



WASH for Children

Investing in Water, Sanitation and
Hygiene in East Asia and the Pacific

unite for
children

unicef 

Sanitation coverage in East Asia and the Pacific



WHO/UNICEF Joint Monitoring Programme (JMP), 2006
(2004 data set)

Water coverage in East Asia and the Pacific



WHO/UNICEF Joint Monitoring Programme (JMP), 2006
(2004 data set)

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Cover photograph: UNICEF EAPRO MGLA00687/Jim Holmes/Mongolia
Oyunbat, ten years old, and Ganchimeg, five years old, wash their hands outside their family's house in Uvs Aimag, western Mongolia. UNICEF has supported hygiene-related activities throughout Mongolia and in 2007 started a WASH programme.

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Preparation and publishing of this report has been made possible through the generous support of the Government of Norway.

Text, figures and tables: Machamba Consultants, Toronto

Design and layout: Keen Media (Thailand) Co., Ltd.

Printed in Thailand

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ISBN: 978-974-685-091-9

Foreword

Safe water, good hygiene and adequate sanitation are every child's right. They are critical factors for child survival and are the building blocks for their health and development. Yet every day, millions of children in East Asia and the Pacific continue to live with menacing conditions that threaten their lives and futures. Almost one half of the region's population – 900 million people – live without basic sanitation and 20 per cent – or 400 million – have no access to drinking water. More people live without access to sanitation and water in this region than anywhere else – and this in an area currently experiencing the world's highest rates of economic growth.

This report, *WASH for Children: Investing in Water, Sanitation and Hygiene in East Asia and the Pacific*, is for our partners: civil society, government counterparts, non-government organizations, international agencies and donors – those we work with to realize long-lasting changes for children.

This report explains why water, sanitation and hygiene (WASH) is so critical to the health and well-being of children. It outlines the challenges facing countries and communities for meeting and surpassing the Millennium Development Goal targets for drinking water and basic sanitation. And it describes some of the innovative ways in which UNICEF is contributing to the achievement of WASH goals in the region. The overriding message is simple: it pays to invest in WASH.

Although the scope of UNICEF's work varies from country to country, the priority is to ensure that investments in WASH make a difference, not only for a large number of children, but especially for the poorest and most marginalized communities. And in emergency situations, UNICEF strives to meet its commitments for children by ensuring predictable and effective responses in water, sanitation and hygiene.

The progress made in WASH over the past decade exemplifies what is possible. With strong political commitment, community involvement and sufficient resources we *can* achieve our goal: bringing safe water, sanitation and hygiene to every home and school in East Asia and the Pacific. Help us meet the challenge.



Anupama Rao Singh
UNICEF Regional Director
East Asia and the Pacific
January 2008

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Inside front cover maps

Sanitation coverage in East Asia and the Pacific

Water coverage in East Asia and the Pacific

Inside back cover table

Water and sanitation coverage for UNICEF programme countries in East Asia and the Pacific

Acronyms

ARI	acute respiratory infections
BORDA	Bremen Overseas Research and Development Agency
CCCs	Core Commitments for Children
CFS	child-friendly schools
CIDA	Canadian International Development Agency
CLTS	community-led total sanitation
CSO	civil society organization
DFID	UK Department for International Development
DHS	Demographic and Health Survey
DPR Korea	Democratic People's Republic of Korea
ECHO	European Commission Humanitarian Aid
IASC	Inter-Agency Standing Committee
IDP	internally displaced person
JMP	Joint Monitoring Programme for Water Supply and Sanitation
KAP	knowledge, attitudes and practices
Lao PDR	Lao People's Democratic Republic
MDG	Millennium Development Goal
MICS	Multiple Indicator Cluster Survey
NGO	non-governmental organization
PTCA	parent-teacher-community association
PHAST	participatory hygiene and sanitation transformation
ppb	parts per billion
SODIS	solar disinfection of water
UN	United Nations
UNICEF	United Nations Children's Fund
WASH	water, sanitation and hygiene
WSP	Water and Sanitation Program of the World Bank
WHO	World Health Organization



The importance of WASH

Home to almost a third of the world's population, the East Asia and Pacific region encompasses a huge area, and is enormously diverse. It includes large, populous China with 1.3 billion people, as well as small nations like Timor-Leste, with a population of less than one million. The region is represented by relatively wealthy countries, but also by countries where grinding poverty is still a fact of life for many people. The quality of children's lives in the region also varies enormously. In some parts of the region, children have relatively good access to the support and services necessary to ensure their survival and development, but in many other areas much remains to be done.

There is also significant diversity in access to sanitation and water in the region (see maps on inside covers). Sanitation coverage ranges from among the lowest in the world – in Cambodia, only 17 per cent of people have

access to sanitary means of excreta disposal – to countries such as Malaysia and Thailand, with coverage rates in the nineties. Water coverage rates range from lows of 39 per cent in Papua New Guinea to highs of over 90 per cent in several countries.

More people live without access to water and sanitation in East Asia and the Pacific than anywhere else in the world. Over 400 million people have no access to improved drinking water sources and almost a billion lack access to basic sanitation facilities.

Yet safe drinking water, sanitation and hygiene are essential for the health, development and welfare of children everywhere. Inadequate access to safe water and sanitation services, coupled with poor hygiene practices, kills and sickens thousands of children every day, and leads to impoverishment and diminished opportunities for thousands more.

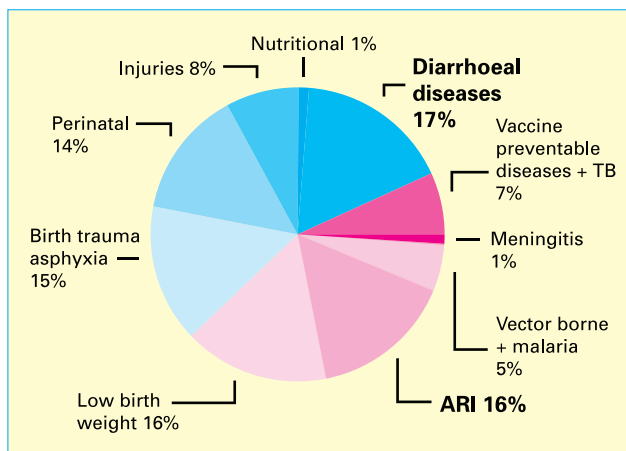
The link to health

In the East Asia and Pacific region, diarrhoeal disease is the leading killer of children under five years of age (see Figure 1). It causes an estimated 187,000 deaths annually, and accounts for 17 per cent of all child mortality in the region.¹ The World Health Organization (WHO) estimates that 88 per cent of all diarrhoeal deaths are caused by unsafe drinking water, poor hygiene and lack of access to sanitation.²

Diarrhoea-caused mortality is only part of the story. Children weakened by frequent diarrhoea episodes are more likely to be seriously affected by malnutrition and opportunistic infections – such as acute respiratory infections (ARI), the second major killer of children in the region (see Figure 1) – and they can be left physically and mentally stunted for the rest of their lives.

Thao Pheung, four years old, is looking at a water jar, which is important to villagers in areas where rainwater harvesting is practiced. UNICEF supports jar construction and distribution in Savannakhet Province, Lao PDR.

Figure 1. Causes of death of children under five in the East Asia and Pacific region, 2002



Source: WHO, 2002

Water, sanitation and hygiene are also linked to many other serious diseases that kill children or derail their development, including helminth infections, schistosomiasis, trachoma, cholera, fluorosis and arsenicosis.

The link to school performance

WASH is an important prerequisite for ensuring the right to basic education – affecting both the number of children in schools and their educational performance. Unhygienic school and community environments lead to diarrhoea, helminth infections and other diseases that have been shown to lead to mental stunting and poor educational performance.³

Helminth infections – including roundworm, hookworm and whipworm – are a particularly serious problem in the East Asia and Pacific region. Helminth infection rates are high in parts of China, Lao PDR, Viet Nam and other countries in the region, including in the Philippines, where a 2006 UNICEF-supported

study of grade 3 pupils in six provinces indicated a prevalence of 54 per cent, with rates as high as 67 per cent in one province.⁴

Many girls are reluctant to stay in school because toilet and washing facilities are not private, are not safe or are simply not available. But all children are affected when water is unavailable or toilets are unusable. This is a common problem in the region. In Lao PDR, for example, recent surveys show that less than one-third of all schools have water and toilets, while in some areas of China, less than 10 per cent of schools have a full complement of water, sanitation and hand-washing facilities.

The cost of WASH-related disease

Poor water and sanitation exact a heavy economic cost in terms of health spending, loss of productivity and labour diversion. A 2004 WHO study estimated that if everyone in the East Asia and Pacific region had access to basic water and sanitation services, the reduction in diarrhoeal disease alone would save the health sector US\$7.5 billion in treatment costs and people would gain over

4.5 billion productive days per year.⁵ When the potential economic gains of providing the entire population of the region with basic, low-cost water and sanitation facilities are added together, the region could save as much as US\$66 billion a year.⁶ Or, in cost-benefit terms, for every dollar spent on water and sanitation to meet the MDG target in the region, over five dollars would be saved.

