

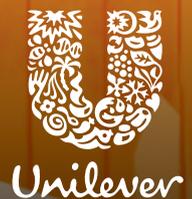
**ECONOMIST
IMPACT**

Tackling Toilet Loss

The hidden economic and societal cost of neglecting school toilets



Supported by



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Foreword

Many people are fortunate enough not to give the humble toilet much thought. But next time you sit on a fully-functioning, clean toilet, just take a moment to think about the millions of school children around the world who go to school without one.

The first toilet was built in around 3000 BCE, and the first flushing toilet in 1596. But what is one of humanity's most important inventions is easily—and rightly—taken for granted. The uncomfortable truth, however, is that one in three, or 539 million, school children do not have a toilet in school that is fit for use. They can't take the toilet for granted. That this is happening in 2023—a year of missions to the sun, tourists flying into space and AI going mainstream—makes it even more shocking. This has to change.

Without up-to-date, relevant data, we make decisions in the dark and risk doing the same things while expecting different outcomes. We need clear, actionable, new data to solve old problems. This is why we've commissioned the Toilet Loss report to help us understand why the SDG 6.2 target of universal access to adequate and equitable sanitation has stayed resolutely out of reach—a gap in access that never closes despite the Herculean efforts in building toilets over the past decade.

What has emerged from the report is simple behavioural economics, specifically the economics of loss aversion. Loss is felt more keenly than a gain. And the problem isn't that we're building toilets too slowly, it's that we're losing toilets too frequently. The toilets exist but, without a plan to maintain them, they fall into disrepair and become unusable—like they never existed.

This report quantifies the scale and cost of Toilet Loss, starting with schools, where the impact of lost toilets means that an urgent change is required. Toilet Loss is holding back a generation of school children whose education has already been unjustly impeded by the global pandemic. This report shows the value of investing in school toilets, and the economic impact of improved learning outcomes alongside more prosperous economies. More than US\$1.9 billion is lost across four countries alone because toilets are built without a plan to maintain them. If we want to achieve universal access by 2030, the solution is not simply to build more toilets—the most cost-effective strategy is to direct investment first towards maintaining existing toilets.

The humble toilet is something worth protecting. A value that's understood as universally as gold. Our Unilever brand, Domestos, is the world's leading toilet cleaning brand and believes exactly that. To date, Domestos has helped 29 million people get access to a clean, safe toilet through its 10-year partnership with UNICEF and its school toilet operation and maintenance programme, 'Cleaner Toilets Brighter Futures'.

Together with its partners, including UNICEF and GIZ, Domestos is committed to helping 100 million people get improved access to sanitation by 2030.

This is not a fight we can win alone. Many experts from the public and private sector have contributed to this report and their voices are heard in it. So just as we came together to develop it, we must come together to act on it.

Our hope is that this report shines a light on the overlooked and undervalued issue of the operation and maintenance of school toilets; ignites new discussions and decisions to inform policymaking and funding; and frees all schools and pupils to have their needs met so they can focus on what matters: their education. Toilet Loss is an unnecessary drag on our education systems, and only by knowing it's happening—having the data to show it—can we work together to stop it. If we get it right, every child born today will have access to a clean, safe toilet by the time they start school. And I sincerely hope each of them takes it for granted.

Eduardo Campanella, Chief Marketing Officer, Home Care, Unilever

About the report

This report, supported by Unilever, presents findings from research conducted by Economist Impact to assess the costs of failing to provide all children with access to clean, safe and usable toilets in their schools and to identify the most effective investment pathway to close the gap. The findings are based on insights gathered from a literature review, expert interviews and a custom economic impact model developed by Economist Impact. Economist Impact bears sole responsibility for the content of this report. The findings and views expressed do not necessarily reflect the views of the sponsor.

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Executive summary

Context

Chances are, if you are reading this report, you take access to a usable toilet for granted. That is, until one is not available when you need it most. Lucky for you, reader, this problem is most likely rare and only a temporary inconvenience.

But imagine you are a child in school and the only toilet in your school is out of order—and has been since the start of the school year. Imagine trying to focus on lessons while living in fear of nature's call on a daily basis.

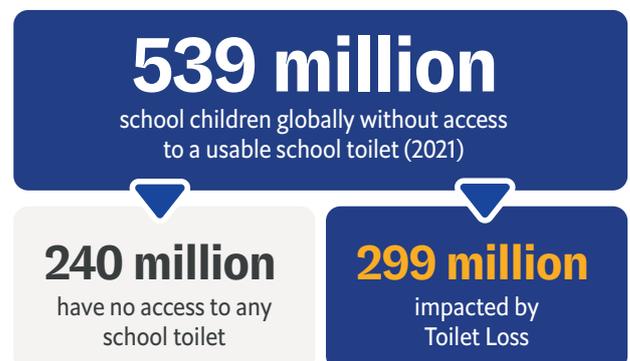
Sadly, this is the reality for at least 539 million school children around the world (equivalent to one in every three school children) who do not have access to a usable toilet at school.¹ Almost half of these children have no toilet in school at all. For the other half, a toilet may exist but have become unusable through a lack of basic maintenance.² These children suffer the impact of Toilet Loss daily.

These statistics on toilet access across schools capture only a specific moment in time. The reality, in fact, is constantly evolving and can shift in a matter of hours when a toilet is left unmaintained and another child is left without a usable toilet.

Addressing Toilet Loss for school children is necessary to meet two of the UN Sustainable Development Goal (SDG) targets: 4.a—to provide safe and effective learning environments for all—and 6.2—to ensure equitable access to safe sanitation and hygiene.³ It is also necessary to fulfil a basic human right—the right to physical and affordable access to sanitation (including toilets), that is safe, hygienic, secure, socially and culturally acceptable and that provides privacy and ensures dignity.⁴

Toilet Loss is the economic and societal cost of neglected toilets. Toilets can become unusable through neglect from:

- a) lack of investment in operations and maintenance;
- b) lack of appropriate school-level management policies, or implementation capacity, to enable toilet use (e.g. safety policies, school policies on routine O&M); and
- c) lack of provision of essential resources (for example, water and sanitary products).



¹ https://data.unicef.org/wp-content/uploads/2022/08/JMP-WASH-in-schools_2022.pdf

² Economist Impact estimates based on data from the WHO/UNICEF Joint Monitoring Programme (washdata.org/data/school#!/)

³ unstats.un.org/sdgs/metadata/?Text=&Goal=6&Target=6.2

⁴ <https://digitallibrary.un.org/record/821067>

⁵ Economist Impact estimates based on data from the WHO/UNICEF Joint Monitoring Programme

The existence of a school toilet is not enough. Toilets also need to be safe, clean and maintained if children are to use them. The WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene (JMP) is the most widely used and reputable source for measuring access to usable school toilets.⁶

The JMP ladder for sanitation in schools

Throughout this report, we refer to the terminology used by the WHO/UNICEF Joint Monitoring Programme (JMP) in classifying sanitation services in schools.⁷

No service	Required toilets are not available in schools, or they are unimproved
Limited service	Improved toilet facilities exist in schools but they are not single-sex or usable
Basic service	Improved toilet facilities exist in schools that are single-sex and usable
Advanced service	To be defined by countries at the national level. National-level definitions to include consideration of additional requirements for use including cleanliness and accessibility for all users, among others

Improved services are defined as those that receive waste management to remove excreta from human contact.

Usable services are defined as toilets that are accessible to students (doors are unlocked or a key is available), functional (not broken or blocked, and water is available), and private (lockable doors with no large gaps in the structure).

Building on JMP data (see “Interpreting the JMP data” below), Economist Impact, supported by Unilever, has measured the scale, scope and cost of Toilet Loss and developed an investment pathway to ensure every school child has access to a clean and safe basic toilet. Specifically, we focus on five core questions:⁸

- How many safe basic school toilets have been lost through neglect?⁹
- What is the cost—or *Toilet Loss*—of not providing all children with access to basic school toilets?
- How much will countries need to invest in both building new toilets and maintaining existing and new ones to close the gap?
- How much will countries and their economies gain from doing so?
- What is the most effective investment pathway to ensure that all children have a basic toilet in school by 2030?

⁶ washdata.org/monitoring/schools

⁷ <https://washdata.org/monitoring/schools>

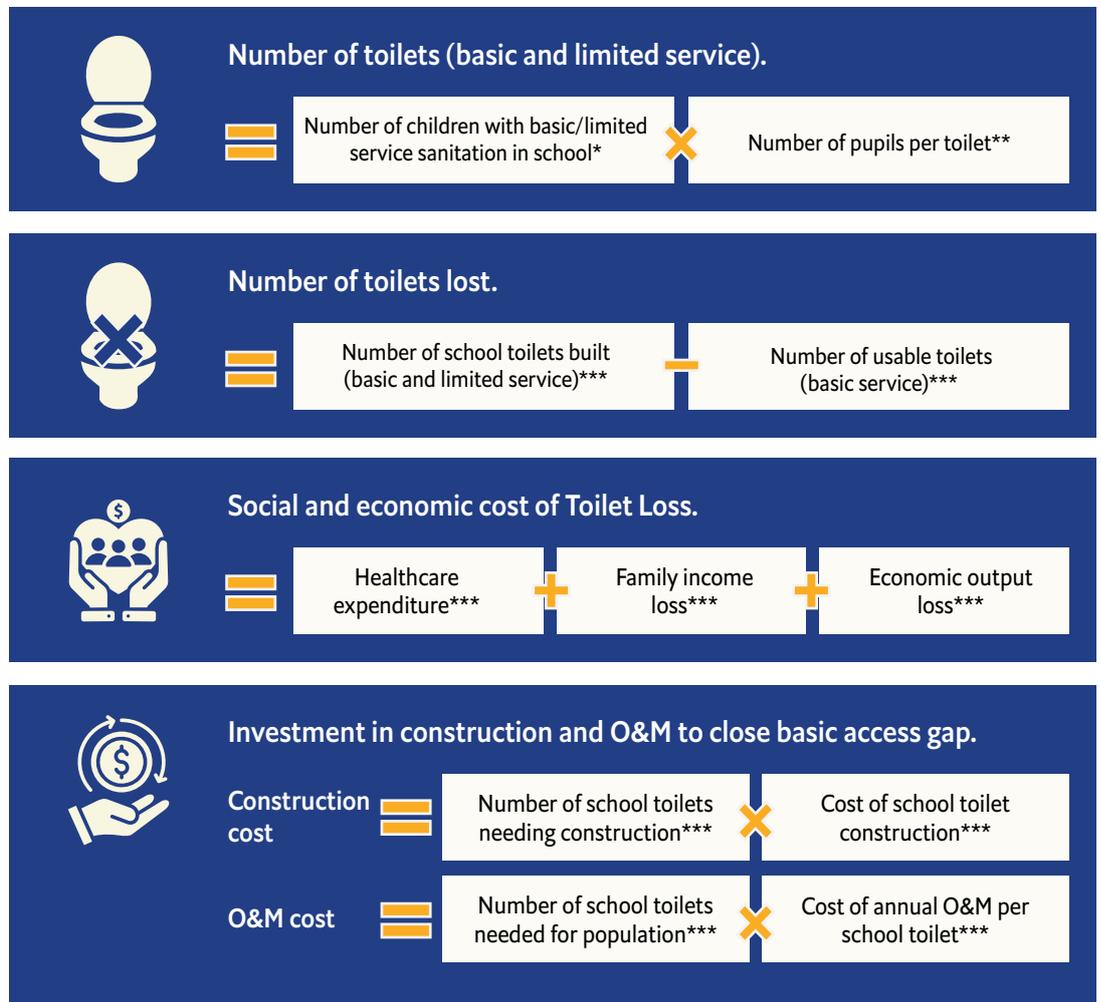
⁸ See technical annex for further detail on the methodology

⁹ Estimated as the number of limited service toilets in schools. See technical annex for further detail on the methodology

Our research shines a light on the urgent need for countries to collect and provide systematic data not only on levels of access to school toilets, but also the quality of this access. We now have a good sense of whether children have a toilet in their school in principle, but we continue to remain in the dark on whether these toilets are sufficient, clean and usable in practice. Without data on this, we will be unable to fully grasp the scale of the challenge that lies ahead.

Our analysis focuses on four countries, selected to gain geographic coverage across a range of contexts and levels of development: Ecuador, India, Nigeria and the Philippines. It reveals key findings for the pathway to closing the gap in basic sanitation access across schools.

Estimating Toilet Loss and the costs and benefits of addressing it



* Data from JMP ** Based on WHO guidelines *** Economist Impact analysis

Key findings:

1 Across the four countries considered in this study, **1.2 million school toilets** constructed since 2015 have been “lost” through lack of maintenance, equivalent to a **loss of US\$1.9 billion**.

These losses have been most extreme in India and Nigeria, where 0.6m and 0.4m constructed toilets have respectively been lost. In Nigeria and Ecuador, the losses amount to nearly 20% of all investment in school sanitation since 2015—in other words, for every US\$5 invested in school toilets, US\$1 has been lost.

FIGURE 1. Toilet Loss

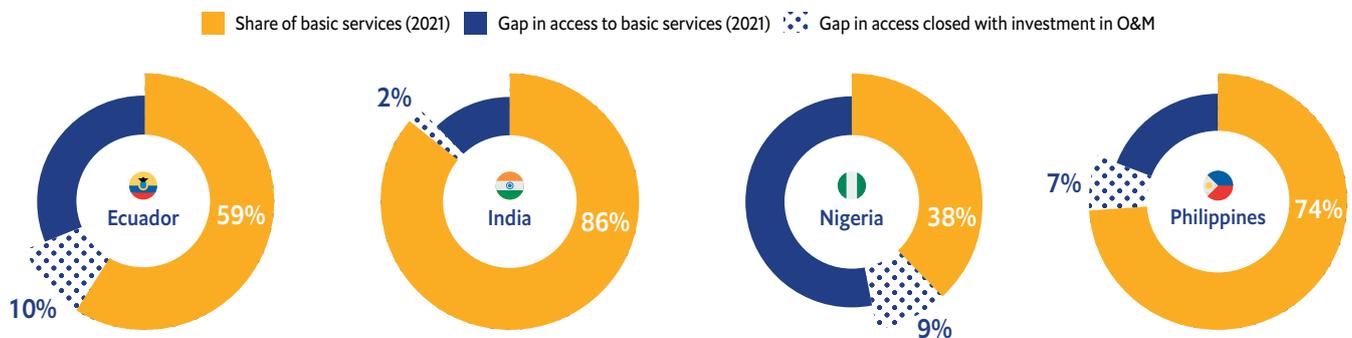


2 If toilet construction had been supported by operation and maintenance (O&M), the countries in this study could be **10% closer to full coverage of basic toilets** across schools. Prioritising O&M is critical to preventing Toilet Loss.

While constructing new school toilets is necessary to reach full school sanitation coverage, construction without O&M results in a significant and rapid loss of the newly built toilets. In Ecuador, US\$120m has been lost from building new school toilets that have not been maintained. If this money had been put towards maintaining existing toilets instead, access to basic school toilets in the country could be 69% instead of 59%.

FIGURE 2. What could have been

Share of basic sanitation services in school, actual (2021) vs hypothetical*



* Note: The hypothetical share of basic sanitation services is estimated by assessing how many additional school toilets could be maintained using the investment made in constructing unusable (limited service) school toilets

Maintaining a toilet: estimating the costs

Increasing access to basic sanitation services in schools means investing not only in constructing toilets, but also in maintaining those toilets over their lifetime. A toilet built without a plan for O&M leads to Toilet Loss.

This analysis quantifies the costs of operating and maintaining toilets in schools using a bottom-up approach at a country level. These costs include:

- **Operation costs:** day-to-day regular costs incurred in ensuring that toilets have the resources required for use (for example, toilet paper, handwashing soap, water supply) and operations (for example, cleaning tools and resources, including personnel for regular cleaning and minor repairs).
- **Maintenance costs:** semi-regular costs incurred in the maintenance and upkeep of toilets over time (for example, pit emptying and minor infrastructure repair, including required tools such as hammers and paint).¹⁰

Rehabilitation costs are not included in this analysis. These costs are incurred if existing toilets are left unmaintained or decommissioned for an extended period of time and, therefore, require more extensive work to bring them to a basic service level before they are available for use again. The existing data does not allow for an assessment of how many toilets require rehabilitation. As a result, the estimated cost for closing the sanitation gap is underestimated.

¹⁰ Some of the costs included within this analysis go beyond those required to achieve basic sanitation levels in schools based on the JMP definitions. For example, pit emptying is not a basic service requirement. However, these costs are marginal (less than 1%) of the total estimated costs.

3 Increased O&M spending could have avoided large healthcare expenditure, reduced family income and lost economic output of over **US\$10 billion** across the countries studied in 2015-21.

India and Nigeria suffered the greatest losses, of US\$5.1bn and US\$4.4bn respectively. The greatest contributor to these losses is healthcare expenditure to treat infections in children—in India, healthcare expenditure constitutes two-thirds of the total loss. Losses in the longer term could be substantially higher than estimated, as learning losses drive wider economic impacts as children grow older, from reduced access to skilled labour and decreased overall productivity.

Construction without O&M leads to societal losses of over

US\$10 billion

across Ecuador, India, Nigeria and the Philippines from:



Higher healthcare costs from more diarrheal infections in children



Lost family income through absenteeism from work or increased childcare spending



Lost economic activity and employment in O&M

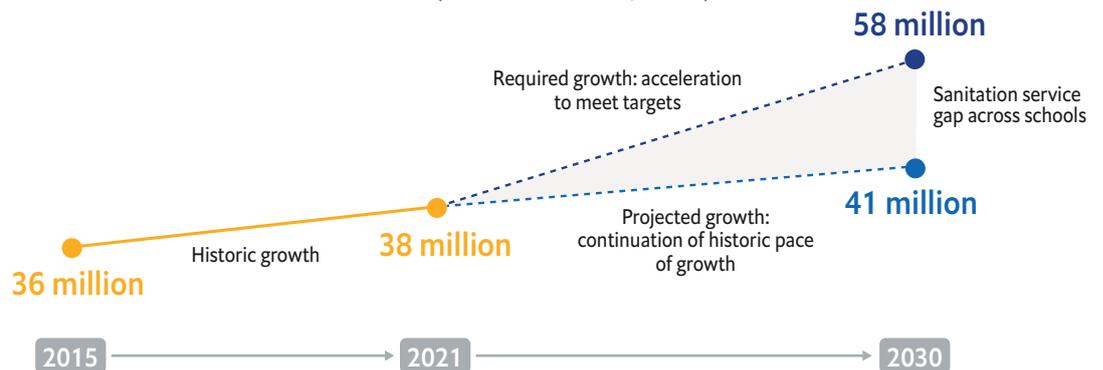
4 Globally, at least 20m more basic service toilets are needed across schools to reach 100% coverage by 2030. Meeting this target requires a **six-fold acceleration** in the progress made since 2015.

Between 2015 and 2021, the number of basic service toilets in schools increased from 36m to 38m. By 2030, 58m toilets will be needed across schools. To achieve this goal, our analysis estimates that:

- 12m more toilets need to be newly constructed and subsequently maintained;
- an additional 8m existing toilets need to be rehabilitated and receive subsequent regular O&M; and,
- the remaining 38m need continued O&M.

FIGURE 3. Accelerating progress in providing sanitation in school

Global access to basic sanitation services in schools (number of basic toilets, millions)



5 An **additional cent in every dollar of education spending per child each year** will allow most countries to achieve full basic sanitation coverage in schools through investment in the construction and O&M of school toilets by 2030.¹¹

Investing both in building (and then maintaining) new school toilets and maintaining existing ones is the most equitable solution to reach 100% coverage of basic school toilets and provides the greatest benefits to society. Additional estimated annual spending of US\$2-11 per child is needed to achieve this across the four countries studied. Nigeria is the only country among those studied where more substantial increases in spending—equivalent to 23% of current education spending per child—will be needed for full basic coverage. This level of investment is a result of lower baseline education spending in Nigeria and much larger gaps in basic toilet coverage in schools. Across all countries, additional investment will be needed beyond those estimated to achieve advanced service levels in schools, particularly in terms of sanitation software such as training, and the implementation of monitoring and evaluation systems.¹²

FIGURE 4. Getting to full coverage: additional investment needs

Additional annual spending needed per child to achieve full coverage of basic service toilets in schools



¹¹ Investments in school sanitation do not come entirely or partially from education budgets in all contexts. These numbers are intended to put the scale of requirements to meet full coverage into perspective and to promote increased education sector ownership and responsibility for WASH in Schools.

