



UN
2023 WATER
CONFERENCE

NEW YORK
22-24
MARCH
2023

Distr.: General
(31 January 2023)

Original: English

2023 United Nations Conference on the Midterm Comprehensive Review of the Implementation of the Objectives of the International Decade for Action, “Water for Sustainable Development”, 2018–2028

New York, 22 March –24 March 2023

Interactive dialogues

Interactive dialogue 1: Water for Health

Concept paper prepared by the Secretariat

Summary

The present paper was prepared pursuant to paragraph 9(d) of UN General Assembly resolution [75/212](#), in which the Assembly requested the Secretary-General of the 2023 United Nations Conference on the Midterm Comprehensive Review of the Implementation of the International Decade for Action, “Water for Sustainable Development”, 2018-2028 (hereinafter: UN 2023 Water Conference) to prepare concept papers on each of the themes of the interactive dialogues, taking into account the relevant water-related processes of the Assembly and other possible contributions. The present paper concerns interactive dialogue 1, entitled “Water for Health, Access to safe drinking water, hygiene and sanitation (SDG 6.1, 6.2, 6.3 and SDGs 1, 3, 4, 5, 17), including the Human Rights to Safe Drinking Water and Sanitation”. In the paper the challenges, current status, interlinkages, opportunities for progress, transformative solutions and recommendations related to access to safe drinking water, hygiene and sanitation are set out.

I. Introduction¹

1. **Drinking water and sanitation are human rights, and access to drinking water, sanitation and hygiene (WASH) services is vital to health, development, and social and economic progress.**

2. The **human rights to safe drinking water and sanitation** have been recognized by the UN General Assembly. Safe and safely managed WASH can contribute to the implementation of and progress on almost all health and development goals. **Improving WASH and water management will ensure positive health outcomes and is essential to the prevention of disease and injury.** Prevention is both more just and more cost-effective than treating health problems after they arise.

3. **Drinking water, sanitation and hygiene services must reach everyone**, consistent with the promise to leave no-one behind. Universal access to WASH services improves health and enables educational opportunities, workforce productivity and a more **dignified, just and equal society** – reducing inequalities between rich and poor, men and women, rural and urban dwellers and different ethnicities, Indigenous Peoples and the rest of the population.

4. Sustainable Development Goal (SDG) 6 calls for universal and equitable access to safe and affordable drinking water, adequate, equitable sanitation and hygiene for all, and improved water quality. The indicators of success, the “proportion of people using safely managed drinking water and sanitation” and the “proportion of wastewater treated,” inject **a new level of ambition in terms of the levels of service to be achieved**. SDG 6 also explicitly includes hygiene, an important factor in ensuring good health, but also, in the form of menstrual health and hygiene management, essential to achieving women’s empowerment and gender equality.

5. The consequences of poor WASH disproportionately affect the most vulnerable, marginalised and disadvantaged, particularly women, people living with disabilities and Indigenous peoples. **Access to adequate WASH services can contribute to an upward spiral of prosperity and well-being and is an essential route out of poverty for individuals and communities, thereby leading to ending poverty in all its forms everywhere, as called for under SDG 1.** Increasing the proportion of people with access to WASH will require, and can result in, corresponding increases in empowerment, participation and social mobilization.

6. A “transformative” approach to WASH is needed that interrupts all pathways for contamination of the environment and systematically prevents human exposure to pathogens.² This is consistent with an approach that encompasses interventions to protect human, animal and eco-system health, recognising that they are an interconnected continuum, which is referred to as One-Health.³ These approaches require engagement across sectors – water, health, agriculture - to identify the root causes of disease and find sustainable solutions. They entail achieving higher levels of service, and more comprehensively identifying and managing risks. These include upstream risks from human, animal and industrial activities that threaten water quantity and quality, and downstream risks, for instance to food safety and sensitive aquatic environments, from inadequately treated wastewater and sludge. These are far from abstract concepts: the COVID-19 pandemic has brought to light the urgency of action to prevent diseases that have complex human, animal and environmental transmission pathways.

7. There is an urgent need to dramatically increase **political commitment** to safely managed drinking water, sanitation and hygiene, to strengthen the governance and institutions required to deliver

¹ This Concept Paper has benefitted from contributions from Member States, UN system and a diverse group of stakeholders. See <https://sdgs.un.org/conferences/water2023/documentation> and https://www.un.org/sites/un2.un.org/files/final_water_consultation_report_19_oct.pdf

² WHO and UNICEF, 2019, Position Paper: Implications of recent WASH and nutrition studies for WASH policy and practice.

³ <https://doi.org/10.4060/cc2289en>

these services, and significantly increase the financial resources available. **Globally, at least a quadrupling of current rates of progress on water, sanitation and hygiene is needed to meet the SDG targets.**⁴ In fragile contexts and the least developed countries, progress needs to be made even faster. While most people lacking access to WASH live in low- and lower-middle income countries, there are substantial pockets of unserved people in middle- and high-income countries, where exclusion is often based on discrimination.⁵

8. **Despite many challenges, there are examples of significant progress and success**, as will be noted below. Many of the countries that have made rapid gains in improving WASH have done so as part of **nation building**. Building institutions to support the provision of WASH services can contribute to good governance in general. A commitment to sustainable and safe WASH has been considered part of the **social contract** between governments and people, and a **precondition for prosperity**.⁶

II. Overview of the challenge, current status and interlinkages

9. The sections below provide a short summary of the current status of WASH and wastewater treatment. Much more detail can be found in the [State of the World's Drinking Water](#), [State of the World's Sanitation](#), [State of the World's Hand Hygiene](#) and [Progress on Wastewater Treatment](#) reports.

Status of household drinking water, sanitation and hygiene

10. To meet the criteria for a safely managed drinking water service, households must use an improved source that is, “accessible on premises, available when needed, and free from contamination.” corresponding to requirements articulated in the UN recognition of the human right to water. To be safely managed, sanitation facilities should not be shared with other households, and the excreta produced should either be treated and disposed in situ; stored temporarily and then emptied and transported to treatment off-site; or transported through a sewer with wastewater and then treated off-site.

i. Drinking water

11. In the last two decades investment in drinking water services has led to considerable increases in access. In 2020, almost three quarters of the world's population used safely managed drinking water. However, 2 billion people still do not use safely managed drinking water, 771 million do not use basic drinking water services, and there are wide geographical disparities. Far fewer people have safely managed drinking water services in rural areas than in urban ones, but the population without safely managed drinking water is actually increasing in urban areas due to population growth.⁷

⁴ <https://www.who.int/publications/i/item/9789240030848>

⁵ Mattos, K. J. et al, Reaching those left behind: knowledge gaps, challenges, and approaches to achieving SDG 6 in high-income countries, *Journal of Water, Sanitation and Hygiene for Development* (2021) 11 (5): 849–858.

