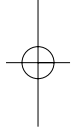
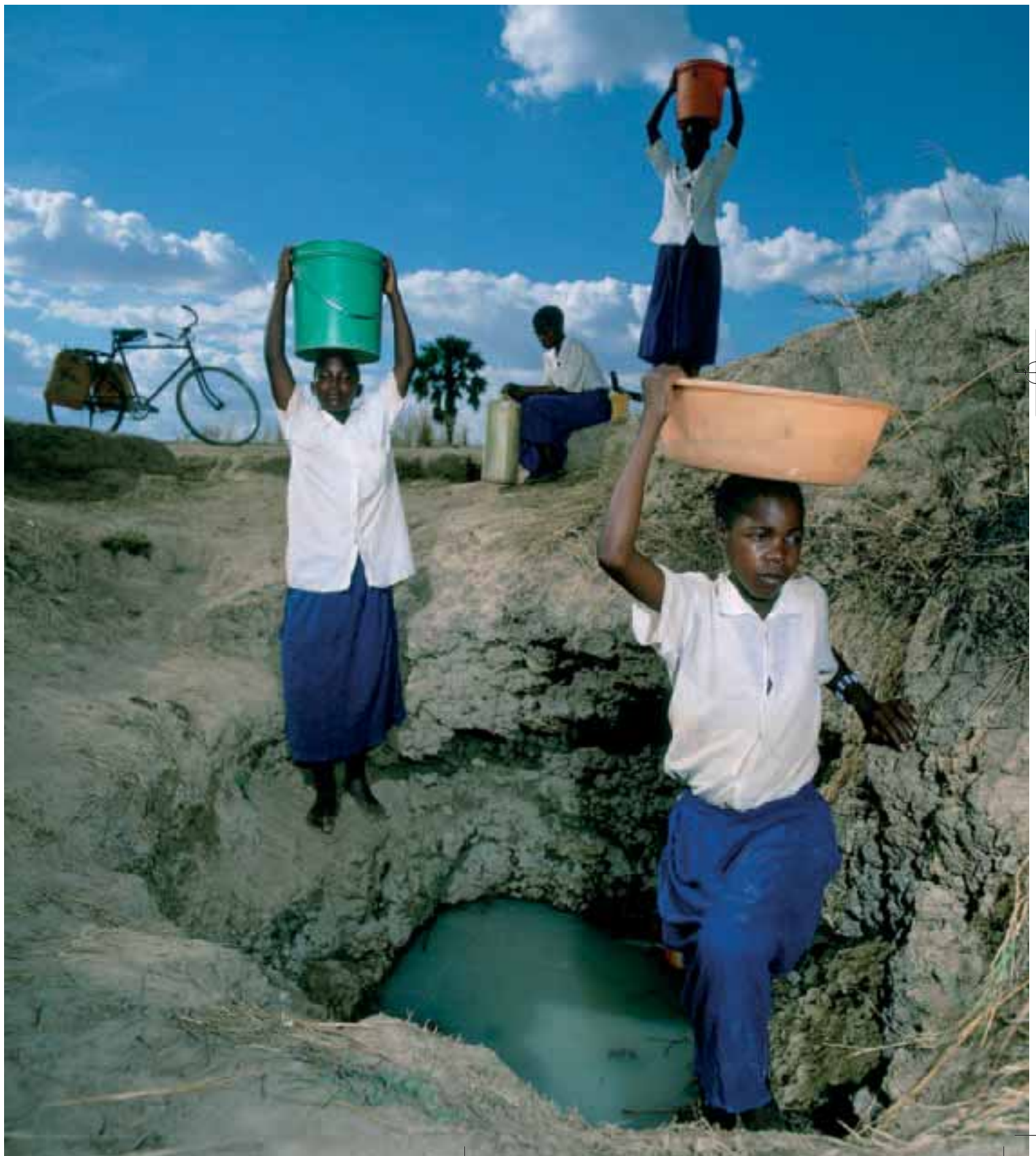




Water and sanitation

The education drain





WaterAid/Jim Holmes

A WaterAid report

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Front cover photo credit: Brent Stirton



WaterAid – water for life
The international NGO
dedicated exclusively to
the provision of safe
domestic water, sanitation
and hygiene education to
the world's poorest people



Executive summary

**Over one billion people worldwide have no access to clean water.
Over two billion people are without access to sanitation.
More than 104 million children have no access to education.
Millions more miss school frequently.**

Poor access to clean water and sanitation prevents millions of children from going to school. These are the world's poorest children. They are denied an education that could help their families and their communities out of terrible poverty.

The report shows the links between these problems and demonstrates why governments need to act on this now in order to fulfil their promises to the world's poor.

The promises

In September 2004 it will be four years since world governments pledged, in The Millennium Development Goals (MDGs),¹ to halve the proportion of people suffering from hunger and living in poverty. At the same time they promised to:

- halve the proportion of people without safe water by 2015
- achieve universal primary school education for every child on earth by 2015

In September 2002 governments added the promise to halve the proportion of people without safe sanitation by 2015.

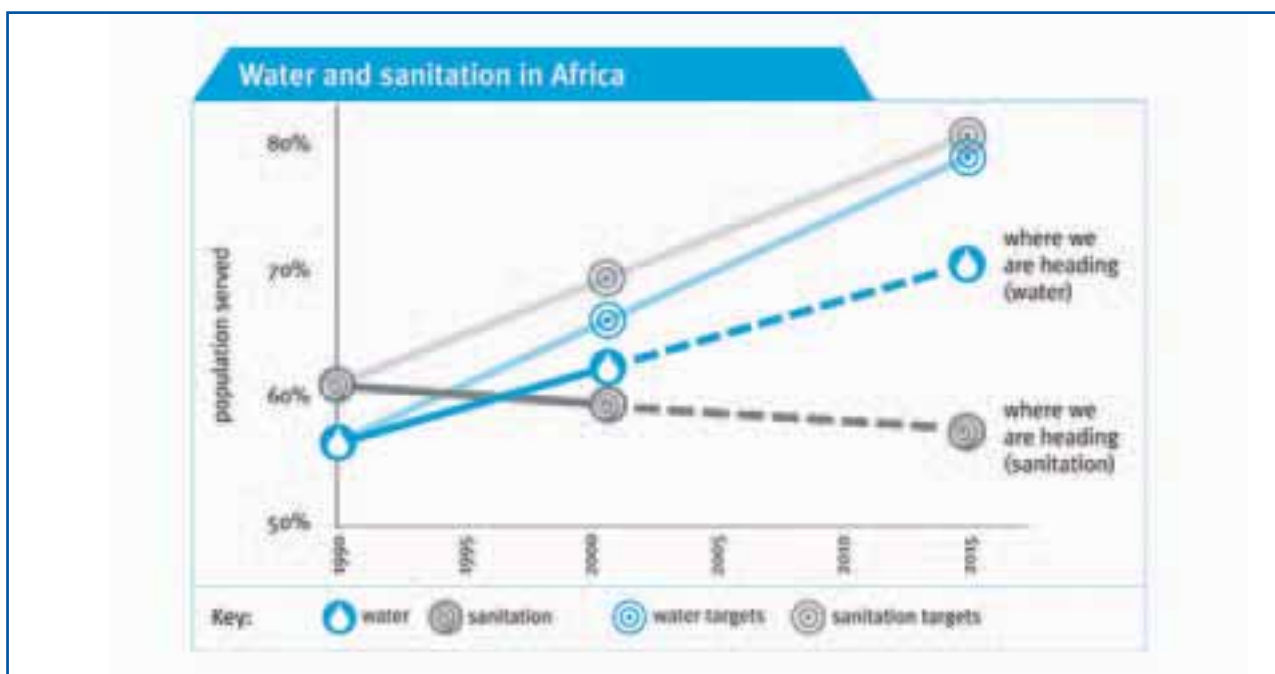
The reality

Since the targets were set progress has been lamentably slow². If things continue at the present rate it would take Africa over 30 years to achieve the water target and the sanitation target will never be met.