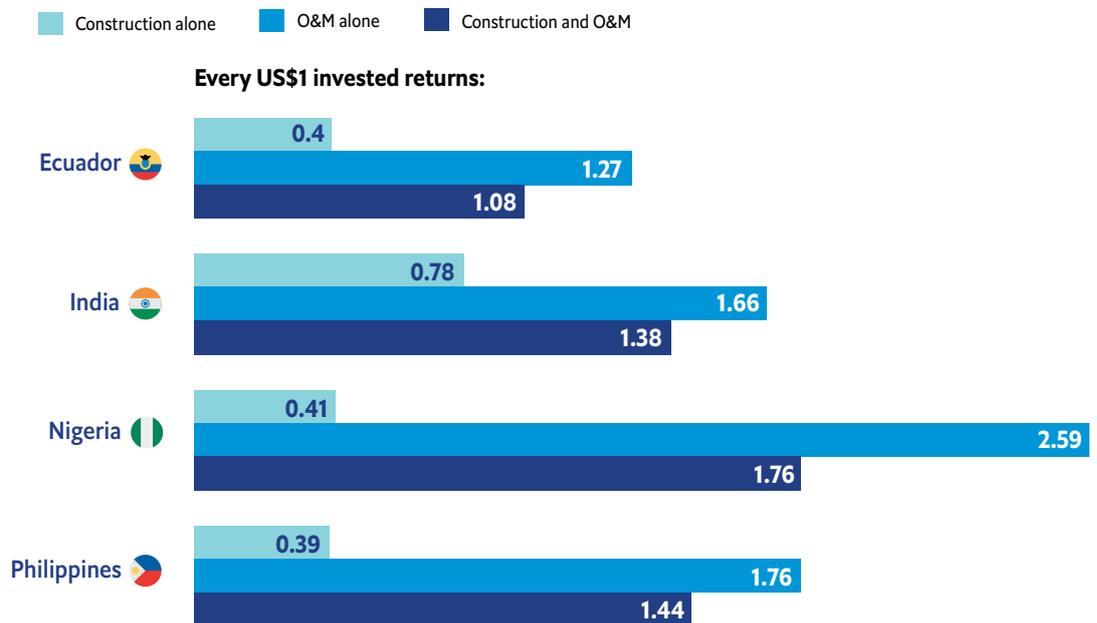
¹² <https://www.ircwash.org/sites/default/files/Peal-2010-Hygiene.pdf>

6 In a budget constrained environment, **prioritising O&M investment to maintain existing school toilets is the most cost-effective strategy**—in Nigeria, this strategy delivers social returns of US\$2.6 for every US\$1 invested.

Achieving the SDG targets will ultimately require investing in both construction and O&M, but, in a fiscally constrained environment, countries may not have the capacity to substantially increase their investment in school sanitation. Investing first in maintaining existing toilets is the most cost-effective and feasible strategy, delivering the highest social returns for every dollar invested (see Figure 5). These returns arise from reduced healthcare expenditure, higher family income and increased economic activity. In the longer term, as more funding is unlocked, greater investment can be directed towards building and maintaining new toilets to close the access gap.

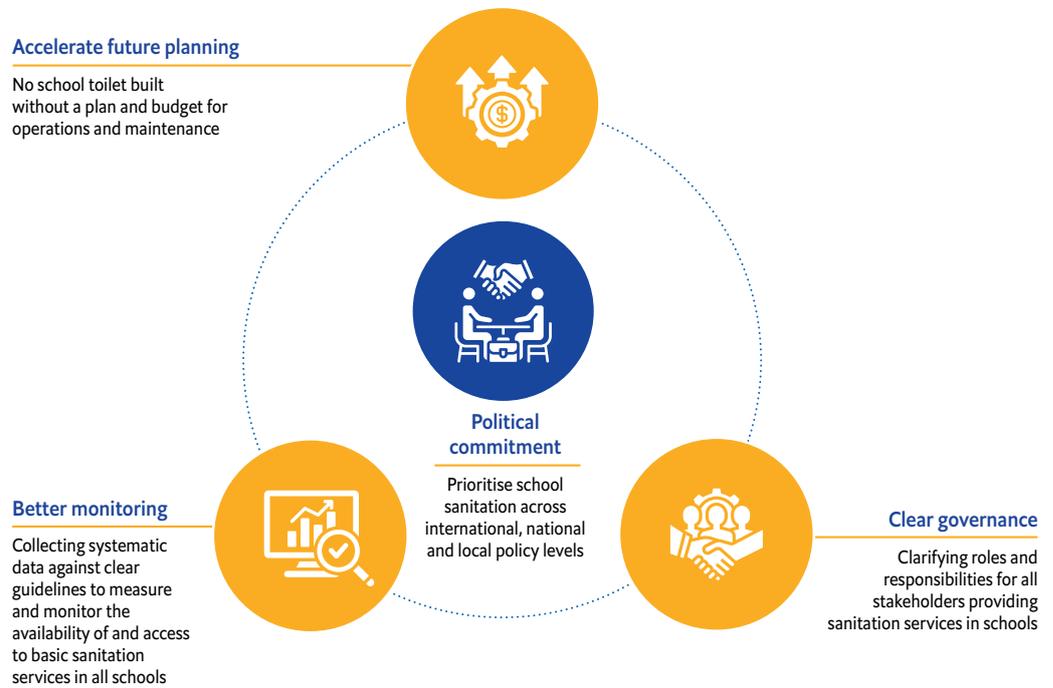
FIGURE 5. Returns on investment

Returns (US\$) for every US\$1 invested in school sanitation, by sanitation strategy



Based on insights gathered through interviews with experts, published research and learning from countries leading the way towards sanitation for all children, we identify a three-point plan as a baseline for developing local strategies to close gaps in sanitation access in schools. Accelerating progress towards achieving the goal of eliminating Toilet Loss will require system-level change in how sanitation services in schools is planned, delivered and managed. Central to this change will be political commitment across international, national and sub-national levels.

A three-point plan for eliminating Toilet Loss across schools



The remainder of this paper explores these findings in greater depth, concluding with key steps that stakeholders can take to urgently accelerate the sanitation agenda in schools.

Interpreting the JMP data

Our analysis makes a number of assumptions in interpreting the WHO/UNICEF Joint Monitoring Programme (JMP) data on basic, limited and no sanitation services in schools. It assumes that:

- toilets defined as “basic service” both exist and are usable;
- toilets that are defined as “limited service” exist but are not usable, because they have not received sufficient and regular O&M; and
- toilets defined as “no sanitation services” have not been constructed and do not exist. In reality, these toilets may also exist despite being unusable, meaning that some construction expenditure has been incurred.

Interpreting basic, limited and no sanitation services



However, these assumptions are likely to overestimate current levels of access in two ways:

- 1. The number of existing toilets is overestimated in our analysis.** We assume that WHO guidelines on student-to-toilet ratios—one toilet per 25 girls, and one toilet and one urinal per 50 boys¹³—are met in all schools that have access to “basic services”; however, the JMP assigns “basic service” levels to any school that has at least one toilet facility each for boys and girls. By imposing ratios on the JMP definitions we, therefore, are likely to overestimate the access to toilets.
- 2. The number of usable toilets is also overestimated in our analysis.** We assume that all “basic service” facilities are usable in practice. The JMP’s definition of “basic service” accounts for school toilets being accessible, functional and private. Other measures of usability—such as cleanliness—are captured in “advanced services” for which data are not yet collected at the country level. Therefore, the analysis does not distinguish between “basic” and “advanced” levels of service.

As a result, it is likely that we have underestimated the infrastructural and financial requirements to close access gaps to basic sanitation services—as well as the benefits that could arise from doing so.

¹³ https://apps.who.int/iris/bitstream/handle/10665/44159/9789241547796_eng.pdf?sequence=1&isAllowed=y

Unpacking the what, why and how

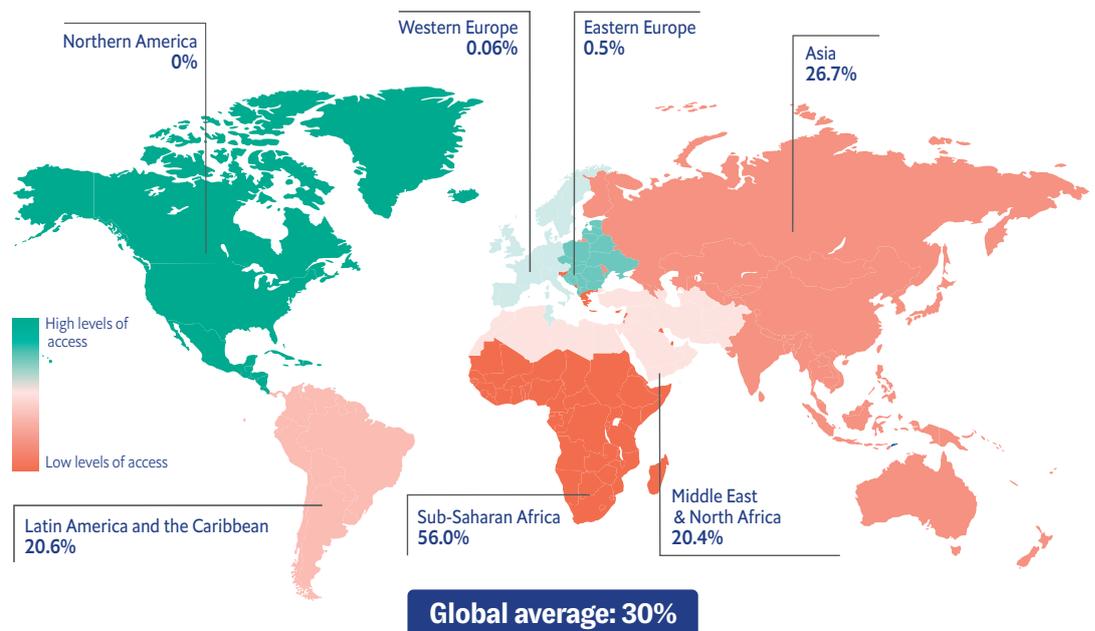
The goal: sanitation for all children, starting with schools

The goal is set for 2030: all children should have access to a basic toilet. We are over halfway through the 15-year period to achieve the SDGs. How far are we away from the goal of universal access to a basic toilet? One of the places where we can measure and monitor toilet access for children is in schools, and today 539 million children around the world still do not have basic access at school.¹⁴

The UN Sustainable Development Goals (SDGs), established in 2015, serve as a call to action for all countries to implement policies that promote prosperity for both people and the planet.¹⁵ SDG target 4.a specifically aims to provide safe and effective learning environments for all. Providing all children with access to a safe and usable toilet at school is crucial to enhancing the learning environment.¹⁶ This goal is complemented by SDG target 6.2, which seeks to ensure equitable access to safe sanitation and hygiene for all by 2030.¹⁷

FIGURE 6. Global access to basic toilets in school

Percentage of children without access to usable basic toilets in school, by region



Source: WHO/UNICEF Joint Monitoring Programme, Economist Impact analysis

Note: Regional assessment is based on JMP definitions

¹⁴ The WHO/UNICEF Joint Monitoring Programme defines a usable school toilet as one that is accessible to students (doors are unlocked or a key is available), functional (not broken or blocked, and water is available) and private (lockable doors with no large gaps in the structure).

¹⁵ sdgs.un.org/goals

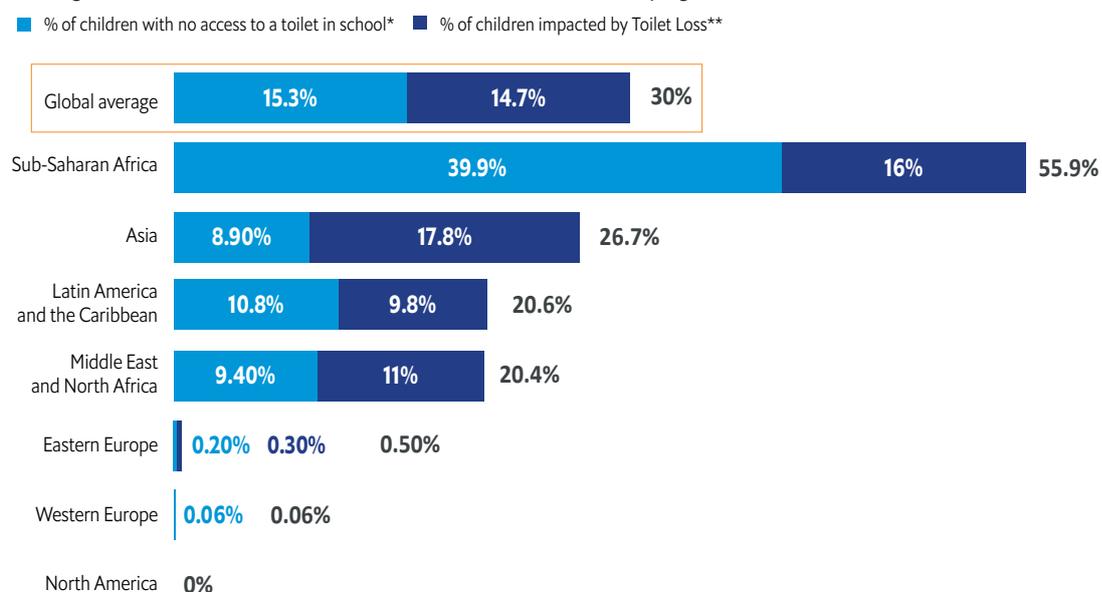
¹⁶ www.globalpartnership.org/blog/how-can-toilets-promote-education

¹⁷ unstats.un.org/sdgs/metadata/?Text=&Goal=6&Target=6.2

Half of these children have no toilet in school at all. For the other half, a toilet may exist, but it has become unusable through a lack of basic maintenance.¹⁸ These children suffer the impact of Toilet Loss.

FIGURE 7. Comparing toilet access with usability

Breaking down the shares of children with no usable toilet access* in school, by region (2021)



* The WHO/UNICEF Joint Monitoring Programme (JMP) definition of toilet usability in schools means that at least a single toilet exists that is accessible to students, functional and private.

** Using JMP data on “no service” access

*** Using JMP data on “limited service” access

Source: WHO/UNICEF Joint Monitoring Programme, Economist Impact analysis

The what: defining Toilet Loss

Toilet Loss arises when toilets are constructed but become unusable. This results in costs: to governments and others who have invested in building infrastructure that cannot be used, and costs to societies from poorer health, educational and economic outcomes.

Toilet Loss is the economic and societal cost of neglected toilets. Toilets can become unusable through neglect from:

- a) lack of investment in operations and maintenance (O&M);
- b) lack of appropriate school-level management policies, or implementation capacity, to enable toilet use (e.g. safety policies, school policies on routine O&M); and
- c) lack of provision of essential resources (for example, water and sanitary products).

Toilets need to exist. They also need to be safe, clean and maintained if they are to be used. Operations and maintenance (O&M) is critical for the sustainability and long-term functioning of toilets.¹⁹ O&M includes daily cleaning to ensure that toilets can be used, and regular maintenance to ensure that toilets do not fall into disrepair.²⁰

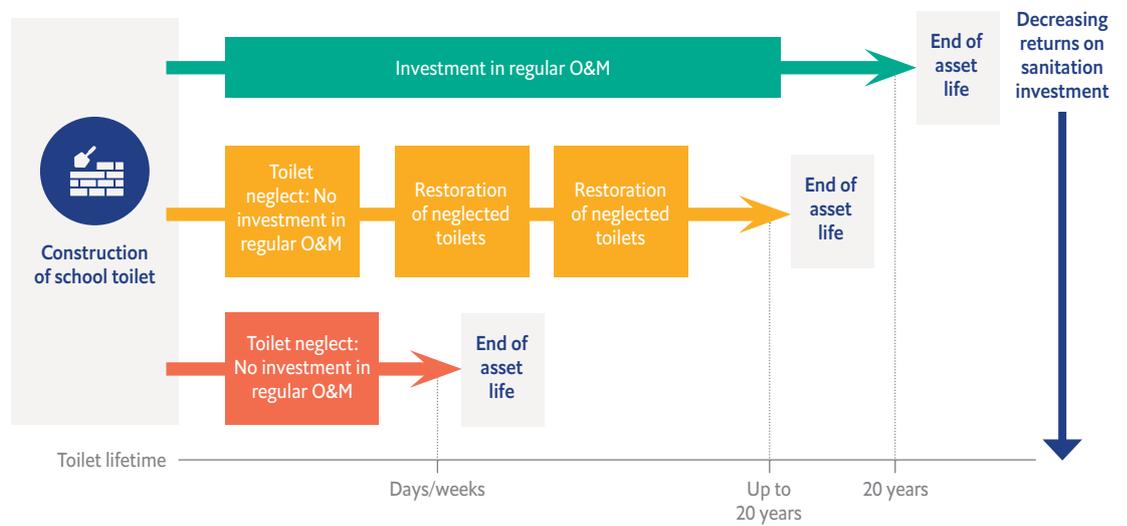
¹⁸ Economist Impact estimates based on data from the WHO/UNICEF Joint Monitoring Programme (washdata.org/data/school#!/)

¹⁹ www.ircwash.org/sites/default/files/Muellegger-2011-Operation.pdf

²⁰ programme.worldwaterweek.org/Content/ProposalResources/PDF/2017/pdf-2017-6723-10-04%20GIZ%20-%20DPP%20O&M%20Guide.pdf

With O&M, a well-installed school toilet can be used without replacement for over 20 years.²¹ However, without investment in O&M, toilets rapidly deteriorate, becoming dysfunctional and hygienically unsuitable for use. Rehabilitating a dysfunctional toilet can require costly renovations. Resource constraints, lack of clarity on ownership and responsibilities across stakeholders, and competing budget priorities can all cause Toilet Loss.

FIGURE 8. Lifecycle of a toilet



“Toilets that aren't properly maintained in schools become unusable very quickly. The cost of neglecting to clean and maintain toilets is very high and we often fail to recognise this. Children are the ones who suffer as a result.”

Guy Hutton, independent consultant, senior economist and financing specialist in WASH



²¹ pdf.usaid.gov/pdf_docs/PNAAM278.pdf

Case study

Implementing O&M initiatives in schools: roles and responsibilities

Water, Sanitation and Hygiene (WASH) in Schools (WinS) is a global effort dedicated to enhancing WASH services within schools. In the context of sanitation, WinS emphasises the role of O&M to ensure that school toilets both exist and are usable, to minimise Toilet Loss.²²

Implementing WinS requires the collective engagement of teachers, parents, students and community members.²³ In particular, education ministries play a key role in managing and co-ordinating WinS programmes, while relying on local authorities and schools for implementation.

India's Ministry of Education launched the Swachh Bharat: Swachh Vidyalaya (SBSV; Clean India: Clean Schools) programme in 2014 to advocate for enhanced WASH services. These included the need for regular O&M of school toilets and separated toilets for boys and girls.²⁴ In 2016 the ministry instituted the Swachh Vidyalaya Puraskar (Clean Schools Award) to reward best practice under the SBSV initiative.²⁵ The introduction of the award created a mechanism and incentive for schools to collect and share data on their WASH practices. Data are collected at the school level through a survey, which includes questions on the frequency of cleaning school toilets, the materials used in cleaning, and responsibilities for the supervision of cleaning and maintenance.²⁶

Liberia also joined the WinS efforts to help combat its Ebola outbreak in 2014-16.²⁷ The Ministry of Education published *Guidelines for the implementation of the Liberia WASH in Schools* in 2015, in which it established clear WASH objectives. The guidelines state that all schools should have adequate, clean, functional, accessible, private and safe toilet facilities.²⁸ Clear roles and responsibilities are outlined for different stakeholders, overseen by the Ministry of Education, including the Ministry of Public Works, Ministry of Health and Social Welfare, and local and international NGOs. The guidelines emphasise the importance of O&M, with recommendations for school authorities to assign daily cleaners to all school toilets and for funds to be set aside for maintenance and repairs.²⁹

The why: the need to address Toilet Loss

Beyond loss of infrastructure, not investing in school toilet O&M creates additional real and tangible losses both to individuals and to societies more broadly.

