

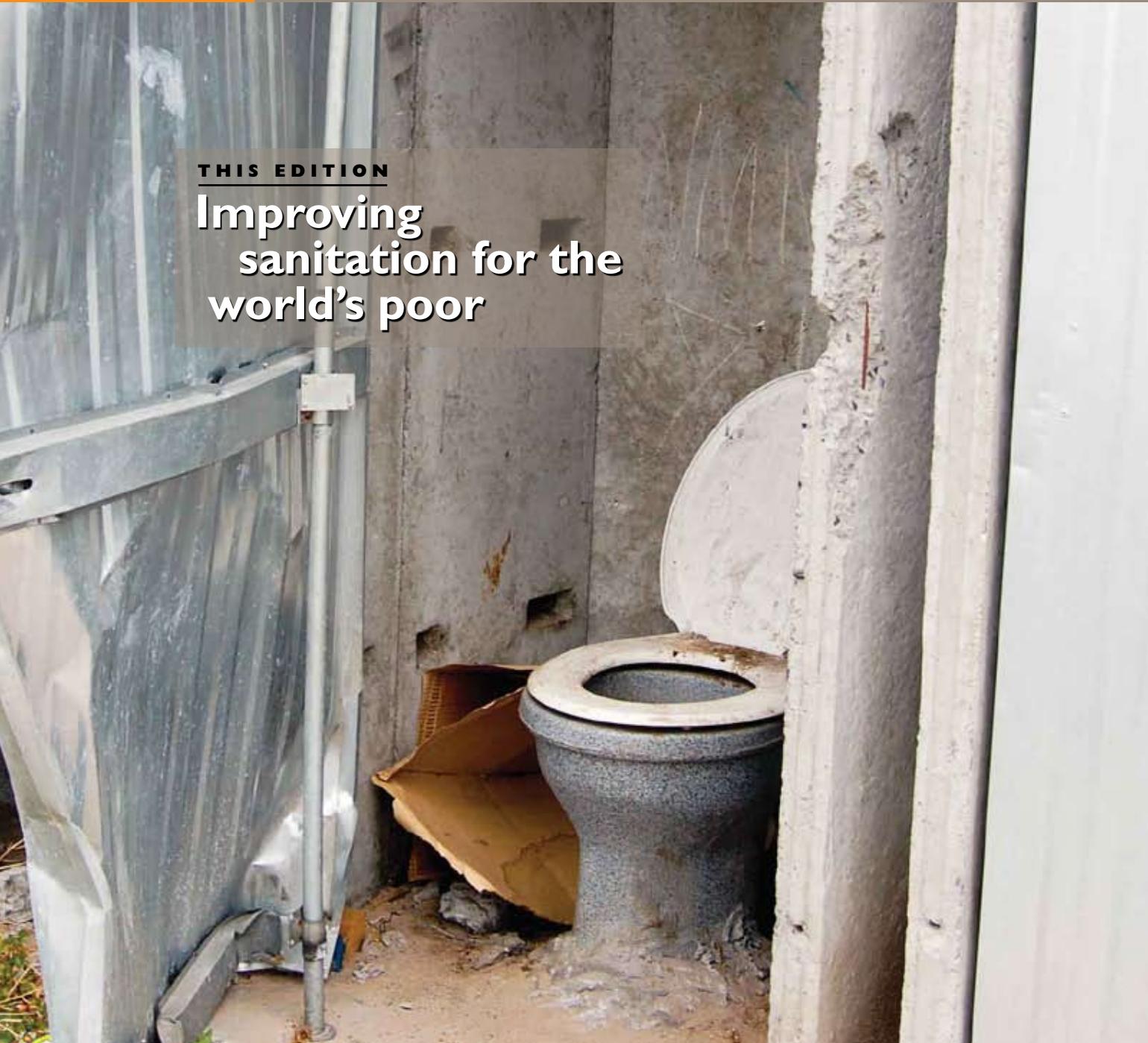
Global Future

Number 1, 2008

A WORLD VISION JOURNAL OF HUMAN DEVELOPMENT

THIS EDITION

Improving sanitation for the world's poor



FEATURING

Clarissa Brocklehurst

Chief of Water, Environment
and Sanitation, UNICEF

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Under Secretary General,
UN-HABITAT

Lester Brown

Founder and president,
Earth Policy Institute

Desmond Tutu

Archbishop Emeritus
of Cape Town

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This award recognises diligent champions for social justice within the World Vision Partnership – those undertaking initiatives at the community and local level, whose excellent work achieves practical change through advocacy.

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what next? in number 2, 2008

Neglected emergencies

Neglected humanitarian emergencies continue to disappear from the world's radar – from our media, government, even humanitarian agendas. Apart from individual initiatives to fund or draw attention to them, there appear to be few co-ordinated efforts to better understand why some emergencies become neglected, or to ensure a stronger co-ordinated response to them. Within some emergencies, there is great disparity in the way different social groups' needs are addressed.

This edition of Global Future will tackle such questions as: Why do some emergencies descend into neglect while others don't? To what extent is this an issue of political will? What defines civil society response to neglected emergencies? How can an over-stretched humanitarian community address all neglected emergencies? How effective are existing humanitarian assessment frameworks for anticipating – and then preventing – emergencies becoming neglected? What are the implications of all this for our responsibility to protect vulnerable groups, notably children?

front cover image: Atlantis is an urban area about 20 minutes from Cape Town in South Africa. Most of the housing here is inadequate and the sanitation is very poor, but there is clean water available. And merely providing toilets does not guarantee their use.

photo: Bronwyn Lee/World Vision

facing page background image: Children in Malawi collecting water at a pump: drinking it, washing in it, and filling buckets.

photo: Gary Dawd/World Vision

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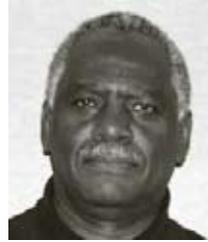
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World Vision

FACING UP TO IT

Talking about sanitation is not “nice”. It’s a matter of life and death. Poor hygiene leads directly to diseases such as cholera and diarrhea – which in turn kill five million people a year, mostly children. Better sanitation facilities could reduce diarrhea-related morbidity by more than **one third**,¹ while improved hygiene, such as proper hand-washing, can halve the rate of diarrheal disease and respiratory tract infections in the first place.²



According to a key United Nations report, more children die today because of unclean water and poor sanitation than from violent conflict, and the sanitation crisis causes greater economic devastation than any act of terrorism. Yet this issue of basic human security is virtually absent from the international agenda.³

The world is on track to meet the Millennium Development Goal for clean water, but we are lagging far behind on the sanitation goal. Global sanitation coverage rose from 49% in 1990 to 59% in 2004, meaning an estimated 2.6 billion people – mostly in Asia and Africa – still lack basic facilities. While some commendable programmes are making headway, in many cases the attention is more on providing water rather than sanitation and hygiene. All three are needed for the well-being of children and their communities. If current trends continue, there will **still** be 2.4 billion people without even basic sanitation in 2015.⁴

In this far-reaching crisis, the urban poor and remote rural communities alike are seriously affected. Children and women have particular vulnerabilities: intestinal parasites and other threats harm children’s health and sap their learning potential; lack of adequate toilets severely affect the health, dignity and safety of girls and women. With improved sanitation and reduced child morbidity and illness, women would have time to participate in other development activities. Economic and social development suffer in countries where workers and students lose days to sanitation-related illness. Then there are the ecological impacts – from neighbourhoods to bio-regions.

This issue of *Global Future* presents some critical responses to the problem. UNICEF’s Clarissa Brocklehurst spells out the implications for children in this, the International Year of Sanitation. Anna Tibajuka of UN-HABITAT looks at the crisis for the urban poor and the dilemma of inadequate resources. Addressing the policy framework specifically, British MP Malcolm Bruce focuses on what governments are (and ought to be) doing, while Henry Northover and Belinda Calaguas highlight the importance of grassroots campaigning to change policy.

At the community level, Petra Bongartz outlines one significant sanitation initiative, and our centre-page feature tells how people in Ethiopia, Vanuatu and Bolivia have mobilised to improve their sanitation, and more. World Vision’s own experience world-wide highlights that the three-pronged “water, sanitation and hygiene” approach can break the cycle of disease and environmental contamination alike. In emergency situations, sanitation can present especially unique hazards where vast numbers of people are displaced and forced to live in very confined quarters, highlighting the value of the Sphere standards in disaster response.

Viewed against the background of declining water resources, this is a crisis of special significance. Population growth, increased urbanisation and increased consumption exert substantial pressure, especially in regions of the world where water shortage is and will continue to be aggravated by climate change. Lester Brown’s article calls us to re-think our water-based sanitation assumptions, and Juliet Willetts and Cynthia Mitchell highlight some innovations for sustainable hygiene and eco-systems.

Local, national and international investments must be stepped up so that the world’s poor have full, informed access to this critical human right, while ensuring water and safe environments for the future. Even more fundamentally, attitudes need to change; we need to face the situation anew. If each of us looked at every community we know and asked: “Would I let my own children play here?”, we might find the will-power and commitment, and a willingness to live as good neighbours. Archbishop Desmond Tutu’s closing reflection reminds us that “what is dirty and unhealthy can be changed into its glorious counterpart” – and that we have a God-given mandate to ensure that this change happens. ■

Mr Joe Muwonge is Associate Director for Africa and the Environment, Policy and Advocacy, World Vision International.

¹ http://www.who.int/entity/water_sanitation_health/factsfigures2005.pdf ² <http://siteresources.worldbank.org/INTWSS/Publications/20389151/HandwashingHandbook.pdf>, pp 5–9 ³ <http://hdr.undp.org/en/media/hdr06-complete.pdf>, p 3 ⁴ http://www.who.int/water_sanitation_health/mdgl/en/index.html

INTERNATIONAL YEAR OF SANITATION, 2008

This is the year to talk about the widespread benefits of improved sanitation, says Clarissa Brocklehurst, and to secure the path to achieving it!



World Vision has provided schools with water tanks to ensure clean drinking water for children in India.
Photo: Anish Premson/World Vision

Voted the most important medical advance of the last 150 years,¹ improved sanitation has yet to fully reach the developing world. The result: millions of deaths each year from preventable diseases.

Improved hygiene behaviours, coupled with access to toilets, not only lower child mortality rates, they also reduce malnutrition and infection rates, increase the number of girls that go to school, and afford a greater dignity and privacy for all – particularly women, who suffer disproportionately from the lack of safe, clean toilets.

Although in the period 1990–2004 an estimated 1.2 billion more people gained access to sanitation, another 1.6 billion people need to gain access over the coming decade to meet the Millennium Development Goal (MDG) target on sanitation.² Developing countries face the biggest challenge.

Recognising the cross-cutting importance of sanitation to all of the MDGs, the United Nations General Assembly declared 2008 the International Year of Sanitation (IYS). The central objective – through advocacy and awareness-building – is to put the global community on track to achieve the sanitation MDG target.

SANITATION AND THE MDGs

In 2000, when the world endorsed the eight MDGs, governments committed themselves to “halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation” (MDG 7, Target 7c). Meeting this target is linked to meeting the other MDGs:

- Sanitation is fundamental to the climb out of poverty and towards economic progress (MDG 1).
- Access to learning is predicated upon the provision of basic sanitation and hygiene facilities in schools, and children’s attendance can only be guaranteed if the burden of sanitation-related disease at home is lifted (MDG 2).
- Ending the degrading practice of open defecation and removing the burden of caring for sick relatives are essential to empowering women and girls (MDG 3).
- Improved sanitation and hygiene are critical to improving maternal and child health outcomes (MDG 4 and MDG 5).
- Basic sanitation and hygiene

provide essential additional protection from opportunistic diseases for people with HIV and AIDS; sanitation and water at home also provide some dignity and privacy to sufferers and their carers (MDG 6).

- As well as dealing directly with sanitation and water, MDG 7 includes a target to improve the lives of 100 million slum dwellers, who are especially vulnerable to the ill effects of a lack of hygiene and sanitation; high population density facilitates the spread of fecal contamination and disease (MDG 7).
- Addressing the sanitation challenge requires input from households and individuals, local and national governments, civil society, the private sector, and religious and social leaders – through both horizontal and vertical partnerships, connecting local people to the international community; indeed, sanitation can act as a catalyst for such partnerships (MDG 8).