It would cost an estimated additional \$16 billion³ each year to reach the targets for water and sanitation in the Millennium Development Goals. This is less than the amount that North Americans and Europeans spend on pet foods in a year.

No time for school

In many of the world's poorest countries children's time is taken up collecting water for cooking and washing, or taking animals long distances to drink. There is simply too little time left to spare for education. Projects to improve



¹ MDGs were agreed at the September 2000 UN General Assembly. In September 2002 at the World Summit, the water target was reconfirmed and a new target for sanitation was accepted

² *Global Water Supply and Sanitation Assessment 2000 Report*, World Health Organisation and UNICEF

³ *Framework for Action*, Global Water Partnership. \$16 billion = approximately £9 billion at 12 February 2004

Executive summary



WaterAid/Alex Macro

access to water, supported by WaterAid and its partners, have made a considerable difference to the amount of time that women and children have to spend collecting water each day – that means children have time to attend school. In Tanzania, there was a 12% increase in school attendance when water was 15 minutes away, rather than an hour.⁴

Too sick for school

Illnesses caused by dirty drinking water and poor sanitation are one of the biggest killers of children worldwide. Diarrhoea alone kills 1.8 million children under five every year.⁵ If they don't die, millions are so sick from water-related diseases they can't attend school. In Madagascar alone 3.5 million schooldays are lost each year to ill-health related to bad sanitation.⁶ Some 400 million school-age children are infected by intestinal parasites, like hookworms and roundworms,⁷ at any one time. School can even be the cause of sickness among children. If schools don't have clean water, children cannot wash their hands after going to the toilet, a classic cause of disease.

Worse impact on girls

Girls, who, along with women, bear the brunt of water carrying in Africa and Asia, fare worse than boys when it comes to getting an education. One in four girls (24%) worldwide do not complete primary school, compared with 15% of boys. Currently around 65 million girls remain out of school.⁸ The benefits of addressing this inequality, however, are far reaching: for every 10% increase in female literacy you can expect a 10% increase in life expectancy at birth. You can also expect the country's economy to grow by 0.3%.⁹

No teachers

Good education depends on good teachers. But recruitment can be difficult in Africa and Asia and most teachers aren't interested in working in schools with no water supply and inadequate sanitation. After WaterAid projects in India, Tanzania and Ghana communities reported that the chances of teachers accepting postings were much higher.¹⁰

Education for a healthier future

In a self-improving cycle children with education about good hygiene become ill less frequently so spend more time in school. Washing hands with soap and water can reduce diarrhoea by over 40%.¹¹ School is an ideal venue for sanitation and hygiene education to take place, and children can be encouraged to take that vital knowledge home. Building sanitation facilities and improving water access must go hand in hand with sensitive, appropriate water and hygiene education for them to be effective in improving school attendance and cutting child deaths and illness.



WaterAid/Alex Macro

⁴ *Water and Sanitation in Tanzania*, Ministry of Water and Livestock Development and WaterAid Tanzania, 2002

⁵ *Common Water and Sanitation-Related Diseases*, UNICEF

⁶ *Assainissement: Le Defi*: WaterAid Madagascar et al, 2003

⁷ *Common Water and Sanitation-Related Diseases*, UNICEF

⁸ *The State of the World's Children 2004*, UNICEF

⁹ *World Development Report 1993*

¹⁰ *Looking Back: The long-term impacts of water and sanitation projects*, WaterAid, 2001

¹¹ *Effect of washing hands with soap on diarrhoea risk in the community: A Systematic Review*, BMJ, Curtis V, Cairncross S, 2003

Executive summary



WaterAid calls for action

Developed and developing nations need to understand the vital links between water, sanitation and education. This is crucial if we are to tackle poverty in a sustainable way. Governments need to act now to ensure that the lack of attention to water and sanitation does not undermine all other development goals including those on education. Failure to act now means a terrible waste of resources, money and millions of children's lives.

Developing countries must give higher priority to water and sanitation issues in their Poverty Reduction Strategy Papers (PRSPs) which are increasingly used as the guiding framework for national spending programmes. In Madagascar the Government recently amended its PRSP to prioritise sanitation after it became clear that the costs of ignoring the problem were much greater than the costs of dealing with it.¹² However, currently the crucial interdependence of education and water and sanitation is simply not factored into most countries' spending plans.

In 2005, the UK will have Presidency of G8 and the European Union. These two institutions represent the most powerful nations on the earth. The UK must use its pivotal role to prioritise water and sanitation for the poorest in the international and development agenda.

The UK Government must, to be consistent with its own assessment of the importance of the Millennium Development Goals, insist that funding for water and sanitation from all sources is doubled. The UK Government needs to ensure that 10% of its own aid budget supports water and sanitation.

The UK Government must demand that other developed countries also increase their aid spending, and particularly their spending on water and sanitation in order to meet the Millennium Development Goals to halve poverty by 2015.



WaterAid/Jon Spaul

¹² Assainissement: Le Def. WaterAid Madagascar 2003

Summary of statistics



WaterAid/Jenny Matthews

Water and sanitation

- Over one billion people worldwide don't have access to clean water.
- Over two billion people are without access to sanitation.
- It would cost an estimated extra US\$16 billion each year to reach the targets for water and sanitation in the Millennium Development Goals. This is less than North Americans and Europeans spend on pet food each year.
- Unsafe disposal of excreta is the main cause of childhood diarrhoeal diseases.
- One gram of faeces can contain:
 - 10,000,000 viruses
 - 1,000,000 bacteria
 - 1000 parasite cysts
 - 100 parasite eggs
- A child dies every 15 seconds from water-related diseases. This amounts to nearly 6000 deaths or the equivalent of 20 jumbo jets crashing every day.
- The weight of water that women and children in Africa and Asia carry on their heads is normally 20kg, the same as the average UK airport luggage allowance.

Children, water and sanitation

- In both Africa and Asia the average distance people have to walk to collect water is six kilometres.
- Diarrhoeal diseases are the second most serious killer of children under five worldwide (after pneumonia) but in most cases can be prevented or treated.
- Diarrhoea alone results in 2.2 million deaths, including 1.8 million children under five annually.
- The simple act of washing hands with soap and water can reduce diarrhoea by over 40%.
- The number of children that die from water-related diseases is the equivalent of 20 jumbo jets crashing every day. If they don't die, millions can be too sick from water-related diseases to attend school.
- Some 400 million school-age children are infected by intestinal parasites, like hookworms and roundworms, at any one time. Hookworms cause anaemia and stunted growth.

Education

- More than 104 million children have no access to education. Millions more miss school frequently.
- Nearly a quarter of girls (24%) worldwide do not complete primary school, compared with 15% of boys. Currently around 65 million girls remain out of school.
- For every 10% increase in female literacy you can expect a 10% increase in life expectancy at birth. You can also expect 0.3% of economic growth in a country.
- In Andhra Pradesh, India, up to 15% of children go to school hungry, many because they don't have time to eat.