Cambodia: The economic impact of poor sanitation and hygiene

A 2007 comprehensive five-country study sponsored by the Water and Sanitation Program (WSP) highlights the huge economic costs of inadequate sanitation and poor hygiene in the region.⁷ In Cambodia, the study found that the total losses amounted to US\$498 million per year, equal to 8 per cent of Cambodia's GDP in 2005 or US\$36 per capita. This clearly represents a huge burden, for the nation as a whole and especially for poorer communities. The figures are based on the aggregated economic losses due to health-related costs (the largest single factor), losses in productive time, and costs due to water pollution and to reductions in tourism.



Children collect water at a pump in Battambang Province, Cambodia. UNICEF supports the government rural water supply programme, which seeks to improve the availability of safe drinking water.



The good news – and the challenges

The East Asia and Pacific region has made significant progress in improving water and sanitation coverage. From 1990 to 2004, a third of a billion people gained access to water and almost half a billion to sanitation. Coverage rates increased from 72 per cent to 79 per cent for water and from 30 per cent to 51 per cent for sanitation. This rate of progress means that the region as a whole is considered to be on track for meeting the Millennium Development Goal (MDG) Target 10 of halving the proportion of people without sustainable access to safe drinking water and basic sanitation.

However, these aggregate regional figures mask a number of serious problems and challenges. They do not take into account the

enormous disparities between countries and within countries in the region. They do not reveal the huge numbers of education and health facilities still without water and sanitation. They do not show the massive number of people – currently 944 million – without access to sanitation. Even successfully meeting MDG Target 10 in 2015 will leave 735 million people without access to basic sanitation and almost 300 million people without drinking water.

The coverage statistics also do not take into account the rapidly deteriorating environmental conditions in the region, including threats to the freshwater environment from contamination and poor resource management.

Disparities in access

There are serious disparities in the East Asia and Pacific region at a number of different levels. Water and sanitation coverage rates vary widely from country to country. For example, sanitation coverage in Lao PDR is only 30 per cent while in Malaysia it is 94 per cent. Several countries in the region – including Thailand and Tuvalu – have achieved at least 90 per cent coverage for water, yet a few – such as Papua New Guinea at 39 per cent and Cambodia at 41 per cent – lag far behind.

Urban-rural disparities are often very high. In sanitation, the overall urban-rural disparity is 37 percentage points (73 per cent urban coverage, 36 per cent rural coverage), five points higher than the average of all world regions. In some countries in the region, disparities are much higher (see Figure 2).

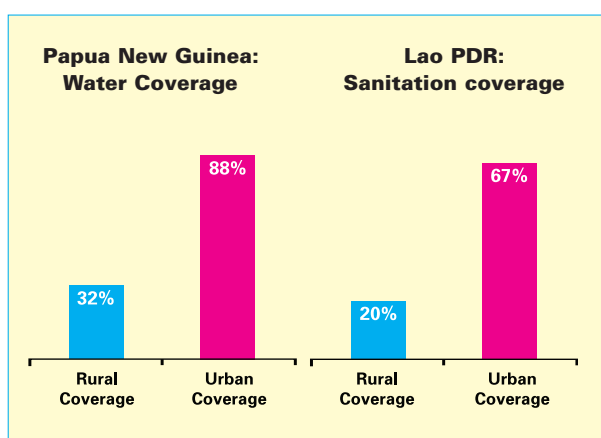
The greatest coverage disparities, however, are between the poor and the rich within countries in the region. This is true in many countries, but in some countries, the

Mrs Phouan collects water from a river that is 500 metres from her home. During the dry season, this is the only source for bathing and drinking water in her village in Luang Phrabang Province, Lao PDR.

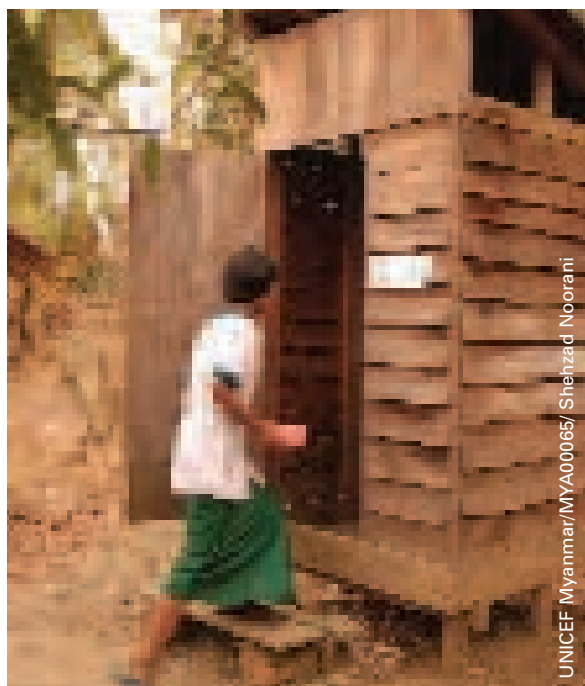
differences are pronounced, such as in the Philippines (see Table 1).

Isolated areas, including outlying islands in archipelago countries, tend to have much lower coverage rates than more accessible areas. For example, in Indonesia, sanitation coverage in some provinces is more than double what it is in others (see Figure 3).

Figure 2. Examples of high urban-rural disparities



Source: JMP, 2004



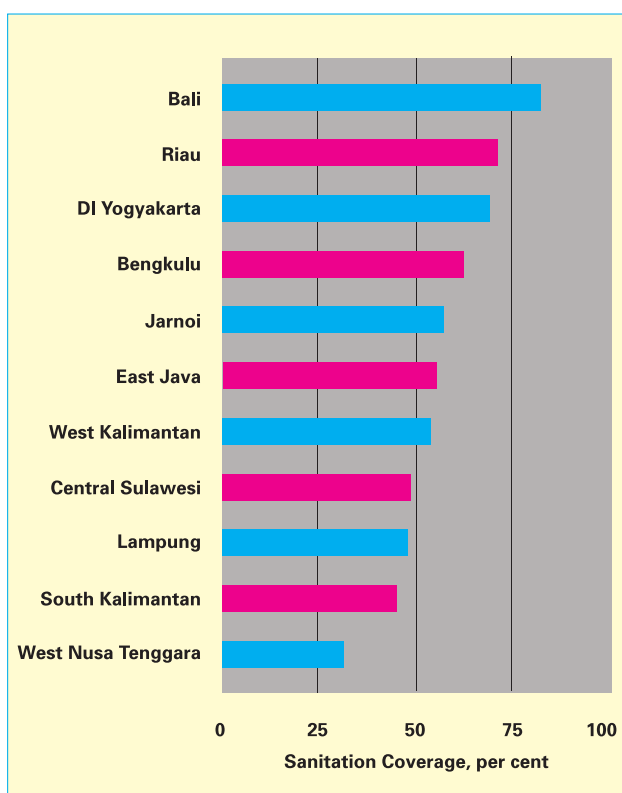
A young schoolgirl uses sanitary latrine at the government primary school near Hsaw Township in Magwe division, Myanmar.

Table 1. Rich-poor disparities, the Philippines

Wealth quintile	Access to water (%)	Access to sanitation (%)
Poorest	67	28
2nd	91	61
3rd	96	79
4th	96	92
Richest	98	99

Source: DHS, the Philippines, 2004

Figure 3. Sanitation coverage disparities in Indonesia, selected provinces

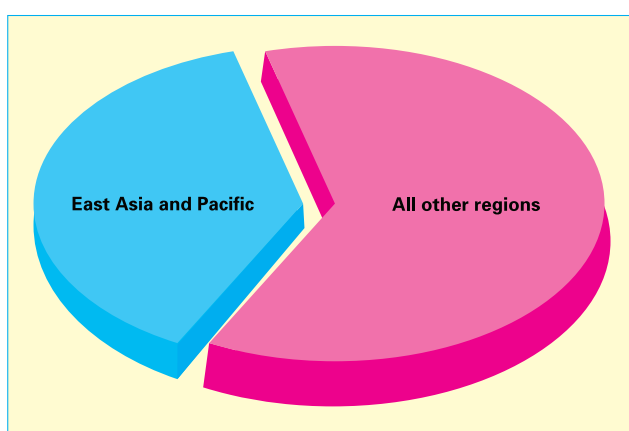


Source: DHS, Indonesia, 2003

Sanitation: A regional and rural-urban issue

A total of 944 million people in East Asia and the Pacific do not have access to sanitation, representing more than a third of all people without coverage worldwide (see Figure 4).