When toilets are clean and well-maintained, children have an incentive to use them.³⁰ But when they are not, children avoid them. Even in middle- and high-income countries, children avoid dirty school toilets—a recent study in Denmark found that over 50% of children are dissatisfied with the toilets in their schools and 25% postpone toilet visits as a result.³¹

²² programme.worldwaterweek.org/Content/ProposalResources/PDF/2017/pdf-2017-6723-10-04%20GIZ%20-%20DPP%20O&M%20Guide.pdf

²³ programme.worldwaterweek.org/Content/ProposalResources/PDF/2017/pdf-2017-6723-10-04%20GIZ%20-%20DPP%20O&M%20Guide.pdf

²⁴ swachhvidyalayapuraskar.com/about

²⁵ dse.education.gov.in/sites/default/files/2022-12/SVP_Coffee_Table_Book_5.pdf

²⁶ www.education.gov.in/sites/upload_files/mhrd/files/upload_document/Swachh_Vidyalay_Puraskar_Guidelines.pdf

²⁷ oxfamilibrary.openrepository.com/bitstream/handle/10546/345841/tb-wash-in-schools-ebola-recovery-liberia-020315-en.pdf;jsessionid=2BEF-20566D313A602C58FFC48D6D1890?sequence=1

²⁸ reliefweb.int/attachments/e0a42c7b-3eb7-3056-bd35-dfe3af1a2e55/liberia_wins_quick_implementing_guidelines_v1_0.pdf?_gl=1*1nn2jwm*_ga*OTc3MDk0MjgzLjE2OTQxODE3OTg.*_ga_E60ZNX2F68*MTY5NTg0MDk0OS4yLjEuMTY5NTg0MTA3NC42MC4wLjA

²⁹ www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/annex_8_liberia_wins_guidelines_and_tor_0.docx

³⁰ programme.worldwaterweek.org/Content/ProposalResources/PDF/2017/pdf-2017-6723-10-04%20GIZ%20-%20DPP%20O&M%20Guide.pdf

³¹ link.springer.com/article/10.1007/s00431-021-04111-1

Toilet avoidance can bring severe health risks. Lack of adequate sanitation is associated with the transmission of diseases such as worms and diarrhoea.³² In the worst cases, these diseases can lead to death—globally, 90% of deaths from diarrhoeal diseases in children under the age of five are linked to lack of sanitation, contaminated water or inadequate hygiene.^{33,34}

For those who survive, inadequate sanitation impacts more than health. It can impede access to education—studies have shown impacts on both school enrollment and attendance, with more pronounced impacts for girls.^{35,36} Research shows that children’s perception of their physical school environment is associated with academic achievement.³⁷ Adequate sanitation at school is critical to creating a health-promoting environment in which children can thrive. In South Asia, one in three girls miss school days every month owing to toilet facilities that lack water or privacy.³⁸ In some cases, this also leads to school drop-out.³⁹ The resulting implications for a child’s learning outcomes impact on their employment opportunities and earning potential.

The negative impacts on health and education outcomes—through increased disease transmission or lower school attendance—translate into wider impacts across communities and societies. In the short term, sanitation-related diseases create a burden both on health services and on individuals, families and governments through higher healthcare costs. In the longer term, deaths caused by sanitation-related diseases and worse education outcomes result in a smaller and less productive workforce, contributing to reduced economic activity and an overall loss of economic value (see Figure 9).⁴⁰



³² www.ncbi.nlm.nih.gov/pmc/articles/PMC4889767/

³³ www.unicef.org/mena/press-releases/lack-of-toilets-dangerous-for-everyone

³⁴ reliefweb.int/report/world/children-dying-daily-because-unsafe-water-supplies-and-poor-sanitation-and-hygiene

³⁵ www.mdpi.com/1660-4601/9/8/2772

³⁶ iwaponline.com/washdev/article/8/1/53/38065/Sanitation-and-water-supply-in-schools-and-girls

³⁷ www.frontiersin.org/articles/10.3389/fpsyg.2022.959259/full#:~:text=Regression%20analysis%20indicates%20that%20students,significantly%20related%20to%20academic%20achievement.

³⁸ www.wateraid.org/uk/media/young-children-most-at-risk-from-lack-of-water-sanitation-and-hygiene-in-schools#:~:text=A%20recent%20WaterAid%20and%20Unicef,disposal%20options%20for%20sanitary%20pads.%E2%80%9D

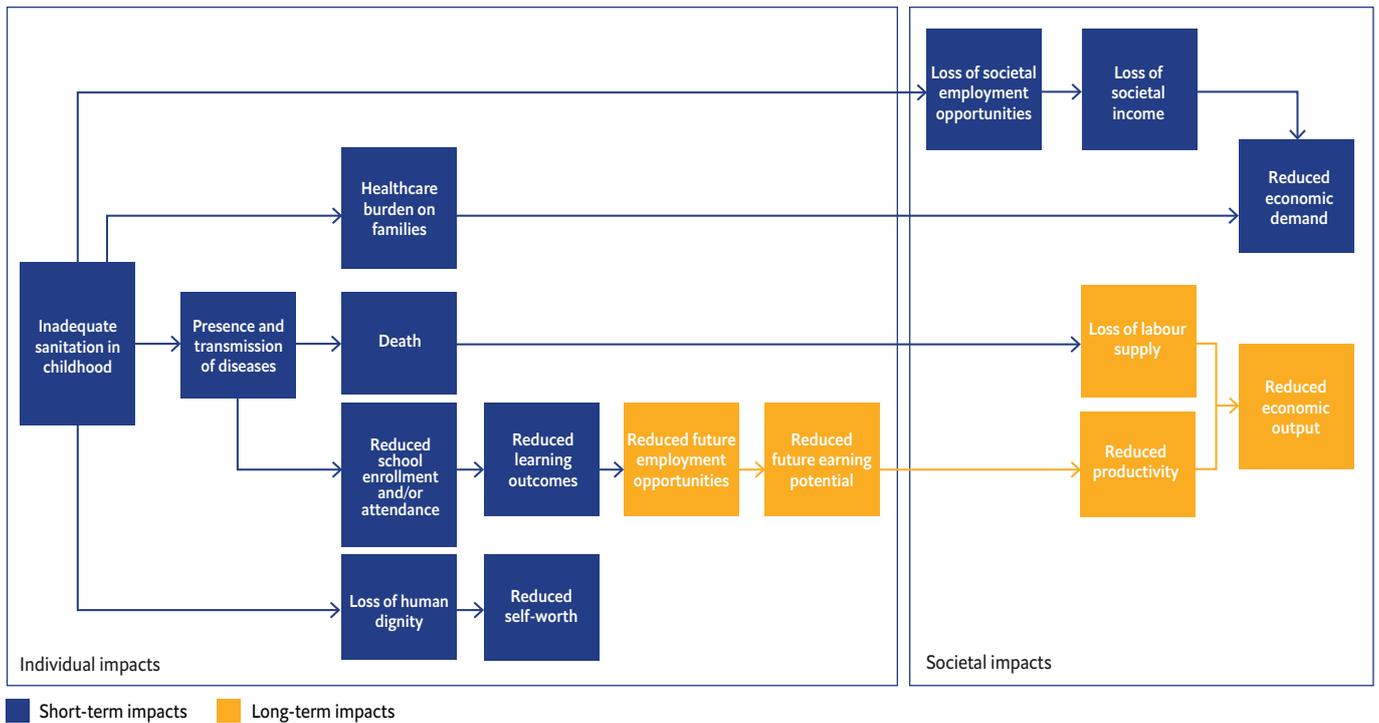
³⁹ washmatters.wateraid.org/publications/women-and-wash-water-sanitation-and-hygiene-for-womens-rights-and-gender-equality-2013

⁴⁰ www.wateraid.org/us/media/economic-report-unlock-trillions-of-dollars-with-clean-water-decent-toilets-and-hygiene

“It’s poorly understood that lack of access to sanitation really undermines the achievement of any of the other SDGs. We can’t achieve any of them, arguably, without access to sanitation.”

Heather Murphy, associate professor and Canada research chair in One Health, University of Guelph

FIGURE 9. Impacts of inadequate sanitation in childhood



Through the impacts it has on individual children, lack of access to basic sanitation services directly hinders the achievement of SDG target 4.a (to provide effective learning environments for all) and target 6.2 (to provide adequate and equitable access to sanitation and hygiene for all). Beyond these direct impacts, the wider implications for societies and economies at large also indirectly prevents progress on other SDGs including goal 3 (ensuring healthy lives and wellbeing for all), goal 4 (ensuring inclusive and quality education for all), and goal 8 (promoting inclusive and sustainable economic growth), among others.

“By not investing in WASH, policymakers jeopardise their efforts in providing effective learning and proper education.”

Oliver Schmoll, programme manager, water and climate,
WHO European Centre for Environment and Health

The impact of school sanitation: Evidence from Tanzania

Case study

Tanzania has made significant efforts to expand access to WASH services across schools in recent years, delivering tangible benefits for children.⁴¹ In response to the pressing need for improved school sanitation, the Tanzanian government initiated the Sustainable Rural Water Supply and Sanitation Programme (SRWSSP) in 2018.⁴²

The SRWSSP aimed to construct and upgrade sanitation and hygiene facilities, referred to as “School-WASH” or SWASH, in public primary schools. A key focus was on building separate sanitation blocks for girls and boys, and ensuring that toilets are lockable and private.⁴³ Schools participating in SRWSSP also introduced menstrual health and hygiene initiatives, such as changing rooms for girls stocked with sanitary towels.

At programme inception, an estimated 57% of schools lacked functional handwashing facilities, nearly 40% had no on-site water supply and over 60% had no proper disposal mechanism for sanitary pads. Additionally, more than half of the installed toilets did not have a door, exposing students to the risk of violence, including gender-based violence.⁴⁴

The introduction of improved sanitation facilities brought about transformative changes. World Bank findings demonstrate that the interventions led to increased retention and participation of students in schools, particularly among adolescent girls, who were encouraged to attend school even during menstruation. The overall attendance rate for girls has surged from an average of 70% to 90% since the introduction of these initiatives.⁴⁵

⁴¹ www.worldbank.org/en/news/feature/2022/06/14/school-toilets-in-rural-tanzania-a-performance-game-changer

⁴² projects.worldbank.org/en/projects-operations/project-detail/P163732

⁴³ www.worldbank.org/en/news/feature/2022/06/14/school-toilets-in-rural-tanzania-a-performance-game-changer

⁴⁴ www.worldbank.org/en/news/feature/2022/06/14/school-toilets-in-rural-tanzania-a-performance-game-changer

⁴⁵ www.worldbank.org/en/news/feature/2022/06/14/school-toilets-in-rural-tanzania-a-performance-game-changer

The how: building a pathway for stopping Toilet Loss

To begin to develop a road towards meeting the SDG targets on sanitation in schools, national policymakers, local authorities and school districts need to understand current gaps in access, what this means for gaps in infrastructure, and how much money will need to be invested to close these gaps.

The WHO/UNICEF Joint Monitoring Programme (JMP) provides a starting point to measure access to basic school toilets. It is currently one of the most comprehensive databases on sanitation services across countries and is widely used to inform policy-level decisions.

The **Joint Monitoring Programme** is a joint initiative by the World Health Organisation (WHO) and UNICEF to provide estimates of country, regional and global progress on targets for drinking water, sanitation and hygiene across households, schools and healthcare facilities.

With regards to sanitation services in schools, the JMP collects data on access at three levels:⁴⁶

- Basic services: infrastructure for improved sanitation facilities exists and is single-sex and usable
- Limited services: infrastructure for improved sanitation facilities exists, but is not single-sex and/or usable
- No services: infrastructure for sanitation facilities does not exist

The JMP's definition of usable within "basic services" in schools means that at least a single toilet exists that is accessible to students (doors are unlocked or a key is available), functional (not broken or blocked, and water is available), and private (lockable doors with no large gaps in the structure).⁴⁷

A fourth level of service—advanced services—incorporates additional elements such as student-per-toilet ratios, facilities for menstrual hygiene management and toilet accessibility for all users. However, while the JMP has developed a framework for advanced services, national-level requirements have not yet been defined by countries, and data are not currently collected consistently across schools.

“To allocate government or public sector budgets effectively, whether at the national or local level, it is crucial to understand context-specific needs and plan accordingly. Ideally, investment plans should be informed by data obtained through monitoring and evaluation processes.”

Ana Virginia Mujica, programme officer, Stockholm International Water Institute

Building on the JMP data on access levels to basic and limited sanitation services in schools, this study measures the scale, scope and cost of Toilet Loss and develops an investment pathway to ensure every student has access to a clean and well-maintained school toilet. Specifically, we quantify:

⁴⁶ washdata.org/monitoring/schools

⁴⁷ washdata.org/monitoring/schools

- the number of school toilets lost through neglect;
- the cost—or *Toilet Loss*—from not providing all children with access to basic school toilets;
- the level of investment needed in both building new toilets and maintaining existing and new ones to close the access gap; and
- the gains for societies and economies from doing so.

Creating these data allows us to answer the question: what is the most effective investment pathway to ensure that all children have a basic toilet in school by 2030?

To convert access data from the JMP into estimates of the availability and requirements for toilets, we make assumptions on the interpretation of the existing data. We assume that school toilets defined as “limited service” exist, but have not received sufficient O&M to remain usable. In other words, these toilets are lost. School toilets defined as “basic service” both exist and are usable.

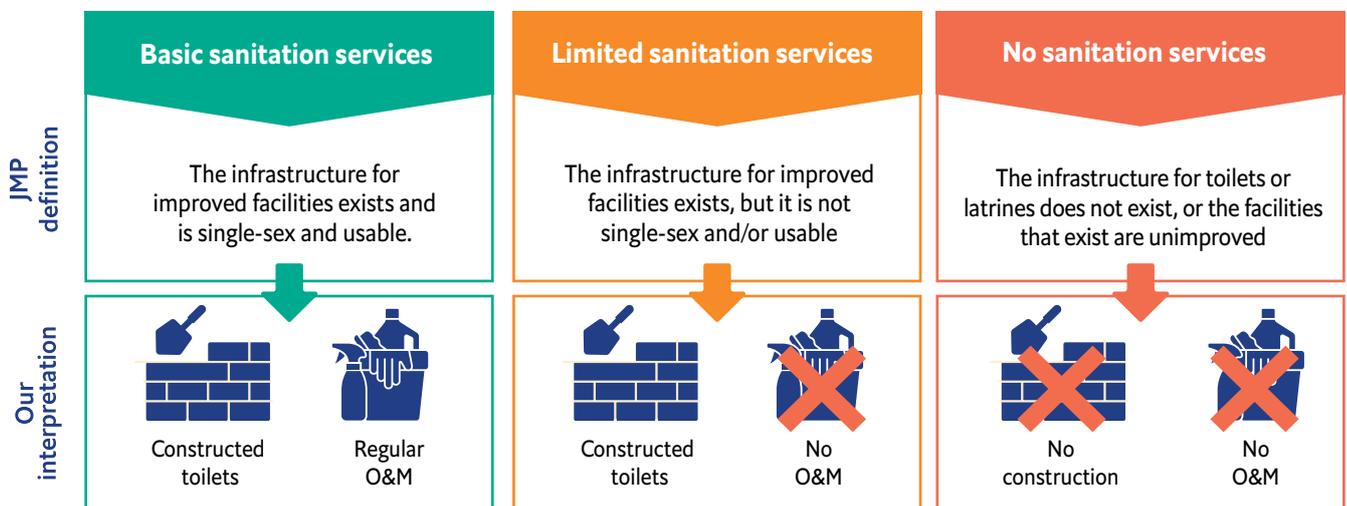
In reality, toilets defined as “no sanitation services” may also exist despite being unusable, meaning that some construction expenditure has been incurred; however, we assume that no construction has been made.

Our analysis deep-dives into four countries, selected to gain broad geographic coverage across a range of contexts and levels of development: Ecuador, India, Nigeria and the Philippines.

“With the current JMP data, we’re not monitoring toilet use but whether a toilet is usable—these are two different things. The basic services indicator is based on survey data and only looks at if a school has at least one toilet in it which is single-sex, functional and private. It’s a low bar to report on. Some countries collect data on the cleanliness of toilets and the particular barriers that children face, but there is a lack of standardisation on measuring these indicators of use.”

Tom Slaymaker, senior statistics and monitoring specialist, UNICEF

FIGURE 10. Interpreting the JMP data



Why a focus on schools?

While the JMP collects data on sanitation in the contexts of households and healthcare facilities, in addition to schools, the focus of this analysis is specifically in assessing the requirements to eliminate Toilet Loss in schools.

The initial focus on schools is driven by a combination of factors:

1. An understanding of accountability:

Establishing accountability is crucial for driving change, and these governance structures are clearest in the context of schools. While the roles and responsibilities of different stakeholders are not yet fully defined when it comes to building, operating and maintaining school toilets, there is an understanding of who the key players are within the system—education ministries, local authorities and school bodies, and schools themselves. The same structures are not fully in place at a household level, particularly when it comes to the governance of sanitation.

2. A measure of wider sanitation:

“Schools are the place in which children learn good habits and behaviours.”

Tom Slaymaker, senior statistics and monitoring specialist, UNICEF

Schools are a place where habits form. Good sanitation practices learned during childhood are taken forward into adulthood, as well as into wider communities and future generations. Understanding sanitation levels and requirements at the school level can provide a good indicator for wider community sanitation.

3. Tackling the challenge one step at a time:

Driving system change requires a focused approach. By building a framework that is validated and credible for assessing the losses from lack of sufficient investment in O&M in a school environment, we hope that the same approach can be adopted to understanding sanitation requirements in other contexts.

“A major challenge in the WASH sector is the lack of detailed monitoring and inadequate data. This makes it hard to thoroughly evaluate the condition of WASH infrastructure and, as a result, to identify and address the sector's specific requirements.”

Christie Chatterley, Fort Lewis College; independent consultant
with WHO/UNICEF Joint Monitoring Programme

Overestimating infrastructure availability

Our analysis uses data and definitions from the WHO/UNICEF Joint Monitoring Programme (JMP) on access levels to basic, limited and no service sanitation facilities across schools as the basis for our calculations. We assume that toilets defined as “limited service” exist, but have fallen out of use from lack of sufficient and regular O&M. Toilets defined as “basic service” both exist and are usable.

However, these simplifying assumptions are likely to overestimate infrastructure availability in two ways.

- **The number of existing toilets is overestimated.** We assume that WHO guidelines on student-to-toilet ratios—one toilet per 25 girls, and one toilet and one urinal per 50 boys⁴⁸—are met in all schools that have access to “basic services”; however, the JMP assigns “basic service” levels to any school that has at least one toilet facility each for boys and girls.
- **The number of usable toilets is also overestimated.** We assume that all “basic service” facilities are usable in practice. The JMP’s definition of “basic service” accounts for school toilets being accessible, functional and private. Other measures of usability—such as cleanliness—are captured in “advanced services” for which data are not yet collected at the country level. Therefore, the analysis does not distinguish between “basic” and “advanced” levels of service.

As a result, it is likely that we have underestimated the infrastructural and financial requirements to close access gaps—as well as the benefits that could arise from doing so.

⁴⁸ apps.who.int/iris/bitstream/handle/10665/44159/9789241547796_eng.pdf?sequence=1&isAllowed=y

The current state of Toilet Loss

To better explore how much investment is needed to close sanitation gaps, how that investment needs to be allocated, and the benefit that countries would experience from universal access to sanitation in schools, we conducted a deep-dive analysis into four countries—Ecuador, India, Nigeria and the Philippines. These countries are geographically diverse and at different stages of their school sanitation journey, allowing us to understand overarching trends and implications across a range of contexts, geographies and levels of development.

These four countries are home to over one-quarter (26%) of the world's child population,⁴⁹ and have sufficient availability of JMP data to conduct our analysis. We also considered current gaps in sanitation access for country selection, which enables us to demonstrate the potential magnitude of impact and required levels of investment.