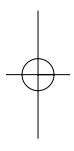
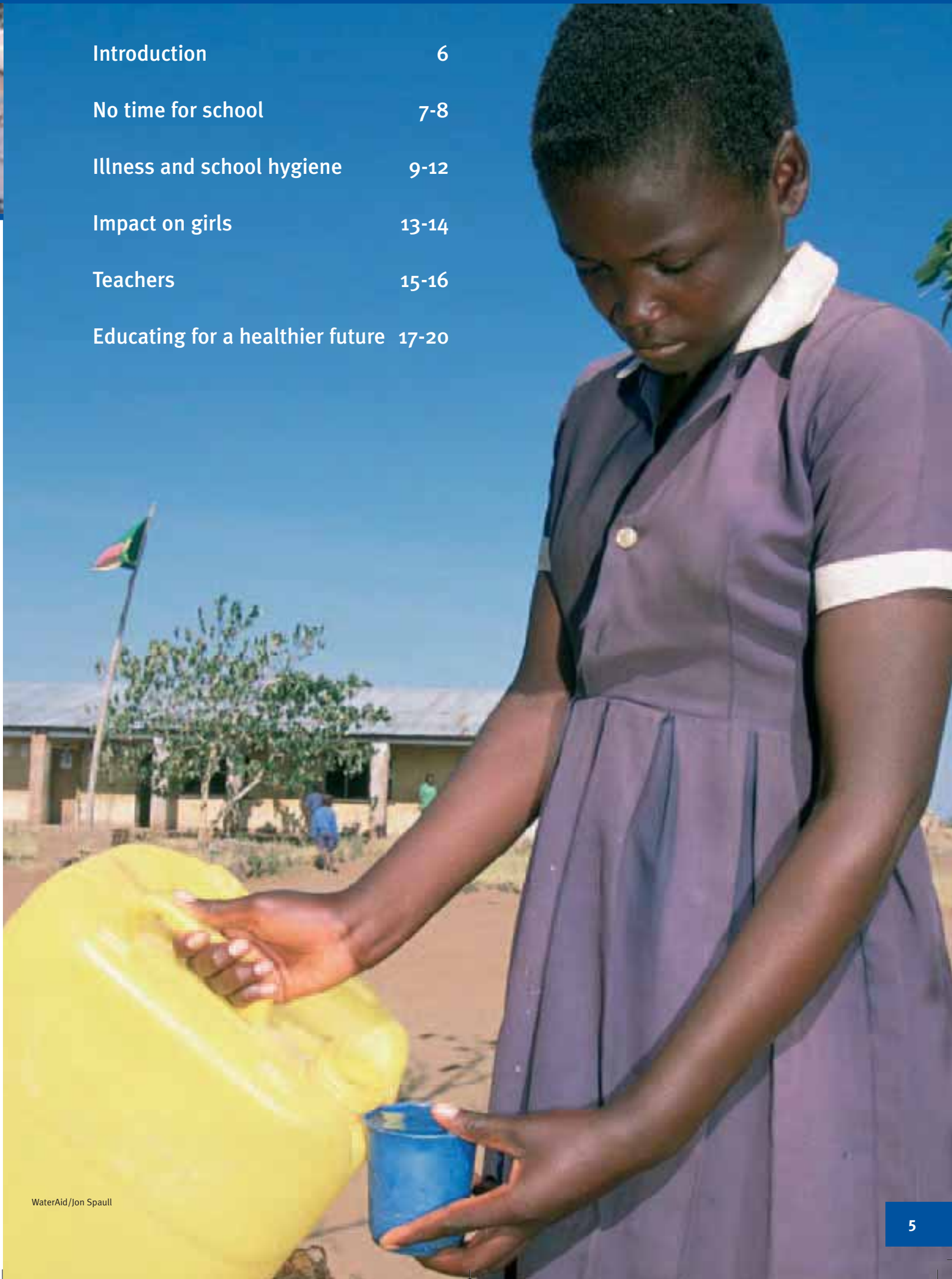
Education, water and sanitation

- Some 104 million children worldwide receive no education at all. Millions more can only attend school infrequently. Poor access to safe water and sanitation is a key cause.
- In Madagascar 3.5 million schooldays are lost each year to ill-health related to bad sanitation.
- In the Rimecha Michiko community in Ethiopia, students are absent from school for two or three days a week because they are taking animals on a six-hour round trip to find water.
- A survey of 5000 schools in Senegal revealed that over half had no water supply and 46% had no sanitation facilities.
- In the Mysore district of Karnataka, India, over nine out of ten schools had no latrines and seven out of ten had no water supply.
- In Tanzania, there was a 12% increase in school attendance when water was 15 minutes away, rather than an hour.
- A World Bank study revealed a 15% increase in Bangladeshi school attendance when water hauling time was reduced.
- A study of 432 children from 42 primary schools in Java, Indonesia, suggested that hookworm infection, which causes anaemia (or thin blood), can have a significant adverse effect on children's working memory, which may affect their reasoning and their reading comprehension. Educational attainment improved when the infection was treated.



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Introduction

“Before we got clean water in the village my life was so very different,”

says twelve-year-old Erika Makalli who lives in Mbalawala, Tanzania.

“I was constantly sick and had horrible, itchy skin because I could never wash properly. I was always suffering with stomach cramps and diarrhoea. I had to get up at 4am and walk a long distance to find water. It took two hours and I could only collect a small amount of water to take home. That meant that Mum had to spend most of the day finding water so that we’d have enough to drink and cook with.

I used to try and rush to get to school and wouldn’t be able to wash or have any breakfast beforehand. Most of the time I missed school altogether because I was sick or just exhausted. There were so many diseases in this village. The school closed down for ten months in 1998 because so many children were sick it wasn’t worth opening it.

I now wake up at 5am and clean the house. I brush my teeth and go to get water from the tapstand. It takes me 15 minutes to go and bring back one 20-litre bucket of water. I do this about three times a day. I meet my friends at the tapstand so we get to have a chat. Then I wash and prepare breakfast with the clean water. We always wash our hands now before eating which keeps everything clean and healthy.



Erika Makalli at the new tapstand in Mbalawala, Tanzania, that has transformed her life.

After breakfast, at about 6am, I leave for school, which is a 15-minute walk. I don’t have to take water to school with me as the school also has a tapstand now. When I get home I do my homework and collect more water and start to prepare supper for the family. Then I chat with friends and play games and then have a good wash. At 8pm I eat supper with the family and we sit around telling stories together.

If I still had dirty water I wouldn’t be going to school anymore. I probably wouldn’t have had any real education at all. Also, some of my friends would probably have died from the diseases we used to get. Life would be miserable. Now I feel I can at last look forward to a brighter future. Perhaps I will be a health and hygiene teacher when I leave school.”

Erika’s story is one of many collected by WaterAid that show how safe water and sanitation underpin the ability of children in the very poorest countries to receive an education.

Some 104 million children worldwide receive no education at all. Millions more can only attend school infrequently. Poor access to safe water and sanitation is a key cause.

In June 2003 **Kofi Annan**, Secretary-General of the United Nations, said:

“These targets – to reduce by half the proportion of people without sustainable access to safe drinking water and basic sanitation services, both by the year 2015 – are vital in and of themselves, but are also crucial if we are to meet the other Millennium Development Goals (MDGs).”

World leaders must do a lot more to put water and sanitation on the development agenda for tackling poverty and improving access to education. These next few years are critical.

Money isn’t the only issue. For sustainable projects communities must be at the heart of development, taking control of their facilities, of the issues that affect them and of their lives.

More money is essential however. An estimated US\$16 billion more per year – less than North Americans and Europeans spend annually on pet food – needs to be spent worldwide in order to reach the MDGs of halving the proportion of those without access to adequate sanitation and water by the year 2015.

The cost of not doing so will be much, much higher.

Ravi Narayanan
Director, WaterAid

No time for school

Some 104 million children¹³ are being denied the right to go to school. Millions more are only able to attend occasionally or for short periods each day.¹⁴ In the world's poorest countries, millions of children simply can't spare the time for an education. Instead, they have to spend hours walking miles to collect water for their families to drink. That water is often so dirty it can kill them, or makes them so sick that they miss the education that could help them out of poverty.

Six kilometre walk for a drink that can kill

Here in the UK, getting a drink of water is easy and quick, often no more than a few metres walk to the kitchen. In many of the world's developing countries the story is very different. In Africa and Asia the average distance people have to walk to collect water is six kilometres. During the dry season in Ethiopia, people have been known to walk 20km to collect water.

Most often it is women and children who have to find water each day. Children miss school because they are walking miles with buckets full of water that is not even safe enough to drink. Once at a water source, they queue for hours. If men are there, children have to let them go first. When they do get their turn, the water may be so shallow it takes hours to scoop the water into their containers. Then there's the long, exhausting walk home, carrying heavy barrels and buckets. Even if children get up before sunrise, water sources are often too far away for them to collect water and attend school. If they can eventually attend classes, they may have to leave early to collect more water for the evening.

Education or water: no choice

For families in much of the developing world there is no choice: children have to miss the education that could help their families out of poverty. Their lives depend on having water, even if drinking that water could kill them.