<https://doi.org/10.2166/washdev.2021.057>

⁶ Northover, H. et al, [Achieving total sanitation and hygiene coverage within a generation – lessons from East Asia](#), WaterAid, 2016

⁷ <https://www.who.int/publications/i/item/9789240030848>

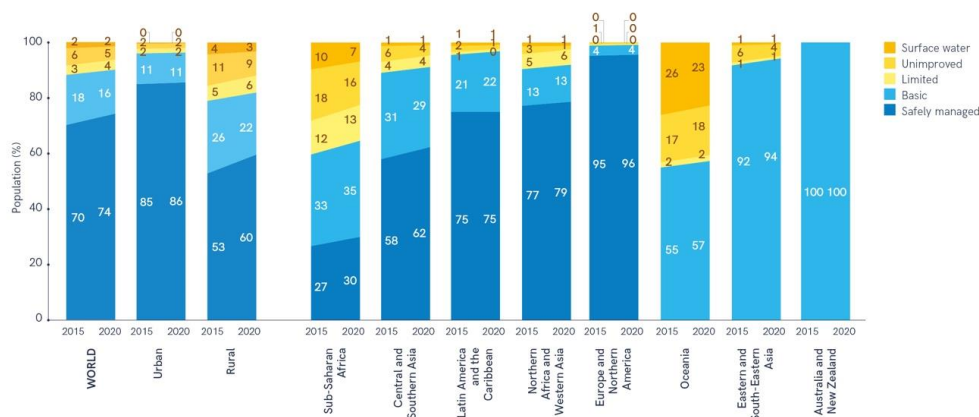


Figure 1 Global and regional drinking water coverage 2015-2020 (%) Source: JMP

12. However, climate change is exacerbating water scarcity and droughts, while flooding disrupts supplies and devastates communities. Pollutants threaten both human health and entire ecosystems. Rapid urbanization and population growth are limiting the ability of cities to deliver water to millions of people living in informal communities and slums, slowing progress on SDG 11. Sustainability and functionality of rural water supply facilities remain a major challenge, and systems to maintain, repair and rehabilitate rural water technology are often missing or weak. Safely managed water services require resilient systems to deliver them: service providers that operate and maintain the infrastructure in a technical and financial efficient manner, and all ancillary elements of the enabling environment to sustain those investments over time.

ii. Sanitation and Hygiene

13. **Sanitation:** Despite progress, in 2020 almost half of the world’s population, 3.6 billion people, used sanitation services that leave human waste untreated, threatening human and environmental health. An estimated 494 million people practised open defecation, with rural dwellers, Indigenous Peoples and poor people much more likely to be without any sanitation services at all.^{8,9}

⁸ <https://www.who.int/publications/i/item/9789240030848>.

⁹ A/HRC/51/24

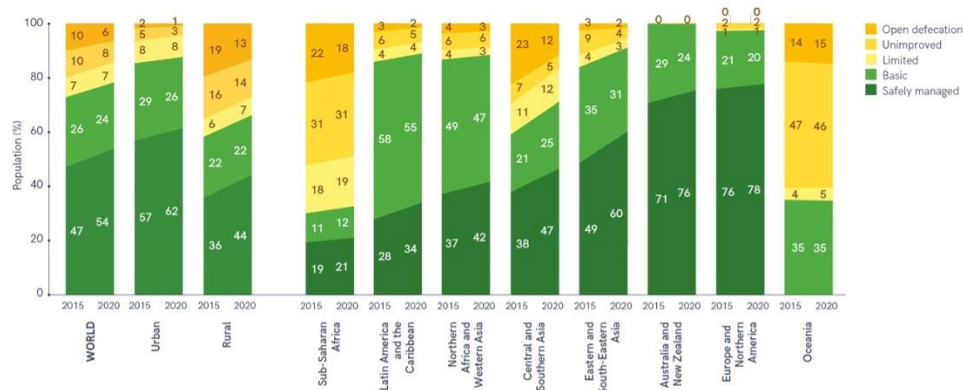


Figure 2 Global and regional sanitation coverage 2015-2020 (%) Source: JMP

14. Some countries have made significant progress on eliminating open defecation¹⁰ but have found it challenging to achieve and maintain basic levels of sanitation, as facilities must be durable enough to last multiple seasons; this is becoming even harder with the onset of climate change. Another challenge has been to make progress while also eliminating inequalities. Yet, inequalities based on ethnicity, gender, caste and other factors still exist.

15. Onsite sanitation and decentralised wastewater treatment are growing as options to bring safely managed sanitation to everyone, no matter how challenging or remote their location. In addition, container-based sanitation provides an option for densely-populated areas and refugee camps. These options place the emphasis on the management services that keep them running: waste collection, transportation, treatment and reuse. But households that are most in need of faecal sludge management services are often located in dense urban settings, and faecal sludge management is not addressed in many urban sanitation policies or plans.¹¹

16. Regulation and standard setting are missing or weak. For instance, more than 80% of countries have formal national standards for wastewater treatment, but only 62% cent of countries have a standard for safe use of wastewater and faecal sludge for agriculture and other productive purposes.¹²

17. Providing more formalized, safe, adequately paid and dignified jobs in the sanitation sector is key to providing safely managed sanitation services. Many more sanitation workers are needed, yet too often their work exposes them to hazards such as pathogens in faecal sludge and wastewater, injury from collapsing pits, asphyxiation from gases in sewers, social stigma and drug and alcohol abuse to cope with the dehumanizing conditions of sanitation work.¹³

18. **Hygiene:** Hand hygiene plays a significant role in controlling disease. But both access to the facilities to practise hand hygiene and support for the behaviours required are missing in many settings. It is estimated that three out of ten people, 2.3 billion globally, lack a facility with water and soap available to wash their hands at home, including 670 million who have no handwashing facility at all.¹⁴

¹⁰<https://www.who.int/publications/i/item/9789240030848>.

¹¹ <https://glaas.who.int/>

¹² *ibid*

¹³ <https://documents1.worldbank.org/curated/en/316451573511660715/pdf/Health-Safety-and-Dignity-of-Sanitation-Workers-An-Initial-Assessment.pdf>

¹⁴<https://www.who.int/publications/i/item/9789240030848>.