Activities during the IYS will focus on communications, dialogue and partnership building. Specific objectives of the IYS include securing commitments and financing, mobilising governments, encouraging sustainable solutions, strengthening institutional and human capacity, and capturing learning.

Every dollar spent improving sanitation creates an average return of \$9.10

The IYS provides a unique opportunity to raise political awareness and the profile of sanitation within the development agenda. The UN Department of Economic and Social Affairs is co-ordinating the IYS globally, in broad partnership with stakeholders including UN agencies, non-governmental organisations, the private sector and academia. At the country level, these efforts are led by national stakeholders.

SO MUCH MORE

The IYS focuses on the central and inter-linked themes of health, economics, social development,

**INTERNATIONAL YEAR OF
SANITATION
KEY DATES 2008**

15–21 March: Sanitation and Hygiene Week
22 March: World Water Day – special focus on sanitation
7 April: World Health Day
5 June: World Environment Day
8 September: World Literacy Day
6 October: World Habitat Day
19 November: World Toilet Day

environmental sustainability and achievability.

Sanitation is vital for health.

Poor hygiene and lack of access to toilets together account for 1.5 million diarrhea-related under-five deaths each year.³ Children under five are most vulnerable to the effects of insufficient sanitation and hygiene. Diarrhea is also closely linked to malnutrition, a condition associated with more than half of all under-five deaths. And under-nourished children, in turn, have compromised immune systems and are at a higher risk for developing pneumonia – which kills more children than any other disease.

This chain reaction illustrates that hygiene and sanitation are fundamental for child survival, especially considering that of 120 million children born in developing countries each year, half will live in households without access to improved sanitation facilities.⁴

In addition to saving lives, improved sanitation can reduce illness due to diarrhea by 35% – up to 190 million cases of diarrhea could be averted each year if sanitation access was improved.⁵ Hand-washing with soap – another key sanitation issue – can decrease incidences of diarrhea by 47%.⁶

Sanitation is a good economic investment. Improved sanitation has positive impacts on economic growth and poverty reduction. Inadequate sanitation leads to many costs including medical treatment of sanitation-related illnesses and lost income through reduced or lost productivity.

According to a recent World Health Organization study, every dollar spent on improving

sanitation generates an average economic benefit of \$9.10.⁷ This amount represents time and effort losses due to distant or inadequate sanitation facilities, lower product quality resulting from poor water quality, reduced income from tourism (due to high risk of contamination and disease) and clean-up costs. Additionally, increases in female literacy (due to increased school attendance where proper sanitation facilities exist) contribute to economic growth. These costs, associated with lack of proper sanitation facilities, can have a major impact on a country's growth and economic development.

Sanitation leads to social development. Where adequate sanitation is coupled with improved hygiene behaviours, there is: less illness; improved nutrition among children; increased learning and retention among school children; higher work productivity among adults; and more dignity and privacy for everybody, especially women and girls. Sanitation also provides women, who are primary caregivers, with greater support for maintaining children's health and domestic cleanliness.

Annual costs are affordable; and if sustained, we'll have world-wide basic sanitation in 10–20 years

Providing safe water and sanitation facilities is a first step towards a physical learning environment that benefits both the education and the health of children. Schools that have separate and private sanitation facilities attract and retain students, particularly girls. Menstruating girls are reluctant to attend schools without toilets, and their parents are reluctant to send them. These missed educational opportunities have a profound effect on human development.

Sanitation helps the environment. Improved disposal of human waste protects the quality of drinking water sources. Each year more than 200 million tonnes of human waste goes uncollected and untreated around

the world, fouling the environment and exposing millions of people to disease and squalor. In regions where a large proportion of the population is not served with adequate sanitation, sewage flows directly into streams, rivers and lakes. Currently about 90% of sewage in developing countries is discharged untreated into watercourses, often polluting the only usable water supply.⁸ Considering that just one gram of feces can contain more than one million bacteria, 10 million viruses, 100 parasite eggs and 1,000 parasite cysts, the health of everyone, but especially children, is at risk as they live and play each day.

Sanitation is achievable! The estimated US\$10 billion annual cost⁹ to halve the proportion of people without basic sanitation by 2015 is affordable – particularly when compared with the benefits of each dollar spent. If sustained, the same investment could achieve basic sanitation for the entire world within one or two decades. ■

Ms Clarissa Brocklehurst is Chief, Water, Environment and Sanitation, for UNICEF. For more information visit <http://www.sanitationyear2008.org>.

¹ *British Medical Journal* online poll to decide the most important medical advance since 1840, 5–14 January 2007, http://www.bmj.com/cgi/content/full/334/suppl_1/DC3

² UNICEF, *Monitoring the situation of children and women* website, "Sanitation: Current status and trends", cited 24 January 2008, <http://www.childinfo.org/areas/sanitation/status.php>

³ UNICEF, *Progress for children: A report card on water and sanitation*, Number 5, September 2006, p 1 http://www.unicef.org/progressforchildren/2006n5/files/PFCEnglish_PDF.pdf

⁴ Circle K International and UNICEF, *Saving lives: The six cents initiative*, 2007, p 5

⁵ World Health Organization and United Nations Development Programme (UNDP), *Economic and health effects of increasing coverage of low-cost household drinking-water supply and sanitation interventions to countries off-track to meet MDG target 10*, p iv, http://whqlibdoc.who.int/hq/2007/WHO_SDE_WSH_07.05_eng.pdf

⁶ World Bank, *Water, sanitation & hygiene at a glance*, November 2003, p 2, <http://siteresources.worldbank.org/INTPHAAG/Resources/AAGWatSan11-03.pdf>; J Ensink, "WELL fact sheet: Health impact of washing hands with soap", Well, <http://www.lboro.ac.uk/well/resources/fact-sheets/fact-sheets-htm/Handwashing.htm>

⁷ World Health Organization and UNDP, *op. cit.*, p 10

⁸ United Nations Population Fund (UNFPA), *The state of world population*, 2001, p 13, <http://www.unfpa.org/swp/2001/pdf/english/chapter2.pdf>

⁹ <http://esa.un.org/iys/achievable.shtml>

SANITATION: A COMMON CAUSE

Poor sanitation undermines the fight against poverty and is an injustice in desperate need of more champions, argues Belinda Calaguas.

Global attention to sanitation is long overdue. The United Nations International Year of Sanitation in 2008 is welcome. Unfortunately, it is too little and fatally late for the millions of children under age five who have borne the brunt of the lack of safe and hygienic means to dispose of human feces. With just seven years remaining to make progress on the Millennium Development Goal sanitation target (MDG 7), it would seem that this particular MDG will be missed – by more than half a billion people, according to some estimates.¹

It isn't because of the size of the task to be undertaken, massive though it is. The target is threatened for a number of reasons.

Public investments are not being made at the levels and speed required. As populations grow, development efforts need to keep pace. Total commitments to water and sanitation are almost stagnant – in real terms, stuck at 1995 levels.² This does not make sense in light of global increases in aid, and specifically aid for health and education.

The Organization for Economic Co-operation and Development (OECD) reported in 2004 that on average it took eight years from aid being committed to it finally being disbursed and spent in the water and sanitation sector.³ On top of this, developing country governments are not investing adequately, even in just maintaining the institutions and infrastructure networks required for sanitation and water supply. Between the two linked sectors, water supply gets the bulk of investment, leaving sanitation even further behind.

GREAT RISK AND LOSS

Change is so desperately needed. Poverty eradication and human development efforts are seriously undermined by inadequate sanitation.

Take education. Sanitation-linked diseases (including diarrhea, the second-largest killer of children under five)⁴ interrupt children's school attendance; repetitive bouts of diarrheal illnesses can affect young children's cognitive abilities.⁵ We know that absence of toilet facilities, especially in schools, can affect girls' attendance, particularly after the onset of menstruation.

Adults suffer, too – and pay a price in terms of lost earnings, lower

productivity, and the cost of medical attention and treatment eating into household income reserves. Poor women, in particular, bear the burden of care for children and other members of the family who fall ill to diarrheal diseases.

Hand-in-hand with costs of medical attention that are unaffordable for poor households, sanitation-linked illness is often deadly. One can argue, too, that if the children who die of diarrhea lived to join the workforce, their contribution to the economy, even at minimum wage levels, could be staggering.

The crisis calls for campaigners with the vigour of 19th-century England's sanitary reformers

Then there is the loss of dignity that women and men suffer for want of a safe and private toilet facility, and the threats women suffer to their personal and physical security as they use the cover of darkness and distance to relieve themselves.

LACK OF COHERENCE

Development circles are still debating policies setting the boundaries of public investments and those of private households. In this vacuum, different development actors advocate competing ideas about the roles of private household, community initiatives, government leadership and the marketplace. And because sanitation has not been a high priority of governments, donors or many non-governmental organisations, the effort and resources spent on its analysis and policy development are low.

There is also not the same level of institutional coherence and strength for addressing the sanitation crisis as, for example, for education and health.

Attention and responsibility for sanitation is pushed down to local governments, and commonly scattered among the various tiers and agencies at that level. Sanitation does not have a powerful champion within central government, unlike the

“big-spending” ministries. There is rarely a unifying set of plans or policies to give coherent direction to disparate agencies. Where some level of regulation exists (e.g. in house building), weak local institutions are unable to enforce it. Civil society actions in the sanitation sector have historically focused on alleviating immediate need in rural and urban poor communities, rather than on advocating and mobilising for change.

A BRIEF HISTORY OF THE LONDON SEWER

As far back as 1290, the Carmelite Friars petitioned the English Parliament to do something about the stench from waste and excrement in the river Thames.⁶ The London fishing industry halved by 1800 because of the state of pollution in the river, shutting down completely by the 1820s.

In 1842, campaigner and sanitary reformer Edwin Chadwick published a damning report on sanitary conditions in Great Britain to shake officialdom into action.⁷ In the poorer parts of the city, cellars and yards were perpetually flooded with wastewater and covered in feces. Death from cholera became commonplace amongst the poor since they also used the river as a source of drinking water. There were even explosions from the methane that built up in some of the covered streams that carried waste to the Thames. Chadwick's contemporary Florence Nightingale also created a stir by reporting how many British soldiers in the Crimean War were dying not from war injuries but from unsanitary conditions in the hospitals.

Yet it wasn't until 1858, when the summer stench from the river hounded parliamentarians out of their chambers situated along the river bank, that politicians gained enough will to legislate the means and public finance needed to address London's long-standing sanitation crisis. The advances in health, lifespan and productivity from the laying down of London's sewers led a recent poll by the *British Medical Journal* to vote sanitation as the greatest medical milestone of the last 150 years.⁸

TOO FEW CHAMPIONS

It is the poorest quintile of households, and women and children, that suffer most from the failings of government and the wider development community. The well-to-do political elite in developing countries is not normally acquainted with the filth and squalor that absence of sanitation facilities brings. They don't really have a stake in solving the problem. Unless, of course, it starts to impinge on their lives. England's sanitation history has some lessons for us on the long tradition of official inattention and inadequate response to sanitation needs (see box).

Today, there are few campaigning champions with the vigour of the Victorian sanitary reformers and municipal socialists of 19th-century England. Yet it is clear that no less than a vigorous public campaign is needed to get politicians in both developing and donor countries to address our global sanitation crisis.

Last year, the End Water Poverty coalition launched a campaign to do just that. Let's hope it succeeds in giving the political and economic elites no choice but to take out a stake in solving the sanitation crisis. Let's also hope that it does

not spare donor governments any embarrassment for their culpability in the needless deaths of millions of children from the lack of a toilet. ■

Ms Belinda Calaguas is Director of Policy and Campaigns for ActionAid UK.

