



## Sanitation and Hygiene – A key to Better Health and Education Outcomes

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Most of us, in the developed world, take for granted our access to toilets, and only start noticing their absence when we go camping or on a long trip... The adoption of the Sustainable Development Goals in 2015 intended to extend this same access to toilets to everyone on the planet. Specifically, world leaders promised to achieve universal access to sanitation by 2030. Of all the Sustainable Development Goals, however, access to sanitation is arguably the furthest out of reach.

Washdata.org shows that 2.3 billion people don't have a basic toilet, and nearly 0.9 billion defecate in the open. A further 2.2 billion have only a basic toilet, i.e. a toilet where human waste flows untreated into a river or seeps into the environment. In other words, 68% of the world's population has at most access to basic sanitation.

8 countries have an open defecation rate of 50% or higher.

Variations between rural and urban settings are quite important: 83% of households have at least basic sanitation in urban areas, but only 50% in rural areas. The differences are even more stark when we look at more extreme conditions: open defecation is the lot of 2% of households in urban areas, but that percentage reaches 24% in rural areas.

### ***Why is sanitation so important?***

For most people in the developing world, sanitation is first and foremost a question of privacy and dignity, and obviously the same applies elsewhere, but in the developing world, in addition, lack of sanitation entails serious health and social consequences.

Health:

The morbidity cycle begins with lack of clean water and improper sanitation cycle to diarrhea and worm infections, because either rain transports the infectious agents close to the living quarters where children play or simply because hands get contaminated and improperly washed. Diarrhea leads to dehydration and vulnerability to infection. Repeated diarrhea leads to malnutrition which leads to impaired physical development (children are too short for their age) and lower IQs. This condition is labeled stunting. <sup>1</sup>

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<sup>1</sup> For more information on diarrhea and the health impacts of sanitation, see Walter, CLF, et al. (2013) Global burden of childhood pneumonia and diarrhea, *The Lancet*, Vol 381, Issue 9875 and WaterAid, SHARE and London School of Hygiene & Tropical Medicine. 2013. Under-nutrition and water, sanitation

Diarrhea and worm infections account for 50% of child malnutrition. 25% of stunting can be attributed to 5 or more episodes of diarrhea before age 2.

A Landmark Study of the Lancet, in 2013, established that childhood malnutrition, in turn, causes directly or indirectly 45% of child deaths.

In situations of crises, the effects of lack of sanitation can be even more devastating; for instance, it is estimated that diarrhea causes 40% of deaths in refugee camps.<sup>2</sup>

Concretely, over 2,000 children die each day of diarrheal diseases.<sup>3</sup> While not all these cases are the result of lack of sanitation and hygiene, access to clean water, sanitation and hygiene would directly reduce disease burden by more than 9% and reduce the child death toll by 6%<sup>4</sup>. And combined to other health measures, it is estimated this access would contribute to substantial further disease burden reductions.

Lack of sanitation strikes at the very heart of the health system: according to Wateraid, 19% of hospitals worldwide do not have sanitation, 35% do not have hand-washing. As a result, 15% of already vulnerable patients develop an infection during a hospital stay.<sup>5</sup> Conversely, simple hygiene like handwashing can reduce neonatal deaths by 25% (and an actual decrease of 44% was observed in Nepal).

### **Education**

Access to Sanitation should be a right for all children of the planet. Indeed, world leaders, in adopting the sustainable goal of universal access to education, committed to “build and upgrade education facilities that are child, disability and gender sensitive”.

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and hygiene. London: WaterAid. [http://www.wateraid.org/~media/Publications/undernutrition\\_and\\_water\\_sanitation\\_and\\_hygiene.pdf](http://www.wateraid.org/~media/Publications/undernutrition_and_water_sanitation_and_hygiene.pdf)

<sup>2</sup> Isidore, K. K., Aljunid, S., Kamigaki, T., Hammad, K., and Oshitani, H., 2012. Preventing and controlling infectious diseases after natural disasters. United Nations University. <https://unu.edu/publications/articles/preventing-and-controlling-infectious-diseases-after-naturaldisasters.html#info>

<sup>3</sup> Liu L, Johnson HL, Cousens S, Perin J, Scott S, Lawn JE, Rudan I, Campbell H, Cibulskis R, Li M, Mathers C, Black RE; Child Health Epidemiology Reference Group of WHO and UNICEF. Global, regional, and national causes of child mortality: an updated systematic analysis for 2010 with time trends since 2000. Lancet. 2012 Jun 9;379(9832):2151-61.