Figure 4. Thirty-six per cent of people without sanitation live in the East Asia and Pacific region



Source: JMP, 2004

Seventy-six per cent of these 944 million people live in rural areas. Twelve countries in the region have rural sanitation coverage of 50 per cent or less, including the high-population countries of China, Indonesia and Viet Nam. In these six countries, two-thirds or more of the rural population do not have coverage (see Table 2).

Table 2. UNICEF-supported countries with rural sanitation coverage at 33 per cent or less

Country	Rural sanitation coverage (%)
Cambodia	8
Solomon Islands	18
Lao PDR	20
Kiribati	22
China	28
Timor-Leste	33

Source: JMP, 2004

Sanitation coverage is also low in poor urban areas, and the situation is worsening. Countries in East Asia and the Pacific have some of the highest urbanization rates in the world, and most of this migration is made up of poor people moving to slums. The increasing population is exacerbating the already very serious problems of land tenure, land scarcity, water availability and environmental degradation, and accentuating the challenge of finding lasting sanitation solutions.

Water quality: A regional priority

Drinking-water sources in the region are under increasing threat from naturally occurring contamination and from pollution, with far-reaching consequences for the health of children and their families. If the full extent of the water quality problem were accounted for in the JMP water access figures, water coverage rates in the region would be significantly lower.

The most significant water quality problem is microbiological contamination of drinking-water supplies, especially from human faeces. Faecal contamination is generally caused by inadequate construction, operation and maintenance of water systems, and poor water handling and storage practices. But in the East Asia and Pacific region the principal cause of faecal contamination is simply the

huge amount of excreta deposited directly into the environment every day by the vast number of people without toilets or latrines. Improved water quality in the region is directly linked to the need for increased sanitation coverage.

Arsenic is also a critical water quality challenge in East Asia and the Pacific. Arsenic occurs naturally in groundwater under certain hydrogeological conditions and has now been detected in six countries in the region. If arsenic is ingested over long periods of time, even in minute concentrations, it can cause arsenicosis, which can develop into various types of cancers. Millions of

people in the region – mostly in rural areas – consume arsenic-contaminated water every day because of inadequate attention to the problem and limited local capacity and funding for solutions.

Naturally occurring fluoride is another serious water quality problem in East Asia and the Pacific. Ingesting fluoride over a long period of time causes dental fluorosis and the more serious skeletal fluorosis, a condition that can be crippling and ultimately fatal. In China alone, almost 50 million people suffer from dental fluorosis and 2.8 million people from skeletal fluorosis.

Emerging environmental issues

Unsafe environments have a particularly harmful effect on children, creating direct threats to their health and provoking poverty caused by environmental pollution and resource degradation.

Threats to the environment are clearly on the increase. Water contamination from agriculture and industry, over-pumping of aquifers and growing demands on fresh water resources by megacities all contribute to the growing pressure on fragile environments. In China, for example, the environmental costs of rapid industrialization are revealed in the state of the country's

rivers, at least 70 per cent of which are now severely polluted. In tiny Pacific Island nations, finite fresh water resources are especially vulnerable to human threats and sea-level rise.

The most serious, far-reaching threat is global warming, with its complex and comprehensive impact on water resources and its predicted multiplier effect on diarrhoea, malaria and other diseases, as well as the increased frequency and scale of climate-driven disasters. The impact of global warming is and will continue to be felt most by developing countries and their children.⁹

The scope of the arsenic problem

The full extent of arsenic contamination of water supplies in the East Asia and Pacific region is not yet known, and testing programmes continue to be a priority for affected countries. Arsenic concentration in water as low as 10 ppb (parts per billion) has been shown to have an impact on health.⁸ National standards for drinking water range from 10 ppb (the WHO guideline value) to 50 ppb. Here is an overview of the currently known arsenic situation.

Cambodia: Arsenic concentrations greater than 50 ppb in well water have been found in the Mekong River basin. An estimated 2.25 million people are considered to be at risk in seven provinces. Arsenicosis cases have been confirmed in one community, and more are suspected.

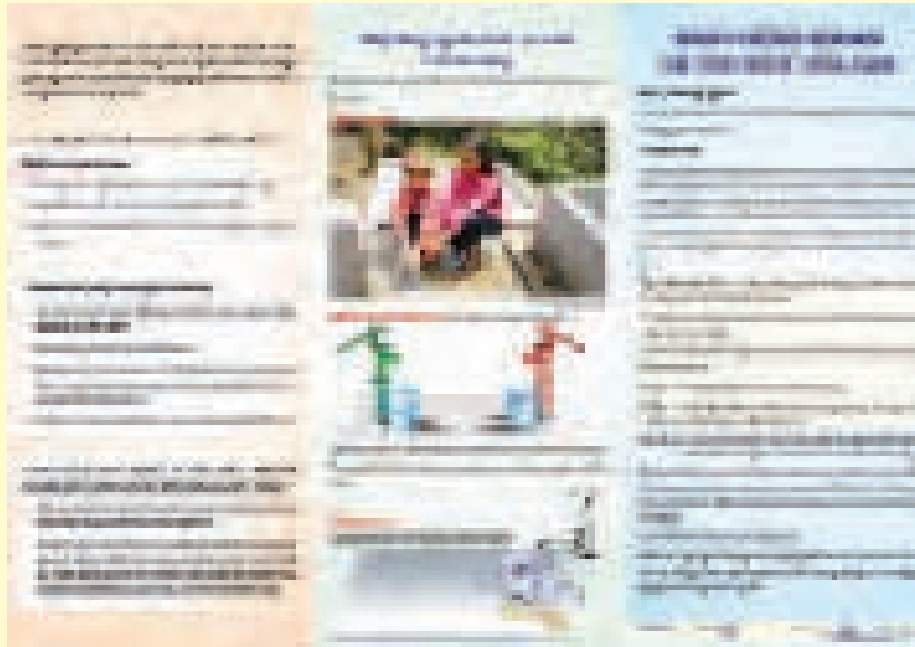
China: Over 20 million people are estimated to be exposed to arsenic, mainly from contaminated water, but also from arsenic-contaminated coal. More than 30,000 cases of arsenicosis have been confirmed.

Lao PDR: High arsenic levels have been identified in wells in three southern provinces where 1 per cent tested above 50 ppb. About 1 million people along the Mekong River may be affected.

Mongolia: The extent of the problem is not yet clear. A 2004 study found some contamination of water sources (10 per cent of the 867 wells tested) and signs of mild arsenicosis in 1 per cent of people assessed.

Myanmar: Arsenic is an identified problem, especially in alluvial plain areas. Arsenic above the national standard of 50 ppb has been found in 8 per cent of the approximately 250,000 water sources tested to date. An estimated 300,000 people are exposed to arsenic in drinking water.

Viet Nam: There is extensive arsenic contamination in the Red River and Mekong River deltas, confirmed through random sampling surveys. An estimated 4.5 million people are affected.



A Vietnamese poster promoting the importance of using safe water and warning of the dangers of arsenic amongst affected communities. Community education is one way UNICEF works to reduce the risks of unsafe drinking water.



Promoting WASH for children

The overall objective of UNICEF in the area of water, sanitation and hygiene (WASH) is to contribute to the realization of children's rights to survival and development through promotion of the sector and support to national programmes that increase equitable and sustainable access to, and use of, safe water and basic sanitation services, and promote improved hygiene.

UNICEF WASH strategy

The UNICEF WASH programme in the East Asia and Pacific region is defined by the sectoral context, the priorities and programmes of government and non-governmental partners, the design of UNICEF's country programmes and by the new global UNICEF WASH Strategy. The Strategy, informed by lessons learned working in the sector (see page 20), is guided by a set of fundamental programming principles that stress rights-based approaches, the need to work closely with governments and other partners, and the importance of evidence-based advocacy and programme design. The Strategy sets time-bound targets:

- Target 1: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation (same as MDG Target 10);
- Target 2: Ensure that all schools have adequate child-friendly water and sanitation facilities and hygiene education programmes by 2015.



Thanh A Mai, 10 years old, uses the new toilets in his primary school. The new toilets are part of the renovation project supported by UNICEF at the Long Luong Primary school in Son La Province, Viet Nam.

UNICEF EAPRO VIE00077/Jim Holmes/Viet Nam

Nang Souksavanh, nine years old, reads cards illustrating hygiene issues to fellow students at the Donchanh Primary School, Sekong Province, Lao PDR. UNICEF promotes these activities in the 'Blue Box' of hygiene games and lessons.