Projects to improve access to water, carried out by WaterAid and its partners, have drastically cut how long women and children spend collecting water each day. That means children have time to attend school. In Tanzania there was a 12% increase in school attendance when water was 15 minutes away, rather than an hour. WaterAid supported projects in Ethiopia led to more students attending school more regularly, and with better punctuality.¹⁵ A World Bank study revealed a 15% increase in Bangladeshi school attendance when water hauling time was reduced.¹⁶

Ten-year-old Kadia Coulibaly (pictured right) benefited from a WaterAid project to improve access to water in his Mali village:

“Before, I could not go to school until I had filled all of our earthen water jars. I would search from one well to another well, which were often a long way away, to try and find water. Now we have water, I have the time to do my jobs and go to school as well. I study well now.”

• Chores take longer

Children's chores take longer when there is poor access to clean water. Families often know they should boil water to kill bacteria, but if their children have to collect firewood they have even less time for learning. If the family has a small farm, water is needed to grow crops. If there is no farm, or the crops have failed, children have to go to buy or find food. If there are very young children in the family, their older siblings have to look after them while mothers collect water or prepare food.



WaterAid/Daniel O'Leary

¹³UNESCO: Global Monitoring Report on EFA 2003/4.

¹⁴UNICEF, *The State of the World's Children 2004*, December 2003.

¹⁵*Looking Back: The long-term impacts of water and sanitation projects*, WaterAid, 2001.

¹⁶*Progress Report and Critical Next Steps in Scaling Up*, World Bank/International Monetary Fund Development Committee, 27 March 2003.

No time for school

Christina Pede from Chipongwe village in Zambia says:

“I have twelve children and this water has really helped my family. The distance we walk to collect water and carry heavy loads has reduced a lot. My children are now able to go to school, but in the past by the time they had gone down and collected water they couldn’t go to school. Now they can go with no problems at all.”



WaterAid/Jon Spauill

- **No time to play**

The need to collect water and water-related illnesses mean children have no time to study, and no time or energy to play, hindering their educational development. A study in Andra Pradesh, India, showed that up to 15% of children came to school hungry, many because they didn’t have time to eat.¹⁷ Hunger and poor nutrition leads to poor concentration levels, further hindering students’ learning.

- **Caring for the sick**

Children also miss an education because they have to care for sick relatives struck down with water-related illnesses. If relatives become sick, children have to do their chores as well as their own. If a mother or father dies from a water-related disease, girls especially have to take on the parental role, cooking, washing and caring for the young. They become too busy to attend school at all.

- **Taking animals to drink**

Where a family has cattle, children are often responsible for taking the animals to drink. At the Belale school in the Rimecha Michiko community in Ethiopia, students are absent from school for two or three days a week because they are taking animals on a six-hour round trip to find water.¹⁸ Often animals and humans use the same water source to drink because it is the only one available. That leads to water sources becoming polluted and in turn leads to more water-related diseases.

CASE STUDY

Kasanda Stephen, 15, is the oldest girl in the family and so has to help her mother with the cooking and fetching water. For six hours every day, she has to walk in the hot sun to a hole in the ground where she can collect water, as long as it has not dried up.

“Every day after school I have to go to the water hole” says Kasanda, who only has time to attend the Mangashine primary school, in the Tabora region of north-west Tanzania, in the mornings.

Once at the water hole, it is often so dry and shallow that Kasanda has to use a flat metal plate to scoop it into a barrel. The journey back – lumbering a bicycle, laden with barrels of water – is a long, hot and exhausting one.

“If there was water at school, I would have more time,” says Kasanda. **“I could wash my clothes and body every day, and help my family with gardening to grow food to eat. I would prefer to play than to walk for water every day.”**



Brent Sifton

Stephen Turner, Director of Policy at WaterAid, said:

“One of the biggest challenges to achieving the Millennium Development Goal of improving children’s education in the world’s poorest countries is that they are so busy collecting water they don’t have time to attend school. Creating better access to water, and reducing the time taken by children to collect it, improves both children’s education, and their long-term life opportunities.”

¹⁷Through the Life Cycle of Children, Factors that Facilitate/Impede Successful Primary School Completion, EPW 2003.

¹⁸Looking Back: The long-term impacts of water and sanitation projects, WaterAid, 2001.

Illness and school hygiene

The number of children that die from water-related diseases is like 20 jumbo jets crashing every day.¹⁹ Diarrhoea alone results in 2.2 million deaths annually including 1.8 million children. If they don't die, millions can be too sick from water-related diseases to attend school.

Water-related diseases

Some of the most prolific illnesses in the world are water-related. They are caused by drinking dirty water, not being able to wash food, hands or utensils before eating, the lack of a clean and safe place to go to the toilet, or dirty stagnant pools where disease-spreading insects can breed.

In the UK, diarrhoea is a nuisance. In the poorest countries of the world, it is a major killer. It is a symptom of water and sanitation-related diseases, including cholera, typhoid and dysentery. Without access to clean water and sanitation, children are quickly infected. If they don't die, many are too sick with fever or dehydration to go to school. In other cases their school's sanitation is too poor to meet their toilet needs. Some schools just don't have toilets. Others have facilities that leak or aren't cleaned properly. Repeated episodes of diarrhoea make children more susceptible to other infections.

Intestinal worms, which can result from contact with decaying faeces or polluted water sources, also cause illness in children. Some 400 million school-age children are infected by intestinal parasites, like hookworms and roundworms, at any one time. Hookworm infects millions of children every year, causing anaemia²⁰ and stunted growth. Children are also especially susceptible to guinea worm, which is spread through contaminated water; and also trachoma, the largest cause of preventable blindness in the world. Six million people are already blind or visually impaired due to the disease, with 150 million infected and requiring treatment.²¹ And its cause is poor hygiene and the lack of water.

Many diseases are also spread by unsanitary surroundings. During the rainy season in some countries, human waste washes over land, where it becomes a breeding ground for disease and mosquitoes, which can carry malaria, causing more child death and illnesses. Faeces can also wash in to water sources causing further contamination.

Tackling disease, improving education

By improving access to clean water, sanitation and good hygiene, fewer children die and more children spend more time receiving education. WaterAid supported projects in Ghana have been shown to significantly reduce incidences of diarrhoea, scabies and guinea worm.²² The result was increased school attendance among teachers and students, and improved cleanliness across the community. In two communities in India where WaterAid has worked, no diarrhoea-related deaths were reported in the three years following intervention.

¹⁹Through the Life Cycle of Children, Factors that Facilitate/Impede Successful Primary School Completion, EPW 2003

²⁰Evidence for an association between hookworm infection and cognitive function in Indonesian school children, Sakti, H et al 1999

²¹Common Water and Sanitation-Related Diseases, UNICEF

²²Looking Back: The long-term impacts of water and sanitation projects, WaterAid, 2001