The countries assessed have each taken different approaches to meeting SDG targets 4.a and 6.2 in the context of schools. They have directed varying levels of investment towards constructing new school toilets and maintaining existing ones. In the Philippines, investment has largely focused on O&M to enable greater usability of already constructed school toilets. Conversely, Ecuador's investment efforts have focused on building additional toilets to close the gap in access. India and Nigeria have invested in a combination of construction and O&M (see Figure 11).

“Governments often claim that they lack the funds to invest in O&M. The problem is not that they lack the funds but that they do not know how much they need to set aside within their budgets in the first place.”

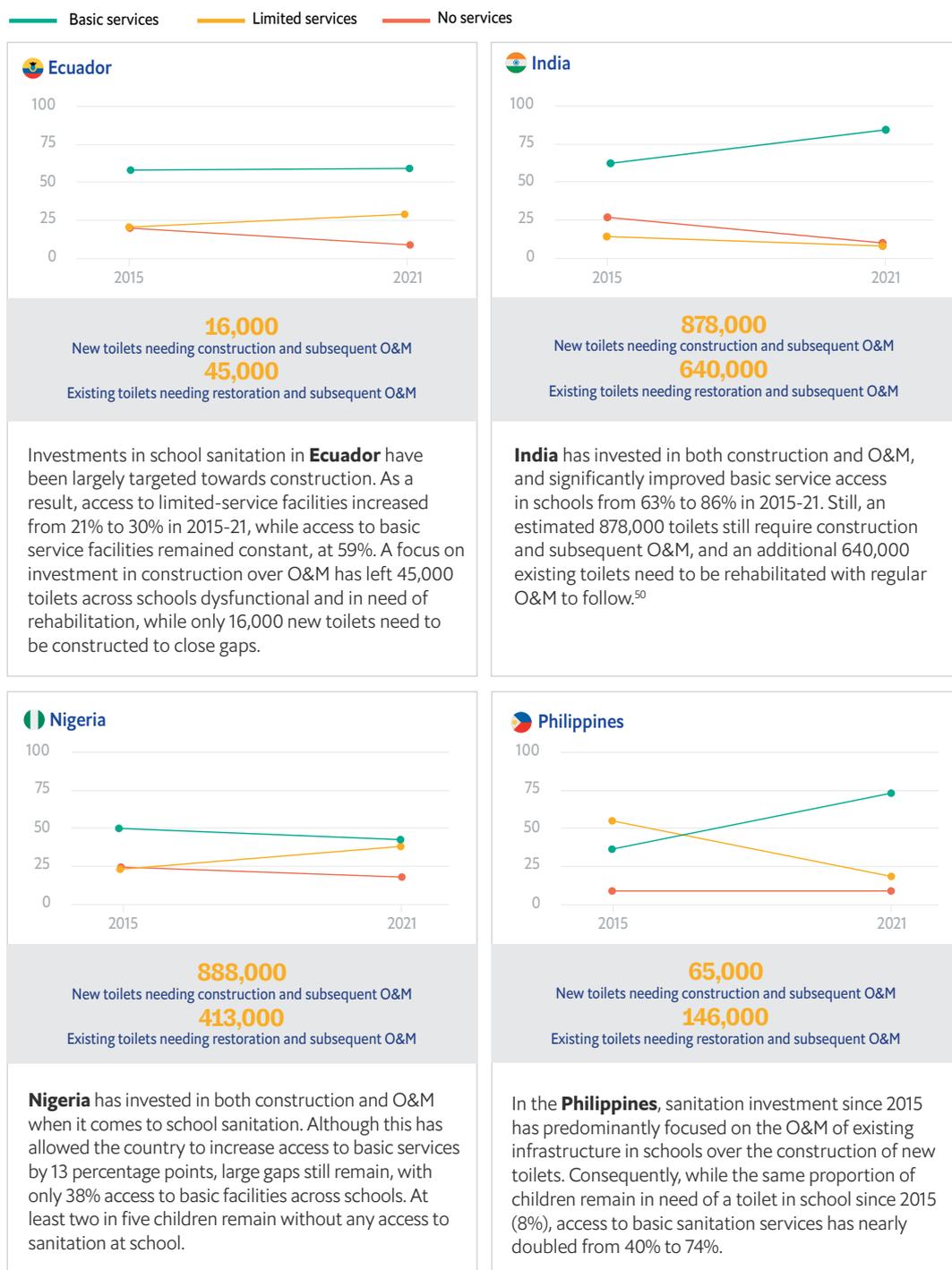
Bella Monse, senior advisor, Fit for School, GIZ



⁴⁹ Source: data.worldbank.org/indicator/SPPOP0014.TO.ZS

FIGURE 11. Diving deeper: exploring past allocations of school toilet spend

Trends in access to sanitation services, 2015-21 (% of children)



Source: WHO/UNICEF Joint Monitoring Programme, Economist Impact analysis

⁵⁰ JMP data on limited and no service shares for India have been adjusted from published data based on consultations with experts to account for data collection challenges

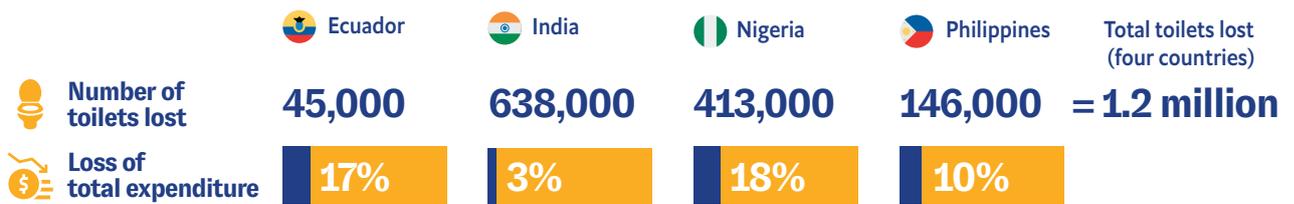
⁵¹ Includes only toilets that require construction to meet full sanitation coverage in 2021. Additional toilet construction will be required by 2030 to account for population growth.

The cost of neglecting toilets

Ecuador, India, Nigeria and the Philippines have all invested in constructing school toilets to help close the gap in access for children; however, not all of these constructed toilets have remained usable at a basic service level. Across the four countries, 1.2m school toilets constructed since 2015 have been “lost” through lack of O&M. In both Ecuador and Nigeria, nearly one in three of the school toilets that exist have not been sufficiently maintained to be usable today.

This Toilet Loss also translates into a financial loss of the value of the initial investment spent in constructing each lost toilet. These financial losses range from 3% of total estimated school sanitation investment between 2015 and 2021 in India to almost 20% in Ecuador and Nigeria (see Figure 12). In other words, for every US\$5 spent on school sanitation, up to US\$1 is currently lost because of failure to maintain school toilets. Total accumulated Toilet Loss across the four countries amounts to US\$1.9 bn.⁵²

FIGURE 12. Toilet Loss (2015-2021)



“Some people who work in sanitation refer to schools as “toilet graveyards”. While the infrastructure is present, the essential operations and maintenance are often neglected.”

Christie Chatterley, Fort Lewis College; independent consultant with WHO/UNICEF Joint Monitoring Programme



Every time a toilet is constructed and not maintained, there is a loss of toilets and of investment. The most effective method of minimising, and ultimately eliminating, Toilet Loss is through first directing investment towards the maintenance of every toilet that is constructed. Then, surplus funding can be allocated to the building of new toilets with an O&M plan in place. Had countries taken this approach from the start, the world would be closer to achieving our global sanitation targets (see “Investing smarter, not harder” below).

⁵² data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=CV

Investing smarter, not harder

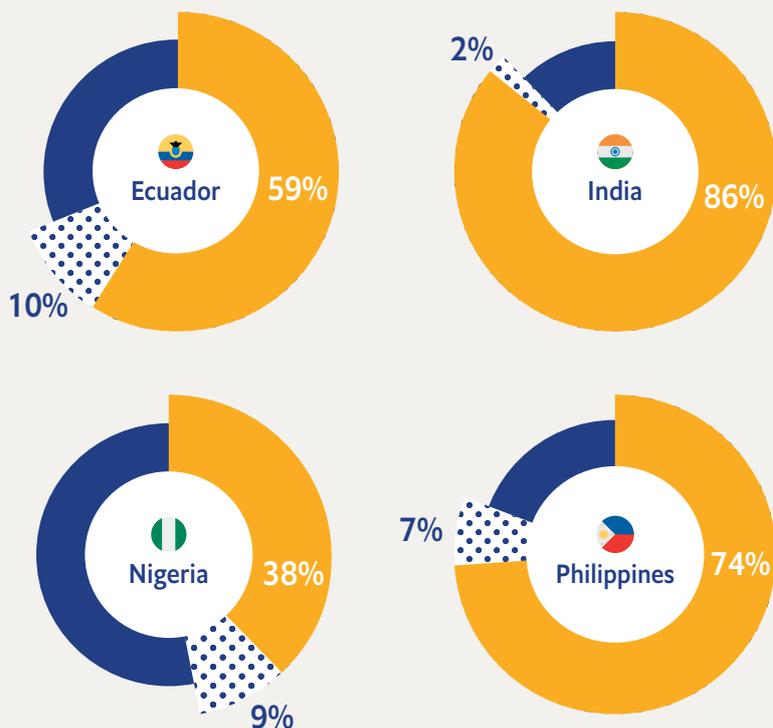
Although constructing new toilets is necessary to reach full basic sanitation coverage, construction without O&M results in a loss of resources. Building toilets without developing and implementing a maintenance plan jeopardises one in every five US dollars invested in toilets. The countries in this study could have had up to 10% higher levels of basic sanitation access if the investments made in constructing new toilets that have not been maintained since 2015 had instead been allocated to the O&M of existing toilets (see Figure 13). Across the four countries, this investment is equivalent to an additional 500,000 usable toilets of the 3.1m required toilets for full basic coverage.

In Nigeria, Toilet Loss is estimated at US\$580m in 2015-21. If this US\$580m spent on building unmaintained toilets had instead been put towards the maintenance of existing toilets, almost half of the 70m children in the country could have had access to basic sanitation in schools in 2021 (compared to 38%). Even in the Philippines, where significant progress has been made in closing the gap in basic sanitation access, access in schools could be 7 percentage points higher than it is today (81% instead of 74%) if investment had been directed towards O&M of existing toilets instead of construction.

FIGURE 13. What could have been

Share of basic service toilets, actual (2021) versus hypothetical: how much higher could access to basic service toilets be with the same level of investment re-directed from construction without maintenance towards O&M?

■ Share of basic services (2021) ■ Gap in access to basic services (2021) ⋯ Gap in access closed with investment in O&M



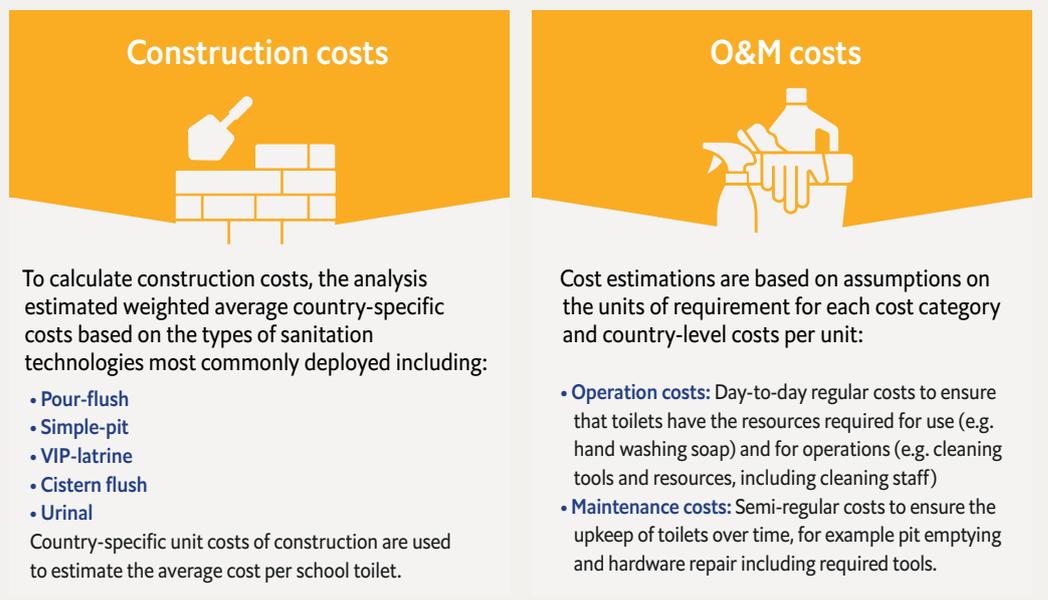
The cost of a toilet and how we measured it

A policy decision to increase access to sanitation requires investment not only in constructing a toilet, but also in maintaining that toilet over its lifetime.

Our analysis quantifies the costs of constructing and maintaining toilets in schools using a bottom-up approach at the country level. Some of the costs included within this analysis go beyond those required to achieve basic sanitation levels in schools based on the JMP definitions. For example, pit emptying is not a basic service requirement. However, these costs are marginal (less than 1%) of the total estimated costs.

The diagram below summarises the construction and O&M costs incorporated within our calculations. Further detail is provided in a technical annex.

It should be noted that rehabilitation costs—the costs incurred if an existing toilet has been left unmaintained for an extended period of time and, therefore, requires rehabilitation to bring it back to a basic service level—are not included in our analysis. These additional costs vary substantially across countries and depend on the type of toilet constructed and the extent of disrepair. The existing data do not allow for an assessment of how many toilets require rehabilitation. As a result, our estimated overall cost requirements for closing sanitation gaps will be lower than they are likely to be in reality.



“Some schools build toilets but quickly close them because they realise that the cost of maintenance is expensive. What they don’t realise is that building toilets and not maintaining them can be even more expensive. Better planning is needed to prevent these costs.”

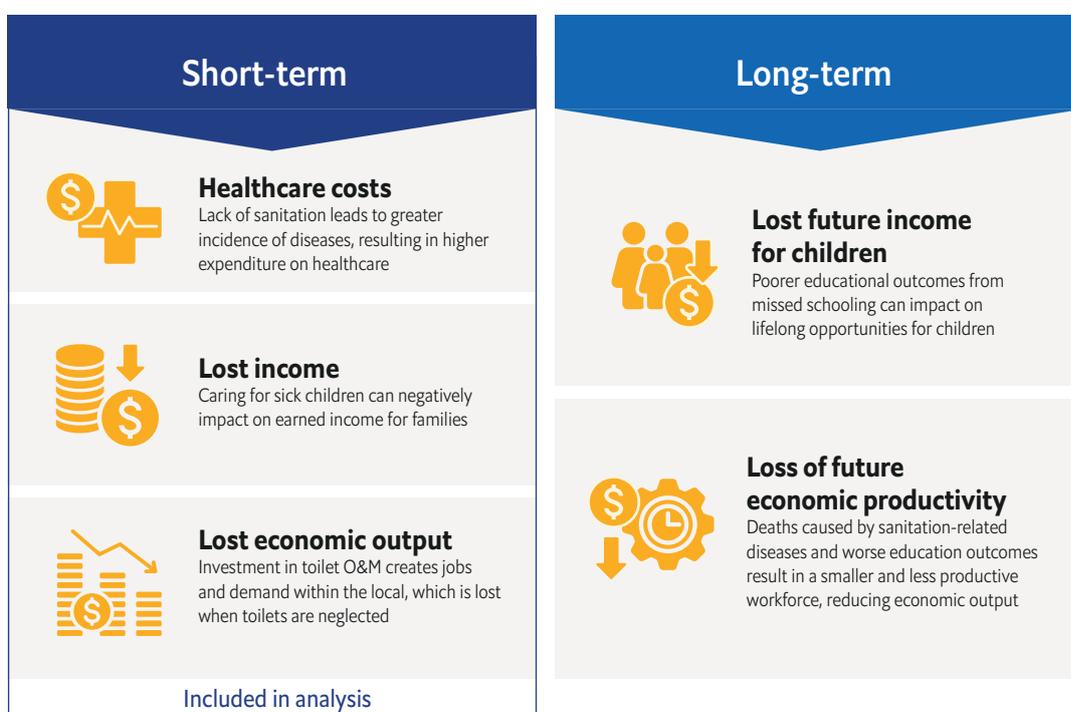
Bella Monse, senior advisor, Fit for School, GIZ

The societal impacts of Toilet Loss

Toilet Loss extends beyond the financial losses from neglecting toilets—it creates real impacts for children, economies and societies (see discussion in “The why: the need to address Toilet Loss” above).

Although the longer-term implications of Toilet Loss can be substantial, the evidence on impacts is inconclusive.⁵³ As such, longer-term impacts cannot be robustly quantified. Instead, our analysis focuses on the immediate impact that arises through three key channels: additional healthcare costs, loss of income and loss of economic output.

FIGURE 14. Socioeconomic costs of toilet neglect

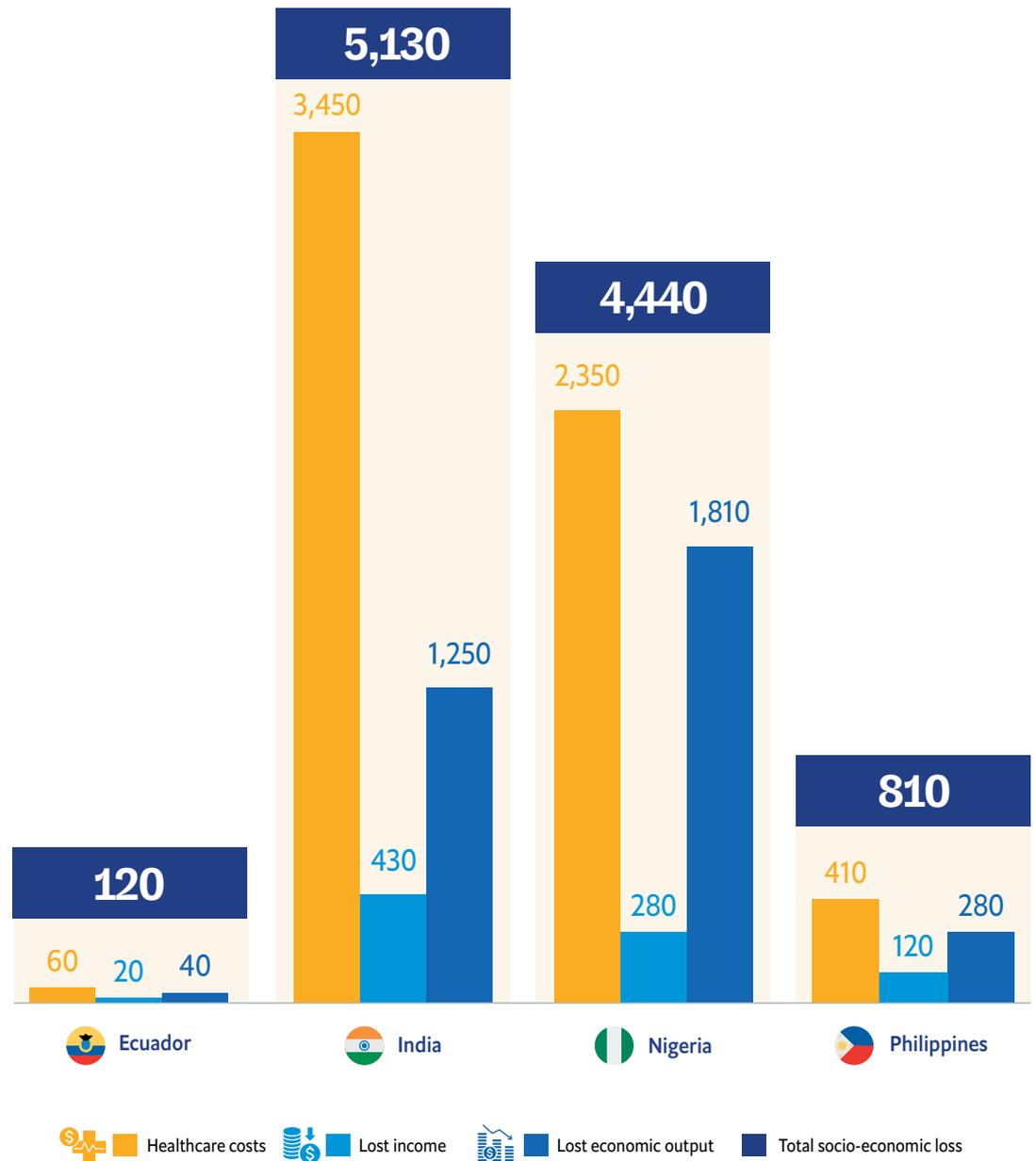


Across the four countries assessed, total immediate socioeconomic losses from toilet neglect are estimated at over US\$10bn in 2015-21. India and Nigeria suffered the greatest respective losses, of US\$5.1bn and US\$4.4bn.