¹ UNICEF, *Progress for children: A world fit for children statistical review*, 2007

² B Frost (WaterAid UK), “Citizens demanding their right to water and sanitation”, 2006 *Stockholm Water Prize Laureates Seminar: Challenges and opportunities within the water sector*, Stockholm International Water Institute, 2006, p 22

³ *Aid for water supply and sanitation*, a report prepared by the Secretariat of the Development Assistance Committee (DAC) of the OECD at the request of The International Water Academy, 2004, p 11, <http://www.oecd.org/dataoecd/37/28/36191814.pdf>

⁴ World Health Organization, *World health report: Make every mother and child count*, 2005, see: http://www.who.int/whr/2005/media_centre/facts_en.pdf; United Nations Development Programme, *Human development report 2006. Beyond scarcity: Power, poverty and the global water crisis*, 2006, p 43, <http://hdr.undp.org/en/media/hdr06-complete.pdf>

⁵ *ibid.*, pp 45–46

⁶ S Halliday, *The great stink of London*, Alan Sutton Publishing, 1998

⁷ E Chadwick, *Report on the sanitary condition of the labouring population of Great Britain*, 1842

⁸ *British Medical Journal* online poll to decide the most important medical advance since 1840, 5–14 January 2007, http://www.bmj.com/cgi/content/full/334/suppl_1/DC3

In one of the oldest villages in Gueni River region of Chad, the first pit latrine was constructed by the village chief in 1979. In 2002, the village health and sanitation committee received assistance from World Vision to complete masonry work for latrines, building two latrines at the primary school and beginning a household latrine programme.

Photo: Djimte Saloman/World Vision



RE-FOCUSED ON SANITATION: GOVERNMENT PRIORITIES AND AID

The UK parliamentarian Malcolm Bruce calls for a cultural shift within donor nations and international agreement on a global plan of action to improve sanitation.



Pre-school children in Thirukkivil, Sri Lanka, learn to brush their teeth as part of their morning activities.
Photo: Sithini Perera/World Vision

The International Development Committee,¹ which I chair, devoted a great deal of attention in 2007 to analysing the international failure to improve sanitation and water in developing countries. It is our job, on behalf of Parliament, to make recommendations to the UK's Department for International Development (DFID) to help put this right.

Our 2007 *Sanitation and water* report shows that although sanitation and water officially feature in the seventh United Nations Millennium Development Goal (MDG 7), the target to halve the number of people without access to water and basic sanitation by 2015 is integral to all the other MDGs.²

Over one billion people face a daily struggle to access and transport clean water. Women and girls tend to bear the burden of fetching water, trading valuable hours that could be spent at work and in school for arduous and often unsafe journeys to the nearest water source. Adequate sanitation is an even greater problem: 2.6 billion people lack access to "improved sanitation",³ which itself is a low marker of adequate provision and could be as basic as a shared pit latrine.

But despite its pivotal importance, progress on the sanitation target in particular is lamentable: on current trends the target will not be met until 2076! This in turn compromises the likely achievement of all eight MDGs. The world is hiding from this international scandal that is killing millions of children every year.

WHY NOT SANITATION?

A key problem is that sanitation is often shrouded in stigma and embarrassment. DFID could help address the taboos around sanitation by using lessons from the successes in tackling the stigma around HIV and AIDS, where a variety of interventions, including information awareness campaigns and community sensitisation, have been successful in changing attitudes.

There also needs to be a cultural shift within donor nations who tend to prefer "doing water" to "doing sanitation" – building water taps and pipes provides a greater sense of accomplishment than building toilets and than the less quantifiable programmes in education and instituting behaviour change necessary

to improve sanitation. We need DFID to make the cultural changes and organise its personnel to approach those more difficult solutions that sanitation requires.

MAKE IT REAL

DFID has re-focused on sanitation and water after taking its "eye off the ball" in recent years. It has doubled its aid to Africa for this purpose and will double it again to £200 million a year by 2010–11. In fact, 2008 is the United Nations International Year of Sanitation and DFID will be setting up its own Sanitation Working Group. DFID also launched a Global Action Plan for water and sanitation in 2006 which aims to ensure more, and more **effective**, aid for the sanitation and water sectors.⁴

By making access to sanitation and water a reality for millions of people world-wide, DFID could secure a series of development "wins", from a vastly reduced global disease burden to large-scale enrolments of girls in school. DFID has shown that it recognises sanitation and water's position at the heart of the development nexus through its proposed Global Action Plan. It now needs – urgently – to secure international agreement to the plan, and to ensure that the necessary personnel and organisational resources are in place to support its implementation. Only then will the development "wins" be truly won. ■

The Right Honourable Malcolm Bruce, MP, is Chairman of the United Kingdom's International Development Committee.

¹ See <http://www.parliament.uk/indcom>

² The International Development Committee, *Sanitation and water: Sixth report of Session 2006–07 (HC 126–I)*, the House of Commons, London, April 2007, <http://www.publications.parliament.uk/pa/cm200607/cmselect/cmintdev/126/126i.pdf>

³ "Improved sanitation" requires access to "adequate excreta disposal facilities, such as a connection to a sewer or septic tank system, a pour-flush latrine, a simple pit latrine or a ventilated improved pit latrine. An excreta disposal system is considered adequate if it is private or shared (but not public) and if it can effectively prevent human, animal and insect contact with excreta." UNDP, *Human development report 2006*, p 409

⁴ Department for International Development, *Why we need a global action plan on water and sanitation*, Crown, 2006, <http://www.dfid.gov.uk/consultations/pubs/files/global-action-plan-water.pdf>

SANITATION FOR THE URBAN POOR: A FRESH LOOK

Cities are growing fast world-wide and slums are increasing. The plight of the urban poor must be addressed, warns Anna Tibaijuka, if we are to achieve improved sanitation by 2015.



Sathivani Muthu Nagar in Chennai is one of the many slums in India where most of the household work, like washing and bathing, is done out in the open. Sewage drains are often too close to drinking water taps, and this is always a potential threat to children.

Photo: Anish Premson/World Vision

The sound of a flushing toilet is so familiar that most people take it for granted. Yet 2.6 billion people in the developing world, including almost one billion children, have probably never experienced the convenience that accompanies this sound.

Sanitary and hygiene conditions stemming from the lack of sanitation are dangerous and even life-threatening for the environmental health of urban residents. Their health, dignity, privacy and safety – especially for women and girls – are compromised by a lack of this basic human innovation.

Research makes clear that inadequate toilet facilities lead to many girls dropping out of school, and increase the risk of chronic constipation, with women in particular forced to delay defecation until night-time or until they can reach a secluded area – which often renders them vulnerable to violence.¹ And consider the risks arising from the hundreds of millions of tonnes of uncollected and untreated human waste.

RAPID GROWTH

Rapid urbanisation and increasing urban poverty are the two primary factors inducing a sanitary crisis in the developing world. Half of humanity already lives in cities and projections indicate that by 2050 that figure will rise to two thirds.²

The cities growing fastest are those of the developing world. And the fastest growing neighbourhoods are the slums. Today, one billion urban residents live in slum conditions: characterised by lack of basic services, sub-standard housing, over-crowding, hazardous locations, insecurity of tenure and social exclusion.

A consequence of this rapid and chaotic urbanisation has been the inability of city and municipal authorities to cope with the pressure of providing even the most basic water and sanitation services to the urban poor.

The international community has to confront the problems of the urban poor if it is to meet the Millennium Development Goal of halving the proportion of people without access to clean water and adequate sanitation by 2015 (MDG 7). Closely linked to this, the living conditions of at least

100 million slum dwellers need to improve by 2020.³

A BLUNT REALITY

Despite significant efforts by governments and development partners, the United Nations says the efforts of the past 15 years need to **double**.⁴ In sub-Saharan Africa alone, 365 million people still need to gain access to sanitation by 2015 in order to meet the MDG target. And the challenge is much more daunting in both South and East Asia: services must reach more than 700 million in each region.

Based on the current trends, the world will miss the sanitation target by more than half a billion people.⁵ These numbers express a blunt reality: “business as usual” won’t achieve the sanitation target.

With rapid, chaotic urbanisation, authorities have been unable to cope

We must wake up to the realities of the urban age – with almost one billion slum dwellers suffering the danger and indignity of inadequate sanitation – and prioritise the needs of the urban poor to ensure the success of local action for global goals.

The international community has set the targets. If we are to meet them we must be prepared to meet at everything anew, to reassess our statistics and re-examine our policies and ask why we have failed in the past.

We must innovate strategies of good urban governance and invest more funds in urban infrastructure. Much more investment is needed in basic toilets, personal hygiene, and laundry and drainage infrastructure that millions of ordinary people need, want and can afford.

PRO-POOR

Increased investment is critical, but even more so is the urgent need for pro-poor policy measures to induce pro-poor institutional changes in service delivery of utilities and municipalities, to better serve the urban poor.

Equally important are community-managed processes, innovative financing arrangements that take into account the needs of the urban poor,

> from previous page

and social marketing strategies that promote sanitation, including improved hygiene practices, improved solid waste management practices and appropriate and affordable technologies.

The United Nations International Year of Sanitation, 2008, is raising awareness to accelerate progress towards MDG 7, strengthening political and administrative commitment to provide sanitation services to the urban poor.

Taboos surrounding sanitation must be broken and “business as usual” give way to innovative action at every level – from the household to the international community. With sufficient political will, financial investment, popular participation, and the most appropriate and affordable technological and hygiene education approaches, we can reach the 2015 Sanitation Goal. ■

Dr Anna Tibajuka is Under Secretary General for the United Nations Human Settlement Programme, UN-HABITAT.

¹ WASH, *For her it's the big issue: Putting women at the centre of water supply, sanitation and hygiene*, Water Supply and Sanitation Collaborative Council, Geneva, March 2006, http://www.wsscc.org/fileadmin/files/FOR_HER_ITs_THE_BIG_ISSUE_Evidence_Report-en.pdf

² UN-HABITAT, *Addressing the challenge of slums, land, shelter delivery and the provision of and access to basic services for all: Overview*, African Ministers' Conference on Housing and Urban Development, 2005, p 4, http://www.unhabitat.org/downloads/docs/2551_58814_overview.doc

³ MDG 7, Target 11: Achieve significant improvement in the lives of at least 100 million slum dwellers, by 2020.

⁴ World Health Organization and UNICEF, *Meeting the MDG drinking water and sanitation target: The urban and rural challenge of the decade*, 2006, p 6

⁵ World Health Organization, “Health through safe drinking water and basic sanitation”, *Water sanitation and health*, cited 24 January 2008, http://www.who.int/water_sanitation_health/mdg1/en/index.html

SANITATION AND THE WELFARE OF CHILDREN

An empowered community that fully realises the contribution of children is a community that accelerates effective change and rewards all members – especially the youngest, says Braimah Apambire.

In 2003, when the government of Ethiopia began a new social marketing approach to sanitation in the Amhara region, each district was constructing an average of 100 latrines per year. Only two years later, that number soared to 26,400 latrines. The approach was a shift away from simply producing and distributing latrine slabs – it increased the community's understanding of sanitation and health, and the high demand for improved sanitation facilities naturally followed.¹ World Vision promotes this type of sanitation marketing in our projects.

As a child-focused organisation, World Vision recognises the devastating implications of the sanitation crisis on the youngest members of affected communities. Today, a child dies every 20 seconds from a preventable sanitation-related disease.² Millions of others suffer chronic and debilitating ill health. Our Water, Sanitation and Hygiene (WASH) programme empowers communities, including school-aged children, to improve their health through behaviour change and by obtaining necessary facilities, thus improving environmental cleanliness and breaking the cycle of disease.

Water, sanitation and hygiene interventions must be integrated and introduced with equal emphasis, whether in communities or emergency situations. This three-pronged approach is being adopted by most agencies, due to the realisation that it achieves far greater health improvements than does providing access to clean water alone.

SELF-BUILT SOLUTIONS

Improved sanitation requires “a process whereby people (women, children and men) effect and sustain a hygienic and healthy environment for themselves”.³ Our projects empower community members to construct household latrines that meet acceptable design criteria, with minimal subsidy. Other structures (such as rubbish pits, bathrooms, wastewater drainage channels and water system aprons) are built to prevent disease.

Nekosgadjibaye Jolie lives with her husband and three children in a modest home at the edge of their village in Chad. “The connection between illness and the lack of latrines became clear during World Vision's training on Environmental Hygiene,” she says. With minimal help (to acquire building materials) the family built a latrine in the corner of the compound. Besides reducing the time and danger of walking to the bush, the entire family is now at less risk of disease.