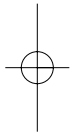
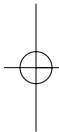
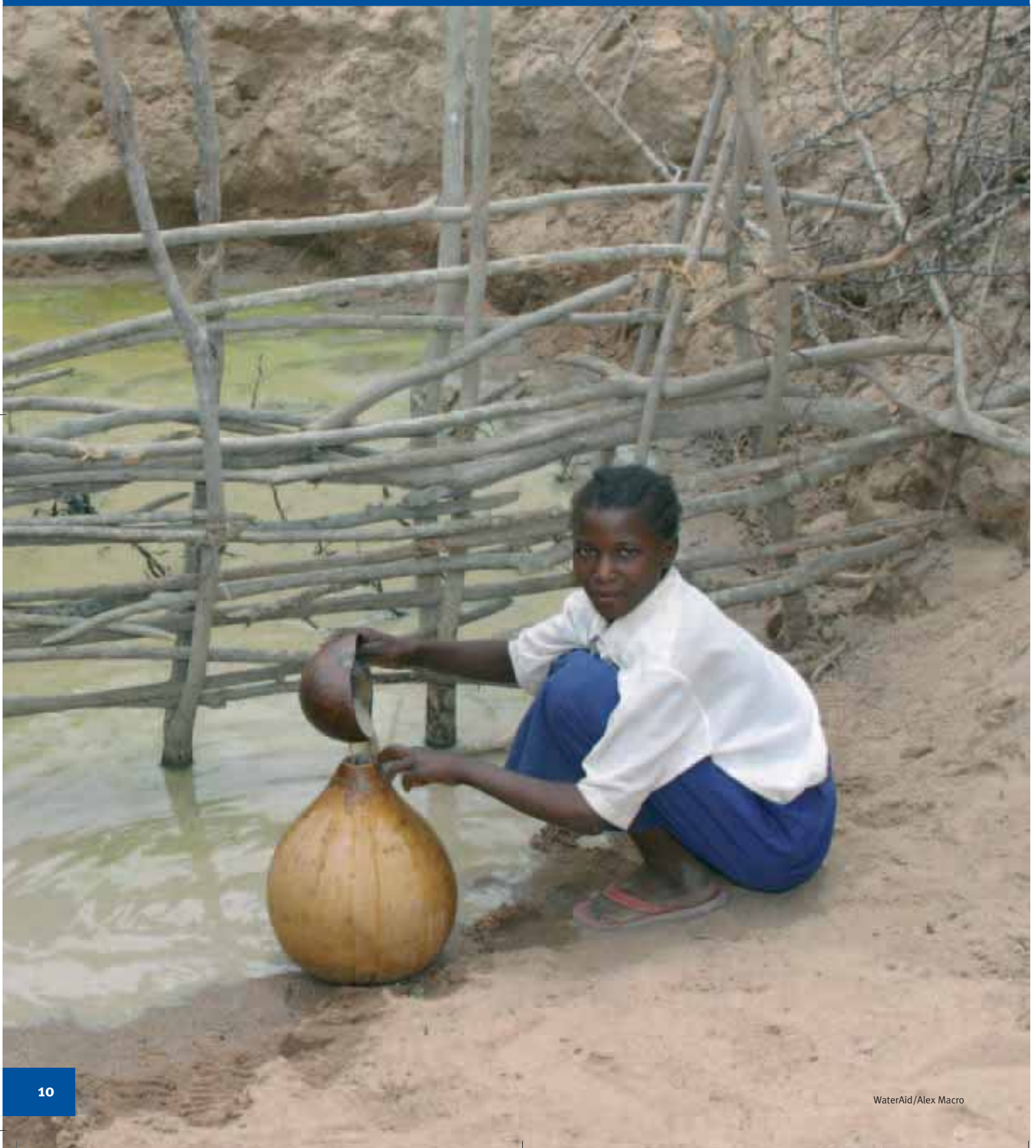




Illness and school hygiene

“I come to this water hole twice a day to collect water for home and school. It is a 2km walk from school and about 3km from home. We can’t boil the water because of lack of firewood. I get stomach aches all the time.”

Pauline Malima, 13, Nala, Tanzania



Illness and school hygiene

CASE STUDY

When eight-year-old Gantla Krishnaveni arrives at school in Rapaka village in Visakapattinam District in Andhra Pradesh, she's never really sure which of her classmates will be present.

"Some of my friends are suffering with a fever now so they are not able to come to school. I had a fever too recently and had to stay in bed for four days."

For the children of Rapaka disease is an every day occurrence, and it's not unusual for disease to be fatal. Last year, six children under the age of three died in the village from diarrhoeal diseases.

There is no proper drainage in the village and so stagnant water lies everywhere, turning the footpaths to mud, mixing with rubbish and attracting mosquitoes. Most of the villagers go to the toilet by the roadside and wild pigs roam the streets, eating human faeces and other wastes. One handpump in Rapaka doesn't work at all, and the other has a broken platform, which means stagnant water seeps into the ground.

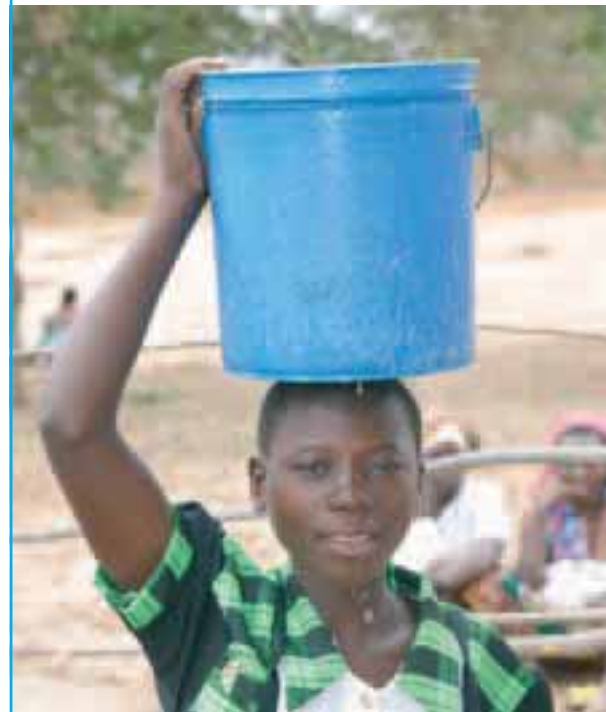


WaterAid/Somesh

CASE STUDY

"Before we got clean water in the village, my life was so very different. I was constantly sick and had horrible, itchy skin because I could never wash properly. I was always suffering with stomach cramps and diarrhoea. Most of the time I missed school altogether because I was sick or just exhausted. The school closed down for 10 months because so many children were sick. If we still had dirty water I wouldn't be going to school anymore. I probably wouldn't have had a real education at all. Most of my friends would probably have died from the diseases we used to get. Life would be miserable."

Erika Makalli, Mbalawala, Tanzania.



WaterAid/Alex Macro

• Turned away from school

Teachers often have to turn children away from school if they are not clean or their clothes are dirty. In crowded places, where there is not enough clean water, skin diseases like scabies spread quickly. Teachers have to exclude children who might spread infections, even if it means they miss days, weeks or even months of school.

Yet without a proper water supply many mothers can only wash their children rarely. Agnes Mwilnga of Choobana, Zambia, says: **"Our 20 litres had to last between our family for all our drinking, cooking and cleaning. Sometimes even a month would go by before we could wash our children. This was especially bad in September and October at the end of the dry season when water was very scarce. As water was so hard to come by we didn't wash our clothes much either then. Now though things are different, the children bathe every day before they go to school."**

Illness and school hygiene

- **School makes children ill**

Poor access to sanitation and clean water means school can be the cause of sickness, and even death, for its teachers and pupils. The place for learning can be a very dangerous place to be. In many developing countries access to water and sanitation in schools is lower than the average coverage of the country.²³ A survey of 5000 schools in Senegal revealed that over half had no water supply and 46% had no sanitation facilities.²⁴ Without water children cannot wash their hands after going to the toilet, a classic cause of diarrhoeal diseases and other water-related infections.

- **Dirty open spaces**

In some countries, people wrongly think that children's faeces are not harmful so it is tolerated for them to defecate in the open. Parents often also tell their children to defecate in the open, rather than in pit latrines, because they can become very dirty and unhygienic. This gap in knowledge can help spread diseases among children. Pit-latrines are easy to keep hygienically, as long as they are properly built and used, regularly cleaned and protected from the elements.

- **Disease affects learning**

Diseases may hinder learning. A study of 432 children from 42 primary schools in Java, Indonesia, suggested that hookworms, which cause anaemia (or thin blood), can have a significant adverse effect on children's working memory, which may affect their reasoning and their reading comprehension. Educational attainment improved when the infection was treated.²⁶

See SECTION V for how better hygiene for pupils and their families is being promoted in schools.

²³UNICEF 2002

²⁴IRC, *Every Child Clean through School Hygiene*, at www2.irc.nl/sshe/econf/backgpap.html

²⁵UNICEF & IRC SSHE information, at www2.irc.nl/sshe/resources/mysore.html

²⁶Trop Med Int Health, 1999 May, *Evidence for an association between hookworm infection and cognitive function in Indonesian school children*, Sakti H et al

²⁷*Common Water and Sanitation-Related Diseases*, UNICEF

In the Mysore district of Karnataka, India, over nine out of ten schools had no latrines and seven out of ten had no water supply.²⁵

Unsafe disposal of excreta is the main cause of childhood diarrhoeal diseases.

