



Ignored: the biggest child killer

The world is neglecting sanitation



Hope mired in excrement

“We will spare no effort to free our fellow men, women and children from the abject and dehumanizing conditions of extreme poverty, to which more than a billion of them are currently subjected. We are committed to making the right to development a reality for everyone and to freeing the entire human race from want.”

Extract from the United Nations Millennium Declaration, 8 September 2000

Cover image: A newborn baby girl and her sister in Singoya, Zambia. In the village there is just one well to serve 23 households and their toilet is a pit. Every year, around 60 million children in the developing world are born into households without access to sanitation.¹

Photography: WaterAid/Anna Kari

Ten years on from the launch of the Millennium Development Goals (MDGs), the hope embodied in the declaration of 2000 is mired in excrement.

Governments that signed up a decade ago are today presiding over a society where billions are living and dying in their own faeces for want of somewhere clean and safe to go to the toilet.

In this paper we draw on authoritative medical, academic and grassroots sources to assert that without sanitation in place we will fail to reach the MDGs across large parts of the developing world. Millions of lives are being lost because of governments’ and the aid community’s blindspot when it comes to sanitation.

- Diarrhoeal diseases caused by poor sanitation and unsafe water kill around 1.4 million children a year, more than AIDS, malaria and measles combined.²

- In Africa, diarrhoea is now the biggest killer of children, claiming the lives of almost one in five children before their fifth birthday.³

The continuing neglect of the sanitation MDG target (to halve the proportion of people living without this basic human right) represents a shocking failure of governments and the aid community to recognise the centrality of this sector and foster an integrated approach to international development. At current rates of progress, the 2015 target will not be met globally until 2049; in Sub-Saharan Africa not until the 23rd century.

At present, there are 2.6 billion people living without safe sanitation, which means countless communities where people are exposed to their own and others’ faeces. Excreta is then transmitted between people by flies or fingers and also finds its way into water sources, resulting in a public health crisis.

The faeces produced every day by the 1.1 billion people worldwide who still have to defecate in the open could fill a football stadium. Just one gram of faeces can contain ten million viruses (such as polio and hepatitis A and E), one million bacteria (such as cholera and shigella), 1,000 parasite cysts and 100 parasite eggs.⁴

In terms of child health, repeated diarrhoea and nematode infections are associated with 50% of childhood malnutrition.⁵ Recent research suggests that an even greater impact on child undernutrition is caused by a lack of sanitation leading to the repeated ingestion of faecal bacteria by young children.⁶

Poor sanitation and associated hygiene practices also impact on maternal and newborn health and survival. A recent study from Nepal, for example, shows that the simple act of hand washing with soap by mothers and birth attendants can reduce the risk of neonatal deaths by 41%.⁷

Lack of progress on sanitation also has a broader impact on healthcare. Without sanitation, safe water and good hygiene practices, patients with already lowered immune systems have their recovery and survival chances radically reduced, particularly those living with HIV/AIDS (see page 04). Diarrhoeal diseases caused by lack of sanitation and safe water place a huge burden on already under-resourced health systems: at any one time half the hospital beds in developing countries are filled with people suffering from diarrhoea.⁸

Beyond the direct impact on health, lack of sanitation damages other areas of human development. It affects educational access and attainment, both in physiological terms by repeated illness stunting intellectual development (see page 09) and in practical terms by causing many teenage girls to drop out of school (see page 05), further entrenching the barriers caused by gender equality. It also frustrates global and national efforts to

eradicate poverty, simply because sick people are unable to work or study (see page 09).

In this paper, we bring you the voices of people in Zambia, Uganda, Burkina Faso, Bangladesh and Timor Leste, and expert opinions from the London School of Hygiene and Tropical Medicine, the British Medical Association, the University of North Carolina and the International Centre for Diarrhoeal Disease Research, Bangladesh. Some describe the vicious cycle of disease and missed opportunity that a lack of sanitation causes. Others describe the wider impacts that access to such a basic human service can bring to people’s lives.

We urge the world’s leaders to honour their promise made on sanitation. The testimonies of experts and of ordinary people in this paper illustrate the need for immediate and long-overdue action.