The greatest contributor to these costs is healthcare expenditure to treat infections in children. In India, healthcare expenditure constitutes two-thirds of the total cost—these costs result from an average of 9m additional annual cases of diarrhoeal infections among school children that could have been avoided with better access to clean and usable toilets.

⁵³ www.mdpi.com/1660-4601/9/8/2772

FIGURE 15. Counting the losses
 Socioeconomic losses from Toilet Loss by country, 2015-21 (US\$m)



Total socioeconomic loss across four countries
US\$10bn

A CASE STUDY BY UNILEVER

How Unilever and GIZ joined forces to tackle Toilet Loss in the Philippines



Unilever brand Domestos and the German Development Cooperation (GIZ) joined forces to find realistic answers, starting small to scale effectively. In 2016, JMP data showed that only 40% of Philippines schools had useable, gender-segregated toilets, impacting millions of school children. Closer inspection showed a significant number of toilets physically in place, but 'lost' for daily use; simply requiring improved maintenance to bring them back into use. To address the issue, Domestos and GIZ jointly implemented a project within the develoPPP programme—the German Federal Ministry for Economic Cooperation and Development's (BMZ) funding scheme for sustainable company initiatives. The team agreed to start with a pilot study to assess school toilet conditions and maintenance solutions in the Batangas region of the Philippines. The interventions there were proven to work across the country, creating a blueprint for scaling nationwide.

A practical, sustainable, scalable solution

The on-ground project team worked closely with local schools and education sector leaders to test and verify a practical, scalable and sustainable school toilet operation and maintenance (O&M) programme. It includes daily cleaning reports; checklists and standards; simple management tools and quantifiable supplies; Massive Open Online Course to train teachers and school heads; and, an app for schools to calculate the costs for maintenance and cleaning supplies. After on-going iteration, testing and approvals, Domestos and GIZ supported the Department of Education for a nationwide school roll-out.

The Unstoppable Award

To drive uptake and sustained commitment to the programme, the Unstoppable Award was created. The award is an annual interschool competition rewarding schools for regular toilet cleaning and the recording of O&M measures. The award builds on the Filipino tradition of *Brigada Eskwela* (school maintenance week)—a national preparatory celebration whereby parents, guardians and the entire local community get schools clean and ready for the beginning of the new school year.

It works



Increase in useable, gender-segregated toilets across Philippines schools from **40% to 74%**



Over 19 million children reached, according to data verified by the Philippines' government (2017-22)



Increase in the number of schools reporting daily cleaning from **26,811 to 38,563 (2017-22)**

What we learnt

Understanding what data shows, testing the efficacy of materials, and rewarding data collection are what underpin the effectiveness of this programme.

For school children in the Philippines, the quality of data and the impact of this intervention helped the Department of Education recognise and prioritise the issue of access to school toilets and ensured preparedness ahead of schools reopening after the Covid-19 pandemic.

For school children around the world, the programme fundamentals have formed the basis of the Domestos 'Cleaner Toilets, Brighter Futures' school toilet cleaning and maintenance programme. This has been now rolled-out in Vietnam, South Africa and Turkey.

In summary

Public Private Partnerships work best when the sum is even greater than the parts. Unilever Domestos provides materials and guidance for schools and manages the annual Unstoppable Award; GIZ contributes its system strengthening expertise by developing support structures for the government to implement and scale up the national WASH in Schools programme. All parties play to their strengths in pursuit of a bigger goal—in this instance, a way to keep toilets clean and safe for all school children in the Philippines.

A pathway to full sanitation coverage in schools

Closing sanitation gaps

The global need

Countries, communities and individuals have incurred large losses from not providing children with access to clean and usable toilets at school—these include infrastructure losses, financial losses and socioeconomic losses. What is needed to close the gap and prevent these losses from growing?

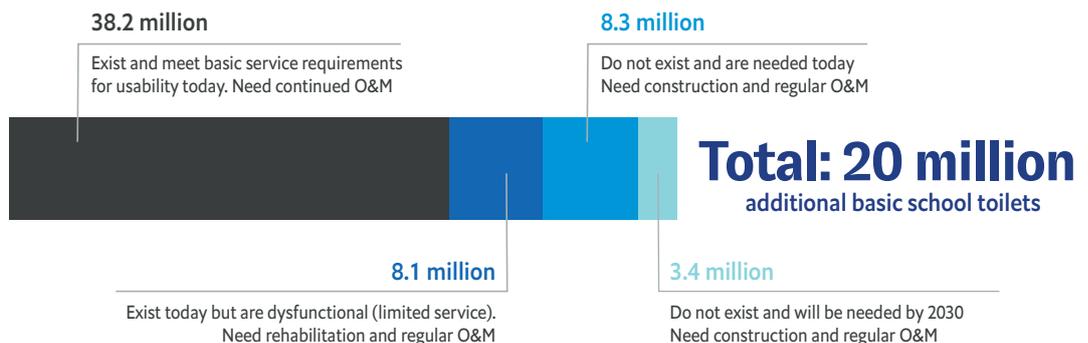
Globally, the number of basic service school toilets will need to grow by at least 20m by 2030, from 38m today, to fully close the gap—double the number of basic toilets that exist in India, and nearly ten times that in the US. In practice, this means that for every two basic school toilets that exist today, another basic school toilet will need to be added—including construction and maintenance.

“For many countries, especially in Sub-Saharan Africa, another significant challenge is the rapidly growing school-age population. It becomes challenging to keep up with the demand for building and maintaining schools when maintaining existing ones is hard enough.”

Tom Slaymaker, senior statistics and monitoring specialist, UNICEF

FIGURE 16. Getting to full global sanitation coverage across schools

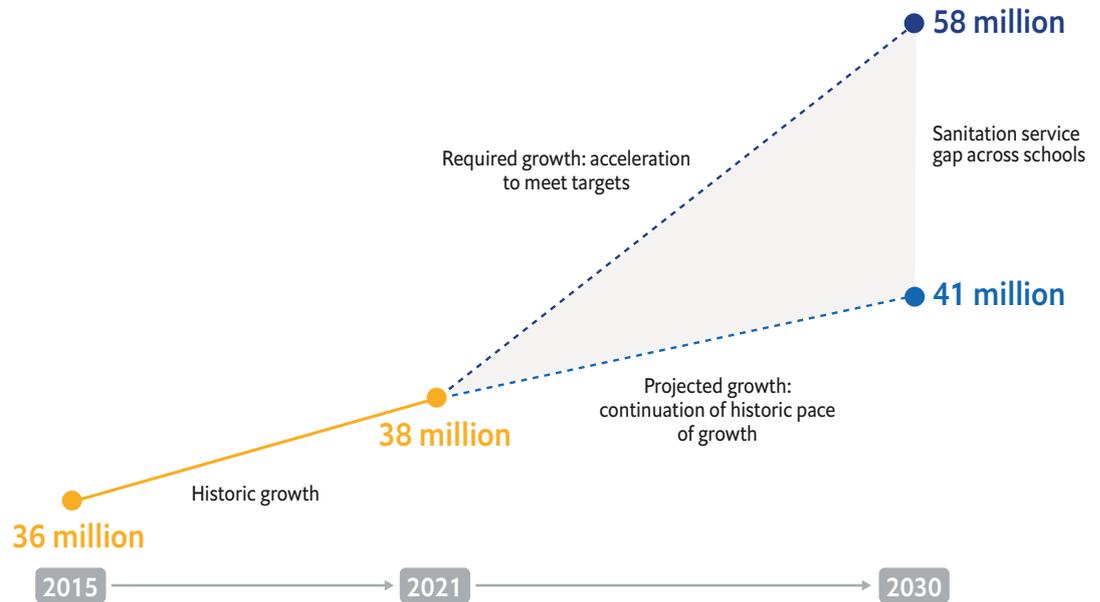
At least 20 million additional basic school toilets will be needed across the world by 2030, of which:



Achieving this goal will require a six-fold acceleration in progress on access to basic school toilets compared to what countries have achieved since 2015. In 2015-21 the number of basic usable school toilets grew by an average of 340,000 each year. Meeting the SDG targets will require an average annual growth of 2.2m basic school toilets—more than the number of existing school toilets in the US today. Nearly 90% of this growth will be required in Asia and Sub-Saharan Africa where, respectively, 1.1m and 850,000 additional basic school toilets will be needed each year between now and 2030.

FIGURE 17. Accelerating global progress in providing sanitation in schools

Global access to basic sanitation services in schools (number of toilets, millions)



Country-level implications

Looking specifically at the countries of focus for this study, across India and Nigeria alone at least 2.5m school toilets still need to be constructed and maintained to close the gap by 2030, and an additional 1.1m need to be rehabilitated and receive O&M (see Figure 18).

Although the gaps that need to be closed are large and may seem unachievable, some countries are on track to meet the SDG target for school sanitation if rates of progress are maintained. If the Philippines continues to maintain its current progress rate, it could reach full basic service coverage across schools within the next six years. Nigeria, however, needs to accelerate its annual progress four-fold to meet target 6.2. At its current pace, it will not meet full basic service coverage in schools until 2054. And, without a shift in focus towards O&M, Ecuador will need at least 100 years to reach full coverage at current progress rates (see Figure 19).

FIGURE 18. Country-level requirements for school toilets (2030)

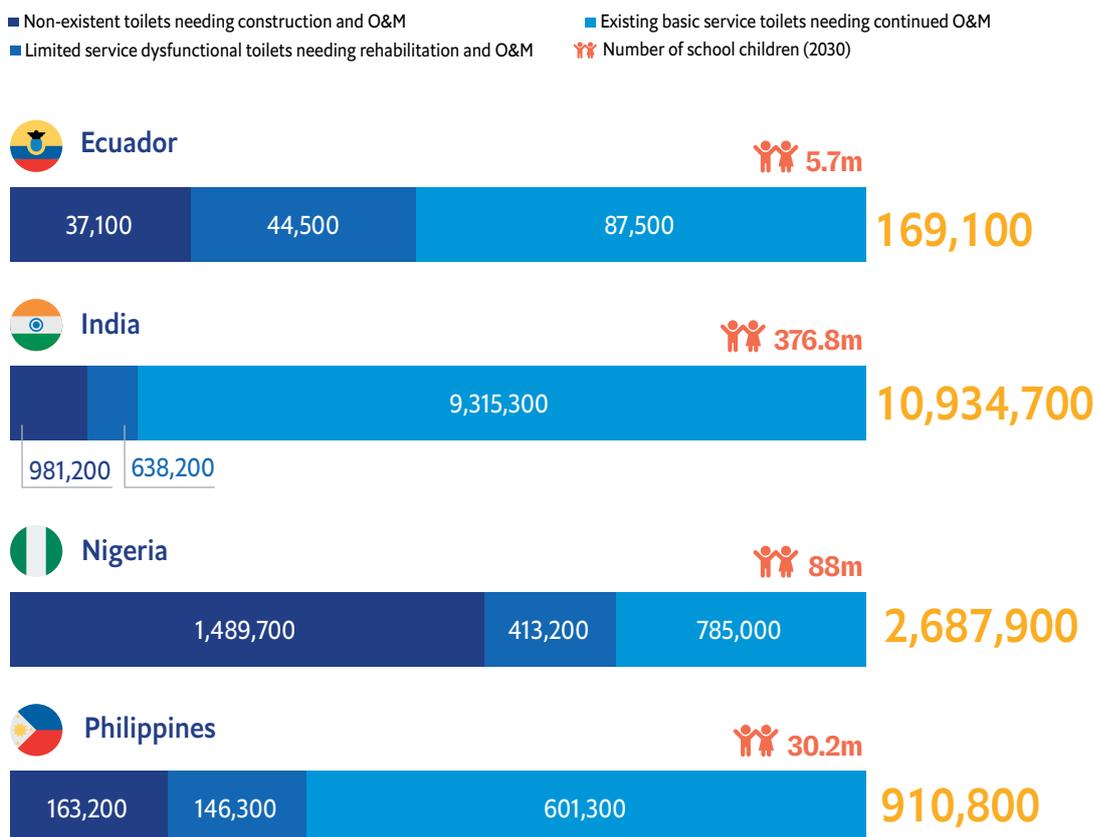
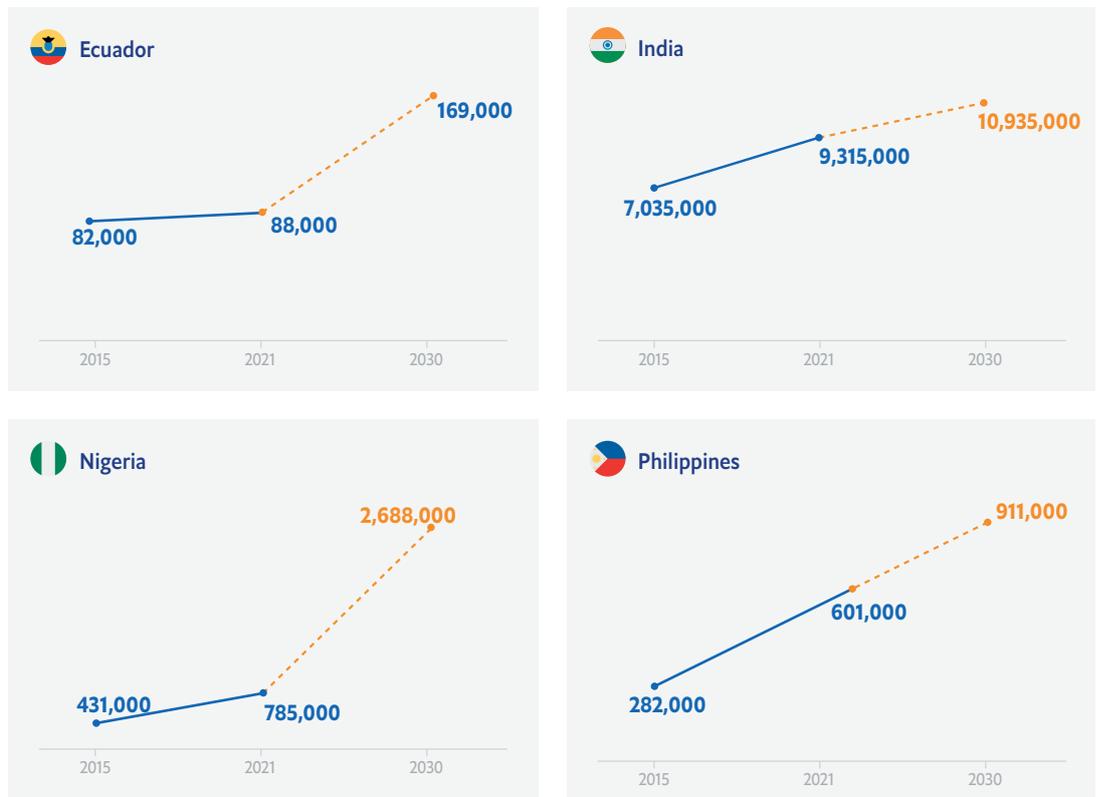


FIGURE 19. The required pace of progress

Comparing historic progress in providing basic sanitation access (2015-21) to required progress (2021-30), number of basic service toilets in schools

— Historic growth - - - Required growth to meet targets



Developing the policy environment to enable toilet use

Investing in construction and O&M to provide children with a clean and usable basic toilet in school gets us part of the way towards encouraging use and the benefits that come with it. However, having a clean toilet is not enough if the school environment itself deters use.

One critical aspect in promoting toilet use is safety.⁵⁴ Creating a safe environment around school toilets is vital for encouraging regular use, and improving the overall wellbeing and confidence of students.⁵⁵ Gender-segregated toilets are critical to instilling a sense of safety, particularly for girls.⁵⁶ In Tanzania and Bangladesh, the construction of gender-segregated toilets has increased school enrollment of girls by 10% annually.⁵⁷

Hygiene education policies are also vital. Having a usable toilet is one thing, but being able to use it in a safe and hygienic way is another. Schools need to implement programmes that teach students proper techniques for toilet use and general hygiene practices such as handwashing, to help reduce the spread of infections and illnesses, and promote a healthier school environment.⁵⁸ Hygiene education also teaches lifelong habits that can positively impact communities outside of school walls.⁵⁹

“All parts of the school are properly regulated except for toilets. Security issues, vandalism, and crime occur in many countries, making them unsafe. Some schools have toilets located further away due to septic tanks. All of these factors impact the use of toilets beyond their cleanliness.”

Bella Monse, senior advisor, Fit for School, GIZ

⁵⁴ washmatters.wateraid.org/sites/g/files/jkxoof256/files/female-friendly-public-and-community-toilets-a-guide.pdf

⁵⁵ washmatters.wateraid.org/sites/g/files/jkxoof256/files/female-friendly-public-and-community-toilets-a-guide.pdf

⁵⁶ www.unicef-irc.org/evidence-for-action/how-wash-in-schools-empowers-girls-education/

⁵⁷ ideas4development.org/en/access-toilets-gender-equality/

⁵⁸ www.cdc.gov/handwashing/handwashing-school.html

⁵⁹ www.ncbi.nlm.nih.gov/pmc/articles/PMC7723000/

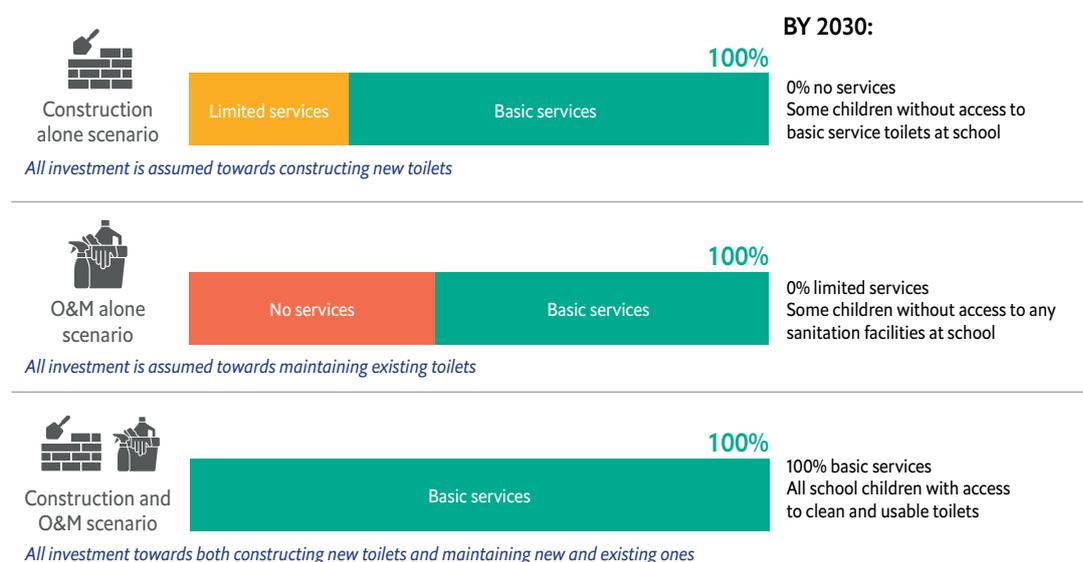
The pathways ahead

Although some countries are on track to meeting the school-sanitation targets, the challenge ahead is by no means trivial. All countries still need to, at minimum, maintain the current pace of school sanitation progress; most need to accelerate their pace in an environment of tight budgetary constraints. What can stakeholders do to close school sanitation gaps in the most cost-effective way?