19. SDG target 6.2 calls for ‘special attention to the needs of women and girls’, but their menstrual health and hygiene needs frequently go unmet, due to gender inequality, discriminatory social norms, cultural taboos, poverty and lack of basic services. This has far-reaching negative impacts on their lives, restricting their mobility; freedom and choices; affecting attendance and participation in school and community life; compromising their safety; and causing stress and anxiety. The challenges are particularly acute in humanitarian crises. Clear government leadership and ministerial ownership of menstrual health and hygiene is essential; however in many cases, menstrual health and hygiene falls between the mandates of ministries responsible for health, education, public works and women’s affairs.¹⁵

Status of WASH outside the home

20. People need access to WASH services no matter where they are. This includes healthcare facilities, schools, workplaces, places where food is prepared, markets, refugee camps and prisons. Data are often lacking for many of these extra-household locations. Healthcare facilities and schools are two particularly important examples for which data are available.

i. WASH in healthcare facilities

21. In 2021, 1.7 billion people globally lacked a basic water service at their health care facility, including 857 million who used health care facilities that had no water service at all. In general, water services are worse in rural health care facilities than in urban ones, public facilities than private facilities, and smaller health care centres than hospitals. Nearly one fifth of health care facilities in least developed countries had no service at all.¹⁶

22. Of the countries with available data, one in 10 health care facilities globally had no sanitation service in 2021. Half of health care facilities worldwide lack basic hygiene services with water and soap or alcohol-based hand rub where patients receive care and at toilets. Many health care facilities lack basic environmental cleaning and safe segregation and disposal of health care waste.

ii. WASH in schools

23. Millions of children attend schools that lack basic drinking water. In 2021, 546 million children lacked a basic drinking water service at their school, including 288 million whose schools had no drinking water service at all. An estimated 539 million children attend a school that lacks basic sanitation, and 240 million children attend a school in which there is no sanitation facility at all. Almost half of schools globally lacked a basic hygiene service (handwashing facilities and soap and water). This means that in 2021, 802 million children lacked a basic hygiene service at school, including 480 million children who attended schools with no hygiene service at all.¹⁷

Status of WASH in fragile contexts and humanitarian settings

24. Fragility poses a major threat to the achievement of the SDGs. In 2020, fragile contexts were home to almost a quarter of the world’s population and more than three quarters of those living in extreme poverty.¹⁸ In 2020, people living in fragile contexts were half as likely as those living in non-

¹⁵ Guidance on Menstrual Health and Hygiene, UNICEF, 2019

¹⁶ [https://www.who.int/publications/i/item/progress-on-wash-in-health-care-facilities-2000-2021--special-focus-on-wash-and-infection-prevention-and-control-\(ipc\)](https://www.who.int/publications/i/item/progress-on-wash-in-health-care-facilities-2000-2021--special-focus-on-wash-and-infection-prevention-and-control-(ipc))

¹⁷ <https://data.unicef.org/resources/jmp-wash-in-schools-2022/>

¹⁸ States of Fragility 2022, OECD Publishing, Paris, 2022. <https://doi.org/10.1787/c7fedf5e-en>

fragile contexts to have safely managed drinking water and safely managed sanitation services. They were three times as likely to practise open defecation. Displaced populations, and migrants in general, are far less likely to have basic water and sanitation services than the rest of the population.¹⁹

25. While most people living in refugee camps collect drinking water from protected/treated sources, camps in many countries are unable to meet post-emergency targets for access to soap and toilets. In these situations, women's vulnerability to sexual violence is multiplied.

26. In fragile contexts, only half of schools have basic water and sanitation. Over half of children without basic drinking water services at their school in 2021 lived in fragile contexts.²⁰ One fifth healthcare facilities in fragile contexts had no water or sanitation service at all (double the average globally).²¹

27. People living in fragile contexts are more likely to suffer from political, economic and environmental crises. WASH services in such contexts are often weak. In addition, water and sanitation can actually contribute to fragility. Global security analyses increasingly cite water as a strategic resource that, when not managed properly, can be a source of conflict and in extreme cases may threaten national and regional security. The failure of governments to provide WASH services as public goods can affect the social contract, resulting in instability. Inequitable provision of WASH services may also fuel grievances and affect social cohesion between communities.²²

Status of wastewater treatment

28. Estimates show that just over half of household wastewater is discharged to the environment without adequate treatment, threatening public health and the environment. Wastewater collected in sewers is more likely to be safely treated than waste from septic tanks and other types of onsite systems. Globally, approximately three quarters of sewer wastewater flows are estimated to be safely treated, but of the wastewater generated by households with septic tanks, over a half is estimated not to have been safely treated due to on-site systems that have been incorrectly designed, operated or maintained.²³

29. Industrial wastewater potentially includes a wide range of toxic metals and chemicals. However, there is no official information available about the proportion of wastewater treated for 80% of the world population, and for 95% of the world's population regarding the proportion of industrial wastewater treated. The limited data available suggest that about a third of total and industrial wastewater received some treatment before discharge.²⁴

30. Improving wastewater management and treatment is fundamental for limiting the discharge of hazardous pollutants (nutrients, heavy metals, pharmaceuticals such as anti-inflammatory drugs, analgesics, antibiotics, hormones and microplastics) into the environment. Chemical and organic pollution from industrial sources can be persistent and bioaccumulate in the air, water and soil.

Status of policy setting, planning and resource allocation

¹⁹ <https://www.who.int/publications/i/item/9789240030848>.

²⁰ *Ibid.*

²¹ [https://www.who.int/publications/i/item/progress-on-wash-in-health-care-facilities-2000-2021--special-focus-on-wash-and-infection-prevention-and-control-\(ipc\)](https://www.who.int/publications/i/item/progress-on-wash-in-health-care-facilities-2000-2021--special-focus-on-wash-and-infection-prevention-and-control-(ipc))

²² Water Under Fire Volume 1: Emergencies, development and peace in fragile and conflict-affected contexts, UNICEF, New York, 2019

²³ https://unhabitat.org/sites/default/files/2021/08/sdg6_indicator_report_631_progress_on_wastewater_treatment_2021_english_pages.pdf

²⁴ *ibid*

31. Countries that are on track to achieve their national drinking-water coverage targets are more likely to have human and financial resources in place to implement their plans and more likely to have functional regulatory authorities and surveillance systems. In comparison, countries that need to accelerate progress to achieve their targets lack sufficient human and financial resources to implement their plans, are less likely to have functional regulatory authorities, and have lower utilization of domestic capital commitments than countries that are on track. While many countries have formally approved policies, few have translated these into costed plans with sufficient financial and human resources to implement them (this is illustrated in Figure 3 for the urban sector).²⁵