Community participation is also crucial, beyond construction, and includes:

- increasing awareness of the causes and prevention of water-borne and water-related diseases;
- teaching appropriate health, hygiene and sanitation behaviour change; and
- encouraging local governments and teachers to integrate health and hygiene promotion into school curricula – often incorporating UNICEF’s framework for School Sanitation and Hygiene Education (SSHE).

Projects focus on developing life skills, creating a healthy and safe school environment, and family and community outreach activities.

LITTLE BY LITTLE

Children are important agents of change within their schools, communities and homes. In Peru, 12-year-old Kaely promotes healthy habits to her classmates. Using boards in the classroom, practical examples and simple language she teaches about parasite infestation and how to prevent diseases.

“I see my friends getting sick because they do not know what they are supposed to do – but I can help them through the things I teach,” says Kaely. “I also talk to them about malnutrition.”

Children have a great capacity to adopt and champion change

To improve household hygiene and health, hand-washing among care-givers and those responsible for food preparation is vital. In Peru, mothers tell us that it is the children who demand hand-washing in their households, reminding parents when they forget. We include children in our training sessions because they are in the middle of this process and have a great capacity to adopt – and champion – behaviour and attitude changes.

World Vision is increasingly focused on greater information-sharing among communities and the global WASH sector, and on the research and development of

approaches in community capacity-building, latrine promotion and children’s involvement.

There is growing awareness in the global community of the sanitation crisis, and greater efforts are being made to reduce the disparity of access.

While there is a great amount of work ahead, enormous advancements can be made with concentrated effort and by involving and empowering communities and children. The future is in promoting learning around sanitation – and having children like Kaely involved is critical. Let’s be led by Kaely’s example when she says: “I am doing something for [the community] and I am very excited about that.” ■

Dr Braimah Apambire is Director of WASH (Water, Sanitation and Hygiene) for World Vision United States.

¹World Health Organization and UNICEF, *Meeting the MDG drinking-water and sanitation target: The urban and rural challenge of the decade*, WHO Press, Switzerland, 2006, p 22, http://www.who.int/water_sanitation_health/monitoring/jmpfinal.pdf

²United Nations, International Year of Sanitation website, “Sanitation is vital for human health” <http://esa.un.org/iys/health.shtml>

³World Health Organization, *Sanitation and hygiene promotion: Programming guidance*, WHO Press, Switzerland, 2005, p 1, http://esa.un.org/iys/docs/san_lib_docs/Sani_Hygiene_Promo.pdf

⁴ See http://www.unicef.org/wes/index_schools.html

In Peru, Kaely and her fellow School Municipality members train their classmates in hand-washing, treating water for consumption and other healthy habits. Photo: Ester Luis/World Vision



Integrating water, sanitation and hygiene boosts livelihoods

ETHIOPIA

“In the Soro district of southern Ethiopia, World Vision’s Sibiya Spring Development Project (SDP) is improving water supply and sanitation for eight communities. In all, 21,000 people and 10,000 animals are receiving drinking water through a sustainable potable water scheme developed from three potentially high-discharge springs. Recognising that integrating water, sanitation and hygiene is key to achieving better health, we launched the Sibiya SDP alongside hygiene promotion and sanitation provision initiatives.

The project’s major activities include:

- capping three springs, contributing to a total yield of 11.5 litres per second
- constructing a masonry reservoir and an 18.4-kilometre galvanised steel pipe
- constructing 28 water points, 18 washing basins and 12 cattle troughs
- producing and distributing 600 latrine slabs

In terms of capacity building, communities have learnt about improved environmental protection, environmental sanitation, hygiene, diarrheal disease management and irrigation practices. To ensure sustainability of the scheme, we trained community members as water technicians and committees to operate and maintain water supplies, and in financial management.

This practical project extended to agriculture, including fruit planting and management, and – by implication – livelihoods. We purchased apple trees and distributed them to 22 households, and vegetable seeds also have been supplied. People in the community have benefited from this both nutritionally and financially.

EMPOWERING FAMILIES

Thirty-five-year-old **Ato (Mr) Markos Handiso** and his 30-year-old wife **Weizero (Mrs) Belaynesh Ermias** have three children: Birtukan Markos, Tigist Markos and Wudinesh Markos. They live joyfully and with the spirit of hospitality, but have striven to overcome the catastrophes of water-borne disease and epidemics such as diarrhea and amebic dysentery caused by drinking unprotected, untreated, muddy river water.

Even to fetch that dirty water in the past, Belaynesh and the children travelled more than an hour each way. To wash their clothes, they had to search for a bigger stream, which cost them an entire day. The family yearns to have a better future.

“Before the Sibiya Spring Development Project,” Markos said, “I had nothing creditable in my hand. I used to live a very miserable life. But after the project started, I got involved in various activities from the very beginning of the implementation phase. I have worked as a daily labourer many times and now I work as a guard. I have also been trained as a water technician.



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“Saving the money I earned, I bought an ox for 600 birr¹ (US\$64) and a cow for 540 birr (US\$58). Moreover I have bought fertiliser and seed, and harvested 500 kilograms of wheat and a sack of barley, which I have never ever harvested before! I have now received seeds of other vegetables from the programme to produce more.”

CHANGING LIVES

The project began in April 2004 following identification, formulation, analysis and design phases, all of which were undertaken by World Vision’s Shenkolla Area Development Programme with government support. Implementation is possible through matched funding from USAID, World Vision United States and World Vision Ethiopia.

“now even our little children use the latrine”

The Sibiya SDP is one among many projects playing a vital role in the lives of the rural communities, benefitting thousands of people through their activities. During the construction phase alone, many benefited from the job opportunities. Overall, there has been a tremendous and positive effect on the lives of many households, like that of Markos and Belaynesh.

When asked what impact the project has had on his life and the lives of his family, Markos smiles, saying: “We had no toilets before; we used our whole garden as a toilet. Often we felt ashamed when receiving guests because of the large number of flies surrounding our house. But after our training and when we received latrine slabs, we dug a traditional pit and now even our little

children use the latrine. You don’t find a lot of flies in our surroundings any more.”

He adds: “I have cultivated the land around the water point and we always water the vegetables collecting the overflowing water, as we learned in the training sessions. All in all, the project has had a life-changing impact on my family.”

Belaynesh, for her part, says: “I have completely forgotten my poverty, the life in which I have been entangled for years. I am no longer in a state of despair; rather, I am enjoying release. I think I have been transformed.” ■

Reported by Mr Abraham Asmare, Water and Sanitation Manager, and photographed by Mr Desalegn Berga, Shenkolla ADP Agriculture Facilitator, World Vision Ethiopia

¹ Conversion rate: One ETBI (Ethiopian birr) to US\$0.11



Photos

- Right – Belaynesh (middle) and her neighbours washing clothes using Sibiya Spring
- Above right – Markos washing his hands after using the dry pit latrine
- Left – Belaynesh with her family working in their garden



life

UND THE GLOBE

Promoting change with Wota mo Sanitesion

VANUATU

“Chief Kenery was very happy to have the World Vision team arrive in his village. “This is the first time anyone has come here to teach us anything,” he said. We were there to facilitate a week-long planning workshop using the Participatory Hygiene and Sanitation Transformation (PHAST) methodology as part of the Wota mo Sanitesion (Water and Sanitation) project.

PHAST has been utilised increasingly in many countries where World Vision works, and more recently in the Pacific region. PHAST promotes hygiene behaviours, sanitation improvements, and community management of water and sanitation facilities.¹ It aims to take people beyond consultation or information and allows them to be masters of the solution. In principle, it facilitates a shift – from technical interventions measured in terms of targets to participatory development.

Chief Kenery’s village is one of six remote rural communities of Vanuatu’s Sanma Province for which the Provincial Government and Rural Water Supply sought World Vision’s assistance to address issues of water quality and supply and the high incidence of water- and sanitation-related diseases.

In rural areas of many developing countries, the majority of people do not have year-round access to safe water and improved sanitation. The Vanuatu national estimate for rural access to improved sanitation is 42%.² Nationally, diarrhea was reported as accounting for 11% of all deaths of children under five in 2000–03;³ skin disease, parasitic worms and diarrhea are the third, fourth and fifth leading causes of morbidity respectively. If they don’t kill, these illnesses adversely affect people’s health, productivity and dignity.

INTERACTIVE ANALYSIS, COLLABORATIVE SOLUTIONS

The sanitation workshop was held in the sandy nakamal (public meeting place, often reserved for Chiefs) overlooking the Pacific Ocean. Planning sessions were held at times determined by the participants so as to fit in with household and other village routines – which enabled more women to participate.

The workshop began with Chief Kenery telling the story of how his village came to be. He told how his people had moved further up the coast to gain access to land, and how they had established their village and their irrigated taro gardens by the river where it enters the sea. “When we came here I was a small boy and my father brought us here,” he recalled. “Now we have grown into a village but we share the customs and language of our cousins who are still where we came from.”

Along with the customs and language brought to this new place, came their sanitation and hygiene practices. They remained unchanged: toilets were still open pits, the beach or the bush. Hand-washing was not common, and water collected from unprotected seasonal sources was typically untreated and stored unsafely in homes, accessible by dogs, pigs and other domestic animals.

Community members described the health problems that they faced. With the nearest health centre a day’s walk away, local causes and cures for illness are taken very seriously and are the starting point for bringing about change. Diarrhea was identified as a common problem (reinforced by the results of the household survey conducted during the workshop). Of the children under five, as many as half reportedly had experienced diarrhea in the previous month and skin diseases were commonplace. Repeated diarrhea episodes were affecting children’s development and nutritional status. “Sit sit wota [diarrhea] always affects our children,” said one father. “It also affects adults sometimes.”

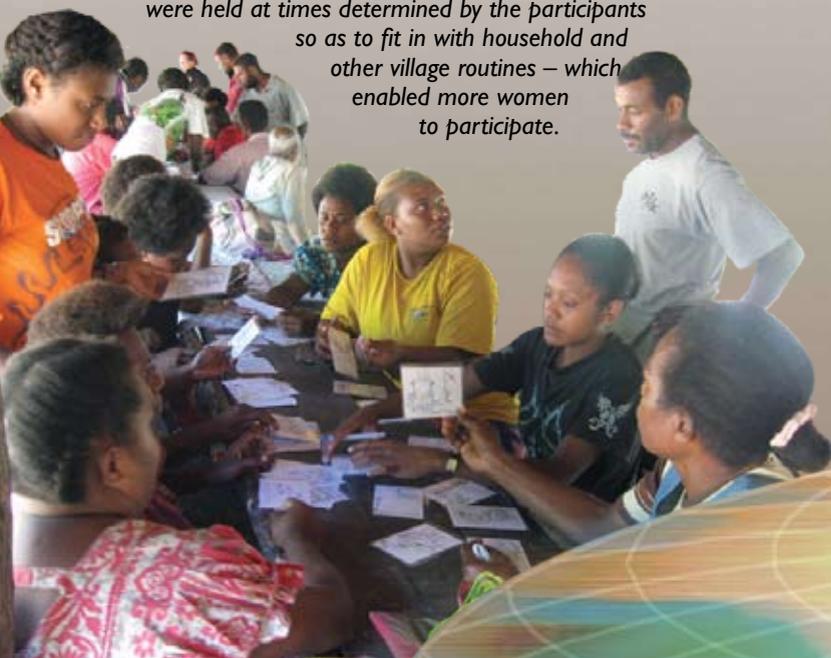
The village mapping, household survey results and health issues were shared pictorially – or with

Photos

Left – Sorting pictures depicting particular behaviours related to hygiene and disease contamination routes

Right – One family that participated in the project

Photos: Gabrielle Halcrow and Karen File/World Vision



Global
VOICES OF LIFE FROM ARO

“I see it’s important to wash hands after the toilet”

stones, shells and seeds – so that all information was tangible and visually explicit and could be arranged in order of seriousness and/or priority through discussion. This physical process of interactive inquiry and discovery was both fun and informative and enabled people to analyse the disease transmission paths and hygiene practices. A plan to block the contamination routes was then developed. Chief Kenery was involved in all aspects of the workshop and planning. His enthusiasm and good humour encouraged other members of the community to participate – women and men together.