¹ UN Water

² World Health Organisation (2008) *Safer Water, Better Health*

³ Black R et al. (2010) “Global, regional, and national causes of child mortality in 2008: a systematic analysis”, *Lancet* 2010; 375: 1969–87

⁴ Water Supply and Sanitation Collaborative Council (WSSCC) *A guide to investigating one of the biggest scandals of the last 50 years.*

⁵ World Health Organisation (2008) *Safer Water, Better Health*

⁶ Humphrey (2009), “Child undernutrition, tropical enteropathy, toilets, and handwashing”, *Lancet*, 374: 1032–35

⁷ Victor Rhee, MHS, Luke C. Mullany, PhD, Subarna K Khatri, MBBS, Joanne Katz, ScD, Steven C LeClerq, MPH, Gary L Darmstadt, MD, and James M Tielsch, PhD “Impact of Maternal and Birth Attendant Hand-washing on Neonatal Mortality in Southern Nepal”, *Archives of Pediatrics & Adolescent Medicine*, 2008 July, 162(7), pp. 603–608

⁸ UNDP

Zambia

Population: **12.3 million**¹

Infant mortality rate per 1,000 live births: **102/1,000**²

Number of children dying from diarrhoeal diseases caused by poor sanitation and unsafe water per year: **12,220**³

Sanitation coverage: **52%**⁴

Water supply coverage: **58%**⁵

¹ Human Development Report 2006/09

² World Development Report 2006/09

³ UNICEF State of the World's Children 2009 and WHO World Health Statistics 2009

^{4 & 5} WHO/UNICEF Joint Monitoring Programme 2006



Living with HIV/AIDS and no sanitation

Claudia Caracciolo (pictured above left) is the only doctor for miles in the Monze region of southern Zambia. Based at the Chikuni Mission Hospital which serves a population of 25,000, she is a gynaecologist by training but it is TB and diarrhoea that are the biggest causes of illness in her patients.

With one in five people infected with HIV, limited medical services

are undermined by a lack of sanitation and clean water.

Claudia says, "In an HIV-positive patient the immune system is depressed and they can get more infections. There are specific ARVs [anti-retroviral drugs] which mean that people have to drink more than two litres of clean water a day.

"If you have HIV/AIDS the diarrhoea can be prolonged, it also means people can't work, which increases

their poverty. One patient who died had been readmitted up to 20 times as he was taking his medicine with bad water, so every time we discharged him he went home and got sick again. The drugs were working on him but what killed him was poor hygiene and diarrhoea."

Safe sanitation and hygiene, alongside safe drinking water, are essential in protecting and caring for people living with HIV/AIDS. Studies have demonstrated that improved hygiene practices can reduce the risk of diarrhoea by 30% or more, improving the quality of life for people who are living with HIV/AIDS and their families. ARV drugs can prolong life and health and keep people economically active but adequate food and safe water are needed for the drugs to be effective.

“The drugs were working on him but what killed him was poor hygiene and diarrhoea.”

Every schoolgirl's dream: a toilet

Improving education has become a priority for the Zambian Government but without a similar focus on school sanitation, every month teenage girls risk missing several days of class or, worse, dropping out of school altogether.

Chimunya (pictured right), aged 17, has just changed schools. Her new school is closer to her home in Nelube, the fees are lower and, crucially, there are clean toilets.

"It is better here because if you have a cloth [used to catch the blood during menstruation] and it is dirty you can throw it away and get another one. In the old school I would have to keep them in a plastic bag and throw them away after school. In my old school I did used to go to school mainly when I had my period, but I would leave early because I was soaked and had to go home and bathe and then wait at home until the period reduced. Now I don't miss school because the toilets here are nice and clean."



Beauty Chiimbwe lost her two year old son to diarrhoea caused by the lack of sanitation and has come close to losing two more children.

A heart-breaking motherhood

In Kayola, in Namavwa ward, nobody in the community has a toilet, and so everyone just defecates in the open around the village.

At 36, Beauty Chiimbwe (pictured left with her daughter Mutinta) has already experienced more than her fair share of tragedy. She lost her two year old son Hampanda to diarrhoea caused by the lack of sanitation and has come close to losing two more.

“When the children are ill, we rush them to the clinic where they can get medicine. I have to go about two or three times a month, we have to borrow bicycles from others in the community to get there as walking is too, too far. It takes about three hours to cycle there. I feel very worried all the way, I stop again and again to check that the child is still alive.