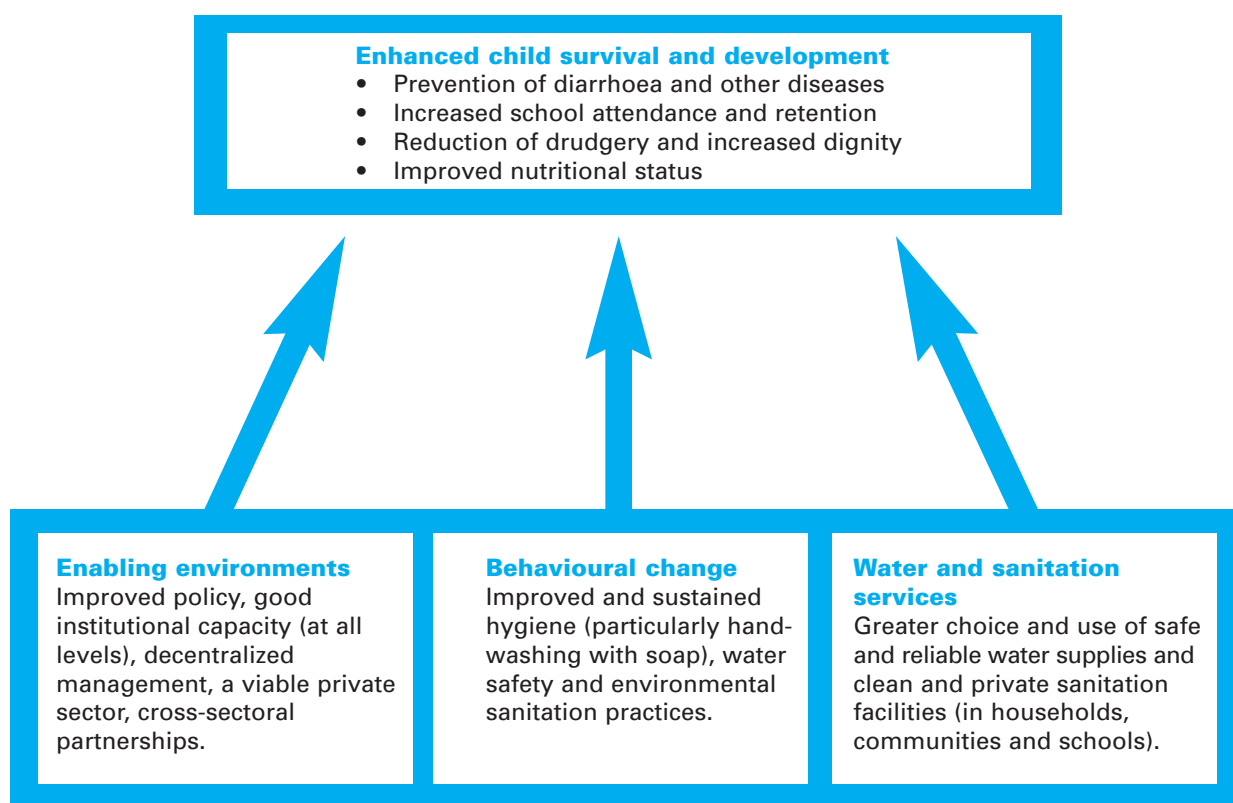
What we have learned from our experience

- UNICEF must promote **increased prioritization of the sector**, including creating awareness of the greater coverage and budget requirements to achieve and exceed the MDG sector targets.
- **Hygiene behaviour change** is a key factor for saving children's lives.
- **Sustainable service delivery** depends on decentralized authority, public and private sector resources and expertise, and communities empowered to make well-informed choices in technical, management and financial options.
- **Central support** through an enabling policy environment, along with adequate funding and sufficient human resources capacity, at all levels, are prerequisites for going to scale.
- **Priority attention and specific techniques** are needed for reaching the poor and addressing gender inequities.
- **High-quality, disaggregated information and strategic partnerships** are necessary for effective leveraging of funds and targeting of activities.
- **Intersectoral approaches** maximize sustainable impact.
- **Good management and equitable distribution of freshwater resources** are prerequisites to household water security.
- Current and future UNICEF programmes must focus on **protection of water sources and delivery of safe water** in order to improve access to drinking water worldwide.
- **Preparedness and coordination** are key prerequisites for an effective response in emergencies.



A boy collects water at a community water pump in rural Cambodia.

Figure 5. Three components for effective and sustainable WASH programmes



Source: UNICEF WASH Strategy Paper, 2006¹⁰

At the heart of the WASH Strategy is the recognition that a balanced programmatic approach will have the maximum impact on child survival and development. This includes not only service delivery, but initiatives to promote key behavioural change and capacity building to strengthen sector policies and institutions (see Figure 5).

The WASH Strategy seeks to maximize impact by focusing resources on those countries with the greatest need and the best potential for improved coverage. Country prioritization criteria include under-five mortality rates, total child deaths, rural water supply and sanitation coverage (both national

percentages and absolute numbers of uncovered populations), levels of basic education and current rates of progress for achieving sector targets.

Multisectoral approaches are the only way to ensure that programmes have a positive and lasting impact on child survival and development. UNICEF WASH programmes are thus closely coordinated with UNICEF programmes in other sectors – primarily health, nutrition and education. These sectoral programmes are complemented by cross-cutting expertise in monitoring, evaluation and social policy to enhance outcomes at country and regional levels.

Country-specific support

The scale and scope of the UNICEF programme of support in the region varies from country to country. In some countries, such as Cambodia, Lao PDR and Myanmar, UNICEF has long-running comprehensive national programmes that combine significant support at both national and sub-national levels in the areas of policy development, technical assistance and service delivery. In these countries, UNICEF is the government's principal partner in the sector, especially for rural water supply and sanitation. In other countries with robust economic growth, such as China and Viet Nam, programmes are more focused on key strategic interventions to address disparities and gaps, and to influence government-funded programmes for going to scale.

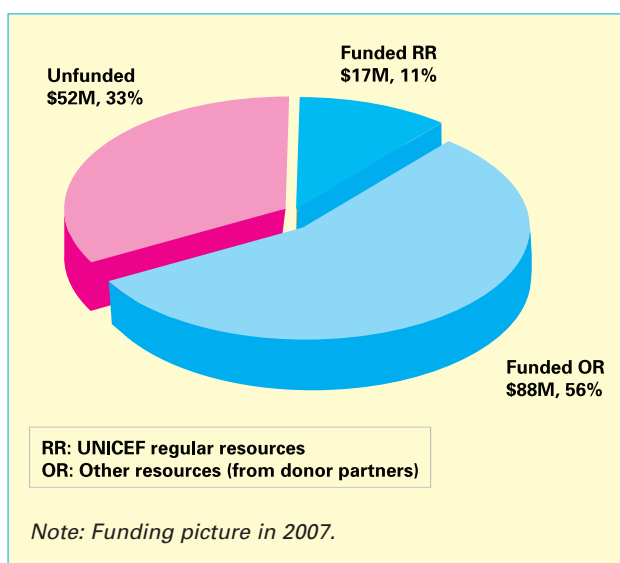
Where UNICEF works in WASH

Cambodia
 China
 DPR Korea
 Indonesia
 Lao PDR
 Mongolia
 Myanmar
 Pacific Islands:
 Kiribati
 Solomon Islands
 Vanuatu
 Papua New Guinea
 Philippines
 Thailand
 Timor-Leste
 Viet Nam

WASH programming also adapts to evolving threats to children's health and well-being. As concerns for environmental and resource sustainability increase, UNICEF is responding by promoting actions that can be taken by poor communities themselves, such as water source protection, micro-watershed management, and wastewater treatment and recycling. UNICEF is expanding its programmes in areas where fresh water resources are under threat from deforestation – such as in Timor-Leste – and where children are suffering from the effects of environmental degradation, such as from air pollution caused by burning arsenic-bearing coal in China.

UNICEF is increasing its budget for programmes in the region, with the support of its funding partners. The overall budget for the region is US\$157 million for 2006 to 2010 (see Figure 6).

Figure 6. UNICEF WASH budget and funding for the East Asia and Pacific region, 2006-2010



Sector reform and development

Influencing policy

The WASH sector is still under-funded in East Asia and the Pacific, and many countries in the region do not yet include targets for access to safe drinking water and basic sanitation in their national development plans. UNICEF works to encourage governments to put WASH programmes at the very top of their national development agendas. These advocacy efforts have enormous potential in countries with rapidly growing economies and an enhanced capacity to fund development programmes.

The China and Viet Nam programmes are examples of how UNICEF's long-term presence and continuous engagement with government partners on policy issues is yielding results. In both countries UNICEF has made significant inputs to policy development, sector planning and budget allocation decisions, using a process of demonstration, analysis, model development and dialogue with decision-makers.

At the regional level, UNICEF works with WSP and WHO to highlight sanitation and hygiene issues. Activities include engagement with

finance ministers and other key decision-makers for increased funding, as well as evidence-gathering, publication development and sponsorship of regional and national conferences.