One mother commented, “I’ve never known that diarrhea is caused by not washing hands. I see now why it’s important to wash hands after going to the toilet, even if the hands do look clean. After the session on hand-washing yesterday and the tippy tap⁴ demonstration, I went home and made two tippy taps: a smaller container which is hung lower for my young children and a bigger container hung higher for the adults. My son went to the tippy tap and washed his hands this morning even when he had not been to the toilet.”

The village people developed their own plan to address the issue of diarrhea. It included outcomes, timelines and persons responsible for overseeing each of the three parts of the plan: personal hygiene, sanitation (toilet and refuse facilities), and clean, protected water supplies. By the end of the workshop, every household had at least one “tippy tap”.

World Vision will be available to provide technical support and assistance, but the ownership of the plan and the resulting activity is very much with the people. “Our expectation was that World Vision would come in and tell us that they are building our water system for us,” said the community’s pastor. “But during the planning we learned that we have to make a contribution as well. Thank you for helping us to make our plans.” ■

Reported by Mr John Donnelly, Country Co-ordinator for Vanuatu, the Solomon Islands and the Philippines, and Ms Gabrielle Halcrow, Regional Programme Co-ordinator, both with World Vision Australia

PHAST

Participatory Hygiene and Sanitation Transformation (PHAST) is a methodology for helping communities to improve hygiene behaviours, prevent diarrheal diseases and manage water- and sanitation-related diseases. The underlying basis of PHAST is that “no lasting change in people’s behaviour will occur without understanding and believing”.⁵

PHAST uses specific adult learning tools developed in each context to facilitate a process for community groups themselves to discover the fecal–oral contamination routes of disease. They then analyse their own hygiene behaviours in light of this information and develop a community plan to block the contamination routes.

PHAST evolved out of a collaborative effort between different stakeholders in the sector, including the World Health Organization and the United Nations Development Programme, which generated a series of innovative field tests in Africa in the 1990s. It is now used widely across the globe in the water and sanitation sector.

¹ M Simpson-Hébert, R Sawyer & S Wood et al., *PHAST step-by-step guide: A participatory approach for the control of diarrhoeal disease*, World Health Organization, 1998, http://www.who.int/water_sanitation_health/hygiene/envsan/phastep/en/index.html

² World Health Organization/UNICEF, *Joint monitoring programme for water supply and sanitation: Coverage estimates, improved sanitation, Vanuatu, 2004*, p 2

³ World Health Organization, *Mortality country fact sheet: Vanuatu, 2006*

⁴ A tippy tap is a plastic bottle of water with a small hole in the lid, and with soap attached, that is operated by the elbow or a string to release water for hand-washing. It can be made easily and locally as the first step towards improving hand-washing practices, a key barrier in breaking the fecal–oral transmission path.

⁵ See M Simpson-Hébert, R Sawyer & S Wood et al., *op. cit.* and M Simpson-Hébert, R Sawyer & L Clarke, *The PHAST initiative: Participatory Hygiene and Sanitation Transformation – A new approach to working with communities*, World Health Organization, 1997, p 6, http://www.who.int/water_sanitation_health/hygiene/envsan/EOS96-11a.pdf



Bolivia's water war

BOLIVIA

Water is essential to human life – for sanitation and health, as well as for drinking, cooking and agriculture. In 2000, when the Bolivian water system was dramatically reformed without community involvement, and price rises threatened access, communities fought to regain control of their water supply, reports Andrés Vera...

“The World Bank’s stabilisation policy for Bolivia in the 1990s pushed for the privatisation of all basic services. State-run corporations were handed to the private sector (mostly international consortia) with the condition that they invest in and improve services. As an incentive, the Bolivian government granted corporations a concession of 30–40 years and over 60% of revenue.

It was in this political and economic climate that a private corporation was able to take “ownership” of the water system in the city of Cochabamba in 1999, negotiating a contract with the ruling political party of the time.

WATER IS LIFE

Clean water is crucial for the health and hygiene of families, used not only for drinking but for cooking and bathing. Most Bolivian rural communities had wells that weren’t “owned” by anyone, but for hundreds of years had supplied them with water – for drinking, bathing, cooking, watering crops and animals. Sometimes, outsiders helped repair or improve them: in 1998, World Vision projects were helping several communities of Cochabamba to implement wells and irrigation systems.

One project involved expanding the drinkable

water system to help 700 families, including over 1200 children. Before this project, the community had to bring water into the area by truck. It was very expensive. People who couldn’t afford the trucked-in water had to drink from an open drain that caused health problems, affecting children and adults alike. Other projects ensured farmers had enough water each week to cultivate carrots, onions, potatoes and other local products to sell in major markets in the cities of Oruro, Cochabamba and Santa Cruz.

But in late 1999, Law 2029, known as “the law of potable water and sewers”, was passed stating that all water systems would be privatised whether they worked properly or not. Wells that fed rural communities became the private property of a foreign company. Water prices increased by 200–300% in a very short time and were said to cover the costs of improved service.

The population was outraged, and massive public protests began. A group including environmentalists, lawyers and economists began a fight to modify the contract, leading to the creation of a large social movement, La Coordinadora por la Defensa del Agua y de la Vida (Co-ordinator for the Defence of Water and Life). The government countered with a campaign of its own. But with the support of the newly aware population, the petition simply asking for a revised contract became a demand that the private corporation leave Bolivia.

The government harshly repressed the escalating protest, declaring a curfew and deploying troops in January 2000. Six people died and more than 1000 people were wounded in a three-month “water war”. In April 2000, the private corporation left Bolivia and Law 2029 was repealed.

*The “water war” ushered in a period of greater grassroots participation in Bolivia because it showed that community participation is **crucial** when developing regulations, policies and institutions related to water and sanitation.¹*

The Drinking Water and Sewage Municipal Service (SEMAPA) was reinstated, with improved participation. And the Inter-institutional Water Council (CONIAG) was created, as a new forum in which government representatives, civil society, the private sector and academic institutions participating.²”



“no outsiders should turn water into just merchandise”

Oscar Olivera, spokesman for La Coordinadora por la Defensa del Agua y de la Vida tells the story...

“I started working in a shoe factory in 1995, then became a union leader defending workers’ rights. When the local water system was to be privatised – turning water into one more purchase item – it was not important to my union. We had to pay for water anyway... we just didn’t want it to be too expensive.

But the first voices of alarm came from the countryside when peasants asked us to help defend their inalienable right to water, life and nature. Our view changed completely. This was a problem not just for the poor, but for all of us. We remembered the values and beliefs of our ancestors regarding water and life: that water is a generous gift that belongs both to all and to no-one, and we knew that no outsiders should turn water into just merchandise.

More than half the population of Cochabamba did not have access to privatised potable water, a third had their own wells and underground sources, providing mostly untreated water. But privatisation meant not only losing the water services but **sources** as well – community-built water systems, some used by peasants for generations. The corporation just took water systems and fields without improving the quantity or quality of water, and also increased prices. People had to stop eating or struggle to pay often more than 40% of their monthly income just for water. People stopped paying.

This was about the loss of cultural patrimony; about watering or not watering grain, seeds and life itself (for water is life); and about a repressive economic model being imposed in our country, affecting us all. This was a usurious model that only valued money, and destroyed humanity and nature. The government was not going to solve the problem, so we fought for the recovery of water as a common right. We regained our voice through La Coordinadora por la Defensa del Agua y de la Vida, restoring the decision-making process to the people: this time, we would **all** decide on the issues that affect us so deeply.

More than discussing what kind of water we wanted, we discussed what kind of **life** we wanted, and what our leaders were offering. This changed the life of Bolivians, our understanding of democracy, and the dreams we have for our children.”” ■

Reported by Mr Andrés Vera, Communications and Marketing Manager, World Vision Bolivia

¹ R Bustamante, “The water war: Resistance against privatisation of water in Cochabamba, Bolivia” in REGA / Global Water Partnership South America, vol. 1, no. 1, January 2004, p 37, <http://www.eclac.cl/samta/noticias/documentosdetrabajo/8/23358/RegaSam000101.pdf>

² *ibid.*, p 43; see also G Barja, D McKenzie and M Urquiola, “Bolivian capitalization and privatization: Approximation to an evaluation” in Reality check: The distributional impact of privatization in developing countries, J Nellis and N Bordsall (eds), Center for Global Development, 2004, p 133, <http://siteresources.worldbank.org/DEC/Resources/ch4.pdf>

Photos

Right – Oscar Olivera visiting the first community to face the water problem in Cochabamba
Photo: Andrés Vera/World Vision
Left – In 1998, Victor Vasquez, 14, lived in a poor community near Cochabamba where the people suffered from a lack of clean water, and many died, including Victor’s 2-year-old sister. World Vision helped install a new clean-water system.
Photo: Pablo Carrillo/World Vision



life
UND THE GLOBE

SANITATION IN EMERGENCIES

The global humanitarian community is beginning to realise that swift, co-ordinated and culturally-appropriate action is essential to ensure sanitation in emergency contexts, says Rod Jackson.



In September 2007, approximately 20,000 people fled their flooded houses and lived for weeks on the side of the road leading to Kobu Said Khan in Pakistan. Like many people affected by emergency situations, they faced scarce water and food supplies, and a lack of sanitation and health facilities.
Photo: Dana Palade/World Vision

My first on-ground exposure to a humanitarian emergency was in November 1984, shortly after the world had learnt of the widespread famine in Ethiopia that went on to affect some eight million people. Weeks after the dramatic early pictures appeared on television screens around the world, I arrived in northern Ethiopia for my first assignment with World Vision as a water and sanitation engineer.

Our relief centre in Alamata was surrounded by tens of thousands of people who, having exhausted their own meagre resources, had walked up to 50 kilometres (31 miles) seeking assistance. One of the enduring memories I have of my arrival is of the large quantity of human feces littered throughout the area. This was just one feature of the overall scene of suffering, disease and death in which these people were trapped.

On reflection, the random scattering of feces was hardly surprising given the huge number of people and the total lack of facilities at that stage. In time, pit latrines were constructed and things slowly improved, but my initial impression graphically illustrated how critical it is to provide appropriate sanitation facilities as early as practicable, to protect the health and preserve the dignity of disaster-affected communities.

URGENT, EFFECTIVE RESPONSE

Humanitarian agencies have put considerable effort into defining appropriate approaches to providing conditions that are conducive to good health and human dignity for disaster-affected populations. The widely-accepted *Humanitarian charter and minimum standards in disaster response*, produced by the Sphere Project,¹ identifies the minimum standards to be achieved in five key sectors: water supply and sanitation; nutrition; food aid; shelter; and health services.

Water supply and sanitation are critical to survival in the initial stages following a disaster. Disaster-affected populations are generally much more susceptible to disease – largely due to inadequate sanitation, inadequate water supplies, and poor hygiene. The most significant are diarrheal diseases, together with infectious diseases transmitted through the fecal–oral route. Other diseases carried by vectors (flies, mosquitoes, etc.) associated with solid waste and

ponded water are also of concern. In some emergency situations affected communities are forced to live in over-crowded situations, increasing the opportunity and risk of disease transmission. Early and appropriate sanitation and hygiene interventions are particularly critical in such circumstances.

The main objective of water supply and sanitation programmes in disaster situations is to reduce the potential for the transmission of these diseases. This is achieved by promoting good hygiene practices, providing safe drinking water and reducing environmental health risks, to allow people to live with good health, dignity, comfort and security despite their circumstances.

Socio-cultural considerations are paramount in programme success

In the Sphere standards, and therefore for most humanitarian agencies, the term “sanitation” refers not only to excreta disposal, but also to vector control, solid waste disposal, and drainage.

While the Sphere standards do not prioritise water supply above sanitation, in practice water supply generally has been accorded more attention. Yet it is widely accepted that the health benefit of providing safe water alone is far lower than if adequate attention is also given to sanitation and hygiene promotion. Humanitarian agencies are now starting to put more effort into these equally important areas in their disaster response planning and protocols.