<sup>4</sup>Prüss-Üstün A., Bos, R., Gore, F. & Bartram, J. 2008. Safer water, better health: costs, benefits and sustainability of interventions to protect and promote health.[PDF - 60 pages] World Health Organization, Geneva.

<sup>5</sup> <https://www.wateraid.org/ca/node/3226> Water, Sanitation and Hygiene – A Pathway to Realizing Gender Equality and the Empowerment of Women and Girls

Yet, one in three schools does not have decent latrines (see [washdata.org](http://washdata.org)). One in five at the primary level and one in 8 at the secondary level have no access to latrines at all.

Specifically, only 66% of schools had a basic sanitation service, defined as an improved (i.e. separating excreta from human contact) single-sex facility that is usable at the time of the survey. 12% of schools had a limited sanitation service, defined as an improved facility that is not single-sex or not usable at the time of the survey. 23% of schools had no sanitation service, defined as an unimproved facility or no facility at all.

In Sub-Saharan Africa, the problem is even more acute: only 52% of schools have basic sanitation, 12% have limited sanitation and 33% had none at all.

As a result, over 400 million days of school are lost due to lack of sanitation<sup>6</sup>.

The impact is in particular strong on pubescent girls. The onset of menstruation should be an indicator of reproductive health but, in a majority of cultural contexts, it is too often shrouded in a sense of shame or secrecy. First there is a barrier of silence: most girls have very little information about what is happening to their bodies: according to WASH-United, a non-profit organization whose goal is to end the global sanitation and hygiene crisis, 1 girl in 3 knew nothing on menstruation before the onset of their first period in South Asia.<sup>7</sup> Many more have really only a vague idea of what they are supposed to do during their periods: for instance, in Sri Lanka, one study found that only 41% of girls had good overall knowledge of menstrual health management<sup>8</sup>

The problem is that even if these girls knew exactly what to do, in too many cases there is not the infrastructure at school that will allow them to deal with their period in full privacy.

As a result, in a region like South Asia, studies have shown that a third of girls miss school for 1-3 days during their period. And in Bangladesh, 31% of girls reported that menstruation affected their school performance. More radically, in India, one girl in 5 stops attending school when girls start having their period, leading to a 25% reduction in learning time.<sup>9</sup> As girls miss days of school, they have problems catching up, their grades drop, they fall further and further behind, school becomes less and less attractive and ultimately they drop out of school for good, thereby perpetuating the vicious cycle of poverty.

In contrast, the introduction of sanitation was associated with an 11% increase in attendance by girls in Bangladesh.<sup>10</sup>

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<sup>6</sup> UNDP, 2006. Human Development Report; Beyond Scarcity: Power, poverty and the global water crisis. Retrieved from <http://www.undp.org/content/dam/undp/library/corporate/HDR/2006%20Global%20HDR/HDR-2006-Beyond%20scarcity-Power-poverty-and-the-globalwater-crisis.pdf>

<sup>7</sup> <http://www.wash-united.org/our-work/issues/menstrual-hygiene-management>

<sup>8</sup> [https://washmatters.wateraid.org/sites/g/files/jkxoof256/files/WA\\_MHM\\_SYNTHESIS.pdf](https://washmatters.wateraid.org/sites/g/files/jkxoof256/files/WA_MHM_SYNTHESIS.pdf)

<sup>9</sup> [https://washmatters.wateraid.org/sites/g/files/jkxoof256/files/WA\\_MHM\\_SYNTHESIS.pdf](https://washmatters.wateraid.org/sites/g/files/jkxoof256/files/WA_MHM_SYNTHESIS.pdf)

<sup>10</sup> <http://schoolsandhealth.org/safe-water-and-sanitation>

### *Impact on Gender Inequality*

Lack of sanitation cuts short academic outcomes and years of schooling for girls.