One gram of faeces can contain:

10,000,000 viruses

1,000,000 bacteria

1000 parasite cysts

100 parasite eggs²⁷

Fay Ripley, actor and WaterAid supporter said:

"It is a terrible that children die or get too ill to go to school from avoidable illnesses. Simply washing their hands after going to the loo would avoid many of these illnesses and deaths. We have to do more to make schools a place where children go to learn in a healthy, safe environment, rather than a place where they are at risk from infections that could kill them."

WaterAid/Jon Spaul



Impact on girls

If the impact of poor access to water and sanitation is bad for children's education in general it is much more pronounced for girls. Girls have more household chores, like collecting and boiling water, and if a teacher or relative becomes sick, girls are the first to miss lessons. Teenage girls also miss school while menstruating if there is no toilet or no privacy.

CASE STUDY

Napoga Gurigo, from the village of Tengzuk in the Togo hills of Ghana doesn't know her age, but is probably about 12. She came to the waterhole at 5.30am to collect water and had been there for over three hours. On average it takes six hours to collect water here as women and children must sit and wait for water to seep through the ground and the mud to settle. Animals also drink from the same waterhole. She does not go to school. She is engaged and lives with her intended husband's family.



WaterAid/Caroline Penn

Millions of girls out of school

By 2015, governments have committed themselves to the Millennium Development Goal of every child having access to a good quality primary education. More pressingly, by 2005 there is a MDG for full gender equality in all schools.

These goals are dauntingly distant. Less than one in every four girls (24%) worldwide do not currently complete primary school, compared with 15% of boys. The majority of children out of school are girls: an estimated 65 million. In sub-Saharan Africa the number of girls out of school in 2002 was 24 million. In seventy countries more than 15% of girls do not attend school regularly enough to be considered enrolled.²⁸

The burdens of housework

Water and sanitation are key issues preventing girls from

receiving an education, because of gender inequalities in the home, family and school. In most developing countries the burden of housework traditionally falls to the eldest daughters. It is girls who are most often expected to collect water and help their mother to boil it, to prepare food for the family and take animals to drink.

In many developing countries girls are left to work at home while their brothers gain an education. Where education or uniforms have to be paid for and families are poor, boys are given preference. If relatives become sick from water-related diseases, it is girls who have to miss school to look after them and do their chores. Furthermore the family's income is reduced and, at the same time, they may have to spend more money on medicines. This means even less money is available for children's education. If teachers are sick, it is the boys' classes that continue, while girls are sent home or told to clean the school grounds, including the toilets.

By developing sources of clean water and better sanitation in developing countries the problems that prevent children from going to school will be reduced, and girls will benefit most. A school sanitation programme in Bangladesh has increased the enrolment of girls by 11% per year since it began in 1990.²⁹ WaterAid supported projects in India have led to more girls enrolling in, and staying at school.

The benefits of addressing the gender issue can be more far-reaching still: for every 10% in female literacy you can expect a 10% increase in life expectancy at birth. You can also expect the country's economy to grow by 0.3%.³⁰

CASE STUDY

For 18-year-old Tatu Muhamed, the lack of clean water close by was the source of a number of problems. Her father died from tuberculosis during her second year of school. When he died, her brother took control of the family and took Tatu out of school so she could collect water and do work for the family instead.



"I had to collect water for the whole family, and prepare the porridge and wash the clothes," explained Tatu. "My brother decided I wasn't to go to school because I didn't have time. I wasn't happy not going to school and asked my brother, but he said no."

Brent Stirton

²⁸ All statistics from UNICEF, *The State of the World's Children 2004*, December 2003

²⁹ Cairncross 1999, UNICEF 2000.

³⁰ World Development Report 1993

Impact on girls

- **Security and privacy**

If girls do go to school, they often face privacy and safety issues because of poor sanitation and water supply there. If there are no latrines at school, girls go far into the bush to urinate for fear of being seen, where they may be at risk from snake bites or even sexual attack. If there are pit-latrines at school, they may not be segregated. A study of 5000 schools in Senegal revealed only half had separate facilities for girls and boys.³¹ Girls prefer to 'hold on' all day rather than risk being seen going to the toilet. In Senegal, according to the Red Cross, girls are frequently warned not to urinate at school because the latrines there are too dirty, or not private enough. But holding on is not only painful for girls, thereby reducing their ability to learn, but may lead to urinary and bladder problems which would force them to miss school through illness. The Senegal study also found girls weren't drinking during school time to avoid urination. Dehydration can hinder concentration further.

- **Menstruation**

The lack of adequate water and sanitation, at both home and school, prevents girls from attending school when menstruating. Many girls have the sense of being unclean or smelly during their period. In developing countries, where there is little clean water for girls to wash themselves, this leads to girls staying away from school. Likewise, there are rarely private or segregated facilities at school, where girls can go to the toilet or wash the rags they use during their period. Girls can also pick up vaginal and urinary infections

if the water they use to wash rags is dirty, leading to more time off school.

- **Boys don't clean toilets**

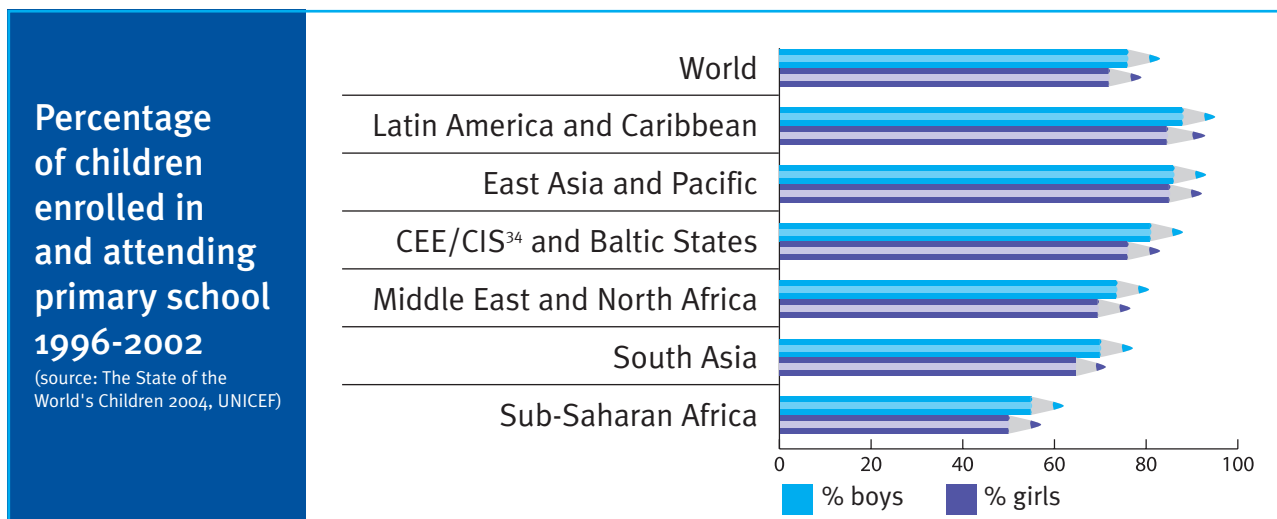
Gender inequalities at home are often perpetuated at school. In a Mexico study, when asked why the girls were cleaning the school toilets and the boys were playing basketball, the teachers said: "Boys don't clean toilets in Mexico."³² Girls may have to miss classes to keep the school and toilets clean. If toilets are very dirty, there are no toilets, or if there is faeces around the grounds girls often have to clean up and are exposed further to sanitation-related diseases.

- **In the interests of girls**

When girls are unable to receive an education, it perpetuates a water-related vicious circle. If only men are educated they are in a stronger position to make decisions about sanitation and water provision, in villages and in schools, which do not properly account for the needs of girls. In contrast, educated women are more likely to participate in the decisions that affect women, children and all the community.

- **Family health**

Where girls receive hygiene education there is less ill health and better school attendance among their children, and mother and baby are more likely to survive pregnancies.³³ Women who do not have to spend hours every day collecting water are able to provide better care for their children, reducing illness and increasing school attendance.