Our analysis explores different investment scenarios that focus on a combination of construction and O&M (see Figure 20).

FIGURE 20. Future investment scenarios for school sanitation

We assess three alternative investment scenarios which lead to different levels of access to school sanitation by 2030, illustrated below.



Decoding the options

For each future investment scenario, our analysis compares the socioeconomic gains that could arise in the short term with the financial costs of delivering these gains over and above current spending on school toilets.⁶⁰ Although all additional investment into construction and/or O&M delivers some benefit, the magnitude of these benefits varies substantially across the scenarios. A “one size fits all” country-level approach will not, therefore, work and different countries will need a unique context-specific strategy to meet the SDG targets. This section discusses the impacts of each option individually and concludes with a summary of the best way forward depending on the current state of progress within a country and the financial requirements to close the gap.

Construction only: full, but unusable, toilet access for all

The first option investigates a scenario in which all additional sanitation investment is directed entirely towards constructing new school toilets, leaving no child without access to a school toilet (regardless of whether that toilet is usable). Investing in school toilet construction is essential for closing access gaps, and the SDG targets cannot be met without this investment. However, without additional O&M investment, constructed toilets quickly become dysfunctional, resulting in Toilet Loss.

⁶⁰ See technical annex for further detail on the methodology

The benefits of investing only in the construction of new toilets are minimal, and arise through a short-term increase in activity within the local economy associated with the construction activity. In short, the benefit of construction alone is that construction workers are employed, generating income and demand within the economy. However, unless there is an accompanying investment plan for O&M, these toilets quickly become unusable and the economic benefits are not sustained. There are also no health benefits relative to current investment levels, as no additional children have access to a usable basic service toilet. The burden of disease remains the same and, therefore, healthcare costs also remain the same.

Investing only in construction also requires high levels of investment. In Nigeria, building enough school toilets so that every child would have access could cost nearly US\$1.5bn. However, since this scenario does not set aside additional funding for O&M, under current levels of O&M investment in the country, nearly US\$1bn of the invested US\$1.5bn would end up being allocated to toilets that immediately become unusable. And since two-thirds of the investment would be lost, up to seven-in-ten children (60m children) would still not have access to a school toilet in 2030.

Socioeconomic impacts of construction alone:



Healthcare savings:

No benefit



Family income gains:

No benefit



Economic output:

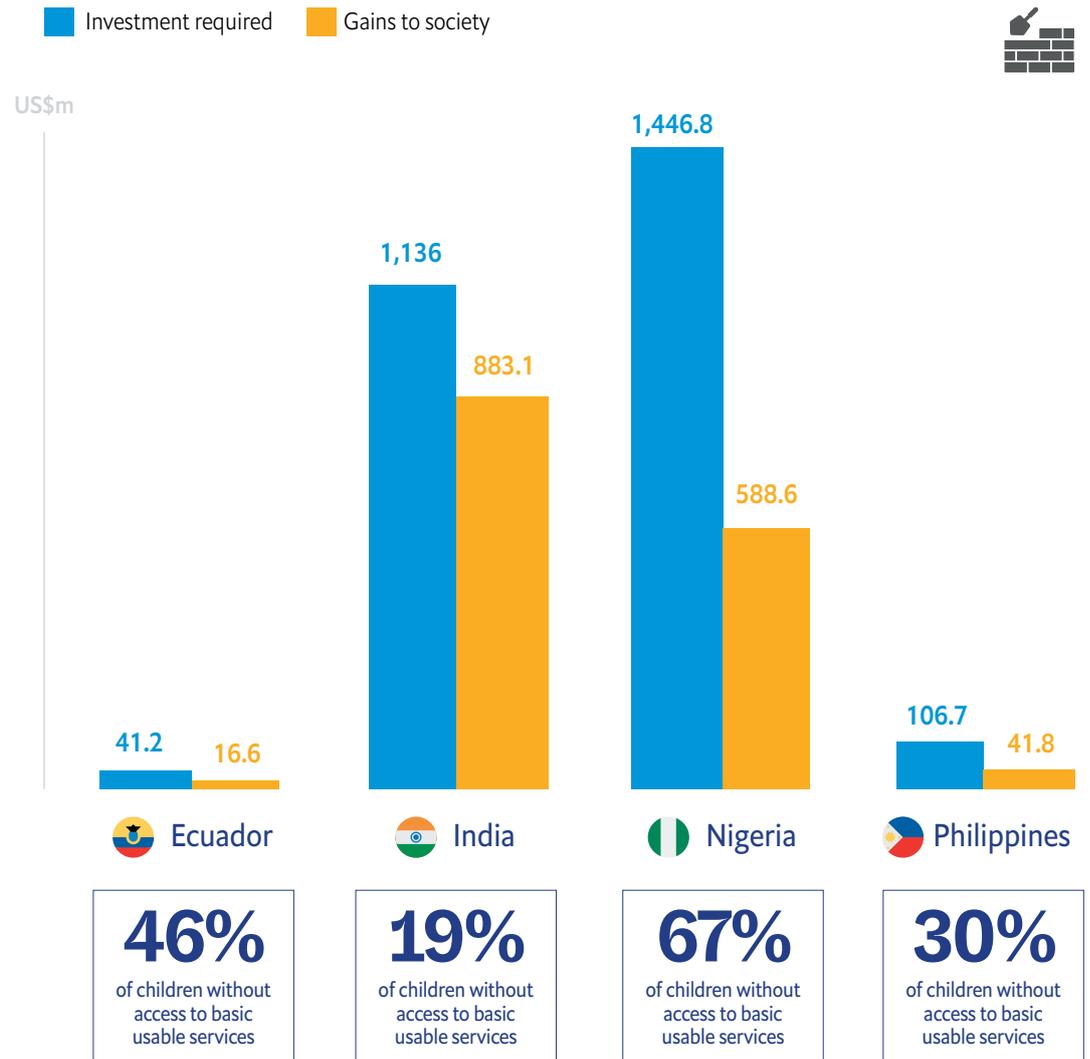
Marginal one-off benefit

“Sustaining progress on sanitation requires considering not only the initial infrastructure, but also accounting for education, maintenance and budgetary provisions to ensure long-term viability. Programmes that solely focus on building infrastructure without these considerations often end in failure.”

Heather Murphy, associate professor and Canada research chair in One Health, University of Guelph

FIGURE 21. Cost versus benefits: Construction alone

Comparing the costs and benefits of investing in construction to advance school sanitation (total, 2021-30⁶¹), US\$m



⁶¹ The total estimated costs and benefits are discounted to present value terms.

O&M only: full basic toilet access for some

An alternative strategy to close access gaps is investing in existing school toilets to convert all existing limited service toilets into basic service toilets. Investing in the O&M of existing toilets delivers significantly higher socioeconomic benefits. More children have access to a usable school toilet, so the transmission of diseases such as diarrhoea is reduced. Households save on healthcare expenditure and are less likely to lose out on income generation owing to illness, which ultimately increases overall household disposable income.

At an economy level, the employment created for regular O&M creates additional benefits. In Nigeria, while construction alone would deliver socioeconomic benefits of only US\$590m between now and 2030, O&M alone would generate nearly four times the benefit (US\$2.1bn).

Socioeconomic impacts of O&M alone:



Healthcare savings:

Benefits for some children who gain access to a usable toilet



Family income gains:

Benefits for some families



Economic output:

Benefits from sustained O&M employment

An O&M-only strategy—in which all existing toilets in schools receive the required levels of maintenance each year to 2030—is more costly than investing in the one-time construction of toilets in most countries. In Ecuador, investing in the O&M of all existing school toilets would cost a cumulative US\$110m, whereas construction alone would cost US\$40m. However, the gains from O&M investment are substantially higher and outweigh the costs (see Figure 22), unlike with investment in construction alone.

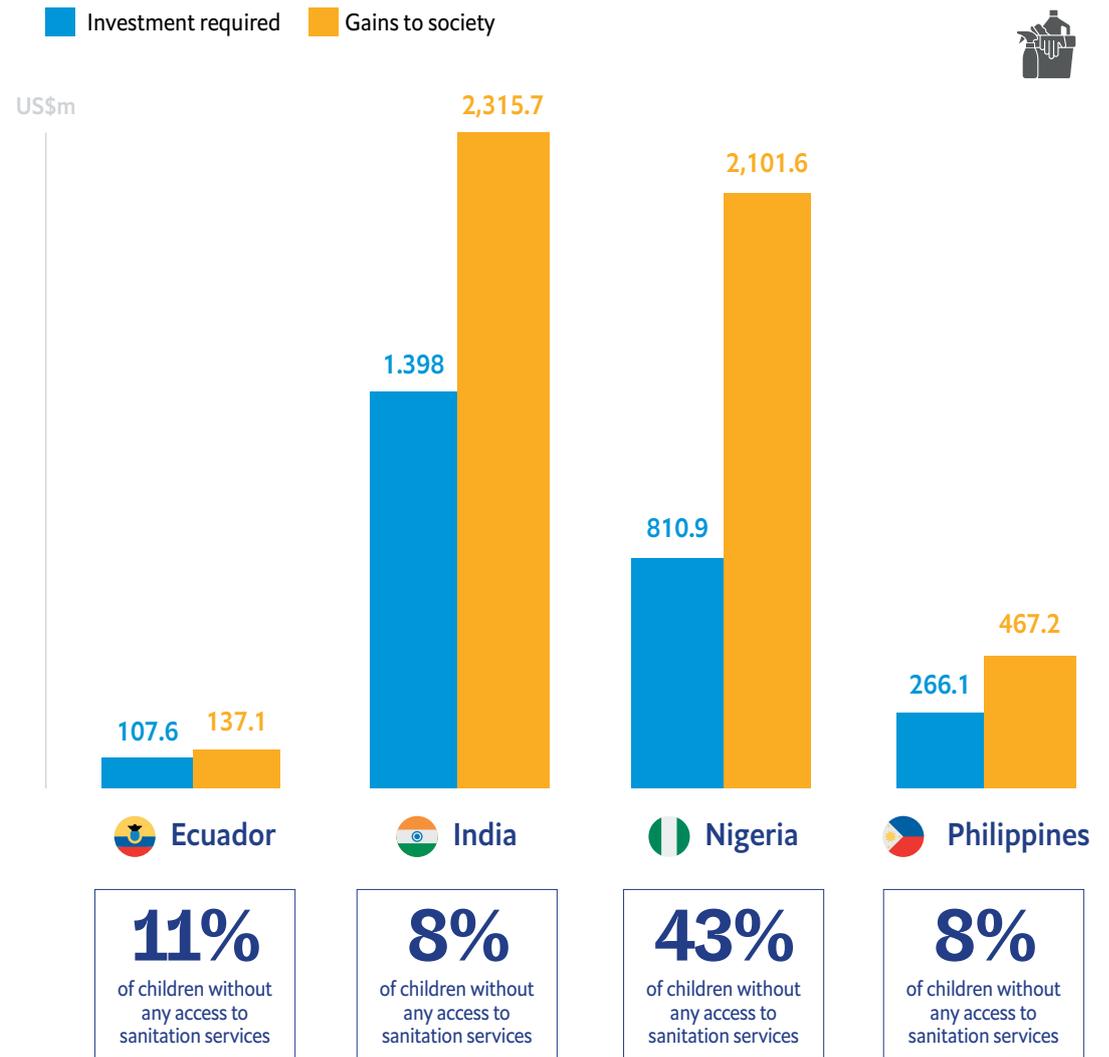
Despite the substantial benefits from investing in O&M, this solution is inequitable and serves to widen the gap between children with and without access to sanitation services in school. Children with access today to unusable limited service toilets gain access to a usable basic service toilet, while children without any access remain without any access. In Nigeria, as many as 40m—two in five—children could still lack access to sanitation facilities at school by 2030.

“WASH intervention efforts by local governments drive demand creation across the sanitation supply chain, which significantly impacts local economies.”

Josh Garn, assistant professor, University of Nevada School of Public Health

FIGURE 22. Cost vs. benefits: O&M alone

Comparing the costs and benefits of investing in O&M to advance school sanitation (total, 2021-30⁶²), US\$m



⁶² The total estimated costs and benefits are discounted to present value terms.

Case study

How O&M creates a local sanitation economy

What starts off as something as seemingly small as maintaining toilets in schools can have far-reaching impacts across societies and economies as a whole. Investments in O&M and sanitation in schools and wider communities offers myriad benefits for local economies. The construction and O&M of sanitation facilities—and the provision of water supply systems and related services—create employment opportunities for the local population.⁶³ Localising O&M also boosts innovation, as it fosters the development of sanitation-related products and services.⁶⁴

The Toilet Board Coalition (TBC, a business-led body that seeks solutions to sanitation issues) identifies three core channels through which a “sanitation economy” is created from investments in expanding access to sanitation:⁶⁵

- 1. Toilet economy:** supply-chain impacts and employment creation from investing in sanitation and toilets
- 2. Circular sanitation economy:** collection and use of waste as renewable resources—water, energy, nutrients—for business operations
- 3. Smart sanitation economy:** data and innovation technologies to improve sanitation systems

In 2021 the sanitation economy was valued at US\$62bn in India alone (almost 2% of GDP).⁶⁶

An illustrative case highlighting the sanitation economy impacts of O&M investment is a 2017 accelerator project initiated by the TBC in Malindi, Kenya.⁶⁷ The primary objective was to enhance sanitation infrastructure and services by treating faecal sludge and combining it with other waste materials to produce briquettes as a substitute for biomass energy. By addressing both waste removal from latrines—a crucial component of O&M—and the implementation of effective waste treatment strategies, the initiative generated significant local economy impacts across the entire sanitation value chain, including transportation, waste treatment, briquette production, and sales and marketing. Overall, the project created employment for 140,000 local residents in wet sludge processing and briquette production. Annually, it creates capacity to process 31,200 tonnes of wet sludge, yielding 5,850 tonnes of briquettes, with further implications on the value added to the local economy.⁶⁸

⁶³ www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_462279/lang--en/index.htm

⁶⁴ journals.openedition.org/factsreports/6451

⁶⁵ www.toiletboard.org/media/52-Scaling_the_Sanitation_Economy.pdf

⁶⁶ www.toiletboard.org/media/52-Scaling_the_Sanitation_Economy.pdf

⁶⁷ www.toiletboard.org/wp-content/uploads/2023/07/Case-Study-Sanivation.pdf

⁶⁸ www.toiletboard.org/wp-content/uploads/2023/07/Case-Study-Sanivation.pdf

Construction and O&M: full basic toilet access for all

A combination of construction and O&M to meet 100% basic service coverage is the most effective and equitable way to provide all children access to a functional school toilet.

This approach also provides the greatest societal benefit. It minimises healthcare costs and loss of income through illness and maximises economic returns in the local economy. In Nigeria, fully closing the school toilet access gap could deliver estimated gains of US\$6.7bn in the short term, with the potential for even larger gains over time through improved educational outcomes and subsequent upticks in workforce productivity.

Unsurprisingly, investing in both construction and O&M will cost the most. Giving every child access to a usable school toilet by 2030 will cost an additional US\$180m in Ecuador, and up to nearly US\$4bn in both India and Nigeria.⁶⁹ These costs will require additional funding (see Figure 23) but deliver the largest benefits and allow countries to meet SDG targets on sanitation for children at school on time.

Socioeconomic impacts of construction and O&M:



Healthcare savings:

Benefits for all children



Family income gains:

Benefits for all families



Economic output:

Benefits from sustained construction and O&M employment

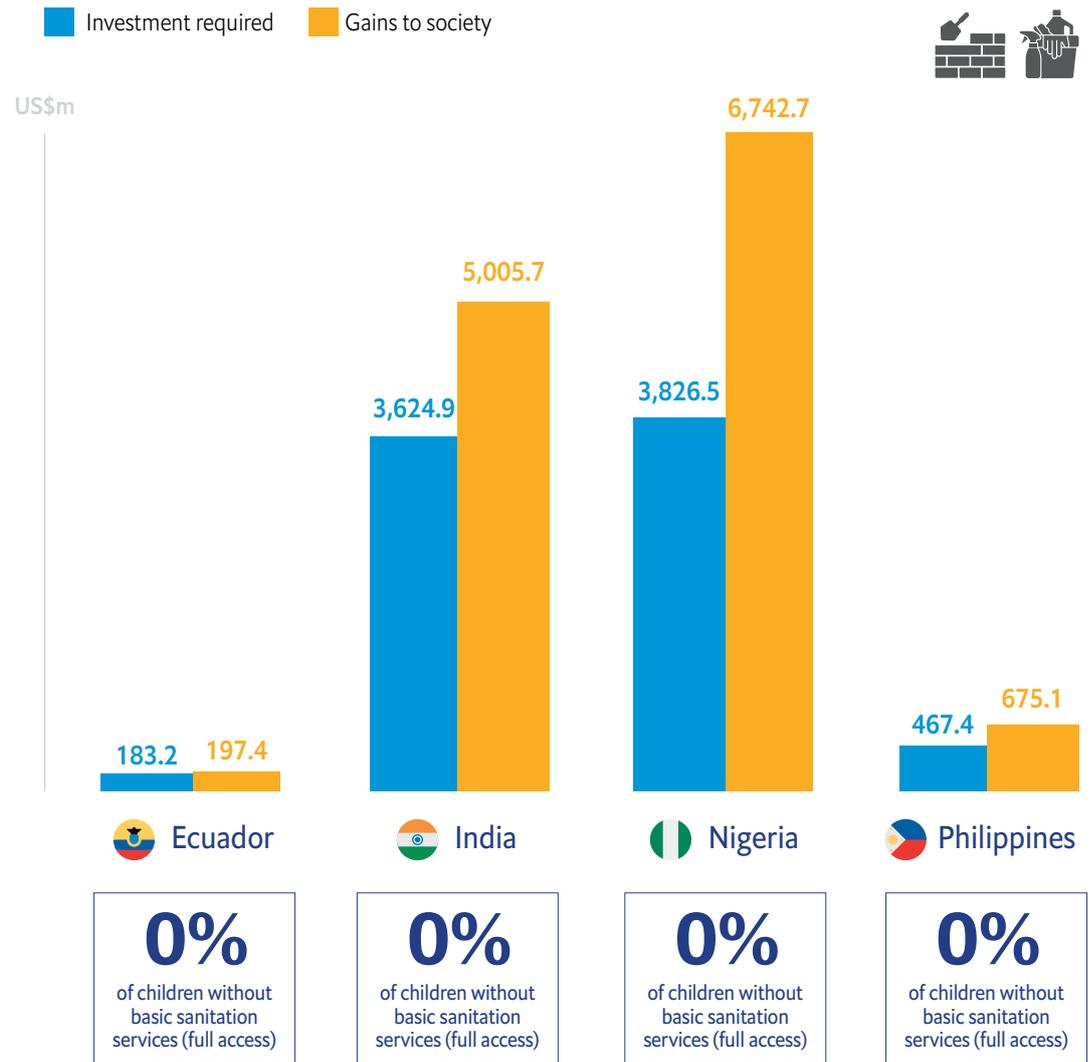
“There's strong plausibility that with clean and usable school toilets, students will be less likely to contract diseases, more likely to attend and remain in school, and more likely to achieve higher educational levels. In short, having usable toilets at school can make a long-term difference to a child's life.”

Josh Garn, assistant professor, University of Nevada School of Public Health

⁶⁹ These estimated costs do not include the cost of rehabilitating currently dysfunctional toilets and are therefore conservative estimates.

FIGURE 23. Cost versus benefits: construction and O&M

Comparing the costs and benefits of investing in construction and O&M to advance school sanitation (total, 2021-30⁷⁰), US\$m



⁷⁰ The total estimated costs and benefits are discounted to present value terms.