But the issues confronting girls are far from stopping there. The girls who drop out of school will tend to have lower earning potential, have more menial jobs, be married off earlier and be subjected to more frequent spousal violence. Typically, they will become pregnant at an early age, which leads to more pregnancy and birth difficulties and less healthy babies.

But even for the lucky ones who stay in school, the problems are not over. Going to do one's business can be a risky thing for a girl when there are no sanitation facilities: they can easily fall prey to sexual harassment and gender-based violence. These events are often associated with shame and, therefore under-reported, especially where social norms condone such violence.

Going out of their way to avoid gender-based violence, can also be dangerous for girls: they can find animals in the woods, or simply risk falling on arduous terrain etc..

If they graduate and get a job, women may still have to deal with inadequate facilities for their menstruation needs. This will translate into absenteeism, lack of promotion opportunities and ultimately, forgone income. For those who will start their own businesses, the problem is compounded by having to leave their business unattended several times a day. Overall, the World Bank estimates it is over half a billion women who lack adequate facilities for menstrual hygiene management! <sup>11</sup>

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<sup>11</sup> <https://www.worldbank.org/en/news/feature/2018/05/25/menstrual-hygiene-management>

If you add up all the days a woman menstruates in her lifetime, it amounts to years. Embarrassed or ostracized, she may cut herself off from school, work, social interaction and being a full participant in her community. This is like serving a sentence of years of house arrest!

***Lack of sanitation and hygiene can deeply influence a girl's destiny***

At her birth – her mother may have had no access to hygiene – as a newborn she would be very ill, and become fragile as an infant.

Lack of sanitation in the ensuing years would have brought about bouts of diarrhea, which would have left her stunted and limited her intellectual development.

Despite her shorter stature, she is the one that fetches water everyday for the family, in the hope that hands and dishes can be kept minimally hygienic. As a result, she is tired and is not very attentive in school. Her grades fall.

With the onset of menstruations, her attendance record becomes marginal, grades fall yet further down. She tries to find a way to attend school during her menstruation but gets taunted by the boys and followed as she tries to go in the bushes behind the school. That tips the scale and she quits.

She is only able to find menial work, so her parents think it is better to marry her off. In her new couple, she has little bargaining power, so she can't insist on contraception and she is soon pregnant.

She is young and of small stature, so this is a higher risk pregnancy. She gives birth to a small baby girl. Because of unhygienic conditions, both mommy and baby are infected.

Will the curse extend to the next generation?

***Unrealized Benefits and Cost-effectiveness***

As mentioned above, lack of sanitation results in illnesses and absences from work and school. Conversely, for every dollar invested in sanitation, WHO calculates that \$5.5 are generated in lower health costs, higher productivity and reduced premature deaths.<sup>12</sup>

Specifically, when school-aged girls are affected, all of society paying a price. With every one per cent increase in the proportion of women with secondary education, a country's per capita

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<sup>12</sup> WHO, 2012. Global costs and benefits of drinking-water supply and sanitation interventions to reach the MDG target and universal coverage. [http://apps.who.int/iris/bitstream/10665/75140/1/WHO\\_HSE\\_WSH\\_12.01\\_eng.pdf?ua=1](http://apps.who.int/iris/bitstream/10665/75140/1/WHO_HSE_WSH_12.01_eng.pdf?ua=1)

income grows by 0.3% every year. This is in addition to unrealized gains by women who, with inadequate sanitation, see millions of days of workday absences, not to mention lost promotions opportunities and simply self-selecting out of job opportunities.

### *How little Canada is part of the solution*

The Canadian government, like most donor countries, reports on its aid program using categories pre-determined by the Organization for Economic Cooperation and Development (OECD).

The Government of Canada reports on its aid program expenditures in two ways: 1. like every donor, it provides a report which is inputted into the OECD's Creditor Reporting System, on a calendar year basis, in US dollars; 2. under the Official Development Assistance Accountability Act (ODAAA), it publishes a statistical report on a fiscal year basis (April to March) using identical expenditure categories. We will review both sources of data.

The OECD categories do not offer a very accurate picture of sanitation, but offer useful approximations. The first analysis encompasses all categories related to water and sanitation: water sector policy, water resources conservation, large systems of water supply and sanitation, large systems of water supply only, large systems of sanitation only, basic drinking water supply and sanitation, basic drinking water only, basic sanitation only, river basin management, waste disposal, and water and sanitation education.