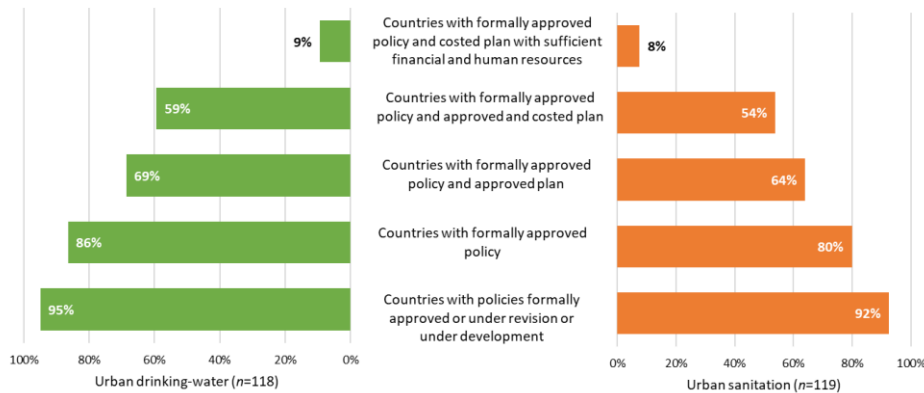


Figure 3 Status of policy and planning for urban water and sanitation Source: GLAAS

Interlinkages

i. Fulfilment of human rights

32. The United Nations General Assembly recognized the human right to water and sanitation in 2010, and sanitation as a distinct human right in 2015. These human rights are assured for all – regardless of income, gender, disability status, age or ethnicity or any other status. Clear guidance for legal, regulatory and policy environments, as well as institutional practice, can be drawn from human rights principles.

33. The right to water entitles everyone to have access to sufficient, safe, acceptable, physically accessible, and affordable water for personal and domestic use. The right to sanitation entitles everyone to have physical and affordable access to sanitation, in all spheres of life, that is safe, hygienic, secure, socially and culturally acceptable, and that provides privacy and ensures dignity.

34. Physical presence is not the same as access. A water or sanitation service does not serve the whole community if it is too expensive, unreliable, unhygienic, unsafely located, not adapted for less able groups or children, or is not gender-segregated, in the case of toilets and washing facilities. Marginalized groups are often overlooked, and sometimes face discrimination as they try to access WASH services.

35. States are duty-bearers in terms of providing water and sanitation services to people, who are the rights-holders. Rights-holders must be able to claim their rights, and duty-bearers must guarantee the

²⁵ <https://glaas.who.int/>

rights to water and sanitation equally and without discrimination. Respect for human rights must be integrated into development plans for all sectors, at all levels. Governments must take a human rights-based approach to water and sanitation improvements, ensuring that no one is left behind.²⁶

ii. Linkages to health and well-being (SDG 3)

36. Good health encompasses not only the absence of disease, but a complete state of mental and physical wellbeing. Safe and safely managed WASH and management of wastewater are intrinsically linked to health and contribute to SDG 3 by preventing disease, supporting physical and mental wellbeing, and contributing to nutrition, food safety and food security. WASH not only prevents specific diseases, but also contributes to the resilience of health systems, increases pandemic preparedness, addresses antimicrobial resistance (AMR) and improves health outcomes in general.

37. A lack of WASH causes 1.4 million deaths annually,²⁷ including from infectious diseases (such as diarrhoea and acute respiratory infections), and from chronic undernutrition. Poor WASH is the root cause of cholera, an acute diarrhoeal disease that can kill within hours if left untreated; in 2022 there were ongoing cholera outbreaks in 29 countries.²⁸ Repeated bouts of diarrhoea can contribute to a reduction in the nutrient and protein uptake of children, resulting in low height-for-age, or stunting. Stunting affected nearly one quarter of children under 5 years of age globally in 2020, and has impacts on cognitive as well as physical development.²⁹

38. WASH is key to combatting Neglected Tropical Diseases (NTDs) such as soil-transmitted helminth infections (worms), schistosomiasis and trachoma. Water is also the habitat to a number of vectors that carry disease, such as the mosquitoes that transmit malaria and dengue. Favourable mosquito breeding conditions may be created by poor management of water, wastewater, drainage and solid waste, and result in the rapid proliferation of diseases such as dengue. The global incidence of dengue has increased exponentially over the past decades; half of the world's population is now estimated to be at risk.

39. WASH services also reduce the need to treat infectious diseases with antibiotics, extending the lifespan of last-line-of-defence antimicrobials. Hand washing, maintaining asepsis and medical waste management are essential for infection-prevention at health facilities. Inadequate WASH in health care facilities has been linked to the spread of antimicrobial resistant infections, placing patients and staff at risk of serious infections that are hard to treat.³⁰

40. Climate change is driving the increased spread of many communicable diseases, including diarrheal diseases, cholera and NTDs. For instance, flooding results in increased mobility of pathogens. The COVID-19 pandemic has demonstrated the critical importance of WASH in households, schools and healthcare facilities on efforts to prepare for, prevent, and control future pandemics.

41. Chemical contaminants in drinking-water pose a significant health burden, whether natural in origin or anthropogenic. These include lead (from household plumbing materials and handpumps), nitrate (from sewage contamination or agricultural runoff), mercury and heavy metals from mining and industry, and fluoride and arsenic (naturally present in groundwater in many places). It is estimated that up to 220 million people are potentially exposed to drinking water containing elevated concentrations of arsenic. Long-term exposure to high levels of arsenic in drinking water and food irrigated with

²⁶ Human Right to Water and Sanitation – UN Fact Sheet: <https://www.unwater.org/water-facts/human-rights-water-and-sanitation>

²⁷ Wolf et al. 2022 Burden of disease attributable to unsafe drinking water, sanitation and hygiene in domestic settings: a global analysis for selected adverse health outcomes (submitted)

²⁸ WHO, Global Situation <https://www.who.int/emergencies/disease-outbreak-news/item/2022-DON426> accessed 20 December 2022

²⁹ <https://www.who.int/publications/i/item/9789240025257>

³⁰ Technical brief on water, sanitation, hygiene (WASH) and wastewater management to prevent infections and reduce the spread of antimicrobial resistance (AMR), WHO, 2020

contaminated water can cause skin lesions and cancer, while in-utero and early childhood exposure to arsenic has been linked to impaired cognitive development and increased deaths in young adults.^{31,32} Contamination of the Amazonian rivers with mercury as a result of small-scale gold mining has led to birth defects in Indigenous children. Indigenous peoples are also disproportionately affected by water contamination as a result of oil spills.³³

42. Other drinking water contaminants of emerging concern include pharmaceuticals, pesticides, per- and polyfluoroalkyl substances (PFAS) and microplastics. Some chemical contaminants may not be of health concern at levels normally found in drinking water, but may cause taste and colour issues, which may lead users to reject improved water sources and use more aesthetically acceptable but unsafe water sources, including surface water.