Anne Jellema, Advocacy Coordinator of the Global Campaign for Education, a coalition of teachers' unions and NGOs in more than 100 countries, says:

"For millions of children, and particularly girls, the daily struggle to find enough water for their families leaves them no time to satisfy their thirst for education. With the Millennium Development Goal on gender equality in girls' education only one year away and 65 million girls still out of school, this report is essential reading."

"Women with even a few years of basic education have smaller, healthier families; are more likely to be able to work their way out of poverty; and are more likely to send their own children – girls and boys – to school... Each additional year of female education is thought to reduce child mortality by 5-10%."

The UK Department for International Development: *Poverty Elimination and the Empowerment of Women Target Strategy Paper*, September 2000 (figures from an original World Bank Source)

³¹ IRC, *Every Child Clean through School Hygiene*, at www2.irc.nl/sshe/econf/backgpap.html
³² IRC, *Every Child Clean through School Hygiene*, at www2.irc.nl/sshe/econf/backgpap.html
³³ UNICEF, *The State of the World's Children 2004*, December 2003
³⁴ CEE – Central Eastern Europe. CIS – Commonwealth of Independent States

Teachers

Good education depends on good teachers. It is difficult for the poorest schools in Africa and Asia to retain good teachers. And in schools that have poor sanitation, or no clean water, teacher recruitment is almost impossible. Teachers prefer to work where the facilities are better.

Teacher shortages

Recruitment and retention of teachers in schools where there are very poor water and sanitation facilities is another water-related challenge to the Millennium Development Goal of educating all primary school age children. Teachers don't want to work in schools without water or sanitation, where it is impossible to wash their hands after going to the toilet, where the school grounds are dirty and polluted, and where children come to school with water-related infections like scabies.

In developing countries, this can lead to teacher shortages across whole regions. That means either bigger classes, where children can't get the good quality education they need, or children being sent home because there is no-one to teach them. The best qualified teachers go to teach in the schools with the best facilities, leaving those with poor facilities with poorly qualified teachers or no teachers at all. Women teachers, already fewer in numbers, often avoid schools where there are no private, segregated latrines.

Before WaterAid projects in India, Tanzania and Ghana, communities reported that it was very difficult to attract and retain adequately qualified teachers because there was no clean drinking water. Since clean water projects were initiated, the chances of teachers accepting postings were much higher. In a school in Mpraeso Aman, Ghana, the head teacher said: "Teachers posted to teach at the community primary school do not hesitate to come."³⁵

- **Too ill to teach**

In countries where there is poor sanitation and a lack of water, teachers frequently become ill. If they die, or miss a lot of school, the children have to be sent home. In schools where there is no clean drinking water and poor sanitation, or where children come to school with water-related skin conditions like scabies, teachers are more likely to become ill.

- **Too busy to teach**

Just as children have to collect water and do household chores before school, so do teachers. If teachers miss hours of school because they are collecting water then pupils have to go without lessons until they return.

³⁵WaterAid, Looking back: *The long-term impacts of water and sanitation projects*, June 2001

CASE STUDY

Lucy Akanboguure is a teacher from Kandiga in Ghana. Her life changed when WaterAid and its partner Rural Aid helped provide her community with a safe water supply:

"A decade ago, I had to get up at 3am every day to collect water from a river 5km away. The earliest I returned was 10am which meant I was often late for work which angered the Head Teacher.

Fetching water took up most of the women's day. During their dark dawn journey to the river, some women were bitten by snakes, others fell down from fatigue, injuring themselves. Girls were also expected to carry water and so very few enrolled in schools. In many deprived communities today only one woman is educated for every 30 men. Female teachers were rare – I was the only female teacher in my school.



Brent Stirton

In Kandiga communities suffered most from water shortages during the long dry season from November to March. Women quarrelled, beat or injured one another and even broke one another's containers and calabashes in the 'mad' rush for water. Because water was so scarce we were forced to collect

Teachers



WaterAid/Alex Macro

dirty water which posed severe health hazards. Sanitary facilities were generally non-existent. Diarrhoea, dysentery, guinea worm and cholera were rife and often resulted in death because we didn't have health facilities. My children and others in the neighbourhood were severely malnourished.

In 1994 I heard about WaterAid's work in Ghana. I quickly organised our community and applied for assistance. In 1995, after several meetings, the project was agreed and the first two hand-dug wells were constructed. As part of the project requirements the community provided labour, contributed funds and bought the handpumps. WaterAid provided skilled labour and materials and Rural Aid, WaterAid's partner, monitored the project, provided support and lined the wells.

The community maintains and manages the handpumps, using funds that they themselves contribute monthly to pay for repairs.

On the first day after the handpump was installed I woke up at 6am and cried aloud thinking I was too late to fetch water from the river. Then I realised that in their excitement my children had woken up earlier and filled the water pots with clean water and were already preparing breakfast. I felt so happy having water at my doorstep, 24 hours a day, knowing that I was safe from water-borne diseases. More value was added to my life when I had access to a toilet.

Since then life in my community has been peaceful. Our primary school is now fully staffed because teachers accept jobs as there is water nearby.

My children and I now go to school as early as 7am. I have time to organise groups of children for extra curricula activities like science clubs, drama groups, sports and clean up campaigns. I help train teachers and teach women in my community and am also educating people about the need for toilets.

Because of WaterAid's approach women's lives in particular have been greatly enhanced. Previously women were seen as unintelligent. Now they are seen as equals. They are involved in decision-making and can take up leadership roles – something that was unthinkable before. I have been elected to represent my community in the District Assembly, the highest political authority at the district level."

Anna Jellema of the Global Campaign for Education says:

"Building and maintaining school latrines, and in some cases providing water points, usually falls to the education ministry and/or school committee and not to the water ministry. Developing countries and developed countries need to take this into account, paying special attention to poor communities, where schools are most likely to lack basic facilities such as latrines and drinking water. Improving teacher training and investing more in learning materials is also a priority so that teachers have the skills and tools needed to teach hygiene in more interesting and effective ways."

Ravi Narayanan, Director of WaterAid says:

"Just as teachers in the UK want to work in the best schools, teachers in developing countries want the same. But while here that means well-behaved pupils or good test scores, in the world's poorest countries it can rely on whether they'll be able to go to the toilet during the working day. In that way, establishing good water and sanitation provision in schools in poor countries is vital if children are to have a good education."

Educating for a healthier future

Simply installing latrines and clean water in schools, in villages or households, is not enough. Without knowledge of basic hygienic practices the benefits are reduced. Improving access to water so that children can attend school must be linked to providing hygiene education. In a self-improving cycle, when children have better hygiene education, they become ill less frequently and so spend more time in school.

The need for hygiene education

When new sanitation facilities and water sources are installed, whether in schools, in communities or in homes, it is essential that they are used properly. If people do not wash their hands after going to the toilet, even if it is a clean and hygienic latrine, they are still susceptible to disease. If communities do not know how water becomes polluted, then any newly installed water sources quickly become unusable.

Without education about hygiene, as well as maintenance of water and sanitation facilities, communities may not see the benefits they expect from them. As a result, they may resort to traditional practices, the intervention becomes wasted and new toilets and water pumps fall into disrepair.

Hygiene education at school

There is a desperate need for programmes to educate communities about health, hygiene and sanitation. School is an ideal venue for these, because children are receptive to new ideas, whereas traditional practices are ingrained in their parents. Toilet-related taboos are also likely to be weaker in children.

Good hygiene education at school may focus on hand-washing with soap after using the toilet and before handling food, protecting clean water from animals, insects and excreta, safe storage of food and hygienic use and care of toilets. But such education can often only take place if children attend school. Water and sanitation 'software' programmes, such as education, must go hand in hand with the construction of new water sources and latrines which can improve attendance in schools.

WaterAid and its partners concentrate on uniting these solutions in poor communities, to improve health and hygiene, relieve poverty and improve school attendance.