KEY CONSIDERATIONS

So what needs to be addressed in planning and implementing a sanitation programme in a disaster context? While it may sound relatively straightforward to provide adequate sanitation provisions in disaster response situations, a successful sanitation response is actually quite complex.

The physical facilities are often extremely basic, but there are many challenges in ensuring that their location and design are appropriate, and socio-cultural

issues are of paramount importance in the success of sanitation programmes.

Information is needed from the affected population on issues such as cultural practices and beliefs related to health and hygiene, women's sanitary practices during menstruation, materials commonly used for anal cleansing, and the like. These are deeply personal and private matters, and there is often an understandable embarrassment or awkwardness when people are asked to provide information on such topics, particularly when already suffering trauma and loss from their experience of a disaster.

Based on the Sphere Standards, the following rudimentary (but not comprehensive) list of key areas for attention provides some sense of the challenges faced by agencies:

- Involve the disaster-affected population in the assessment, design and implementation of the intervention. Of particular note is that in most refugee or displaced situations, women and adolescent girls can be vulnerable to sexual violence or exploitation. Obtaining strong participation from women in planning and implementing sanitation programmes minimises these risks, and helps to ensure that the entire affected population has safe, equitable and easy access to appropriate sanitation.
- Maximise the use of local skills, capacities and materials.
- Ensure that people have adequate numbers of toilets, sufficiently close to their dwellings to allow rapid, safe and acceptable access at all times of the day or night.
- Arrange the use of toilets by household(s) and/or segregating by sex.
- Incorporate toilet provisions that:
 - are designed and built for use by all sections of the population, including children, older people, pregnant women, and people with physical and mental disabilities;
 - allow for the disposal of women's sanitary protection

or provide women with the necessary privacy for washing and drying sanitary protection cloths;

- include hand-washing facilities, including soap, for all users;
- provide a level of privacy consistent with the normal experience of the users;
- are easy to clean and maintain through a community-managed approach, with women and children well represented; and
- are located so as to avoid risk of contaminating water sources.

- Minimise the risk of vector-borne diseases by:
 - settling displaced populations in locations that minimise exposure to mosquitoes;
 - keeping the mosquito population as low as is practicable;
 - ensuring all at-risk populations have an understanding of vector-borne disease, together with appropriate material assistance (e.g. treated mosquito nets) for protection; and
 - providing communities with well-planned, well-built and well-maintained drainage to keep the area free of standing water and wastewater.
- Establish a hygiene promotion programme to ensure behaviours appropriate to the available facilities and commensurate with good health.

A NEW APPROACH

In addition to being equipped to design and implement sanitation programmes of a high quality which reflect the importance of sanitation to communities' well-being, humanitarian agencies need to improve their co-ordination.

As an outcome of the United Nations Humanitarian Reform agenda, a number of Global Clusters have been established, each being led by a UN Agency.² The WASH (Water, Sanitation and Hygiene Promotion) Cluster falls under the leadership of UNICEF.

The world is lagging behind its Millennium Development Goal target for improved sanitation, and Humanitarian Reform promises to accelerate global coverage. The cluster process is intended to ensure sufficient global capacity, predictable leadership, strengthened accountability and strategic field-level co-ordination and prioritisation. Most significant humanitarian agencies involved in water and sanitation in emergencies either participate in or are connected with the WASH Cluster, and are working together to improve their preparedness and co-ordination protocols.

This is a relatively new initiative, yet limited field experience indicates that this global approach is assisting field implementation, and leading to some overall improvements in the WASH sector response. ■

Mr Rod Jackson is Water and Sanitation Specialist for World Vision Australia and for World Vision's Global Rapid Response Team.

¹ Produced by the Sphere Project in 1998 (First Trial Edition), in 2000 (First Final Edition) and in 2004 (Current Edition). See <http://www.sphereproject.org>

² <http://www.humanitarianreform.org>

Do you know?



- ▶ A British Medical Journal online poll in 2007 declared that sanitation (clean water and sewage disposal) is considered the most important medical advance since 1840. (See: http://www.bmj.com/cgi/content/full/334/suppl_1/DC3)
- ▶ It was reported in 2004 that on average it took eight years from aid being committed to it finally being spent in the water and sanitation sector. (See: <http://www.oecd.org/dataoecd/37/28/36191814.pdf>)
- ▶ A family of five in India, producing 250 litres of excrement in a year and using a water flush toilet, requires 150,000 litres of water to wash away its wastes. (S Narain, "The flush toilet is ecologically mindless", Down to earth, 28 February 2002, pp 28-32)
- ▶ Every dollar spent on improving sanitation generates an average economic benefit of \$9.10. (See: http://whqlibdoc.who.int/hq/2007/IWHO_SDE_WSH_07.05_eng.pdf)

PROMISING INNOVATIONS FOR SUSTAINABLE HYGIENE SYSTEMS AND ECO-SYSTEMS

Sanitation systems need to be sustainable and consider not only health, but economy and eco-systems – and they must be suited to each context, explain Juliet Willetts and Cynthia Mitchell.

Our sanitation approach might need some re-thinking as we seriously consider sustainability. In both rural and urban environments, several issues arise from current approaches. Use of pour-flush toilets in rural areas where the required water is not easily available undermines the use and effectiveness of sanitation, and in some locations contaminates either groundwater or surface water. It also prevents the use of nutrients in local agriculture and associated potential economic gains for the poor, who pay the related cost of commercial fertiliser – the costs to them and the environment.¹ In urban areas, in those cases where household wastewater is collected, it is mainly discharged without treatment. This leads to large-scale nutrient problems in the water and drastic shifts in local aquatic eco-systems, not to mention the public health risks. Most of the costs of such an approach are associated with transporting the waste rather than treating it.

PRINCIPLES

So what are the other options? Indeed, what is “sustainable sanitation”? The Sustainable Sanitation Alliance

(SuSanA),² formed in 2007, has developed five key criteria that pertain to (i) health, (ii) environment and natural resources, (iii) technology and operation, (iv) financial and economic issues, and (v) socio-cultural and institutional aspects.

Of particular interest in this article: how are the criteria about “environment and natural resources” defined? SuSanA includes a focus on all the energy, water and other natural resources required for construction, operation and maintenance, as well as the degree to which recycling and re-use is practised (e.g. through safe re-use of wastewater or composted material, recycling of nutrients for agriculture and production of renewable energies).

Along similar lines, sustainable sanitation systems are designed for minimum resource use and maximum resource re-use, following nature’s tendency towards cycles rather than linear systems.³

Sustainable sanitation follows nature’s tendency towards cycles rather than linear systems

The most “sustainable” sanitation system must reflect the given location and context, including geography, population, economy and culture.⁴ In general, we need to consider **less use of water-based systems, greater use of a range of system scales** (from individual house, to neighbourhood, to community cluster, to town/city, etc.), and **explicit mechanisms to allow recycling of nutrients** for agriculture and energy production.

“WHOLE SYSTEMS”

But how do such principles translate to programmes and policies that support sanitation? Above all, they entail situating sanitation initiatives in a “whole systems” perspective, so that not only health but also local economies and eco-systems are explicit parts of the equation.

Communities need to be provided with a full range of options to choose from. They

also need to fully comprehend the consequences of each type of system for them, and for their local economy and environment, in the long run. Particularly, good designs of low-cost waterless sanitation need to be available and, through culture change, sanitation practitioners and recipient communities must overcome the current view that water-based systems are “better” or “higher-status”.

In the policy realm, we need a serious re-think of which approaches are supported and why. For example, in urban areas we need to consider different system scales – particularly nodal, cluster-scale systems as these represent the direction of leaders of the international water industry; they permit much higher levels of resource recovery and re-use, saving significant water and energy.

There is also a need for environmental issues to be dealt with in national plans for sanitation and water, and to be an explicit part of regulation and monitoring.

If we take these incremental steps to move towards sustainable sanitation systems that involve community decision and are supported by policies that encourage minimum resource use and maximum resource re-use, we’ll preserve sorely needed water and support more sustainable forms of agriculture and local business. In doing so, we ensure longer-term preservation of local and global environments and eco-systems – an outcome precious to us all. ■

Dr Juliet Willetts is Research Principal and Associate Professor Cynthia Mitchell is Research Director for the Institute for Sustainable Futures. <http://www.isf.uts.edu.au>

¹ J Rockström et al., *Sustainable pathways to attain the Millennium Development Goals: Assessing the key role of water, energy and sanitation*, Stockholm Environment Institute and Stockholm International Water Institute (SIWI), 2005, pp 48–58, http://www.ecosanres.org/pdf_files/MDGRep/SustMDG31Auglowres.pdf

² <http://www.sustainable-sanitation-alliance.org>

³ J Willetts & C Mitchell, *Transdisciplinarity as a source of insights to sustainable sanitation*, poster presentation at IWA Advanced Sanitation Conference, Aachen, Germany, 12–13 March 2007, see: <http://datasearch.uts.edu.au/isf/about/details.cfm?Staffid=2468>

⁴ *ibid.*; Sustainable Sanitation Alliance (SuSanA), *Towards more sustainable sanitation solutions*, SuSanA Statement Draft, May 2007

COMMUNITY-LED TOTAL SANITATION

The provision of sanitation facilities does not guarantee improved or sustainable sanitation – behavioural change is needed, argues Petra Bongartz.



Women's groups involved in Community-Led Total Sanitation (CLTS) in Himachal Pradesh, India. Women's involvement is crucial for CLTS.

Photo: Petra Bongartz/Institute of Development Studies

“Where do you poo?” It is this simple, direct and often taboo question – usually paraphrased in the vernacular¹ – that Community-Led Total Sanitation (CLTS) takes as its starting point.

CLTS is an innovative methodology for mobilising communities to eliminate the practice of open defecation. Encouraged by participatory facilitation, communities construct latrines and achieve total sanitation without any external hardware subsidy, often in a matter of just weeks. Since its inception in Bangladesh in 2000, CLTS has rapidly spread within Asia, and has more recently been taken up in Africa, Latin America (Bolivia) and the Middle East (Yemen).

At the heart of CLTS lies the recognition that merely providing toilets does not guarantee their use, nor result in improved sanitation and hygiene. Earlier approaches to sanitation prescribed high initial standards and offered subsidies as an incentive. But this often led to uneven adoption, problems with long-term sustainability and only partial use – sometimes facilities were used for storage or as animal shelters. It also created a culture of dependence on subsidies. Open defecation and the cycle of fecal–oral contamination continued to spread disease.

Merely providing toilets does not guarantee their use

In contrast, CLTS focuses on the behavioural change needed to ensure real and sustainable improvements – investing in community mobilisation instead of hardware, and shifting the focus from toilet construction for individual households to the creation of “open defecation-free” villages. By raising awareness that as long as even a minority continues to defecate in the open everyone is at risk of disease, CLTS triggers the community's desire for change and propels them into action.

IGNITING THE COMMUNITY

This approach empowers the community to build and use latrines without prescribing standards or designs. It emphasises innovation, mutual support and appropriate local solutions, encouraging greater ownership and sustainability. CLTS facilitators help communities to analyse their sanitation “profile” and

highlight the links between open defecation, fecal–oral contamination and disease.

- A common way of capturing interest is for facilitators and community members to conduct a **transect walk** through the village. A discussion of village sanitation is easily prompted by asking questions to establish who uses which areas for defecation, which different types of latrines are in use, where women go, and what happens during the night or in bad weather. The unpleasant sight and smell of large-scale open defecation in the presence of a visitor to the community are key factors in triggering community action; disgust and embarrassment generally result in an immediate desire to stop open defecation.
- **Mapping** is also a useful tool for involving all community members in a practical and visual analysis of the sanitation situation. A simple map of the community is drawn, usually on the ground, and all households are asked to locate their homes, indicating whether they have latrines and where they go for defecation. The map can highlight how people are defecating virtually on each other's doorstep, how far they have to walk to defecate (and related safety issues), and how water sources are at risk of contamination.
- **Calculating** the amount of feces produced can also help to illustrate the magnitude of the problem. The high quantities may shock the community and lead to questions about where it all goes and the possible effects of having so much of it in their surroundings.