43. Poor sanitation increases health risks that are specific to women. For instance, women who suffer from worm infections and other diseases may become anaemic and undernourished, increasing the risk of maternal death. Women who lack sanitation may resort to harmful coping mechanisms, such as delayed urination or reduced water intake, resulting in urinary tract infections. Not only does poor WASH in healthcare facilities compromise safe childbirth, but it also deters women from utilising them to give birth.³⁴

iii. Linkages to quality education (SDG 4)

44. Every child has the right to a quality education, which includes access to WASH services while at school. The inclusion of WASH in schools in the SDGs reflects increasing recognition of its importance as a key component of a ‘safe, non-violent, inclusive and effective learning environment’ and as part of universal WASH access, which emphasizes the need for WASH outside of the home.

45. The availability of functional and private school toilets can positively impact health and learning outcomes, particularly for girls. Access to menstrual hygiene management is essential to keep girls in school. But global coverage of basic sanitation services in schools increased by only 1.14% between 2015 to 2021.³⁵

iv. Linkages to gender equality (SDG 5) and the rights of people with disabilities

46. Globally, it is estimated that women and girls are responsible for water collection in eight out of ten households without water on premises.³⁶ Carrying water is particularly common in remote, rural and marginalised communities, such as Indigenous communities. Water collection exposes women and girls to fatigue, injury (including the risk of damage to the skeleton and muscular system, and to uterine prolapse) and risks to their personal safety, including sexual assault.³⁷ In the case of girls, it affects school attendance and completion. Safely managed water entails water available on premises, which contributes significantly to gender equality.

³¹ Arsenic: Fact sheet. Geneva: World Health Organization; 2018. (<https://www.who.int/news-room/fact-sheets/detail/arsenic>)

³² Podgorski J, Berg M. Global threat of arsenic in groundwater. *Science*. 2020 May 22;368(6493):845-850. doi: 0.1126/science.aba1510.

³³ <https://www.ohchr.org/en/special-procedures/sr-toxics-and-human-rights>

³⁴ <https://www.who.int/publications/i/item/9789240014473>

³⁵ <https://www.who.int/publications/m/item/progress-on-drinking-water--sanitation-and-hygiene-in-schools--2000-2021-data-update>

³⁶ <https://apps.who.int/iris/handle/10665/325897>

³⁷ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5825974/>

47. Poor sanitation disproportionately affects the most vulnerable and disadvantaged, particularly women and people living with disabilities. Workplaces that do not have adequate sanitation facilities can dissuade women from seeking employment, further reinforcing lower labour participation by women and their reduced access to resources. Similarly, lack of public toilets reduces women's mobility and participation in public life and the economy. Poor sanitation has been shown to act as a barrier to school attendance and enrolment in many countries. This affects girls in particular, especially after puberty, when their need for menstrual hygiene management may not be addressed. Sanitation workers, often stigmatized and marginalized, face unacceptable health risks and indignities in an unhealthy and unregulated environment.³⁸

48. The ability to maintain personal hygiene has an important role to play in increasing feelings of dignity, privacy and safety, particularly among women and people living with disabilities, and decreasing feelings related to disgust and shame.³⁹ Menstrual health and hygiene management can help dismantle barriers and support girls and women to become full participants in society.⁴⁰

v. Linkages to environmental protection, climate change mitigation, resilience and adaptation (SDGs 13, 14 and 15)

49. Safely managed water and sanitation services that consider climate can both be more resilient to the impacts of climate change, and contribute to reducing greenhouse gas (GHG) emissions and minimize the ecological impact of untreated and/or poorly managed human waste. The IPCC states that “the most effective measures to reduce vulnerability in the near term are programmes that implement and improve basic public health measures such as provision of clean water and sanitation.”

50. The accelerated melting of glaciers, changes in frequency, magnitude and timing of floods, more frequent and severe droughts, a decline in groundwater storage and reduction in recharge, and water quality deterioration due to extreme events have all become more intensified due to anthropogenic climate change. These climate change impacts have significant impacts on access to safe drinking water and represent a threat to gains made in recent years.⁴¹

51. If sanitation facilities are not well built or adapted to adverse weather events, they may release effluent containing nitrogen and phosphorus from human urine and faeces into the environment during periods of heavy rain and flooding. In addition to contaminating drinking water, this can also lead to eutrophication in the receiving waters due to nutrient enrichment that promotes algae growth and depletes oxygen in water systems.⁴² Partially treated and untreated wastewater, for instance from poorly functioning municipal wastewater treatment plants, farms, factories and other sources leads to degradation in quality of receiving waters, impacting ambient water quality, water-related ecosystems, and marine pollution (specifically coastal eutrophication).

52. Low-income communities are the most vulnerable to the climate-induced impacts of disrupted water and sanitation systems. These communities often live in flood-prone areas and are highly impacted by drought and other extreme climatic events.

53. The WASH sector contributes to greenhouse gas emissions; the water sector alone is estimated to contribute as much as 5% of total emissions.⁴³ Smart investment in the drinking water and sanitation

³⁸ <https://www.who.int/publications/i/item/9789240014473>

³⁹ <https://www.who.int/publications/i/item/9789240036444>

⁴⁰ Guidance on Menstrual Health and Hygiene, UNICEF, 2019

⁴¹ <https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/>

⁴² <https://archive-ouverte.unige.ch/unige:17240>

⁴³ https://wacclim.org/wp-content/uploads/2021/04/ECAMv3_Factsheet_EN.pdf

sector can contribute to climate change mitigation while also reducing costs and building resilience.⁴⁴ This includes for example, detecting and eliminating water leaks in piped systems, reducing waste with water saving technologies (such as water meters and water-efficient fixtures and appliances), promoting the use of greywater for indoor and outdoor uses such as toilet flushing to reduce the use of treated and pumped water, improving the energy efficiency of water conveyance and treatment processes among others. Nature-based solutions, such as wetlands, can improve water quality and reduce the need for energy-intensive water treatment.⁴⁵ Safe and efficient wastewater management and reuse can mitigate climate change impacts by avoiding greenhouse gas emissions both directly from the breakdown of untreated waste discharged into the environment, and indirectly through saving the energy required for treatment steps.⁴⁶

III. Overview of opportunities for progress and transformative solutions

54. The existing and future challenges the world faces require the rapid development and deployment of innovative and transformative solutions. But we already have successful examples implemented at scale in WASH. Many governments have already shown leadership and put into practice evidence-based solutions.

55. It is necessary to move away from “project based” support and service delivery to **strengthening the national and local systems** required to deliver reliable, resilient and inclusive services at scale; services that can attract funding from users, government budget allocations, and private finance.