Successful solutions

Hygiene promotion is particularly effective once the facilities are available for it to be practised. The simple act of washing hands with soap and water can reduce diarrhoea by over 40%.³⁶

Before WaterAid's intervention open defecation and poor hygiene were the norm in Kalmandhai slum, southern India, and 73% of the children suffered diarrhoeal diseases. After hygiene promotion sessions to explain the need for good sanitation and the community built communal toilets and bathroom blocks, diarrhoeal diseases have reduced to 10% among children.

A study in Karachi found that people living in areas without adequate sanitation, who had no hygiene education, spent six times more on medicines than those with sanitation facilities.³⁷ A programme to improve sanitation facilities and instigate hygiene education across 20 schools in the Mysore district of Karnataka resulted in higher school attendance and lower drop-out rates, as well as a more positive attitude from school children and teachers towards school sanitation and hygiene education activities.³⁸

CASE STUDY

Marachipatti Primary School, Panchayat Union, Tamil Nadu

This is a government school which provides free education to 104 pupils aged five to ten. The school did not used to have any latrines and the pupils were frequently ill. Three years ago WaterAid and its partner Gramalaya started a health education programme here by building a school latrine block and setting up a school health club. A Gramalaya health educator visited and ran training sessions. One of the teachers is in charge of the club, which is made up of five committees of children with different designated responsibilities:

1. Water maintenance
2. Campus cleaning
3. Toilet maintenance
4. Food
5. Classroom cleaning



WaterAid/Libby Clarke

³⁶Curtis V, Cairncross S. 2003

³⁷Both from WSSCC, *Wash Facts and Figures* at www.wsscc.org, accessed December 2003

³⁸UNICEF & IRC SSHE information, at www2.irc.nl/sshe/resources/mysore.html

Educating for a healthier future

Each committee has five to seven children as members. The children work as health ambassadors within their community. They discuss health issues with their parents such as the building of latrines at home. Their parents then discuss the ideas with neighbours, so there is a ripple of change throughout the whole community. There are 140 households in the village, most of whom are employed as agricultural labourers.

This school is one of six covered by a recent WaterAid study on the effectiveness of school health education programmes. The study covered 1020 pupils and found that following the school health programmes 68% of their families had built their own latrines at home with no external assistance. These are communities who have had no contact with WaterAid except through the school projects. The high rate of latrine take-up is testament to the effectiveness of children talking at home about hygiene messages they have learnt at school. As a result of the study WaterAid India plans to integrate school projects into many community projects. The study also showed that 96% of children could remember how to treat diarrhoea with a sugar-salt solution a year after the projects. It generally takes four to five years for adults to absorb the same messages.

Vizi, 10, is on the toilet committee. “Break time is from 11.00 to 11.10 and we come and look after the toilets then. We have to make sure that all the other children use the toilets, that the toilets are kept clean and that there is water and soap for people to wash their hands with. If there is no water there then we go to the handpump to fetch some more. If there is no soap then we buy some more at the local shop. There are separate toilets for boys and girls. Boys look after the boys’ toilets and girls look after the girls’ toilets. We have learnt about the dangers of open defecation – hookworm can enter your body through your feet and make you ill.”

Girls queuing to use the toilets at breaktime. Vasanthi, 10, seen standing on the steps, is a member of the personal hygiene committee:

“Before we had the toilets we had to use the thorny bushes on the outskirts of the village. Sometimes snakes would come and disturb us. I would run away as quickly as possible. This wasn't much fun. Through the personal hygiene committee we have learnt to cut our nails and wear clean clothes. If somebody else comes to school looking dirty we ask their parents to send them cleaner next time. We also tell our parents to wash their hair, clean their teeth and wash their hands with soap after handling garbage.”



Martin Argles

Educating for a healthier future



WaterAid/Jim Holmes

• Taking health education home

If taught in a creative way, children will take their new life-saving hygiene education home. Providing hygiene and sanitation education in schools can be the foundation for health education across whole communities. If children learn songs about hygiene they will sing them outside school as well as inside. If children are taught to consider how their own home or family's hygiene can be improved, that practical knowledge can be taken home.

In turn, that can improve the status of the school in the community. If parents and village elders see improvements to the community's health due to children's hygiene education they may allocate more resources to schools. In Nigeria, a UNICEF supported project across 153 primary schools concentrated on training teachers to pass-on hygiene education to children, involving parents in hygiene-related school activities and forming children's hygiene and sanitation clubs based around the school. The result was a 20% increase in school enrolment and a 77% decrease in guinea worm infection across the communities. In one village, where water and sanitation facilities were built at

the school for the use of the whole community, school attendance grew from 320 pupils to 538. Two years after the project was initiated, the facilities were still in excellent condition and being used regularly by the whole community.³⁹

• Creative teaching

Children are receptive to hygiene education if they are taught in an interesting and engaging way. Teaching children that washing their hands could give them more time to play is more effective than telling them they will get diarrhoea if they don't.

At a school in Baterkhil village, Sitakunda Thana District in Bangladesh blue powder representing germs is sprinkled onto a football and children play catch to show how germs spread.

In the Mysore school project, colourful murals were painted by children and teachers which emphasised various aspects of personal hygiene and community sanitation, and a weekly school calendar was written, where each day a different aspect of school hygiene is carried out by the pupils.⁴⁰

CASE STUDY

Child-to-Child in Tanzania

In WaterAid sponsored programmes in the Tabora region of Tanzania, older children are 'rewarded' with the responsibility of teaching other children about hygiene and sanitation, and making sure younger children come to school clean. This child-to-child education has been successful in promoting both school and home hygiene.

Amina Ramadhani, 14, is old enough to remember what life was like before a WaterAid supported programme installed latrines at her school at Block Farm, in the Tabora region of Tanzania.



WaterAid/Jane Scobie

³⁹UNICEF, *At a glance: Nigeria*, at www.unicef.org/inforbycountry/nigeria_1468.html, accessed December 2003

⁴⁰UNICEF & IRC SSHE information, at www2.irc.nl/sshe/resources/mysore.html

Educating for a healthier future

“Before we had only three toilets which were shared by boys and girls, around 290 children. It was a hole in the ground and the roof was made of straw. During the rainy season I didn’t like to use them because I would get wet, but when it was dry there was always a bad smell. These new toilets are clean and they don’t smell.”

Amina is part of a child-to-child learning programme at her school to teach younger children about good hygiene.

“We are learning through drama and singing. We are told that we should help each other to prevent disease. I am in standard seven class and we have to teach children in standard one and two these things. I take children to see the latrines and show them how to use them properly. If they do these things, they will not get diarrhoea, malaria and other water diseases.

We can learn much more easily, and children are not sick as much because we are protecting ourselves from disease.”



WaterAid/Steve Bainbridge

• Better life skills

Hygiene and health education also have longer-term benefits for children’s physical, economic and cultural development. When children learn new knowledge, skills and attitudes on hygiene, they acquire many other life skills.⁴¹ Examples include being able to work in groups, develop investigation and analysis skills and being able to speak about sensitive issues. Such education also begins to address gender differences and stereotyping among children, which also has longer term benefits for gender equality.

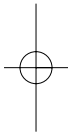
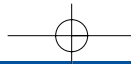
When programmes to construct facilities in villages or schools are coupled with lessons on hygiene and sanitation for children, it provides a good opportunity for children to be consulted on their needs from proposed facilities where they might otherwise be overlooked by adults.

For example in WaterAid projects in India, children found the dark, enclosed spaces of the adult latrines daunting and so open, child-friendly toilets were built as well where they would feel comfortable (see picture above).

Vicky Blagbrough, Hygiene Promotion Advisor, WaterAid says:

“There is growing recognition that better education for the world’s poorest children depends not only on their having good and clean facilities in school, but also on pupils being taught to use them properly and to protect themselves from water-related diseases. When that knowledge is taken home to their families, it makes a real difference to the health of whole communities. Ultimately, that means more children spend more time learning in school.”

⁴¹IRC, *Every Child Clean through School Hygiene*, at www2.irc.nl/sshe/econf/backpap.html



www.wateraid.org



WaterAid – water for life

The international NGO dedicated exclusively to the provision of safe domestic water, sanitation and hygiene education to the world's poorest people

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