Building evidence

Collection, analysis and dissemination of data are at the heart of the UNICEF evidence-based approach to advocacy. Along with WHO, UNICEF is responsible for water and sanitation coverage monitoring world-wide through the Water Supply and Sanitation Joint Monitoring Programme (JMP). The data produced through this programme are integral to national, regional and global advocacy efforts and are used by the UN to track progress towards MDG Target 10. UNICEF supports other information and data-gathering exercises, including nationally representative Multiple Indicator Cluster Surveys (MICS), baseline surveys, knowledge, attitudes and practices (KAP) surveys, water quality database development and sector reviews. UNICEF disaggregates data to better highlight gender, sub-national and other disparities, and to improve programme design.



A woman collects water from a tap in rural Myanmar. UNICEF targets WASH activities to the poorest communities in the country.

Building capacity

To enhance sustainability, UNICEF capacity-building focuses on local and intermediate government institutions, helping to strengthen the decentralization process. In Indonesia, for example, UNICEF works with district governments to improve management practices in the sector. In other countries, including Cambodia and the Philippines, UNICEF WASH inputs are part of larger integrated multisectoral programmes aimed to strengthen sub-national structures and decentralization.

UNICEF also continues to provide extensive support to local governments, NGOs and civil society organizations (CSOs) to help build the capacity of communities to plan, manage and maintain their own water and sanitation systems. Within these efforts, special attention is placed on promoting meaningful participation of women and young people in decision-making bodies such as community water and sanitation committees.

UNICEF provides technical training and support to governments at all levels, such as in DPR Korea for design of county town gravity-fed system design and in Lao PDR for rural community and school rainwater harvesting.

Working with partners

The WASH challenge can only be met through coordinated programmes involving governments, external support agencies and other sectoral stakeholders. UNICEF is strengthening its partnership networks in the region and ensuring that its resources are applied strategically to complement the work of its partners and to leverage the greater resources of governments and funding institutions.

UNICEF works with a wide range of partners at the regional, national and sub-national levels including governments, United Nations (UN) agencies, bilateral donor agencies, development banks, specialist WASH organizations, NGOs and CSOs. Work with the private sector is expanding and evolving, and includes initiatives with soap



Students chat near a UNICEF-provided water point at Baan Nai Rai School in Phang Nga Province, Thailand. Their village was devastated in the December 2004 tsunami. UNICEF has assisted in upgrading school water supplies and toilets in southern Thailand.

manufacturers for hygiene promotion, with water utility companies for emergency expertise and, increasingly, with research institutes for inputs in areas ranging from programme design to technology development.

To improve the efficiency and effectiveness of both development and emergency

programmes, UNICEF prioritizes assistance to governments to establish sector coordination mechanisms. In Viet Nam, for example, UNICEF helped to develop a new government-led donor coordination mechanism and a joint UN planning and resource allocation system.

Taking an upstream approach downstream

An 'upstream' approach to programming focuses on advocacy with decision-makers and on building capacity of key sectoral institutions, with the objective of catalyzing change 'downstream' at the implementation level. Programmes that adopt an upstream approach tend to shift away from field-level support in favour of engagement at the national level.

However in some countries in the region, sector budgets and planning responsibilities have been devolved to the provincial or district levels. In these countries – such as Indonesia and the Philippines – UNICEF is finding that upstream work can be highly effective at these sub-national levels. This does not mean that upstream work at the national level no longer has a place, but that the upstream approach can also be successfully applied downstream.



Children collect drinking water to transport home. People can collect drinking water only at certain times of the day in Uvs Aimag Province, western Mongolia.



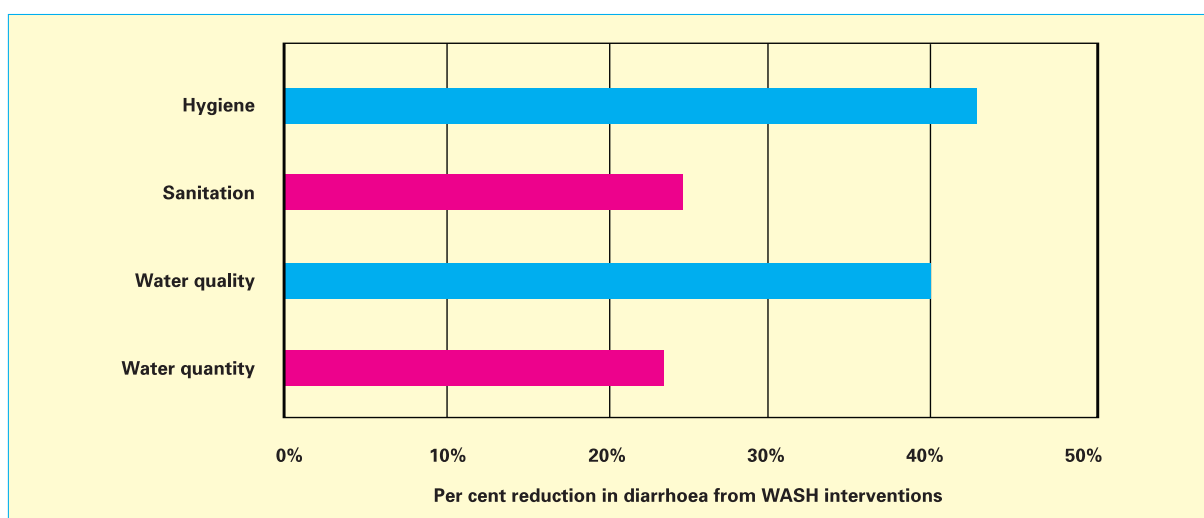
Scaling up WASH

Scaling up sanitation and promoting hygiene

UNICEF country offices in the East Asia and Pacific region have stepped up their efforts on sanitation as it becomes increasingly clear that progress in the area is lagging. Country programmes focus on developing and demonstrating improved programming models and providing support to government partners for taking the models to scale. Evidence-based advocacy is key to achieving increased budgets for sanitation. Working strategically with partners, UNICEF uses country and global data on the costs and health implications of sanitation and hygiene as the basis for dialogue with decision-makers.

In China, since 1996, UNICEF has supported a set of sanitation demonstration projects in low-coverage provinces as part of a three-prong water, sanitation and hygiene package. Local coverage rates have risen significantly through a combination of inputs, including technical assistance, improved latrine designs and social mobilization. Limited UNICEF resources have helped to leverage much larger budget inputs from local governments, communities and householders. The demonstration projects have served as the basis for national advocacy efforts, which have led to increased resources at the national level and the development of a new national policy for rural sanitation.

Figure 7. Using evidence to influence programme design



Source: Fewtrell et al., 2005¹¹

Little Luck, two years old, bathing at a tap stand in Luang Phrabang Province, Lao PDR. The gravity-flow water system supported by UNICEF supplies drinking water and has increased hygiene levels.

In Viet Nam, UNICEF has a similar longstanding partnership with government partners at national and sub-national levels and is supporting efforts by WSP and government to develop a new national action plan for sanitation.

In Myanmar, UNICEF has for many years supported the large-scale National Sanitation Week mass communication initiative. It promotes latrine construction by householders and results in tens of thousands of new latrines each year. This mobilization effort, along with related inputs in the area of technical assistance and support for strategic planning, have contributed to Myanmar's solid increases in sanitation coverage, from less than a quarter of the population in 1990 to more than three-quarters in 2004.

Community-led total sanitation

In Cambodia, with rural sanitation coverage rates the lowest in the region, UNICEF supports government efforts to scale up the

community-led total sanitation (CLTS) approach. CLTS stresses intensive mobilization to reduce open defecation in communities and assist householders to find local solutions, including unsubsidized, low-cost, locally built latrines. This approach has been piloted successfully in Cambodia first by the NGO Concern International, and then by UNICEF, government and other organizations. UNICEF is now providing extensive support to government to scale up the approach nationally. Progress in pilot areas has been excellent, with many examples of communities quickly reaching "open-defecation-free" status.

CLTS or similar approaches are also being developed and implemented with UNICEF support in other countries in the region, including Indonesia (see Box 6) and Papua New Guinea, where the new UNICEF and EU-supported programme includes specific targets for open-defecation-free communities.



Two men dig latrine pits in a camp for people displaced by the tsunami in the village of Lamkawe near Banda Aceh, Indonesia. Since 2005, UNICEF has been supplying safe water and sanitation facilities at camps across the area.

Indonesia: Building on the CLTS approach

UNICEF and provincial governments are employing a modified CLTS approach for sanitation promotion in a major new WASH programme in six provinces in eastern Indonesia. The programme is financed primarily by the Government of the Netherlands.

Like CLTS, the programme follows a demand-responsive approach, motivating people to construct their own toilets without subsidy. The programme also puts emphasis on the quality of toilets and on hygiene promotion.

