasert et al., 2018). The Solar Septic Tank (SST) is a reconfigured conventional septic tank with solar-heated water. Sludge accumulation is reduced by 50% when the septic tank is run at temperatures higher than ambient settings, which also improves pathogen die-off and generates better-quality septic tank sewage (IHE Delft Institute for Water Education, 2018). The lengthened desludging period and cost-savings in sludge management are the results of the decreased output of accumulated sludge. The reduced sludge volume would reduce the pollution issues brought on by improper sludge disposal methods in developing countries.

The SST has the added advantage of converting waste into fuel and water that can be utilized in agriculture and is intended for usage by up to six to ten people (one or two families). The three main parts of the SST system, which uses an advanced biochemical process, are a solar water heating device, a heat transfer pump and equipment, and a modified septic tank (IHE Delft Institute for Water Education, 2018). Hot water produced by the solar heating system is circulated via the heat transfer apparatus by a pump to raise the temperature inside the solar septic tank.

While this innovative solution has only been piloted on a domestic scale in one community in central Thailand, it could potentially be transposed to the densely populated, impoverished, informal urban areas across LAC due to its low investment cost.

4.7 Disability inclusive toilets

The sanitation and hygiene needs of people with disabilities have long been a low priority. Accessing adequate sanitation is no small feat for people with disabilities, often requiring the accompaniment and support of family members and caregivers. As a result, many people with disabilities experience a loss of autonomy and independence, which is detrimental not only to them as individuals but also to the wider community.

To address the sanitation and hygiene needs of people who span the disability spectrum, a social enterprise called Syna Consultancy has made providing equitable and inclusive sanitation solutions its mission (Syna Consultancy Ltd., n.d.). Syna Consultancy's top priority is achieving access to safe and adequate all-inclusive water and sanitation, paying particular attention to the needs of marginalized groups, i.e., people with special needs, the physically challenged, and the elderly.

To achieve the provision of equitable and inclusive sanitation, Syna Consultancy has developed the Utulav toilet, a safe and hygienic portable toilet for mobility-challenged persons. The design was created to be practical in informal settlements, where square footage is at a premium. Wheels are included in the Utulav toilet support frame for mobility. It is simple to disassemble and carry this lightweight, compact shape anywhere. This toilet has a straightforward waste disposal mechanism that can be used hygienically and safely, minimizing contact with waste, and encouraging hygienic practices. It also features an airtight valve to ensure that no waste odors are released (Kamau, 2022).

4.8 Indigenous water purification methods

Indigenous peoples are the guardians of many of the world's most fragile and vital ecosystems, possessing invaluable knowledge about sustainability and resilience, and having a crucial role in protecting our environment. Some traditional concepts and attitudes toward water are generally shared among cultures, even though Indigenous worldviews are far from uniform. Water is considered sacred and revered since it is essential to life and a component of a larger, interrelated whole. According to Indigenous beliefs, one must consider everything related to water. Following these beliefs, one's connection with water should be founded on respect, an ethic of appreciation, and the fulfillment of certain obligations because water is acknowledged as a living spiritual force (Kamau, 2022).

Water is limited and insufficient to meet the human demands of cattle and the natural world in the Kerio Valley in Kenya, home to the Marakwets people. This has frequently led to competition and disputes over who can access and use the water. Because water is so scarce and essential, the Marakwets have created, preserved, and implemented Indigenous knowledge to ensure equal distribution. The maintenance of water bodies and water catchments is under the purview of the entire community, whereas clan elders are in charge of regulating access to and usage of the numerous water sources and water points (Cheserek, 2005).





Indigenous knowledge is characterized by local knowledge unique to a given culture or society. It is the basis for decision-making in numerous social realms, including agriculture, health care, food preparation, education, natural resource management, and various other activities in rural communities.

Due to the difficult climatic circumstances of a semiarid to desert terrain, the Marakwets who live in the Kerio Valley's watersheds have played a significant role in controlling water and watersheds that could have deteriorated. The Marakwet used native plants and herbs, such as *chepuswo* (*Maerua edulis*), as a successful method to purify contaminated water. Women frequently added burnt ash to water pots to settle dirt and sweeten the water. Water storage containers were occasionally cleaned and turned upside down. The pots could dry completely and endure longer without breaking, owing to this procedure (Cheserek, 2005).

Traditional water purification techniques are also employed in India to clarify muddy water using natural coagulants such as the seeds of the clearing nut tree seeds of the clearing nut tree (*strychnos potatorum*) (Yadav, 2014). By rubbing them on the inside of water storage containers, it was thought the seeds of these plants could purify the muddy water. Additionally, wells were filled with burnt coconut shells, with the hope that water would be purified (Cheserek, 2005).



Blue inclusion on the horizon

5. Blue inclusion on the horizon

“It is time for the water and sanitation sector to experience a blue revolution and thoroughly acknowledge and explore the overlap between inclusion and water.”

Equal access to clean, safe, and inclusive water and sanitation services is essential to reducing overall inequalities. The lack of inclusive water and sanitation services undermines the very foundations of development. Good equality and diversity practices guarantee that the services provided to individuals are accessible and equitable for all. Such services ensure that everyone is treated equally, afforded the dignity and respect they deserve, and their diversity celebrated.

Inclusion, equality, and diversity are essential components of well-being, upward economic mobility, and equal opportunities for the underserved, underprivileged, vulnerable, and marginalized. Vulnerable and marginalized individuals and communities lack a voice and autonomy in water management. As people are excluded based on aspects of their identity, such as ethnicity, socioeconomic status, gender, sexual orientation, or disability, their barriers to safe and accessible water and sanitation remain constant and ignored. This paper demonstrates that water and sanitation are frequently used as mechanisms of exclusion and inequality. In light of this, it is time for the water and sanitation sector to experience a blue revolution and thoroughly acknowledge and explore the overlap between inclusion and water.



The Blue Revolution refers to a call to action for a radical change in the WASH sector to more inclusive, equal, and diverse access to water and sanitation services for those historically underserved and marginalized. The WASH sector must experience a fundamental change through multidimensional synergies between science, technology, innovation, and regulations to ensure the equitable distribution of sustainable and adequate water resources and sanitation services for all.

The different dimensions of identity, including race, sexual orientation, disability, and age, intersect and influence individual experiences and outcomes in accessing WASH services. Diversity data is essential for equality because WASH inequality is not experienced in the same way by all women, men, non-binary people, people with disabilities, Indigenous people, and Afro-descendants. Developing frameworks to collect diversity data will allow for the development of policies, strategies, and innovations that address the inequalities faced by these populations. This will ensure that countries in LAC enforce the human right to water and sanitation and enhance people's trust, strengthen democracy, and bring public sector innovation, as different perspectives and skill sets contribute to designing solutions to WASH challenges.

The SDGs enable us to collaborate for the benefit of people, the planet, and prosperity. Water and sanitation are necessary for all three, including reducing inequality and discrimination. It is difficult to achieve the ambitious SDGs without increasing efforts for equality, inclusion, and diversity in water and sanitation. Water security for all may be a multidimensional problem, but a future in which this essential resource is safe and accessible to all, including marginalized peoples, is attainable through concerted efforts to instill equality and diversity in WASH through inclusive innovation.

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