“I stop again and again to check that the child is still alive.”

“Mutinta is my last born, she is two years and nine months. When Mutinta got sick it was during the rainy season. I didn’t have to look for the cause. We don’t have toilets, and the dirt from all around kept running into the well. And this was the water she was drinking. This thought kept coming and coming to my mind. Now every time I give the water to her I have no other choice but to put my faith in God to protect us, what else can I do?”

Work will start in Kayola in 2011 to provide every household with a latrine and install a borehole well. It is too late for Hampanda. But what future for Mutinta and Beauty’s other children?

If we fail to reach the sanitation MDG target, where will we be in 2015?

Professor Vivienne Nathanson, British Medical Association

An adequate supply of clean drinking water, which actually means that a working sanitation system exists, is an essential prerequisite for health. Without this in place we will not only fail to reach the MDGs but any progress we do see will be very limited.

Without safe sanitation and water, sustainable agriculture cannot be developed, and extreme poverty, hunger and undernutrition will continue. Women and girls will not achieve equality while they spend large parts of every day walking long distances to draw water and return it to their homes, and are forced to give up their education due to lack of sanitation facilities in schools.

Most significantly the millions of premature deaths in infants will continue until safe sanitation and water is readily available and

excreta is removed from the living environment. These are avoidable deaths; we have known their cause and the means to reduce them for generations. What is required is the resources and the political will to prioritise sanitation and water. Unless we reduce neonatal, infant and child mortality women will continue to bear more children than is good for their health, or the health of the child, as they will expect to lose a number of offspring in infancy. Vicious cycles of disease and poverty can be readily broken with the right commitment and investment.

“These are avoidable deaths; we have known their cause and the means to reduce them for generations.”

There are two simple messages for the international community on sanitation:

1. We can make a difference.
2. Simple actions are all that is needed.

Of course financial and other resources matter, but disease prevention through access to safe sanitation and water ultimately costs less than the expensive health interventions needed for curing disease. Furthermore, as human beings we have a moral duty to care for each other. Failing to provide the most basic essentials for life affects us all. Watching children die who we can help to flourish is simply unacceptable.



Burkina Faso

Population: **14.7 million**¹

Infant mortality rate per 1,000 live births: **122/1,000**²

Number of children dying from diarrhoeal diseases caused by poor sanitation and unsafe water per year: **24,200**³

Sanitation coverage: **13%**⁴

Water supply coverage: **72%**⁵

¹ Human Development Report 2006/09

² World Development Report 2006/09

³ UNICEF State of the World's Children 2009 and WHO World Health Statistics 2009

^{4 & 5} WHO/UNICEF Joint Monitoring Programme 2006

An unenviable birth

In Burkina Faso almost one in five children die before their fifth birthday. President Blaise Compaoré recently promised to build 324,000 latrines across the country by 2015. It is a start, but with the national sanitation coverage one of the worst in the world at just 12%, his dream of 'one household, one latrine' is a long way off.

Outside the capital, in Polesgo, Denis Bamouni (pictured right) is head of the local medical post and has been a health worker for 12 years.

"Around 80% of the illnesses we see are due to a lack of drinking water and sanitation. When you go round the village here you can see there are some wells that are open and rubbish falls in. Children defecate everywhere and families have no toilets. We need to improve the infrastructure and educate the population about what causes diarrhoea, and also about the importance of the simple act of hand washing."



The health post itself has no running water and the pump behind the centre is often broken. Around 20 women a week give birth here.

Mariam Baye (pictured above right) is the chief birth attendant. "The advice we give to new mothers is to clean containers before putting water in them and not keep the water for longer than a week. They must clean the home, wash the clothes and keep the baby clean."



The new mothers pay CFA900, less than US\$2, for their treatment in the maternity 'wing', a dilapidated set of rooms with posters peeling off the cracked walls. If their sons and daughters make their entrance to this world safely, all the statistics indicate that far too many will not live to see their fifth birthday.