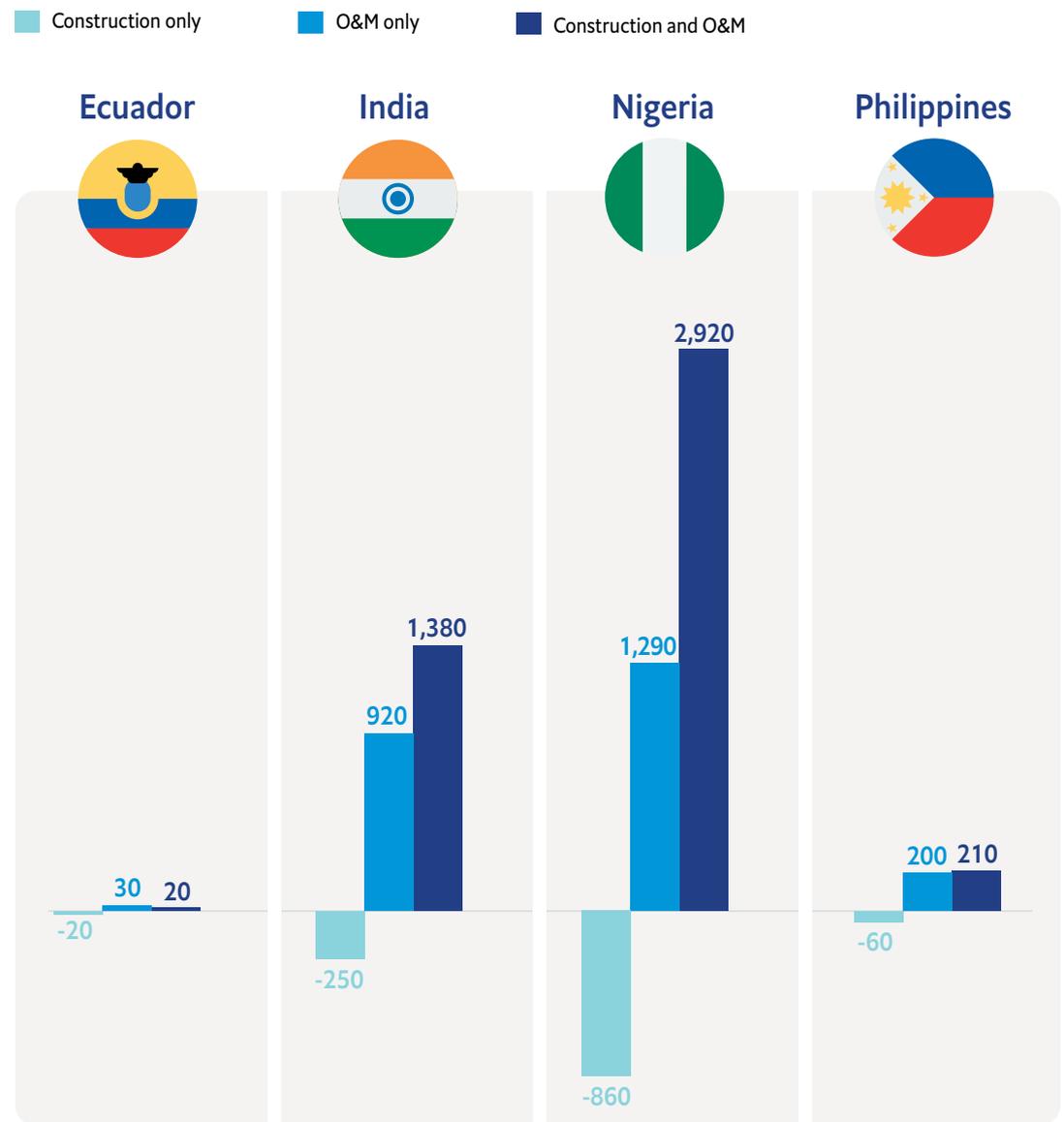
Mapping the road to full coverage

Each school toilet investment pathway offers different levels of benefit at different levels of financial investment. So what is the best way forward?

To compare between the various options, the overall benefits after accounting for the investment costs need to be evaluated (see Figure 24). Across all countries, the ideal strategy from a societal perspective is to invest in constructing and maintaining school toilets. In India, this approach would provide a net benefit of US\$1,380m up to 2030, compared with US\$920m from O&M alone and a loss of US\$250m from construction alone.

FIGURE 24. The net effect

The net benefits of investing in school sanitation (total benefits less costs, 2021-30⁷¹), US\$m



⁷¹ The net impacts are discounted to present value terms.

Overall, weighing up the options:

-  Construction alone: generates very few societal benefits
-  O&M alone: delivers large benefits for children already with some sanitation access
-  Construction and O&M: drives equitable access to school toilets while providing large societal benefits, particularly for children with no access to sanitation services

However, this road comes with a substantial financial cost for governments and schools, challenging policymakers who already face tough budgetary decisions on where to allocate funding in a global environment of fiscal tightening and rising public debt.⁷²

Meeting the SDG targets and providing basic service school toilets for all children will require an estimated additional investment ranging from US\$180m in Ecuador to US\$3.8bn in Nigeria. In per child terms, these figures translate to additional spending on sanitation per year of between US\$2 and US\$11 across the countries assessed (see Figure 25). Across these countries, the vast majority of this spending needs to be allocated towards O&M for existing and new toilets.

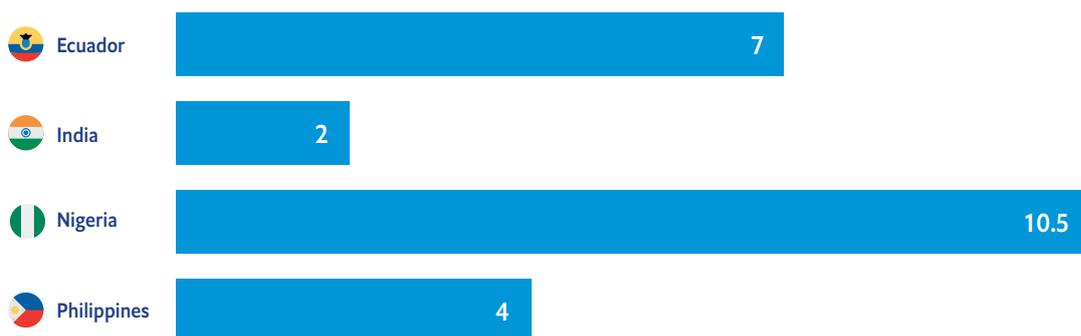
While the additional investment requirements are not immaterial, they are equivalent to an increase in education expenditure of less than 1% per child each year in most countries.⁷³ The only country assessed where a more significant increase in spending is needed is Nigeria, where current education spending per child will need to increase by 23% to provide sufficient funds to close school toilet access gaps.

Across all countries, additional investment will be needed beyond those estimated to achieve more advanced service levels in schools, particularly in terms of sanitation software such as training, and the implementation of monitoring and evaluation systems.⁷⁴

An additional cent in every dollar of education spending will allow most countries to achieve full coverage of basic sanitation services in schools by 2030.

FIGURE 25. Getting to full coverage: Additional investment needs per child

Additional annual spending needed per child to achieve full basic sanitation coverage (US\$ per child)



⁷² www.imf.org/en/Publications/FM/Issues/2023/04/03/fiscal-monitor-april-2023

⁷³ Investments in school sanitation do not come entirely or partially from education budgets in all contexts. These numbers are intended to put the scale of requirements to meet full coverage into perspective.

⁷⁴ <https://www.ircwash.org/sites/default/files/Peal-2010-Hygiene.pdf>

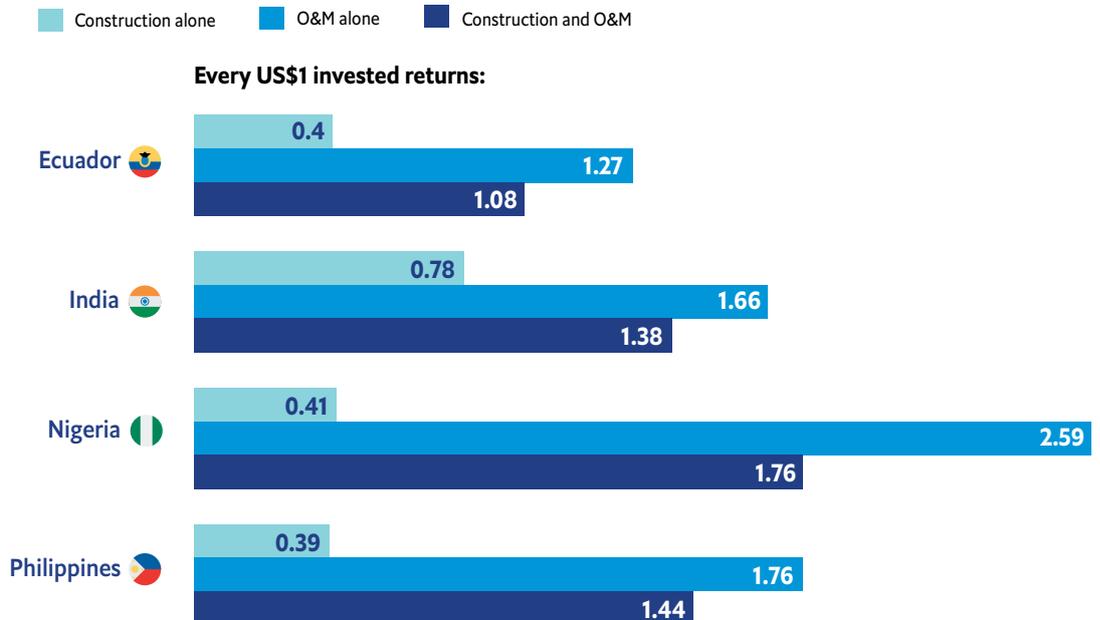
FIGURE 26. Required annual increase in educational expenditure per child (% of current annual spend)



In countries like Nigeria, where sanitation gaps are larger and more investment is needed to meet targets, investing simultaneously in construction and O&M may not be financially feasible. In a budget-constrained environment, an initial focus on the upkeep of current toilet facilities through O&M provides a path forward that maximises the value of past investments. The data consistently underscore the value of investing in O&M in these countries: in Nigeria, while investing in both construction and O&M together offers an economic return of US\$1.8 for every US\$1 invested, investing exclusively in O&M offers returns of US\$2.6.

FIGURE 27. Returns on investment

Returns for every US\$1 invested in school sanitation by investment strategy



Case study

Ethiopia's approach to financing sanitation

Ethiopia has one of the strongest enabling environments for sanitation in schools in Eastern and Southern Africa.⁷⁵ Since 2013 the One WASH National Program (OWNP) has been established as a sector-wide approach to enhance the health and wellbeing of both rural and urban populations across Ethiopia.⁷⁶

Ethiopia stands out as one of the few countries that have public-sector budget lines at the national, regional and district levels specifically earmarked for WinS. The OOWNP follows a matched funding approach, where government contributions are aligned with development assistance, amounting to US\$46.3m sourced from the national treasury.⁷⁷ The Ministry of Finance and Economic Development takes charge of the comprehensive fiscal management of the Country WASH Account.

As of 2020, according to the African Development Bank, the number of schools equipped with sanitation facilities in Ethiopia is 3,440. Importantly, half of these facilities are designated for female students.⁷⁸ The programme continues to operate and aims to extend access to sanitation services to more than 400,000 individuals across rural, urban and refugee regions in Ethiopia by 2025. This effort aligns with the overarching goals of the OOWNP and SDG 6.⁷⁹

Ethiopia's improvement in sanitation in schools can be partly attributed to the establishment of an enabling environment, which includes policy support and dedicated budget lines for WASH in Schools (WinS). This underscores the importance of establishing a supportive framework at the national, regional and district levels. Similarly, both the gender-sensitive and rural-urban approaches are contributing factors to the improvement of the WinS environment in Ethiopia.

⁷⁵ www.unicef.org/esa/media/4356/file/UNICEF-Wash-in-Schools-Scoping-Report.pdf

⁷⁶ www.moh.gov.et/site/One_WaSH_National_Program#:~:text=The%20One%20WASH%20National%20Program,policies%2C%20strategies%20and%20development%20plans.

⁷⁷ This aligns with 2018 figures: www.unicef.org/esa/media/4356/file/UNICEF-Wash-in-Schools-Scoping-Report.pdf

⁷⁸ www.afdb.org/sites/default/files/documents/projects-and-operations/ethiopia_-_one_wash_national_program_-_project_completion_report.pdf

⁷⁹ sdgs.un.org/partnerships/danish-support-unicef-ethiopia-wash-programme-2022-2025

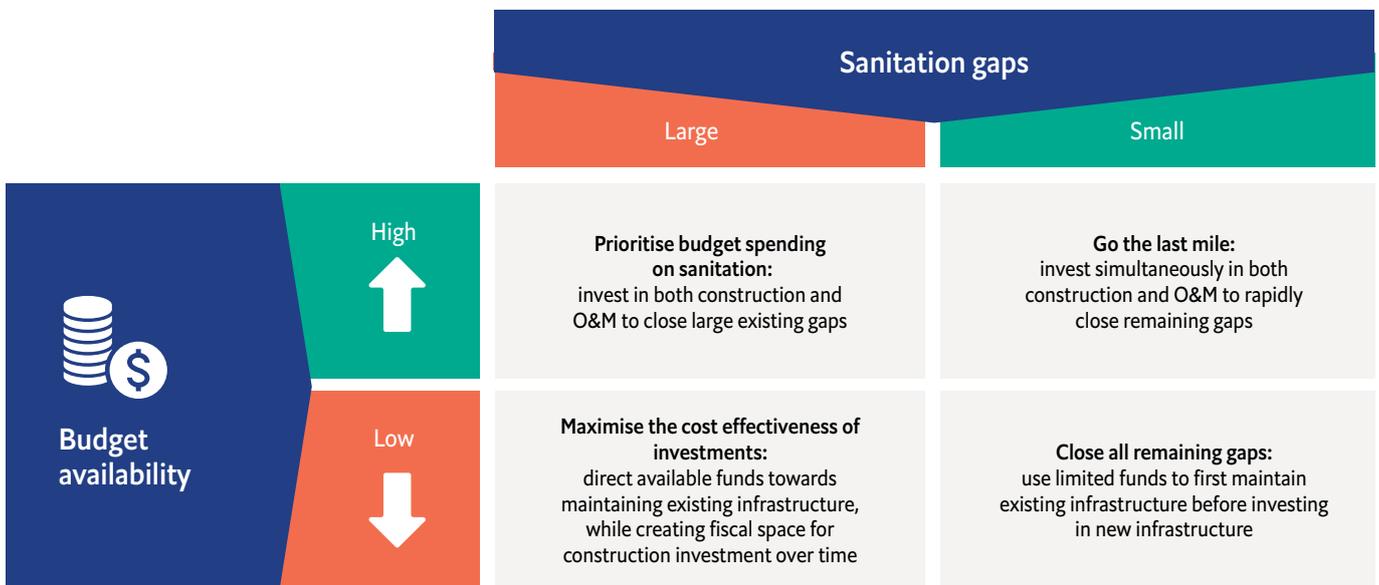
Conclusion

Investing in both building (and then maintaining) new school toilets and maintaining existing ones is the most equitable way to close gaps in toilet access in schools. It is also the pathway that provides the greatest benefits to society. However, in countries that are either financially constrained and/or require significant levels of additional spending, the findings from this research emphasise the economic sense of channelling resources into the maintenance of existing school toilets. This strategy offers a cost-effective means of achieving partial coverage of school toilets with a path to full coverage as more funding is unlocked.

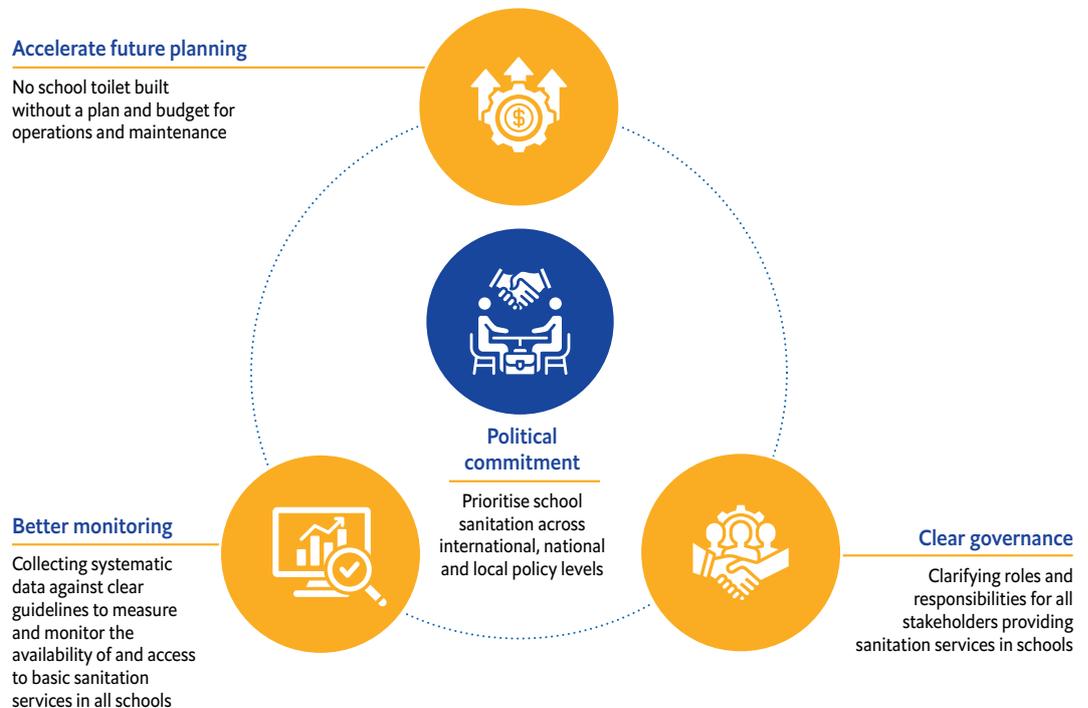
No matter what journey a country takes to reach full basic sanitation coverage across schools, reaching the goal will provide substantial benefits at an individual and societal level. And these benefits will not end in 2030. They will continue in the long term, driving individual prosperity and wellbeing and local economic growth.

The only poor decision that countries can make along the way is to compound existing Toilet Loss. As long as all toilets are built with a plan for maintenance, both children and society will benefit.

Figure 28. The road ahead: a context-specific strategy



So what needs to be done? What steps can different groups of stakeholders take to get countries closer to full basic sanitation coverage? Based on the insights of experts interviewed, published research and learning from countries leading the way towards sanitation for all children, we have identified a **three-point action plan** as a baseline for developing local strategies:



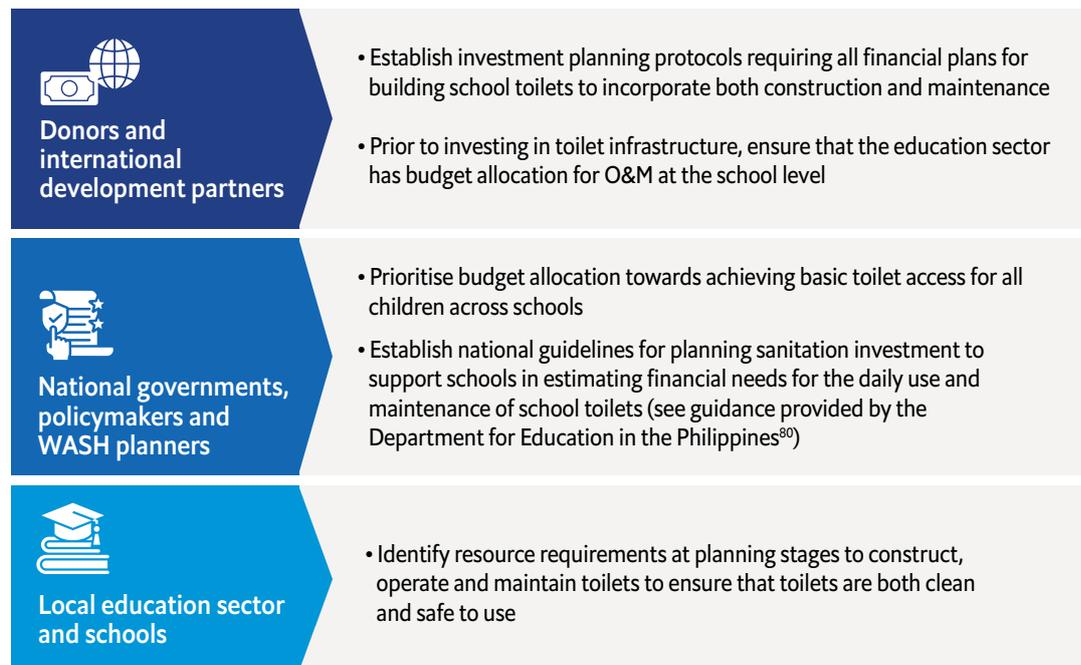
Accelerating progress towards achieving the goal of eliminating Toilet Loss will require system-level change in how sanitation services in schools is planned, delivered and managed. Central to this change will be political commitment across international, national and sub-national levels. Political commitment will ensure that sanitation is prioritised on political agendas and sufficient funding and resources are allocated towards it.