Toilets constructed under the programme will comply with a set of basic minimum sanitary

requirements to ensure that they do not create health or environmental hazards. Householders will install toilets chosen from a range of technology options – including low-cost options within reach of the poor – and will be assisted by trained, local entrepreneurs.

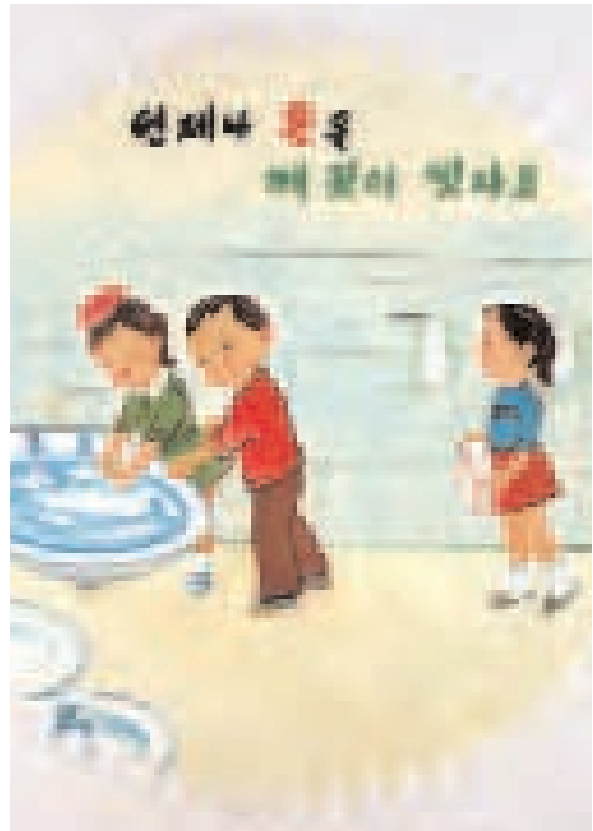
In addition to the CLTS focus on villages becoming open-defecation-free, the programme will promote positive hygiene behavioural change, with a stress on hand-washing with soap to maximize health benefits.

Improving sanitation technologies

UNICEF promotes improved sanitation technologies for use within CLTS or similar community-based sanitation promotion programmes – ones that are low-cost but that satisfy criteria for safety, effectiveness and sustainability. Developing high-quality, low-cost options is key to improving sanitation coverage in the region.

UNICEF also works on reducing the impact of excreta disposal on the environment. This includes the development of new designs for sanitation systems in high water table zones such as in the flood-prone Mekong delta and ecological sanitation (ecosan), an approach that promotes the safe use of human excreta as fertilizer. In DPR Korea, for example, UNICEF is introducing new ecosan latrines based on a Chinese design to make the widespread practice of using human excreta as fertilizer both safer and more effective.

A key UNICEF contribution to sanitation technology development is in the area of school sanitation: making school toilet designs more child-friendly (see Ensuring WASH in Schools).



A poster promoting hand washing amongst school children was produced as part of a larger awareness campaign on school sanitation supported by UNICEF in the Democratic People's Republic of Korea.

Hygiene and the importance of hand-washing with soap

Access to improved sanitation does not, on its own, necessarily lead to improved health. There is now an abundance of evidence showing the critical importance of hygienic behaviour, in particular hand-washing with soap after defecating and before eating or preparing food. Proper hand-washing has become even more important for its protective effect in the face of new infectious respiratory diseases, most of which will emerge from the animal kingdom, such as avian influenza/H5N1, which is currently causing concern in many parts of the region (see page 31).

UNICEF helps to promote positive behavioural change for hygiene on a number of fronts: it encourages increased funding for hygiene activities and the inclusion of hygiene in sectoral policies and strategies; it supports national and sub-national hand-washing campaigns; it includes strong hygiene components within its own WASH programmes in the field, including emergency interventions; and it encourages hygiene promotion in schools and the empowerment of children as agents of change within their families and communities.

National and sub-national hand-washing campaigns are part of UNICEF programmes in China, Indonesia, Lao PDR and Myanmar. UNICEF support includes message design, financial and logistic support for



A young boy in Cambodia washes his hands with soap. UNICEF has been working with community groups to promote hand washing to prevent disease.



Nomindari, five years old, washes her face and hands in her classroom in Uvs Aimag Province, western Mongolia. UNICEF supports early childhood development activities in rural kindergartens.

dissemination of messages and the recruitment of politicians and celebrities as spokespersons.

In Viet Nam, UNICEF is supporting improved coordination of hygiene promotion efforts through a new national online database of hygiene promotional tools. In all countries, UNICEF stresses participatory techniques such as the participatory hygiene and sanitation transformation (PHAST) approach and works with civil society organizations – such as women's groups – to encourage peer-to-peer messaging.

Hygiene promotion campaigns are becoming increasingly sophisticated, departing from prescriptive top-down approaches and using commercial marketing techniques. In some cases, UNICEF and its partners are teaming up with the private sector to tap into new sources of funding and marketing expertise. In Viet Nam, for example, UNICEF is involved in a major new public-private partnership for washing with soap led by WSP and funded by the Gates Foundation. And in Myanmar, UNICEF has teamed up with the motion picture industry to produce and widely disseminate a series of short films promoting hand-washing with soap along with sanitation, safe water handling and food hygiene.

Avian and pandemic influenza and hand-washing with soap

Highly pathogenic avian influenza/H5N1 outbreaks emerged in the region in 2003 and some countries – notably Indonesia – continue to be affected. If an avian influenza virus were to mutate and acquire human transmissibility, and a pandemic of a novel influenza virus were to occur, it would threaten every aspect of children's lives in the region. In recognition of this threat, UNICEF is putting its extensive communication expertise and on-the-ground presence in the region to the service of national governments and partners to help control avian influenza, prevent human infections and prepare for a possible pandemic.

A key component of UNICEF-supported information campaigns for preventing avian influenza infections in humans is hand-washing with soap. Since the promotion of hand-washing with soap is also critical for a reduction in diarrhoea, UNICEF and its partners are supporting combined hand-washing promotion campaigns.

In Indonesia, for example, television spots promote hand-washing both after defecation and after handling poultry and poultry products. This allows programme managers from health and WASH sectors to combine forces.

A similar approach was taken during the SARS outbreak a few years ago in China, where UNICEF supported a large-scale national hand-washing campaign with the dual objective of responding to the outbreak and promoting hand-washing in general.



A billboard shows children washing their hands with soap and water to prevent the spread of dangerous germs.



A poster for use in rural Thai villages shows proper hand washing techniques to promote good hygiene and reduce the risk of avian influenza.

UNICEF CREATE

UNICEF CREATE

Ensuring WASH in schools

In line with its commitment to MDG health and education goals, UNICEF is expanding its support of WASH in Schools programmes in the region. UNICEF works to provide safe and private WASH facilities and to promote hygiene education in schools in 13 countries in the region, up from 7 in 2001. Programmes include four basic components:

- water, sanitation and hygiene facilities;
- hygiene education for teachers and children;
- outreach to communities;
- advocacy for improved policies and alliance building.

Classroom “comfort rooms”

Most UNICEF-supported sanitation interventions in elementary schools in the Philippines involve the construction of toilet and washing rooms (referred to as “comfort rooms”) that are directly attached to classrooms. This is in response to teachers’ and parent-teacher-community associations’ (PTCAs) preference for these additions over communal toilets.

The main advantage of classroom comfort rooms is that teachers can ensure that the facilities are used correctly and kept clean. Classroom comfort rooms also eliminate bullying and security issues (especially for girls), minimize the unauthorized use of toilets and of vandalism, and enable teachers to help young children use toilets and wash basins.

The main disadvantage with the system is that if the toilet smells, then the entire classroom becomes unpleasant or unusable. So the only acceptable technology for classroom comfort rooms is pour-flush toilets, which requires a reliable source of running water. Department of Education standards therefore include classroom comfort rooms as an option only in schools with a piped water system.

Individual classroom comfort rooms are more expensive than a toilet block, but this is the choice of the PTCAs which, in most cases, provide local funding for the facilities.



A girl washes her hands in the lavatory, while other girls line up to use the facilities at San Antonio Primary School in Capiz Province, the Philippines. UNICEF has provided running water and improved sanitation services to increase students’ personal hygiene and health.

UNICEF/HO06-1450/Ninfa Bito

Child-friendly water and sanitation facilities

UNICEF supports the construction of water and sanitation facilities in schools throughout the region. In 2006 over 230,000 students in marginalized communities and in emergency situations were provided with sanitation facilities, over 130,000 with water facilities and many more with hygiene education.