Bangladesh

Population: **157.8 million**¹

Infant mortality rate per 1,000 live births: **52/1,000**²

Number of children dying from diarrhoeal diseases caused by poor sanitation and unsafe water per year: **51,200**³

Sanitation coverage: **36%**⁴

Water supply coverage: **80%**⁵

¹ Human Development Report 2006/09

² World Development Report 2006/09

³ UNICEF State of the World's Children 2009 and WHO World Health Statistics 2009

^{4 & 5} WHO/UNICEF Joint Monitoring Programme 2006

The consequences of diarrhoea

Every rainy season in Bangladesh's capital city Dhaka, the unmistakable smell of excrement starts to creep through the air as sewers overflow and drains fill up.

At such times of the year, the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) has its work cut out to save lives. Every month this hospital sees on average 10,000 patients, more than 30% of whom are suffering from severe dehydration caused by chronic diarrhoea. The second biggest cause of illness after diarrhoea is pneumonia, often transmitted via dirty water droplets on hands or surfaces. Every year, gastroenteritis and diarrhoeal diseases kill 110,000 children below the age of five.

Dr Zahid Hayat Mahmud has been Assistant Scientist at the hospital's microbiology laboratory for just over ten years.

"In Bangladesh, people have a poor understanding about the link between use of contaminated water and disease. Among the 50 most prevalent diseases in Bangladesh, 40 of them, including diarrhoea, dysentery, typhoid, and parasitic worm infection, are related to dirty water. Water-borne diseases in Bangladesh cost US\$80 million each year in treatment alone."

Dr Pradip K Bardhan is the centre's Acting Medical Director.

"If you look at the number of diarrhoeal patients that we have in this country, really it's a huge number of man hours, of productive hours, that we're losing because of diarrhoea."



"In this hospital approximately two thirds of the patients reporting here every day are younger than the age of five. Children are more exposed to the environment, more exposed to the pathogens that cause diarrhoea and also they lack immunity, all of this together makes them very vulnerable."

Dr Steve Luby is a medical epidemiologist based at the centre and specialises in the spread of infectious diseases within communities.

"Diarrhoea has very important social consequences. Children with frequent diarrhoea do not grow and develop at the same rate as children without diarrhoea. This really contributes to the country's under-development because children do not reach their full intellectual potential because of these repeated infections."



Ten year old Nasrin is just one of the thousands of young patients admitted every month to the International Centre for Diarrhoeal Disease Research in Dhaka, Bangladesh.

Sanitation – a sound investment

Dr Jamie Bartram, University of North Carolina

Ensuring universal access to sanitation makes good sense. Indeed, the evidence is compelling. This begs the question: why is sanitation not higher up the development agenda?

Firstly, sanitation is often described as an ‘orphan sector’—abandoned by health, disdained by financiers and ignored by planners. Sanitation is not a clearly-defined sector. Rather, sanitation touches everything and everyone – indiscriminately spreading infections that cause illness and death and hinder development, especially in the world’s poorest communities. Why does the under-performance towards the MDG goal to reduce child mortality, itself significantly driven by sanitation-related disease, not lead to sanitation programming focused on this specific need?

Secondly, with what we know now, we can do enough to achieve progress and bring reductions in child mortality. But even so, we should also invest in developing new solutions that will enable faster and more sustainable progress. The exasperation caused by slow progress sometimes leads to uncritical adoption of what appear to be ‘silver bullet’ solutions. Implementation of promising solutions should be accompanied by more critical reflection. Better understanding of the factors determining the long-term impacts of, for example, community-led total sanitation (CLTS) and ‘market-based solutions’ in different circumstances is critical. Similarly, ‘silver bullets’ may be over-interpreted. Demand-generating interventions have value but this does not mean they are sufficient alone; neither does

it mean that measures such as well-directed subsidies have no place in programming. Developing understanding of the interplay among success factors will be critical if we are to meet the MDG target.

“Sanitation touches everything and everyone.”

Thirdly, the inclusion of sanitation in its own right in MDG targets was acclaimed as an important step. An unintended consequence has been losing sight of **why** it was so included: because of values of rights and dignity and hard evidence of health, social and development benefits. Focusing once again on the ‘why’ raises significant issues. We cannot limit our focus only to the household and exclude other places where sanitation is needed, like markets,

schools and health facilities. Universal coverage must be the goal and that must mean everyone has access to a toilet all of the time, whether at home, at school or at work.