These types of inquiry get the community thinking about the possible impacts without any need for preaching or teaching from the facilitators. CLTS is not about persuading the community to stop open defecation and start constructing toilets – it's about igniting a sense of impurity, often deeply linked to religious or cultural beliefs, which itself compels people to shift to fixed-point defecation in a covered pit.

With the realisation that everyone is virtually ingesting each other's feces, intense arguments begin about how to change. If questions are directed at the

facilitators, they reply that, as outsiders, they have little knowledge of the local situation and that the community itself knows the best course of action and is free to choose anything, including to continue open defecation.

However, the disgust people feel when they are confronted with the reality of their waste usually leads to immediate collective action. Instead of waiting for funding to build expensive toilet facilities they build their own basic latrines and, more importantly, start using them – often in a matter of weeks or months. Over time, many move to more sustainable and complex models.

The collective benefits from stopping open defecation encourage a co-operative approach amongst everyone, with richer households offering land, donating wood or bamboo, or allowing poorer families to use their toilets in the short term.

During the CLTS process, and when spreading CLTS to other areas,

CHILDREN AS “POO POLICE”²

In districts in Bangladesh, children were known as *bichhu bahini* – “the army of scorpions”. They were given whistles and went out looking for people defecating in the open. One youth said that during the “open defecation-free” campaign he had blown his whistle at least 60 times. In a few cases, they flagged piles of feces with the name of the person responsible.

In Sijunjung District in Indonesia, children likewise looked for miscreants. In that musical culture, children sang the CLTS campaign song at the offending person.

In Homa Bay in Kenya, children drew up their own action plan and presented it to their elders.

In Shebedino, Ethiopia, about 200 children staged a demonstration, shouting slogans like “Cats do not defecate in the open, but we people do! Let’s learn from cats!” and “We don’t tolerate open defecation!” One girl commented: “I am tired of fighting with flies. I want to live in a clean environment. I need to be clean and healthy.”

“spontaneous” or “natural” leaders play a vital role. These activists and enthusiasts not only motivate their own communities but also encourage and support others.

Involving children in the discussions and asking them what they will do to stop open defecation is important. When adults see that children can easily understand and “do” improved sanitation, they feel that they, too, have to follow.

CLTS empowers communities to tackle other livelihood issues

Women also play a lead role and are often more eager than men to stop open defecation as they are more immediately affected by its disadvantages. Improved sanitation can bring huge benefits in terms of safety, dignity, privacy and convenience for women, who often wait until after dark or go in the early morning to avoid being seen. They may suffer from urinary and reproductive tract infections, kidney disease or dehydration and chronic constipation, and have enormous additional difficulties during menstruation. They are more vulnerable to assault and rape, especially at night, because they are often forced to find secluded places further from home.

BEYOND SANITATION

In addition to creating a culture of good sanitation, CLTS helps to empower communities to tackle other livelihood issues. For example, CARE Bangladesh uses CLTS as an entry point strategy to revive the practice of community-led collective action, leading to a well-being analysis of a community’s various socio-economic groups.³ Initiatives that may follow on from CLTS activities include negotiating better wages, road repair, confronting corruption and pro-poor share-rearing of livestock. Thus, CLTS has the potential to be a real development success story.

There is growing recognition that this approach offers tremendous hope for developing countries to meet their Millennium Development Goal targets

for sanitation. However, rapid institutional take-up of CLTS has raised some dilemmas and challenges. Philanthropic attitudes of outsiders, external prescription of costlier models of toilet, lack of confidence in and awareness of communities’ capability and social solidarity, and above all, pressure to spend subsidy money, often prevent governments, non-governmental organisations and donors from triggering collective local action to eliminate open defecation.

There are also challenges with monitoring and evaluation and with going to scale. For example, can scaling up (within institutions) and scaling out (to wider geographical areas, and across country borders) take place without losing the integrity of the initial successes?

To deepen understanding of the CLTS approach in different settings, and to share lessons from practitioners and communities, the Institute of Development Studies initiated a research and networking programme in 2006. *Going to scale? The potential of Community-Led Total Sanitation*⁴ is supported by the UK Department for International Development. More understanding of what does and does not work is vital. The stakes are high and the potential gains from CLTS becoming a successful widespread movement are very large indeed. ■

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¹ Local and crude words are deliberately used rather than polite terms, in order to help break the taboos surrounding these subjects.

² Source: K Kar and R Chambers (forthcoming) *Handbook for implementing Community-Led Total Sanitation*, prepared with support of Plan International (UK), and M Tadesse, *Leku town children demonstrate for clean environment*, Plan Ethiopia, 2007

³ N Kanji, with B Bode and A Haq, *Nijeder janyia nijera (We for ourselves): Strategic impact inquiry*, CARE Bangladesh, 2006, p 6

⁴ The project aims to investigate on-the-ground realities of CLTS to shed light on issues concerning adoption, spread, scale, sustainability and quality, http://www.ids.ac.uk/UserFiles/File/knots_team/CLTS_Overview.pdf

CAMPAIGNING FOR CHANGE

Improved sanitation is one of the most powerful development investments, but the international aid system keeps treating it as a side issue. This won't change without campaigning, argues Henry Northover.



End Water Poverty campaigners march a giant knitted petition to the UK Parliament on 12 May 2007
Photo: Steve Bainbridge/WaterAid

Acknowledging that you have a problem is considered the first step to recovery. In 2006 the United Nations Human development report declared that the world has a sanitation **crisis**.

This crisis not only kills nearly 5,000 children a day; it also stands in the way of sustainable development in health, education and livelihoods, locking people into a cycle of poverty and disease. It is difficult to find a development intervention that brings greater public health returns than investments in sanitation.¹ But the international aid system still seems to be averting its eyes while talking the talk of poverty reduction.

Commitments on sanitation have been made to the world's poor and it is the duty of governments to honour them. So how can this sector still be so scandalously and inexcusably overlooked? The elephant in the room is **lack of political will**. There must now be an extraordinary, government-led effort to reverse the political neglect of this basic human right. Economically, socially and morally, continuing inaction is indefensible.

WHOSE PRIORITIES?

Water and sanitation are services that the poor almost always put as one of their top three priorities. Yet the international development community and developing country governments treat them predominantly as marginal issues. Aid officials frequently see them as the natural outcomes of poverty rather than having the potential as drivers of poverty reduction. Over the last decade, the amount spent on sanitation has remained largely stagnant – it has actually fallen compared to the relative spending increases in overall aid and on health and education.² Indeed, so marginal is the sector that few governments – even the UK – are able to say how much development finance is being spent on the sector.

THE END WATER POVERTY CAMPAIGN

Nothing will change without campaigning and leadership. There is a consensus amongst activists on sanitation and water that building the necessary political will is crucial. And political will is usually the result of public pressure. End Water Poverty is a coalition of combined forces that includes WaterAid, the British Medical Association, the trade union Unison and many international non-governmental organisations. Our call is simple: **sanitation and water for all**.

The campaign demands:

- **one global action plan** for sanitation and water, monitored by a single global task force
- **70% of aid money** for sanitation and water to be targeted at the **poorest countries**
- water resources to be protected and shared **equitably**

More specifically, we are asking for the following policy changes:

At the international level:

1. a global action plan for sanitation and water, with political endorsement at the highest level, that recognises the integral role of sanitation in achieving the economic, health and education MDGs
2. a global task force mandated at the highest level to plan, implement and monitor the extraordinary effort that is needed on sanitation and water
3. a commitment that no credible country plan that is consistent with achieving the sanitation and water MDG targets should fail for lack of finance

At the national level:

1. one national plan, one co-ordinating mechanism, and one transparent monitoring and evaluation framework for sanitation
2. increased levels of investment delivered through a specific and transparent budget line that is open to public scrutiny
3. broad participation by a wide range of sector stakeholders in the planning and monitoring of sanitation service delivery at the national and sub-national levels

The global crisis in sanitation and water is one of inequality and poverty. If it is not tackled decisively, it will prevent and undermine progress made in reducing poverty and improving people's basic health. ■

Mr Henry Northover is Head of Policy for WaterAid. For more details of the End Water Poverty campaign, see: <http://www.endwaterpoverty.org>

¹ United Nations Development Programme, *Human development report 2006. Beyond scarcity: Power, poverty and the global water crisis*, 2006, p 62 <http://hdr.undp.org/en/media/hdr06-complete.pdf>; see also J Bartram et al., "Millennium Project: Focusing on improved water and sanitation for health", *The Lancet*, (365), 2005, pp 810–12, <http://www.unmillenniumproject.org/documents/TheLancetWater.pdf>

² B Frost (WaterAid UK), "Citizens demanding their right to water and sanitation", 2006 *Stockholm Water Prize Laureates Seminar: Challenges and opportunities within the water sector*, Stockholm International Water Institute, 2006, p 22

FAREWELL TO “FLUSH AND FORGET”

How can we meet urgent sanitation needs while ensuring water and safe environments for the future? Lester Brown questions the default adoption of water-borne sewerage systems to solve the sanitation crisis, arguing that answers lie in water-efficient sewage recycling – models of which are already emerging.



School children approaching and leaving the pit latrines built with assistance from World Vision in the Hoima district in western Uganda. Photo: Simon Peter Esaku/World Vision

In urban settings, the one-time use of water to disperse human and industrial wastes is becoming an outmoded practice, made obsolete by new technologies and water shortages.

Water enters a city, becomes contaminated with human and industrial wastes, and leaves the city dangerously polluted. Toxic industrial wastes discharged into rivers and lakes or into wells also permeate aquifers, making water – both surface and underground – unsafe for drinking. And their toxic wastes are destroying marine eco-systems, including local fisheries. The time has come to manage waste without discharging it into the local environment, allowing water to be recycled indefinitely and reducing both urban and industrial demand dramatically.

The current engineering concept for dealing with human waste is to use vast quantities of water to wash it away, preferably into a sewer system where it will be treated before being discharged into the local river. The “flush and forget” system is expensive, water-intensive, it disrupts the nutrient cycle, and it is a major source of disease in developing countries.

WATER-INTENSIVE SYSTEMS

As water scarcity spreads, the viability of water-based sewage systems will diminish. Water-based sewage systems take nutrients originating in the soil and typically dump them into rivers, lakes or the sea. Not only are the nutrients lost from agriculture, but the nutrient overload has led to the death of many rivers and to the formation of some 200 dead zones in ocean coastal regions. Sewer systems that dump untreated sewage into rivers and streams are a major source of disease and death.

Sunita Narain of the Centre for Science and Environment in India argues convincingly that a water-based disposal system with sewage treatment facilities is neither environmentally nor economically viable for India. She notes that an Indian family of five, producing 250 litres of excrement in a year and using a water flush toilet, requires 150,000 litres of water to wash away its wastes.

As currently designed, India’s sewer system is actually a pathogen-dispersal system. It takes a small quantity of contaminated material and uses it to make vast quantities of water unfit for human use, often simply discharging it into nearby rivers or streams.

Many countries chase water-based systems, unwilling to admit they are not viable

Narain says both “our rivers and our children are dying”. India’s government, like that of many other developing countries, is hopelessly chasing the goal of universal water-based sewage systems and sewage treatment facilities – unable to close the huge gap between services needed and provided, but unwilling to admit that it is not an economically viable option. Narain concludes that the “flush and forget” approach is not working.

THE ALTERNATIVE

Fortunately, there is a low-cost alternative: the composting toilet. This is a simple, waterless, odourless toilet linked to a small compost facility. Table waste can also be incorporated into the composter. The dry composting converts human fecal material into a soil-like humus, which is essentially odourless and is scarcely 10% of the original volume. These compost facilities need to be emptied every year or so, depending on design and size. Vendors periodically collect the humus and can market it as a soil supplement, thus ensuring that the nutrients and organic matter return to the soil, reducing the need for fertiliser.

This technology reduces residential water use, thus cutting water bills and lowering the energy needed to pump and purify water. As a bonus, it also reduces garbage flow if table waste is incorporated, eliminates the sewage water disposal problem, and restores the nutrient cycle. The US Environmental Protection Agency now lists several brands of dry toilet approved for use. Pioneered in Sweden, these toilets work well under the widely varying conditions where they

are now used, including Swedish apartment buildings, US private residences and Chinese villages.