56. **Government leadership and willingness to drive change is key.** This leadership must be encouraged and supported by a coalition of partners – the private sector, financial institutions, civil society, academia, donors, NGOs - working in close collaboration, and with accountability to each other. Time is needed for systemic change to take hold and results to appear on the ground compared to a conventional project-driven, coverage-focused approach. Governments must establish a transformational culture and systems that facilitate collaboration across sectors. Donors will need to be patient, adaptive and process-focused, collaborating with other stakeholders in support of government leadership. Governments should recognise that **investments in WASH are “no regret” investments** that contribute to the achievement of multiple SDGs, and the fulfilment of human rights obligations.

Opportunities for progress are presented here using the structure of SDG 6 Global Acceleration Framework.

Financing

57. As public goods that deliver benefits for health as well as social and economic development, **water, sanitation and hygiene warrant strategic, well-targeted public funding.** Public finance, including targeted subsidies, has been and remains critically important, even in strongly market-led economies.

58. There are multiple sources of funding for WASH that governments can access and combine, including taxes, transfers from external donors, and tariffs and user fees. Government investments must be used strategically to attract and optimize other investments, recognizing that most funding for WASH eventually comes from households themselves through the payment of tariffs and user fees. Some users may pay significantly more by purchasing water from tanker trucks or installing tanks to store water if they experience intermittent piped supply, and in many parts of the world, households invest in their own systems for drinking water supply and sanitation. However, reliance on self-supply

⁴⁴ <https://www.unicef.org/documents/why-water-sanitation-and-hygiene-must-be-top-your-climate-agenda>

⁴⁵ <https://openknowledge.worldbank.org/handle/10986/36507>

⁴⁶ Progress on wastewater treatment – Global status and acceleration needs for SDG indicator 6.3.1. United Nations Human Settlements Programme (UN-Habitat) and World Health Organization (WHO), Geneva, 2021

for certain sectors of the population can result in inequalities; there is a role for government in both regulating, supporting and helping to fund household level systems.^{47, 48}

59. Public financing can leverage various forms of repayable finance, such as loans, bonds and other financing instruments. Governments can enter into public-private partnerships (PPPs) to access financing and expertise from the private sector. Governments can also address the financial system as a whole, for instance creating financial products for entrepreneurs interested in entering the sector, harnessing the power of financial technology (“fintech”),⁴⁹ and helping to improve the creditworthiness of utilities and local governments wishing to borrow. Policies need to make explicit what is to be funded, when and how government funds will be used, how equity will be achieved in allocations, and how funding is to be coordinated.

60. In many countries, policy priorities and public fund allocations do not align. Governments find it hard to overcome inertia in terms of spending patterns, and the institutions that should use budget allocations are often weak. As a result, budget execution rates in the water sector are low; water sector public expenditure reviews reveal that only an average of 72% of budget allocations are actually spent.⁵⁰ Furthermore, the interdependencies between water supply and sanitation services, irrigation, and hydropower go unrecognised in most countries, and most have failed to make clear investment decisions based on their integration.

61. Transparency and accountability are key, and governments must develop mechanisms to consult stakeholders about funding and financing decisions and make information related to them public.

62. Whether they are funded from public or private sources, it is essential that service providers perform well financially. Financially efficient service providers focus on reducing non-revenue water (through better revenue collection systems and leak detection and control), optimizing their energy use, and optimizing staff resources. Improving service provider efficiency is critical to establishing creditworthiness, attracting investment from both the public and private sectors, and reducing reliance on government transfers and development aid.

63. There is a consistent data gap in WASH financial data and WASH expenditures, which can be filled through the use of the Trackfin methodology developed by WHO for producing WASH accounts.⁵¹

Data and information

64. Reliable, consistent and disaggregated WASH data (by age, gender, etc.) are essential to stimulate political commitment, inform policymaking and decision-making, identify those who are most vulnerable and enable well-targeted investments that maximize health, environmental and economic gains, and allow governments to make timely course corrections. For many governments, improved data collection and analysis is a first step to identifying WASH needs, gaps and investment priorities.

⁴⁷ Sutton S, Butterworth J. *Self-Supply: Filling the gaps in public water supply provision*. Rugby: Practical Action Publishing; 2021.

⁴⁸ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5201363/>

⁴⁹ <https://openknowledge.worldbank.org/handle/10986/31417?locale-attribute=en>

⁵⁰ <http://documents.worldbank.org/curated/en/099102211102224772/IDU0a8831b08028b604d070aa0104893aa4ceda2>

⁵¹ [Reflecting on TrackFin 2012–2020: key results, lessons learned and the way forward](#). Geneva: World Health Organization; 2021. Licence: CC BY-NC-SA 3.0 IGO.

65. Accurate and regular monitoring and data collection and management, including utilization of complementary data sources, such as meteorological and long-term climate projections, are essential to effectively target resources allocated to safely managed drinking water to respond to specific challenges, including climate change, declining water quality, and disease outbreaks. Additional sources of data, including citizen science and the knowledge of Indigenous Peoples, should also be mobilised.

66. Reliable, accessible and publicly-available data and reporting on drinking water and sanitation services increase accountability to customers, reduce openings for corruption and drive healthy competition among utilities or responsible agencies. However, the 2021/22 GLAAS survey indicated that well under half of countries had regulators that issued publicly available reports for urban water, and far fewer for rural water or sanitation.⁵² Governments should require disclosure of water use (withdrawal, discharge and reuse) by all major users.

67. Governments should address the need for consistent data on hygiene. Tools to collect data on hand hygiene in the health care sector are available from WHO, and household surveys increasingly include a standardized handwashing module.

68. While many countries have data on the treatment of wastewater from sewers, relatively few have data on the collection, treatment and disposal of faecal sludge from on-site sanitation facilities such as septic tanks and latrines – an essential component of safely managed sanitation. There is also a lack of independent regulatory data – aggregated at national level – for all steps of the sanitation chain, especially for non-sewered services. Only 32% of countries reported having sanitation/ wastewater regulatory authorities that fully take corrective action in urban areas; and only 23 per cent in rural areas.⁵³

Capacity development

69. Capacity development is essential to build strong foundations for the effective governance, financing, service delivery, innovation and data management needed for sustainable and equitable WASH services. It is also important to build the WASH economy that can contribute to economic growth and prosperity.

70. Developing a strong WASH sector will require a bigger, more diverse and gender-balanced workforce with better skills, but capacity development in this context is far more than just training. It encompasses i) human resources development, ensuring that institutions tasked with WASH service oversight and provision employ the right types and numbers of adequately qualified, trained and motivated personnel, and that adequate training is in place to address staff turnover and new knowledge; ii) organizational development, ensuring that institutions are adequately empowered and use effective systems and procedures, and iii) resources, ensuring that institutions have access to sufficient financial, material and technical resources.