1. Accelerate future planning: Going forward, no school toilet should be built without a plan and budget for O&M. Toilets built without a plan quickly become unusable, which leads to Toilet Loss. Ensuring that sufficient funds are allocated from the planning stage for not only the construction but also the regular O&M of school toilets can stretch initial infrastructure investment, maximising the returns on investment. Understanding the specific requirements for each country in terms of current Toilet Loss, investment needs and the types of investments that will deliver the greatest returns is crucial to developing an effective plan.

“The primary challenge is in the planning and implementation of WASH interventions. Many interventions, even those that initially showed promise, were poorly executed with insufficient resources, resulting in them becoming unsustainable after a few years.”

Josh Garn, assistant professor, University of Nevada School of Public Health

The role of different stakeholders in: Accelerate future planning



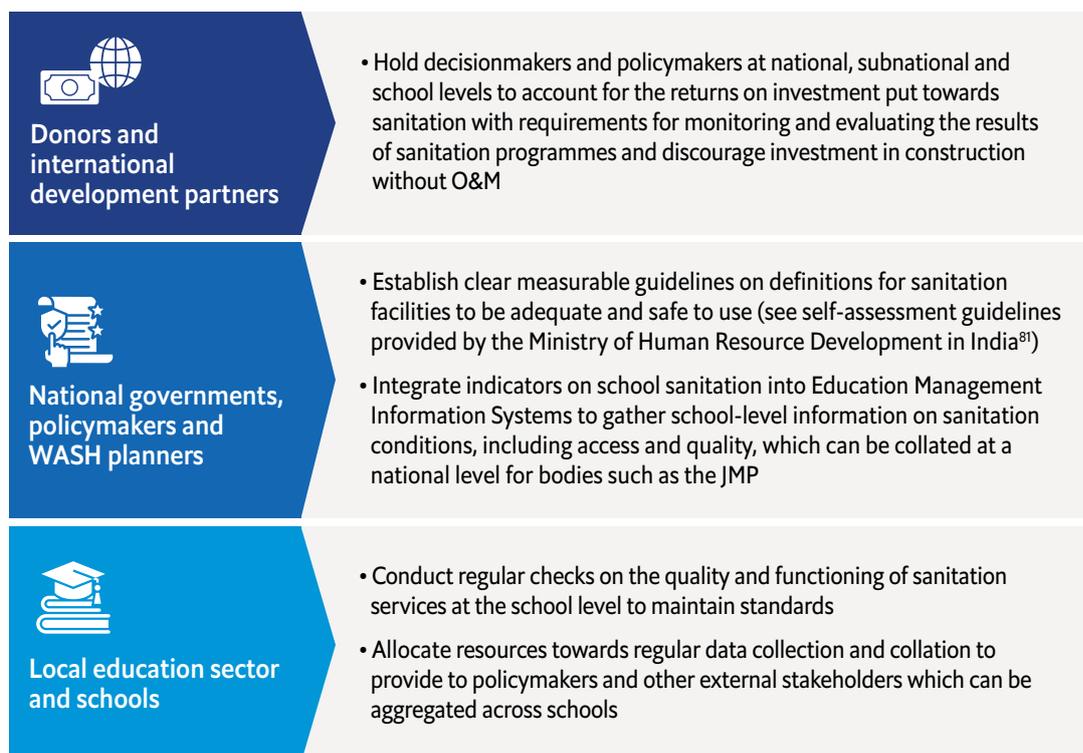
2. Better monitoring: In addition to planning for sanitation investment in schools, the implementation of these programmes also needs to be monitored to ensure that stakeholders are held to account against indicators of the quality of sanitation services. Countries collect and aggregate national-level data across schools on levels of access to functional and private toilets. However, these data are not collected systematically across all countries. Countries also collect little data on the usability of school toilets in practice, including whether the number of toilets is sufficient for the number of children enrolled in a school and whether they meet cleanliness standards for use. Systems need to be put in place to monitor progress against clearly established guidelines for the quality of sanitation services. This includes embedding indicators of school sanitation within Education Management Information Systems.

"Regular inspection and surveillance, together with data collection, are vital for understanding the status of school toilets. It's important that governments have clear criteria for measuring what "good" looks like."

Oliver Schmall, programme manager, water and climate,
WHO European Centre for Environment and Health

⁸⁰ http://www.fitforschool.international/wp-content/uploads/2017/01/WASH_in_Schools_Operation_and_Maintenance_Manual_2017.pdf

The role of different stakeholders in: Better monitoring



“Many countries still lack reliable data on the status of WASH in schools, especially for pre-primary, non-government schools and advanced levels of service. Strengthening routine monitoring systems will be critical to target investments where they are needed most.”

Tom Slaymaker, senior statistics and monitoring specialist, UNICEF

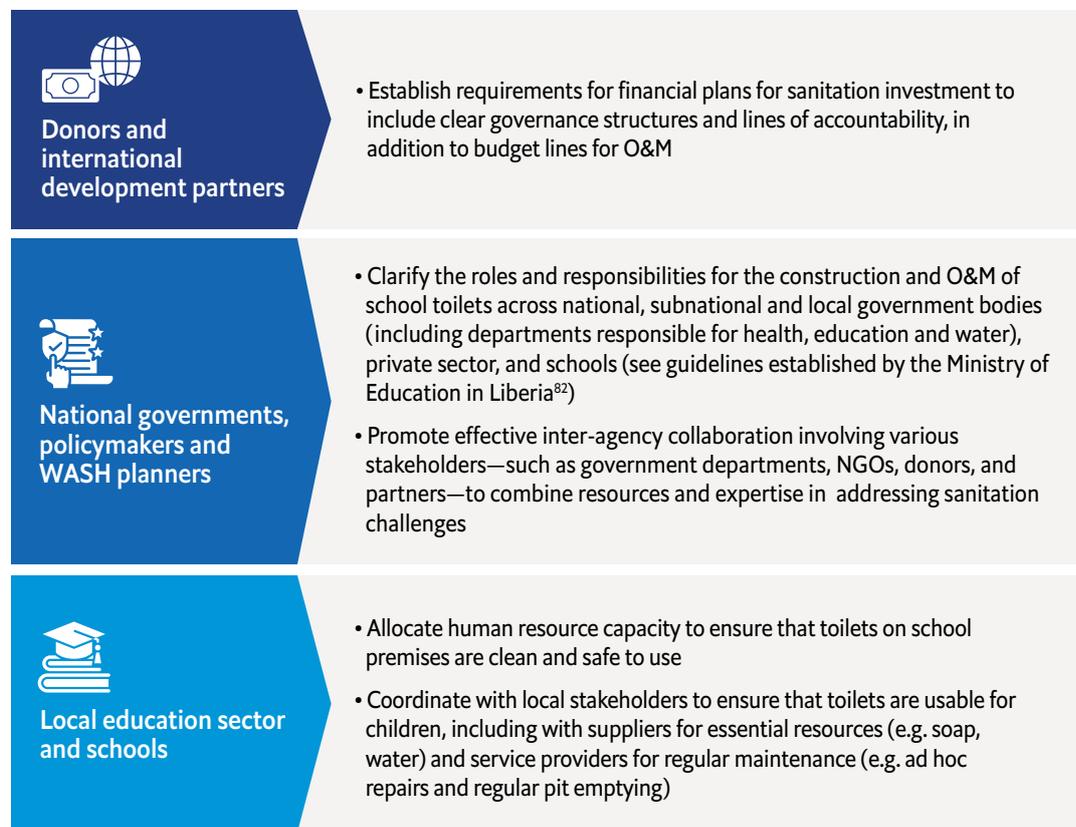
⁸¹ https://www.education.gov.in/sites/upload_files/mhrd/files/upload_document/Swachh_Vidyalay_Puraskar_Guidelines.pdf

3. Clear governance: Unlocking the benefits that come from full access to basic sanitation services in schools requires an acceleration in progress, which cannot be achieved with any single stakeholder group working in isolation. The roles and responsibilities of all stakeholders involved in providing sanitation services in schools needs to be clarified:

- Who is responsible for building school toilets?
- Who cleans the toilets on a regular basis?
- Who maintains the toilets and fixes them when there is a fault?

Governance structures and arrangements may look different in different local contexts, but they need to exist and these roles need to be clearly defined to create accountability for both building and maintaining toilets in schools.

The role of different stakeholders in: Clear governance



“One of the most significant issues is that there isn’t a systematic approach to assigning responsibility and accountability for WASH in schools. Once a toilet is constructed, schools are often expected to be responsible for the O&M, but they are not provided with the required resources or know-how.”

Claire Chase, senior economist, World Bank

⁸² https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/annex_8_liberia_wins_guidelines_and_tor_0.docx

“Responsibility for constructing school toilets is different from responsibility for operating and maintaining them. The construction of toilets is typically managed and financed by the local government or the water and rural development sector - they are responsible for ensuring that toilets are available. Meanwhile, the education sector is responsible for ensuring that toilets are usable and often faces challenges in securing the necessary funds for maintenance.”

Bella Monse, senior advisor, Fit for School, GIZ



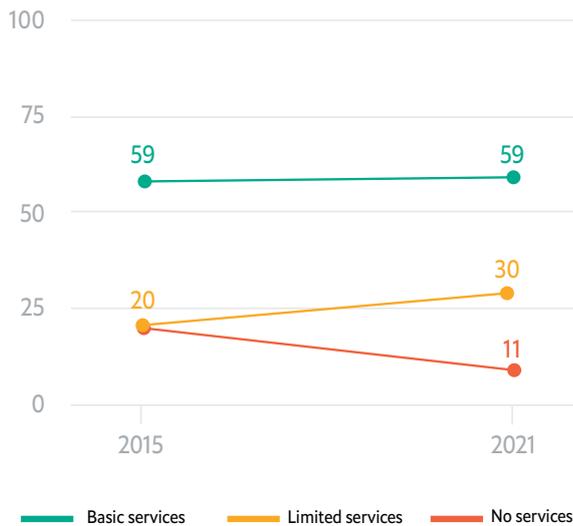
Appendix: Country data summary

Ecuador

Looking back: 2015-21

Tracking progress

Percent of children with access to sanitation services across schools:



Access in 2021

Total number of children: 4.9m, of which:

- No sanitation access: 0.5m
- Limited service access: 1.5m
- Basic service access: 2.9m

Toilet Loss

Lost expenditure: US\$114.9m (17% of investment)

Lost toilets: 44,500

Lost socioeconomic benefits: US\$121.8m, of which:

- Healthcare costs: US\$61.1m
- Lost family income: US\$22.2m
- Lost economic activity: US\$38.5m

The road ahead: 2021-2030

Toilets needed by 2030

Total number of toilets needed: 169,100, of which:

- Existing toilets needing continued O&M: 87,500
- Dysfunctional toilets needing rehabilitation and O&M: 44,500
- Non-existent toilets needing construction and O&M: 37,100

Costs and benefits

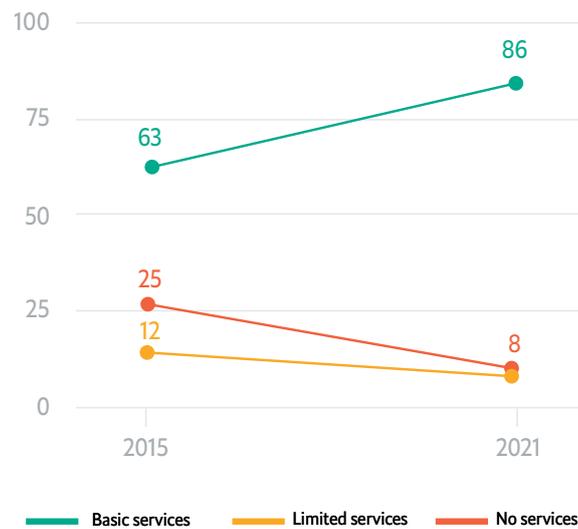
	School toilet access (2030)	Gains to society (US\$m)	Investment required (US\$m)	Return per US\$1 investment
Construction alone	2.6m children (46%) without basic toilet access	16.6	41.2	0.40
O&M alone	625,000 children (11%) without any toilet access	137.1	107.6	1.27
Construction and O&M	No children without access	197.4	183.2	1.08

 **India**

Looking back: 2015-21

Tracking progress

Percent of children with access to sanitation services across schools:



Access in 2021

Total number of children: 369.7m, of which:

- No sanitation access: 30m
- Limited service access: 21.8m
- Basic service access: 317.9m

Toilet Loss

Lost expenditure: US\$994.4 million (3% of investment)

Lost toilets: 638,200

Lost socio-economic benefits: US\$5,132.2m, of which:

- Healthcare costs: US\$3,449.8m
- Lost family income: US\$428.3m
- Lost economic activity: US\$1,254.1m

The road ahead: 2021-2030

Toilets needed by 2030

Total number of toilets needed: 10,934,700, of which:

- Existing toilets needing continued O&M: 9,315,300
- Dysfunctional toilets needing rehabilitation and O&M: 638,200
- Non-existent toilets needing construction and O&M: 981,200

Costs and benefits

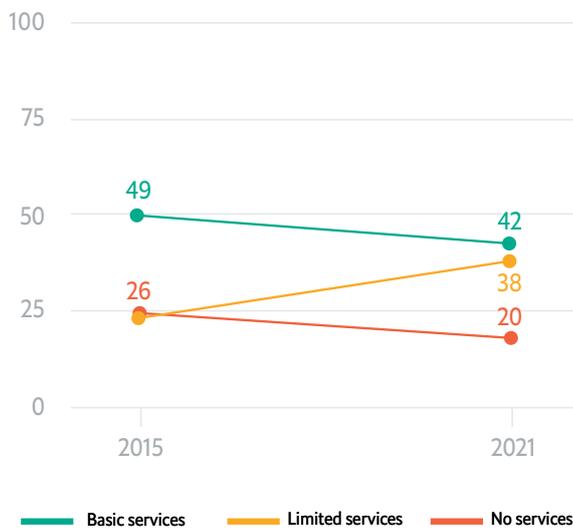
	School toilet access (2030)	Gains to society (US\$m)	Investment required (US\$m)	Return per US\$1 investment
Construction alone	69.7m children (19%) without basic toilet access	883.1	1,136.0	0.78
O&M alone	30.6m children (8%) without any toilet access	2,315.7	1,398.0	1.66
Construction and O&M	No children without access	5,005.7	3,624.9	1.38

Nigeria

Looking back: 2015-21

Tracking progress

Percent of children with access to sanitation services across schools:



Access in 2021

Total number of children: 70m, of which:

- No sanitation access: 29.8m
- Limited service access: 13.9m
- Basic service access: 26.3m

Toilet Loss

Lost expenditure: US\$577.6m (16% of investment)

Lost toilets: 413,200

Lost socioeconomic benefits: US\$4,446.6m, of which:

- Healthcare costs: US\$2,347.6m
- Lost family income: US\$275.6m
- Lost economic activity: US\$1,823.4m

The road ahead: 2021-2030

Toilets needed by 2030

Total number of toilets needed: 2,687,900, of which:

- Existing toilets needing continued O&M: 785,000
- Dysfunctional toilets needing rehabilitation and O&M: 413,200
- Non-existent toilets needing construction and O&M: 1,489,700

Costs and benefits

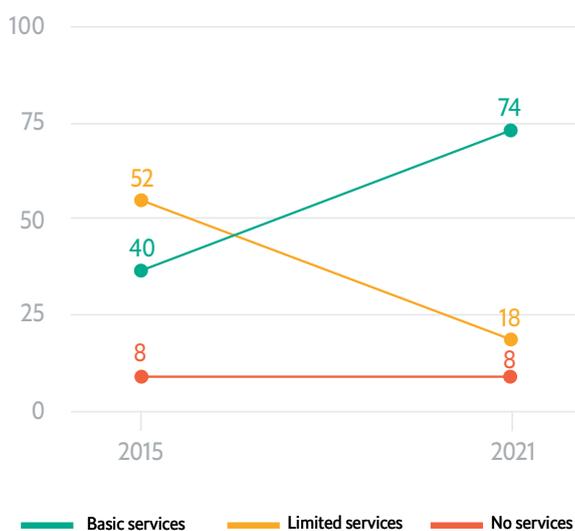
	School toilet access (2030)	Gains to society (US\$m)	Investment required (US\$m)	Return per US\$1 investment
Construction alone	58.5m children (67%) without basic toilet access	588.6	1,446.8	0.41
O&M alone	37.9m children (43%) without any toilet access	2,101.6	810.9	2.59
Construction and O&M	No children without access	6,742.7	3,826.5	1.76

 **Philippines**

Looking back: 2015-21

Tracking progress

Percent of children with access to sanitation services across schools:



Access in 2021

Total number of children: 27m, of which:

- No sanitation access: 2.3m
- Limited service access: 4.9m
- Basic service access: 20m

Toilet Loss

Lost expenditure: US\$248.9m (10% of investment)

Lost toilets: 146,300

Lost socioeconomic benefits: US\$804.1m, of which:

- Healthcare costs: US\$405.6m
- Lost family income: US\$117.2m
- Lost economic activity: US\$281.3m

The road ahead: 2021-2030

Toilets needed by 2030

Total number of toilets needed: 910,800, of which:

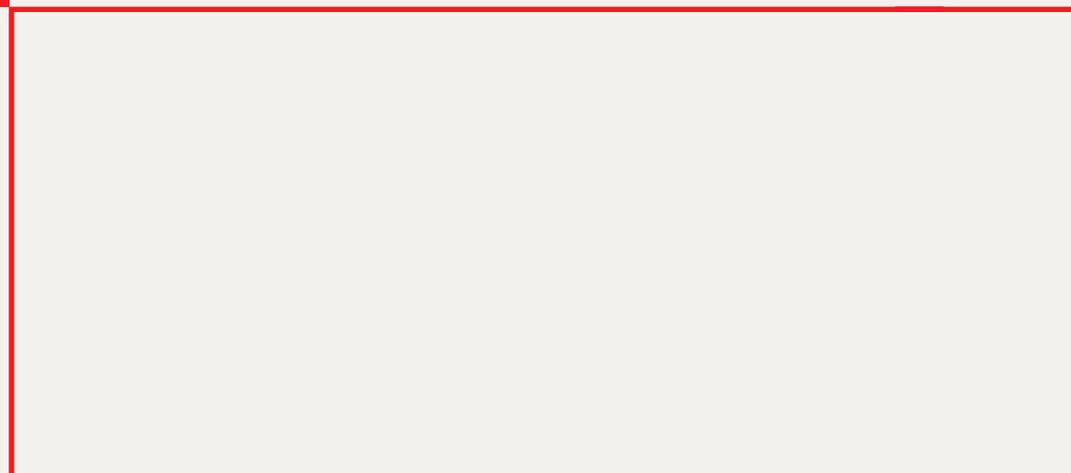
- Existing toilets needing continued O&M: 601,300
- Dysfunctional toilets needing rehabilitation and O&M: 146,300
- Non-existent toilets needing construction and O&M: 163,200

Costs and benefits

	School toilet access (2030)	Gains to society (US\$m)	Investment required (US\$m)	Return per US\$1 investment
Construction alone	9.2m children (30%) without basic toilet access	41.8	106.7	0.39
O&M alone	2.4m children (8%) without any toilet access	467.2	266.1	1.76
Construction and O&M	No children without access	675.1	467.4	1.44

While every effort has been taken to verify the accuracy of this information, Economist Impact cannot accept any responsibility or liability for reliance by any person on this report or any of the information, opinions or conclusions set out in this report.

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