At the household level, water can be saved by using showerheads, flush toilets, dishwashers, clothes washers and other appliances that are more water-efficient. Some countries are adopting water efficiency standards and labelling for appliances, much as has been done for energy efficiency. When water costs rise, as they inevitably will, investments in composting toilets and more water-efficient household appliances will become increasingly attractive to individual home-owners.

Two household appliances, toilets and showers, together account for over half of indoor water use. Whereas traditional flush toilets used 6 gallons (or 22.7 litres) per flush, the legal US maximum for new toilets is 1.6 gallons (6 litres). An Australian-produced toilet with a dual-flush two-button technology uses only one gallon for a liquid waste flush and 1.6 gallons for a solid waste flush. Shifting from a showerhead flowing at 5 gallons per minute to a 2.5 gallons-per-minute model cuts water use nearly in half. With washing machines, a horizontal axis design developed in Europe uses 40% less water than the traditional top-loading models. In addition, this European model now being marketed internationally also uses less energy.

RECYCLING

For cities, the most effective single step to raise water productivity is to adopt a comprehensive water treatment/recycling system, re-using the same water continuously. With this system, only a small percentage of water is lost to evaporation each time it cycles through. Given the technologies that are available today, it is quite possible to recycle urban water supplies comprehensively, largely removing cities as a claimant on scarce water resources.

Some cities faced with shrinking water supplies and rising water costs are beginning to recycle their water. Singapore, for example, which buys its water from Malaysia, is beginning to recycle water, reducing the

amount it imports. For some cities, the continuous recycling of water may become a condition of their survival.

Individual industries facing the same water-related issues as cities are beginning to move away from the use of water to disperse industrial waste. Some companies segregate effluent streams, treating each individually with the appropriate chemicals and membrane filtration, preparing the water for re-use.

Cities can adopt water recycling technology now used in industry

Peter Gleick, senior author and editor of the bi-annual report *The world's water*, writes: "Indeed, some industries, such as paper and pulp, industrial laundries, and metal finishing, are beginning to develop 'closed-loop' systems where all the waste water is re-used internally, with only small amounts of fresh water needed to make up for water incorporated into the product or lost in evaporation." Industries are moving faster than cities, but the technologies they are developing can also be used in urban water recycling.

The existing water-based waste disposal economy is not viable. There are too many households, factories, and feedlots to simply try and wash waste away on our crowded planet. To do so is ecologically mindless and outdated – an approach that belongs to an age when there were many fewer people and far less economic activity. ■

Mr Lester Brown is founder and President of Earth Policy Institute. <http://www.earthpolicy.org>

Adapted from Chapter 11, "Designing Sustainable Cities," in Lester R. Brown, *Plan B 2.0: Rescuing a planet under stress and a civilization in trouble*, New York: W W Norton & Company, 2006, <http://www.earthpolicy.org/Books/PB2/index.htm>

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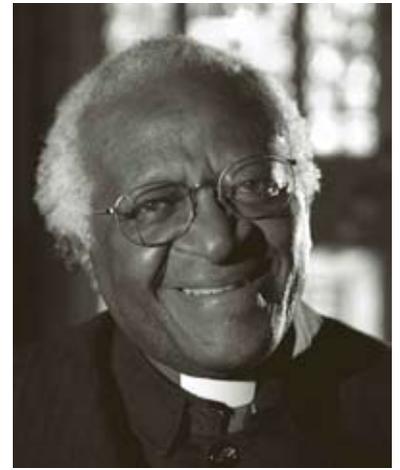


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the Back Pages

...spiritually speaking



GOD IN THE GARBAGE

We are made for interdependence. We must respond compassionately to the needs of our sisters and brothers, to carry one another's burdens.

Most of us tend to associate God with otherness, and all things remotely clean, bright and beautiful. But God is Creator and created all things in a wonderful balance of interdependence. We see this in the diversity of living creatures, the food chain where all life is dependent upon other forms of life, and nature's constant regeneration alongside death and decay – which are also part of God's plan.

We are sustained by each other and by the world around us. We are made for interdependence. We cannot live without each other nor can we survive without the gifts of rain, sun and the living plants and creatures that make our planet home.

We have a divine mandate to be stewards of God's creation. It is an awesome responsibility. At one time we were not doing too badly but more recently we have been dismal failures. Climate change is the result of our negligence and irresponsibility. The delicate balance has been upset and we are paying a very heavy price for our failure to care for ourselves and for others. It is the poor, those most marginalised, who are suffering directly as a result of our selfishness and greed.

Home is where...

The culture of consumerism has led to tons of unnecessary packaging and other waste that has caused the barrios, ghettos and townships of the world to become vast, unhealthy garbage dumps where disease is rife.

Not only is there inadequate clean-up of rubbish, but human waste has become an immense problem to which scant attention has been paid. Rivers have become polluted and standing water a breeding ground for bacteria and diseases such as cholera and diarrhea. Children pick through the rubbish, and flies and rats abound.

Most of us want to avoid such places. But for millions and millions of people around the world, such places are home. They know no other existence than to be surrounded by evil smells and filth.

The gap between those who have a healthy living environment and those who have not is evidence of our failure to carry out our God-given mandate. We are not doing anything near enough to provide clean water and sanitation for the poor.

The rich have only to turn on a tap or press a button; for them, modern, beautiful bathrooms have become a status symbol. The poor must walk miles to fetch water, often of questionable quality; their sanitation is rudimentary.

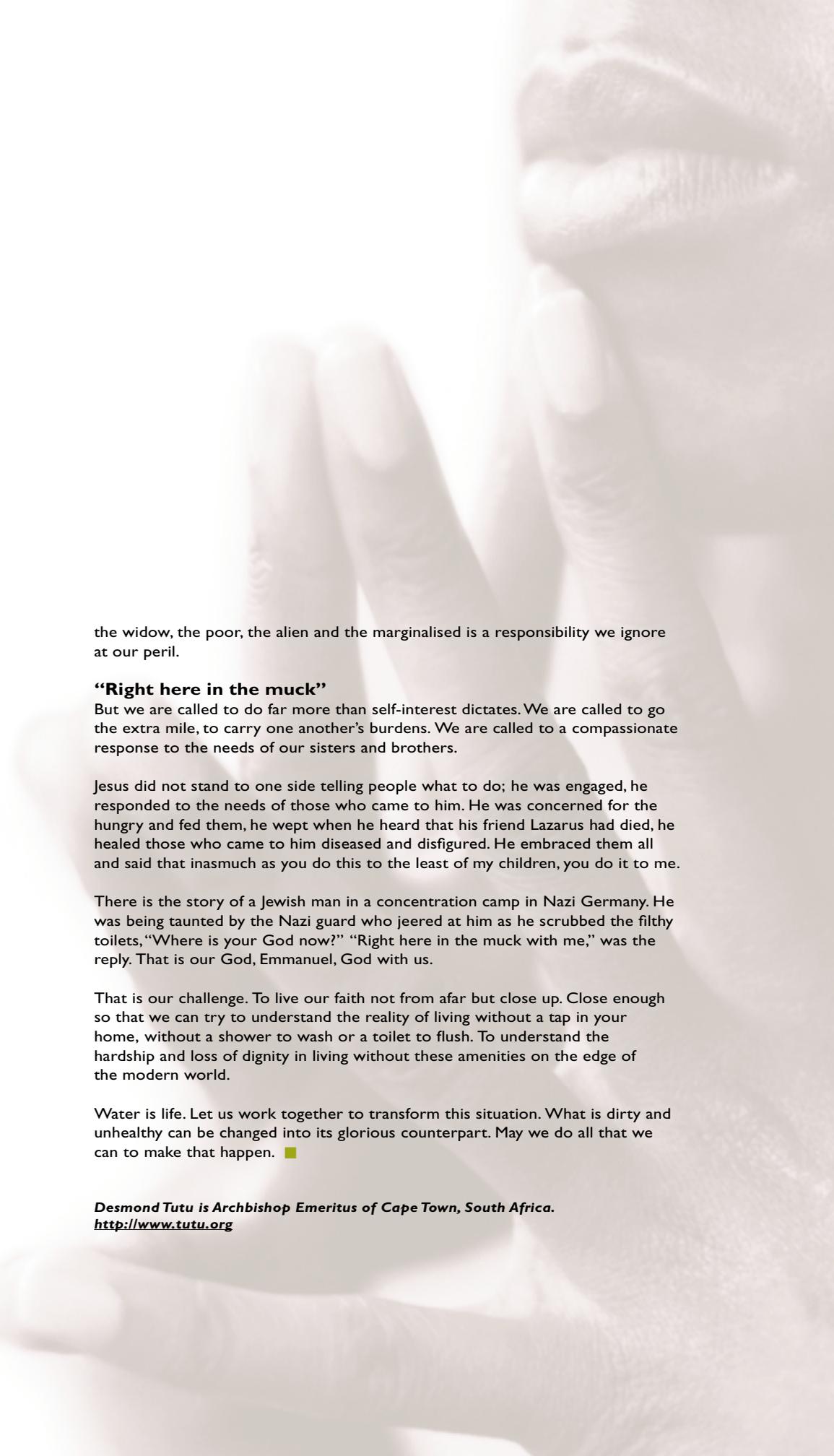
Good health depends on clean water, not only to drink but for personal hygiene. Poor waste and water management are killing millions of God's children through preventable disease. The Millennium Development Goal target for sanitation coverage by 2015 appears to be a pipe dream.

No boundaries

It doesn't have to be that way. Access to safe sanitation, clean water and adequate health care is a human right. This is a moral universe. Sanitation issues are often neglected because they concern the poor and the marginalised, the powerless.

Fortunately many of us are realising that polluted rivers affect us all, that choking smog from township fires knows no boundaries and that caring for our sisters and brothers is not only our obligation, as it must be, but is in our self-interest.

We are beginning to understand that we are in fact our brother's keeper. That the scriptural injunction to care for



World Vision is a Christian relief, development and advocacy organisation dedicated to working with children, families and their communities world-wide to reach their full potential by tackling the causes of poverty and injustice.

As followers of Jesus, World Vision is dedicated to working with the world's most vulnerable people. World Vision serves all people regardless of religion, race, ethnicity or gender:

Children are often most vulnerable to the effects of poverty. World Vision works with each partner community to ensure that children are able to enjoy improved nutrition, health and education. Where children live in especially difficult circumstances, surviving on the streets, suffering in exploitative labour, or exposed to the abuse and trauma of conflict, World Vision works to restore hope and to bring justice.

World Vision recognises that poverty is not inevitable. Our Mission Statement calls us to challenge those unjust structures that constrain the poor in a world of false priorities, gross inequalities and distorted values. World Vision desires that all people be able to reach their God-given potential, and thus works for a world that no longer tolerates poverty.

back cover image:

Julia Farfan, 21, helps her two-year-old son, Jon Anderson, wash his hands before eating at a nutrition workshop for pregnant mothers in Huanta, Peru.

photographer:

Ryan Smith / World Vision

the widow, the poor, the alien and the marginalised is a responsibility we ignore at our peril.

“Right here in the muck”

But we are called to do far more than self-interest dictates. We are called to go the extra mile, to carry one another's burdens. We are called to a compassionate response to the needs of our sisters and brothers.

Jesus did not stand to one side telling people what to do; he was engaged, he responded to the needs of those who came to him. He was concerned for the hungry and fed them, he wept when he heard that his friend Lazarus had died, he healed those who came to him diseased and disfigured. He embraced them all and said that inasmuch as you do this to the least of my children, you do it to me.

There is the story of a Jewish man in a concentration camp in Nazi Germany. He was being taunted by the Nazi guard who jeered at him as he scrubbed the filthy toilets, “Where is your God now?” “Right here in the muck with me,” was the reply. That is our God, Emmanuel, God with us.

That is our challenge. To live our faith not from afar but close up. Close enough so that we can try to understand the reality of living without a tap in your home, without a shower to wash or a toilet to flush. To understand the hardship and loss of dignity in living without these amenities on the edge of the modern world.

Water is life. Let us work together to transform this situation. What is dirty and unhealthy can be changed into its glorious counterpart. May we do all that we can to make that happen. ■

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