71. The sanitation workplace, in particular, requires increased regulation and formalization. Working conditions need to be progressively formalized to safeguard health and safety, to protect worker's rights, and to ensure decent working conditions, as called for by SDG 8. Mobilising the private sector to capitalize on the 'sanitation economy' requires building the skills of service providers and their ability to respond to environmental conditions and climate change.⁵⁴

72. Likewise, professionalization and formalization of rural water supply management is needed, developing a cadre of professional borehole drillers, handpump technicians, construction supervisors

⁵² <https://glaas.who.int/>

⁵³ WHO and UN-Water GLAAS 2018/2019 country survey.

⁵⁴ <https://www.who.int/publications/i/item/9789240014473>

and managers to replace the low-skilled volunteers that have historically supported rural water supply.^{55, 56}

73. Capacity is key to ensuring the success of hand hygiene initiatives. There are serious gaps in capacity for the promotion and sustained uptake of hand hygiene. In many cases, countries need to invest in entirely new skillsets, such as those required to create an enabling policy environment, promote hand hygiene, incentivize the private sector to engage, and regulate and enforce in line with policy.

Innovation

74. Achieving universal access to WASH services requires innovative solutions that support equity and universality of services and help extend WASH services to the hardest-to-reach areas and groups. For instance, governments must think beyond conventional sewage systems, which are costly and time-consuming to install, and think beyond linear sanitation chains to the circular economy, in which both water and waste are recycled and reused. Innovation is needed in institutional approaches as well, for instance, developing new models for managing rural waterpoint maintenance. Financial innovations are essential, for instance new financial instruments for households, businesses and governments. Governments can enable innovation through sound regulation, performance criteria and standards that reduce risk but do not stifle new ideas and entrepreneurship.^{57, 58, 59}

75. Innovation must also consider the traditional knowledge of Indigenous Peoples, who have been managing water resources in a sustainable manner for generations, and whose customary knowledge can support better management.⁶⁰

Governance

76. Good governance requires leadership, clear policy setting, robust regulation, transparency and coordination. Governments must establish strong institutions to coordinate and regulate the activities of governmental agencies, WASH service providers and service users, and generate public benefits. WASH must be included in national policies, strategies and plans, and needs to be backed by human and financial resources.

77. Many countries have significant policy gaps. For instance, in countries where open defecation is still practiced, about one quarter lack specific policies and plans to address it. Similarly, the critical issue of faecal sludge management is not addressed in one quarter of urban sanitation policies and plans. Even where policies are in place, few countries have adequate human and financial resources to support them. While most countries are responding to the SDG imperative to ‘leave no one behind’ and almost all countries report policy measures to reach poor populations with water, just over half report they have identified the means of funding these policies.⁶¹

78. In many countries, regulations may exist but are not enforced for myriad reasons. A common issue stems from the institutional arrangements and underlying mandates of the various institutions. For instance, the responsibility for water quality surveillance might lie with a government ministry that has

⁵⁵ Lockwood, H., Le Gouais, A., Professionalising community-based management for rural water services, IRC Briefing Note, 2015

⁵⁶ <https://www.unicef.org/drcongo/media/4581/file/COD-report-manual-drilling.pdf>

⁵⁷ <https://www.who.int/publications/i/item/9789240014473>

⁵⁸ <https://www.who.int/publications/i/item/9789240060807>

⁵⁹ <https://www.who.int/publications/i/item/9789240036444>

⁶⁰ A/HRC/51/24

⁶¹ <https://glaas.who.int/>

limited enforcement authority over a separate government ministry that is providing water services. Enforcement can also be weak in cases where there is duplication and multiple institutions are mandated to regulate the same services, with no clear line of authority. In the sanitation sector, clearly defined leads and institutional arrangements across the sanitation service chain have enabled success in many countries.^{62, 63}

79. The health sector often neglects WASH as a prevention measure and focuses instead on clinical diagnosis and care, vaccines and medicines. But the health sector must fulfil critical functions to ensure that WASH investments do in fact protect health and reduce the burden on the health system. These functions include integrating WASH into all health policies and programmes where it is needed for primary prevention; contributing to the development of health-protective WASH regulations and standards; using continuous, systematic collection, analysis and interpretation of health-related data (public health surveillance), to target WASH investment in high disease-burden areas and prevent outbreaks; including WASH promotion and monitoring in local level health services; and ensuring WASH in healthcare facilities for patients, staff and carers. Challenges such as entrenched structures of funding, competing incentives, as well as inconsistent implementation structures and institutional arrangements must be overcome.

80. Governments need to recognise that hygiene, including menstrual health and hygiene, is a crucial public policy issue, and progress requires leadership, ownership, targets, strategies, roadmaps and dedicated budgets.

IV. Recommendations

81. These recommendations are presented with accompanying suggestions for actions that could be tracked between now and 2030. These actions require leadership from national governments, coordination across ministries and sectors, and partnership with civil society, the private sector and academia.

Financing

❖ **Governments should develop clear policy objectives to guide funding and financing decisions, develop costed funding and financing strategies, and increase public spending on WASH, recognizing its value as a public good. This includes:**

- Understanding all the costs of WASH service provision and making informed, evidence-based decisions on the allocation of funds and the setting of tariffs and user charges;
- Partnering with financial system stakeholders (banks, credit agencies etc.) and donors;
- Establishing a conducive environment for the use of commercial repayable finance, both domestic and international;
- Developing the expertise and understanding to comply with the requirements of climate finance and access it to expand WASH service; and
- Budgeting for the costs associated with a supportive regulatory environment.

❖ **Development partners should increase investments in the WASH sector, seeking ways to build systems, capacity and institutional strength, working in partnership with governments, in the spirit of SDG 17.**

❖ **Governments should encourage and support improvements in WASH service providers' financial performance, while development partners should support these efforts.**

Possible actions to track:

⁶² <https://www.who.int/publications/i/item/9789240014473>

⁶³ <https://www.who.int/publications/i/item/9789240060807>

- Development of a national funding and financing strategy
- Development of economic regulation for the water services
- Increased levels of public investment
- Increased investments in systems strengthening by development partners
- Increased amount of development assistance channeled through government financial systems
- Improvements in service provider performance (using standard global metrics)
- Establishment of WASH accounts to track expenditures

Data and Information

❖ **Governments should support the institutionalization of data collection and monitoring within national systems, the use of consistent methodologies, including standardized terms and questions, and the transparent sharing and use of the data collected. This includes:**

- Identifying gaps in data collection and analysis and prioritizing those areas in which missing data are a constraint, with particular emphasis on the identification of communities and individuals at risk of being left behind in service provision;
- Making the collection of and transparent sharing of data a requirement for all service providers receiving public finance; and
- Prioritising the collection of data relevant to equality, including gender-disaggregated data and information on marginalised groups.