Through a process of piloting, testing and dialogue with experts and with children themselves, UNICEF is helping to develop new child-friendly toilets and hand-washing facilities that incorporate key elements such as privacy and security for girls and suitability for small children. In Viet Nam, a set of child-friendly sanitation designs developed with UNICEF support have been adopted as the government standard for schools nationally. Similar efforts are ongoing in Lao PDR, Myanmar, Thailand and in the Philippines, where UNICEF is helping to refine a local design for classroom toilets (see “Classroom Comfort Rooms”). In Aceh, Indonesia, child-friendly WASH facilities are an integral component of the hundreds of new and rehabilitated schools that are part of the post-tsunami recovery effort.

Hygiene education: Reaching them early

Children are ideal “clients” for hygiene education initiatives: they are open to new

ideas, they are easily reached in the school environment, and the lessons they learn at a young age will last a lifetime.

Countries in the East Asia and Pacific region support a variety of school hygiene education initiatives, including curriculum development, teacher training and the distribution of hygiene education materials to schools. Because of its potential for long-term impact, curriculum development is a key input.

UNICEF’s significant expertise and experience in the education sector helps to ensure that WASH is an integral part of UNICEF education programming initiatives. The most important of these initiatives in the region is Child-Friendly Schools (CFS), which promotes an inclusive, supportive and safe school environment. Water and sanitation facilities, along with hygiene education, are key components of CFS – allowing UNICEF to make catalytic inputs in the area of hygiene education even in high-coverage countries, such as Thailand.

In Lao PDR, UNICEF has developed the “blue box” health promotion kit, which includes hygiene education materials. The kit – distributed nationwide – is designed to complement the life skills component in the national curricula and the teacher training programme.



A new latrine block including child-height toilets and wash basins has been fitted at this school in a northern province of Viet Nam. UNICEF promotes latrine construction in rural and remote areas, along with promoting hand washing as a basic and easily attainable hygiene step.

Linking to communities

Benefits from WASH in Schools programmes extend beyond the school and into communities. A central part of community life, schools serve as informal and formal meeting places, and adults are frequent visitors. Community members are often active in managing and improving schools through parent-teacher associations and school management committees, and so they become very familiar with the condition of school water and sanitation facilities. Schools are therefore ideal sites for demonstrating improved water, sanitation and hand-washing facilities. Indeed, in some cases schools are used as the starting point for sanitation marketing programmes.

But the most important school-community link is in the area of hygiene. Children are energetic and effective advocates for hygiene with their families and the community as a whole, through formal channels (such as school-sponsored events for parents) and informally in their homes. UNICEF programmes in the region support children as agents of change in their communities through a variety of activities, including building their capacity as hygiene promoters,

supporting the formation of school clubs and developing eye-catching promotional material.

Advocacy and replication

UNICEF country offices in East Asia and the Pacific use data on WASH conditions in schools as a key advocacy tool. In China, for example, a UNICEF-sponsored ten-province survey showed that only half the schools assessed had safe water sources and less than a quarter had safe toilets or adequate washing facilities. The survey provided the necessary starting point for dialogue with government on the issue. In Viet Nam, Cambodia and other countries, UNICEF uses existing government data on WASH facilities to support advocacy and fundraising efforts.

Much work is still needed. Current WASH conditions in schools in the region are inadequate, while a UNICEF survey shows that only 38 per cent of countries in East Asia and the Pacific have explicit national plans to provide water, sanitation and hygiene education in all primary schools.¹² In a region where some national economies are expanding in leaps and bounds, this is a situation where advocacy has the potential to yield significant gains.



Women clean vegetables at a community wash station, part of a UNICEF-supported safe water and sanitation project in the province of North Hwanghae in the Democratic People's Republic of Korea.

Improving drinking water quality and quantity

UNICEF is focusing more attention and resources on water quality, providing ongoing support to arsenic detection and mitigation programmes as well as to the broader issue of bacteriological contamination of water supplies.

Responding to the arsenic threat

UNICEF began work in the area of arsenic detection and mitigation in East Asia and the Pacific region in the late 1990s. Current support to the six affected countries in the region includes programme design and planning, arsenic testing and occurrence mapping, communication, water source purification or substitution, and support to arsenicosis diagnosis. In all its arsenic programming UNICEF promotes the right of households and communities to be informed about the quality of their own water sources and the range of options to find safe water alternatives.

In China, UNICEF's relatively modest arsenic mitigation programme has led to significant gains. Contributions to technical capacity building and arsenic testing, together with advocacy on the extent and seriousness of the problem led to the leveraging of over \$100 million in government allocations for the construction of new sources of potable water in arsenic-affected areas in 2003.



Luong Thi Yen, seven years old, drinks water from a new piped system supported by UNICEF. Water tanks have also been installed outside many homes in Son La Province, Viet Nam.

UNICEF continues to support testing and communication activities in six provinces where groundwater is contaminated and two provinces where coal-burning produces arsenic in the air, and has recently helped to establish a National Arsenic Network involving government departments and the China Centre of Disease Control.

Similarly in Viet Nam, the well-established partnership between government and UNICEF in the water and sanitation sector has enabled UNICEF to play a catalytic role in the development of a national plan of action for arsenic mitigation, involving several ministries and government agencies.

UNICEF's extensive experience from the large arsenic mitigation programmes in Bangladesh and India has also contributed to the effort in the East Asia and Pacific region, through information sharing and exchange visits.

In a sub-regional effort for Mekong countries (Cambodia, Lao PDR, Myanmar and Viet Nam), supported by AusAID, UNICEF provides support for testing, mapping and database development that have resulted in a much clearer picture of the extent of the arsenic problem. From 2004 to 2006, over a quarter of a million water sources were tested and mapped, mitigation plans were developed and national water quality surveillance systems were strengthened. In addition, UNICEF supported national and sub-national government partners to carry out communication campaigns to raise arsenic awareness, and research on alternative water sources for arsenic-affected communities. Ongoing efforts focus on testing and communication campaigns being strengthened and expanded. Additional support will help to develop safe water systems for households and communities, including the tapping of alternative safe water sources such as rainwater and installation of deep arsenic-free boreholes. In Myanmar, solar-powered pumps are used on such deep wells where diesel fuel is in short supply.



Boys collecting water from the pump at the village centre in Uvs Aimag, western Mongolia. Water is collected in barrels or tanks and stored at home.

Water quality initiatives

The silver lining in the arsenic cloud has been increased awareness among sector professionals, decision-makers and, to some extent, the general public, on the importance of water quality in general. In response, UNICEF is expanding its involvement in water quality issues in the region, moving increasingly beyond arsenic mitigation towards more comprehensive approaches to water safety.

UNICEF works with governments, WHO – the UN focal agency for water quality – and other partners to develop water safety plans, refine national water quality standards and improve government water quality monitoring systems. In several cases, monitoring protocols and database designs developed for UNICEF-supported arsenic mitigation programmes have been expanded to encompass all key water quality parameters.

UNICEF also supports initiatives throughout the region that allow families and communities to monitor and control bacteriological contamination of their own water sources through community-based surveillance systems, training and the introduction of low-cost testing and treatment technologies.

UNICEF programmes encourage household-level approaches to water quality to complement existing system-based water safety programmes. This includes a greater focus on the promotion of safe water storage and handling practices. Point-of-use water treatment using standard technologies (such as chlorination) or new approaches (such as SODIS – the solar disinfection of water) figure prominently in UNICEF water quality programming. For example, UNICEF supports local water filter manufacture in Myanmar and promotes bio-sand household filters in Indonesia. In emergencies, UNICEF provides a variety of water treatment systems – from chlorine tablets to large water treatment plants.

In Cambodia, UNICEF and WSP sponsored a comprehensive study by the University of North Carolina of a locally produced ceramic filter. The study verified that the filter is effective at removing pathogens from water in the home and, more importantly, established that regular use of the filters by householders resulted in a 46 per cent reduction in diarrhoea prevalence. The study also highlighted the importance of continued education programmes on correct filter use and availability of spare parts.



Water is processed at a UNICEF-supported water treatment plant in Siron, Aceh Province, Indonesia. The plant serves some 30,000 people still displaced by the 2004 tsunami.

Water supply

On issues of water supply policy, UNICEF advocates for reform and increased budgets to address disparities in access and improvements in service.

UNICEF also provides direct support for improved water supply through government departments responsible for rural development or public works but also under NGO agreements. Most support is for rural community water supply, including ground-water development with well drilling and hand-dug wells. Some interventions target urban water supply, such as in DPR Korea where UNICEF – in partnership with ECHO – rehabilitated city water supply systems in the isolated north of the country through the provision of materials and technology unavailable in-country, providing significantly improved access to water to over 200,000 people. In other countries, including Cambodia and the Philippines, water interventions target marginalized communities through integrated district child rights programmes. In difficult areas, such as remote arid islands, in mountainous regions or where traditional water sources are contaminated, UNICEF works with partners to develop appropriate water supply technologies, including rainwater harvesting and gravity-fed systems. Renewable energy alternatives for water-lifting, such as solar pumping, are also being demonstrated and researched.