### *Canadian aid for Water and Sanitation – Constant 2017 US Dollars*

|          | 2006   | 2007   | 2008   | 2009   | 2010   | 2011   | 2014   | 2015   | 2016   | 2017   |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| US\$M    | 40.266 | 58.679 | 41.729 | 31.024 | 70.812 | 46.355 | 42.566 | 64.067 | 33.176 | 39.919 |
| % of ODA | 1.34%  | 1.85%  | 1.20%  | 0.92%  | 2.13%  | 1.58%  | 1.47%  | 2.10%  | 1.17%  | 1.26%  |

Source OECD Creditor reporting system

### *Global Affairs Canada (GAC) Disbursements for Water and Sanitation – Current Canadian Dollars*

|              | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 | 2017-18 |
|--------------|---------|---------|---------|---------|---------|---------|
| Cdn\$M       | 77.26   | 85.52   | 98.68   | 69.04   | 81.98   | 59.49   |
| % of GAC Aid | 2.24%   | 2.28%   | 2.64%   | 1.75%   | 1.96%   | 1.35%   |

ODA Statistical Reports, Government of Canada

There are variations between the two sources of data, mainly due to the differences in currency, inclusion or exclusion of some multilateral funding, and periods of observation but in both cases, the levels of spending, as a proportion of aid as well as nominally, are very low. This is true over a long series of years and somehow difficult to reconcile with Canadian aid priorities which purport to be supportive of basic health.

The second observation that transpires from the datasets is that the last two or three years (depending on the data source) are the worst in recent history. In other words, from an already low level, there seems to have been a further disengagement that can be seen in the recent reduction in water and sanitation expenditure levels.

Another, more restrictive, way to look at the data, is to focus exclusively on basic sanitation, i.e. small scale projects, typically in small towns or rural areas.

### *Canadian aid for Basic Sanitation – Constant 2017 US Dollars*

|           | 2010   | 2011   | 2012   | 2013   | 2014   | 2015   | 2016   | 2017   |
|-----------|--------|--------|--------|--------|--------|--------|--------|--------|
| US\$M     | 11.788 | 10.222 | 16.186 | 14.694 | 16.974 | 19.347 | 7.592  | 13.562 |
| % of ODA  | 0.34%  | 0.30%  | 0.49%  | 0.50%  | 0.59%  | 0.63%  | 0.27%  | 0.43%  |
| % of WASH | 28.25% | 32.95% | 22.86% | 31.70% | 39.88% | 30.20% | 22.88% | 33.97% |

Source OECD Creditor reporting system

### *Global Affairs Canada (GAC) Disbursements for Basic Sanitation-current Cdn\$*

|              | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 | 2017-18 |
|--------------|---------|---------|---------|---------|---------|---------|
| Cdn\$M       | 20.11   | 23.6    | 22.3    | 15.35   | 16.44   | 14.15   |
| % of GAC Aid | 0.58%   | 0.63%   | 0.60%   | 0.39%   | 0.39%   | 0.32%   |
| % of WASH    | 23.79%  | 20.05%  | 22.60%  | 22.23%  | 20.05%  | 23.79%  |

ODA Statistical Reports , Government of Canada

The tables above show that sanitation represents investments of less than 20 million dollars per year. These investments hover around one quarter of all water and sanitation investments. Not surprisingly, expenditures for sanitation, which total approximately one half of one percent of official development, assistance, have followed the same pattern as the entire water and sanitation sector, with a marked drop in the last two or three years (depending on the dataset utilized).

Overall, Canadian investments in sanitation are singularly out of proportion with the magnitude of the problem on the planet. This constitutes a clear area of growth for Canadian ODA.

For more information on Canadian aid as it pertains to the water and sanitation sector please refer to this document <http://www.globalpovertysolutions.ca/docs/WASH-Ph2-Report-EN.pdf>

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#### *Key Questions for Self-Directed Learning*

*How many people do not have access to sanitation?*

*What are the impacts of no access to sanitation?*

*How much is Canada spending on basic sanitation around the world?*

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