❖ **Development partners should change the way their results are measured, focusing on contributions to a reliable, resilient and inclusive service (measured by outcomes, not inputs).**

Possible actions to track:

- Establishment of government data collection and analysis that is consistent with the definition of safely managed water and sanitation
- Public reporting on service provider performance and progress to reach the unserved
- Establishment by development partners of monitoring systems that measure contribution to systems change

Capacity Development

❖ **Governments should build robust and competent institutions and a capable and motivated workforce through a range of capacity-development approaches based on innovation, partnership and collaboration. This includes:**

- Assessing current capacity with respect to WASH policy and strategies, identifying gaps and developing capacity-building strategies;
- Adopting approaches that overcome resource constraints, such as using private sector capacity to its full potential, harnessing the expertise and resources of NGOs and development agencies, and instituting peer-to-peer learning;
- Building capacity in the health and education sectors to support WASH;
- Diversifying the existing workforce and build a diverse and gender-balanced pipeline of future water and sanitation professionals; and
- Strengthening capacity to continue delivering during shocks, such as natural disasters.

❖ **Capacity should be built in technical areas specific to WASH services and also create a conducive enabling environment for sustainable WASH services. This includes:**

- Building competency in long-term planning and budgeting, improved cost recovery, revenue generation and financial sustainability;
- Professionalizing WASH service delivery and supporting it through capacity development, particularly in small and rural systems;
- Developing standards, regulations and professional certifications that support professionalization; and
- Strengthening capacity to integrate climate resilience and mitigation into planning, designing and delivering WASH services.

Possible actions to track:

- Development of a national capacity building plan.
- Establishment of national training institutions offering training relevant to WASH and wastewater treatment
- Establishment of standards, regulations and professional certifications for service providers and installers

Innovation

❖ Governments should encourage WASH innovation and experimentation through supportive government policy and regulation, accompanied by rigorous monitoring and evaluation, demonstration and dissemination. This includes:

- Regularly updating regulations to reflect changes in the evidence base and the availability of new technologies and service delivery models;
- Encouraging innovation in methodologies and approaches, as well as in technologies, and supporting prototyping, demonstration, validation, and scale-up; and
- Being proactive in setting forth clear specifications and targets for innovative products and methodologies.

Possible actions to track:

- Establishment of innovation-friendly policy and financing mechanisms
- Establishment of mechanisms to incubate and test new technologies and methodologies, including setting specifications and targets and supporting real world adaptive learning, led by government and supported by public sector and development partner investment

Governance

❖ Governments should create an enabling policy environment, across multiple sectors (including water, health, education and other relevant sectors) that supports a progression towards universal access at higher service levels in households, health care facilities and schools for all. This includes:

- Establishing ambitious but feasible national WASH coverage and service level targets;
- Ensuring there are no policy gaps, and that policy exists for rural and urban WASH, and for wastewater treatment and fecal sludge management;
- Ensuring that national and sub-national development plans include targets and strategies for achieving the national targets;
- Clarifying institutional roles and responsibilities, making clear which delivery models are sanctioned;
- Integrating WASH into regular health and education sector planning, budgeting, programming, and monitoring in order to deliver quality WASH services in schools and healthcare facilities;

- Ensuring that public health surveillance data is shared by the health sector to inform WASH service delivery and to support outbreak prevention efforts, and including WASH promotion and monitoring within health programming⁶⁴;
- Ensuring policies, regulatory arrangements, strategies and implementation models are inclusive and gender sensitive, allowing the meaningful participation of women in decision-making and governance, and leading to their social, political and economic empowerment;
- Ensuring marginalized groups, including Indigenous peoples, are represented in coordination bodies; and
- Improving accountability mechanisms, including accountability to users, and facilitating engagement of civil society to promote accountability.

❖ **Governments should address neglected policy issues that have particular relevance to the WASH sub-sectors, by:**

- Defining sanitation as an essential service for which government is responsible and can be held accountable, and establish standards for service quality throughout the sanitation chain (sewered and non-sewered); and
- Making hygiene a public policy issue, including both service availability and behaviours, backed with relevant regulation and enforcement.

Possible actions to track:

- Establishment of feasible national targets
- Establishment of policy working groups by government, with membership across sectors and ministries
- Incorporation of WASH and wastewater treatment into national and sub-national plans and strategies, with parameters that are consistent with the ambition of achieving safely managed drinking water and sanitation, treatment of wastewater, and universal basic hygiene
- Development of new stand-alone policies where appropriate

❖ **Governments should progressively strengthen existing WASH institutions, fill institutional gaps and facilitate coordination and collaboration. This includes:**

- Strengthening their systems supporting WASH services, working within the policy parameters specifying which service delivery models to use, and clarifying roles and mandates;
- Supporting improvement in the operational performance of service providers, and the establishment of management models that promote sustainable, professionalized service delivery;
- Establishing a supportive and predictable regulatory environment backed-up by legislation and clear policies, including standards for service quality;
- Ensuring enforcement of regulations is balanced with technical assistance for service providers, as appropriate;
- Establishing regulation that protects all consumers, allows and encourages continuous improvement, innovation and cost recovery, and facilitates service provision for people living in poverty and those who are marginalised or vulnerable, consistent with the human rights to water and sanitation and the commitment to “leave no one behind”.

Possible actions to track:

- Designation of lead agencies for each of sanitation, hygiene and water services, in both urban and rural areas
- Establishment of regulatory authorities for rural and urban water supply and sanitation
- Regular coordination activities bringing together multiple government ministries and development partners

⁶⁴ For example, as undertaken within the context of the [European protocol on Water and Health \(who.int\)](https://www.who.int/publications/m/item/european-protocol-on-water-and-health)

V. Guiding Questions

1. What are the **data gaps** that are holding back planning, investment and monitoring of progress towards the SDGs? What support do governments need to fill them?
2. How can we build **champions** for water, sanitation, hygiene and wastewater treatment in national and local government and use them to accelerate action?
3. What kind of **policies** for WASH and wastewater treatment are required to drive action, investment and accountability? Are “stand alone” policies the most effective?
4. What should the role of development partners and the private sector be in supporting **skill-building and institutional strengthening**?
5. How can we work **across government ministries and departments** (health, agriculture, water resources) to optimize WASH investments and ensure they contribute to health, food security, equality, and nation-building?
6. What concrete actions can we take to build **trust and transparency** in the WASH sector, ensuring participation and consultation of all stakeholders?
7. What is the best way to **track action** over the next eight years – what are the most important actions to track for governments and development partners?