The consequence of the MDG summit has to be a true recognition that development progress cannot be achieved without sanitation – with all the political will and prioritisation that this entails. We cannot evade this simple yet consistently ignored truth.

Uganda

Population: **30.6 million**¹

Infant mortality rate per 1,000 live births: **78/1,000**²

Number of children dying from diarrhoeal diseases caused by poor sanitation and unsafe water per year: **29,100**³

Sanitation coverage: **33%**⁴

Water supply coverage: **64%**⁵

¹ Human Development Report 2006/09

² World Development Report 2006/09

³ UNICEF State of the World's Children 2009 and WHO World Health Statistics 2009

^{4 & 5} WHO/UNICEF Joint Monitoring Programme 2006



An unacceptable childhood

Josephine Natembo (pictured above) is a 40 year old mother who lives with her five children in the slums of Kifumbira, in Kampala – a maze of rubbish, unplanned housing, mud and human waste.

The few toilets that exist are simply holes overflowing with faeces and maggots. With nowhere else to go, most inhabitants of Kifumbira are forced to defecate on the ground among their houses or into a bag which gets thrown into the nearest gutter.

“They need to help us who are living in these places, so that we can live a life which is just a bit acceptable.”

Josephine cannot afford to buy clean water to give to her one year old son Lucky. So she gives him the only water she can get – water from the local spring well which is contaminated with faeces and other waste.

Like any one year old, Lucky likes to play outside, but his neighbourhood is dangerously filthy. Lucky has had ongoing bouts of severe diarrhoea since he was three months old.

Josephine said: “I have AIDS, so I am not allowed to breastfeed. I mix local food with the water, like tea leaves and a little sugar to feed Lucky. He drinks the water from the spring well. I do not have the money to buy clean water. I am worried about my son, it gives me a headache.”

“I would like to tell world leaders about the environment we are living

in. I would thank them for the effort that has been done, even though it has not yet reached us here. My prayer is, why not make it universal everywhere. They need to help us who are living in these places, so that we can live a life which is just a bit acceptable.”



The despair of doctors

At Amuria Health Centre, north east of Kampala, mothers and children fill the sparse, concrete-floored rooms and line up outside the clinic waiting to be seen.

Dr Eumu Silver (pictured above) is the District Health Officer and the only doctor at the centre serving 350,000 people. In his 14 years of practice he has seen the impact of lack of access to safe water and sanitation.

“It is not like we need to bring water from heaven, it is already there... If only world leaders can be committed to this, because the people that bear the brunt of this are the mothers and the children. There is a lot of death from diarrhoeal diseases, because of contamination, because people are not washing their hands, just because there are not pit latrines, just because people are not drinking safe and clean water.

“Death from diarrhoeal diseases... they can be stopped this century. We cannot afford to have our people die from illnesses which can be stopped. We don't need rocket science to prevent them.”

The unfinished business of sanitation

Professor Sandy Cairncross, London School of Hygiene and Tropical Medicine

Should international agencies and governments not address the terrible lack of progress on the sanitation MDG, then in 2015 our world will be exposed as one in which the rich allow the poor in their billions to be inundated by their own excrement.

Many poor people have little choice but to defecate in the open. The scale of this problem is immense; it has been estimated that the resulting volume of faeces could fill a football stadium every day.

The fear of epidemics drove the governments of developed countries in the 19th century to take action. In those days, typhoid, cholera and other diarrhoeal diseases were life-threatening and paid no heed to social strata. Typhoid took the life of Prince Albert; cholera killed Tchaikovsky. Fear of such epidemic

diseases made sanitation and water supply a political issue.

Today's universal access to sanitation in rich countries will not however protect them from the impact of this crisis in developing countries. The new environments created by modern society – including the excreta-laden slums of developing countries – are potential breeding grounds for new infectious diseases. We have already seen the emergence of drug-resistant strains of malaria and TB, as well as AIDS, SARS and a succession of new types of flu and cholera. The significance of hygiene is well recognised by some health authorities. In Canada, for instance, hand washing was made a cornerstone of the SARS prevention strategy.

SARS, or a similar virus, could break out at any time, and if it gets into

those slums and shanty towns where the world's poor live, it will be far more difficult to control than in 2003. Pandemics such as SARS are a real and imminent threat; and when they wreak havoc in the world's richest countries, the international community, which has ignored the sanitation crisis in poor countries, will have only itself to blame.

The MDG target on sanitation is now massively off track. In 2010, with five years to run until the MDGs expire, the international community has an opportunity to reflect on the poor progress to date and urgently redouble its efforts on sanitation.

“Many poor people have little choice but to defecate in the open – the resulting volume of faeces could fill a football stadium every day.”

Timor Leste

Population:	1.1 million¹
Infant mortality rate per 1,000 live births:	47/1,000²
Number of children dying from diarrhoeal diseases caused by poor sanitation and unsafe water per year:	460³
Sanitation coverage:	41%⁴
Water supply coverage:	62%⁵

¹ Human Development Report 2006/09
² World Development Report 2006/09
³ UNICEF State of the World's Children 2009 and WHO World Health Statistics 2009
⁴ & ⁵ WHO/UNICEF Joint Monitoring Programme 2006



WaterAid/Dean Sewell

Tince Frederica Jempaut (pictured above), 17, is a first year medical student at Liquica hospital near Dili in Timor Leste, the poorest country in south-east Asia. Built by the Portuguese, the hospital was destroyed in the troubles of 1999 and rebuilt in 2002. It is not equipped for operations, serious procedures or emergencies, so the seriously ill must travel to Dili.

Tince regularly visits families to talk about the importance of clean water and sanitation to prevent disease. It is no easy feat – many of the families she visits simply have no running water or proper toilets.

“There are a lot of cases of diarrhoea in Liquica and it is mainly caused by hygiene. People get diarrhoea because they don't wash their hands. Bacteria can get into your body and cause illness.”



WaterAid/Dean Sewell

The major illnesses faced by the population are acute respiratory infections, malaria and diarrhoea. 150 in every 1,000 under five children in Timor suffer from diarrhoea.⁹

“We need toilets”

In the small village of Ediri, Laura Alves Correia's six month old son Appolinarro (pictured above and right) is chronically ill with diarrhoea,

which he has suffered from since he was born. Occasionally his symptoms are so severe that he is taken to the clinic three kilometres from their home for treatment.

“We have nothing, please we need toilets.”

Laura and her family have a water tap at their house, but the water that does flow has very low pressure and when the rainy season stops there is often no water at all. The lack of water for both drinking and keeping the squat-bowl toilet working means that Laura's five children, including Appolinarro, are frequently sick with diarrhoea.

“We have nothing, please we need toilets. The children go to the toilet everywhere and it is not hygienic, we get sick easily because of this issue. Do something for this.”

“I am not happy. We cannot bathe, the kids are dirty all the time. It is not good, it is not comfortable at all.”



The lack of water for both drinking and keeping the squat-bowl toilet working means that Laura's five children, including Appolinarro (pictured), are frequently sick with diarrhoea.

WaterAid/Dean Sewell

If the MDGs are to be achieved sustainably...

We urge the world's leaders to honour the MDG promise made on sanitation. The future success of the MDGs, and global development efforts, depends on it.

In the words of Josephine Natembo from Kifumbira slum in Kampala, who has no choice but to give her one year old son dirty water contaminated with faeces:

“I would like to tell world leaders about the environment we are living in. I would thank them for the effort that has been done, even though it has not yet reached us here. My prayer is, why not make it universal everywhere. They need to help us who are living in these places, so that we can live a life which is just a bit acceptable.”



WaterAid transforms lives by improving access to safe water, hygiene and sanitation in the world's poorest communities.

For enquiries please contact Chloe Irvine at chloeirvine@wateraid.org or +44 20 7793 4909.

Registered charity numbers 288701 (England and Wales) and SC039479 (Scotland)

The MDG summit must:

1. Act now on sanitation

- The MDG action plan resulting from this summit must recognise sanitation as a critical sector in human development efforts, and in the achievement of development outcomes. Without clear political commitment and prioritisation, sanitation will continue to be neglected, with disastrous impact across all MDGs.

2. Reform the aid system

- Action on aid priorities must be integrated and coordinated. Evidence must inform political priorities and the necessary financial allocations for achieving the MDGs.
- Heads of Government must endorse the Sanitation and Water for All Partnership to raise international commitments from all governments on sanitation and water provision and to chase progress and champion pro-poor change.