Pilot projects demonstrate improved approaches and technologies for water service delivery. UNICEF, in collaboration with the French NGO GRET in Cambodia, developed a public-private partnership to build and manage a water supply system for a community in an arsenic-risk area. A local engineering firm implemented the design and construction while the commune council signed an operator agreement with a local entrepreneur. As a result, 515 families have safe piped water connections to their homes. While UNICEF direct support cannot meet



Community members from Svay Chrum District, Cambodia plan where they will construct a well. This will allow for a water supply during the dry season.

the needs of the region, the number of people reached with direct service delivery adds up: in recent years UNICEF has provided access to water to hundreds of thousands of people a year.

Wastewater management

As economies grow and governments construct more piped water systems and water-borne sanitation, wastewater management is becoming a significant challenge, especially in densely populated towns and poor peri-urban areas. In DPR Korea, UNICEF has sponsored Bremen Overseas Research and Development Agency (BORDA) to design, pilot and provide training on decentralized wastewater treatment systems appropriate for towns with cold climate conditions. In Banda Aceh, Indonesia, UNICEF works with Oxfam to promote on-site wastewater treatment systems for new tsunami housing, with a particular focus on difficult, high water table environments. In China, UNICEF is helping to develop a national strategy for handling wastewater disposal and treatment in rural areas.



Emergency WASH

UNICEF has significantly expanded its emergency WASH programme in recent years, both in its role as a major agency for direct response and as lead agency for coordination under the Inter-Agency

Standing Committee (IASC) cluster approach. In 2006, 58 per cent of UNICEF WASH expenditure in the region was for emergency response and recovery, twice the percentage of a decade ago.

Direct response

UNICEF's Core Commitments for Children (CCCs), which govern the organization's response to emergencies, commit UNICEF to a set of interventions in the area of water, sanitation and hygiene. Over the last few years, UNICEF has responded to dozens of emergencies in the region, ranging from rapid and limited interventions in acute emergencies – such as the distribution of water purification tablets during floods in Viet Nam – to comprehensive long-term interventions in complex emergencies, such as the ongoing programme of support in DPR Korea and Timor-Leste.

The largest UNICEF WASH emergency intervention in recent years was in response to the 2004 Indian Ocean tsunami. In a successful programme to restore access to services and prevent the outbreak of disease, UNICEF managed the large-scale distribution of hygiene and safe water kits, hygiene education, water trucking, and the repair and construction of water and sanitation system in camps, communities, schools and health centres. Rapid restoration of water supplies was critical, and UNICEF interventions

reached over a million people in the seven tsunami-affected countries, including Indonesia, Myanmar and Thailand in the East Asia and Pacific region.

The scale of the destruction caused by the tsunami means that the reconstruction effort continues in these countries. In Indonesia, UNICEF is involved in the construction of over 120 new rural water systems; two town water systems; a water, sanitation and hygiene package for 500 schools; and an innovative new anaerobic digestion sewage treatment plant for the town of Banda Aceh. In southern Thailand, UNICEF is upgrading WASH facilities and supporting hygiene education in 300 schools in tsunami-affected communities.

In 2006 and 2007 UNICEF provided emergency WASH services in response to the Yogyakarta earthquake in Indonesia, the Durian typhoon in the Philippines, a tsunami in the Solomon Islands, flooding in DPR Korea, civil unrest in Timor-Leste and many other emergencies.

A mother washes her young son in a temporary shelter in Banda Aceh, Indonesia. In the aftermath of the Indian Ocean tsunami, thousands of people were displaced and forced to live in camps. The provision of safe emergency water was critical in preventing the widespread outbreak of water-borne diseases.

A high-risk region

Many countries in the region are susceptible to natural disasters. Indonesia is a particularly high-risk country. Since the 2004 tsunami, which killed over 130,000 people, there has been an almost constant barrage of natural disasters, including three major landslides, five earthquakes (including the 2005 Yogyakarta earthquake), two major floods and a volcano eruption. UNICEF provided WASH assistance in many of these emergencies.

Other countries in the region with frequent natural disasters include China, Viet Nam and the Philippines. Given the link between tropical storms and climate change, there will likely be an increase in the frequency and severity of emergency events in the region.



A water tanker truck delivers clean water to camps for tsunami-affected internally displaced persons in Aceh, Indonesia.

Coordination and preparedness

UNICEF is the global lead agency for the WASH sector under the IASC cluster approach. Launched in 2005, the cluster approach aims to address gaps in response and enhance the quality of humanitarian assistance by strengthening partnerships and coordination between UN agencies, the Red Cross/Crescent movement, international organizations and NGOs.

In major emergencies where the cluster approach is applied, UNICEF is requested to lead national coordination efforts. In 2006 UNICEF led the response to the Yogyakarta earthquake and the Durian typhoon. In both cases the cluster approach was successful in enhancing coordination and emergency response and ultimately linked sectoral partners in expanded partnerships for non-emergency programme collaboration.

Readiness is of critical importance when disaster strikes in risk-prone countries, and emergency preparedness planning is an important part of the UNICEF programme of

support. Country preparedness activities include planning for emergency staff deployment, pre-positioning of strategic supplies and preparation of pre-approved contracts with local implementation partners (such as water trucking companies) and suppliers, as well as advance coordination arrangements with government partners and other stakeholders through the cluster approach. UNICEF's longstanding partnership with governments means that it is often invited to participate in the development of national preparedness plans and policies.



In Timor-Leste, a seven-year-old fills a bucket while another child works the hand pump in Dili. Since independence in 2002, UNICEF has been working with government and partners to develop water and sanitation services.

Yogyakarta earthquake

On May 27, 2006 a powerful 5.9 magnitude earthquake flattened neighbourhoods in and around the densely populated historic capital of Yogyakarta and surrounding communities in central Java. Almost 6,000 people were killed and over 45,000 injured. More than a million people, including thousands of the injured, were left homeless. People were forced to sleep under plastic sheets and in makeshift centres, initially without water, latrines or other basic necessities. There was large-scale damage to homes, government buildings, schools, hospitals and the water and sanitation network.

Within 24 hours, the UN Humanitarian Coordinator invoked the cluster approach to coordinate the emergency, with UNICEF the designated lead agency for four clusters: WASH, Education, Protection and Information Technology. On the basis of lessons learned from other emergencies, coordination was streamlined through mechanisms such as an online document repository, a real-time needs and progress monitoring system, and the establishment of procedures for NGO reporting to government.

UNICEF implemented the direct response with funding from DFID, CIDA and other donors, in cooperation with cluster partners. The immediate response addressed critical needs through a water trucking operation that reached an average of 15,800 people per day, and the delivery of jerry-cans, hygiene kits, water bladders, pipes and other essential supplies. In addition, over 5,000 temporary and permanent latrines were constructed for homes, internally displaced person (IDP) camps, health facilities, schools and children's centres, and 1,250 wells were repaired or constructed.

On November 30, 2006 UNICEF completed the relief operation and closed its temporary office in Yogyakarta. A core group of staff continued work in the government planning office to provide follow-up for UNICEF-supported activities and support to government for ongoing coordination of the transition and reconstruction effort.



A woman and a man fetch water from a UNICEF-provided water storage facility with bathing cubicles in Lambada Lhok, a tsunami-devastated fishing village near Banda Aceh, Aceh Province, Indonesia. UNICEF, with government and international partners, has programmes underway in the areas of health, nutrition, water and sanitation, education and child protection.



Moving forward

Recognizing the pivotal role that it has to play to achieve the MDG target of sustainable access to safe drinking water and basic sanitation, UNICEF is intensifying its support to WASH programmes in the region. In Indonesia, UNICEF has re-established a comprehensive national programme, responding to service gaps that extend far beyond the tsunami recovery area. Similar, but more modest expansions are taking place in Timor-Leste and DPR Korea, where emergency and development programmes work side by side. New programmes are starting up in the Philippines, Mongolia and Papua New Guinea in response to the huge challenges in these countries. And in the Pacific Island nations, UNICEF has created a new WASH programme based in its Fiji area office, with a focus on support to Kiribati, Solomon Islands and Vanuatu. For these new and growing country programmes, technical, programming and partnership support are provided by the regional office in Bangkok.

This expanded network and increased funding of WASH programmes – now encompassing most countries in the region – will enable UNICEF to enhance the level of its support to government partners through strengthened WASH programmes and help to ensure the realization of children's rights to survival and development in East Asia and the Pacific.

A young girl getting a lesson in the importance of good hygiene in a community outside Papua New Guinea's capital Port Moresby. UNICEF is working with community partners to promote good hygiene and improve access to safe water and sanitation.

Endnotes

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- 6 Figures are from WHO sources and from research carried out for the *2006 Human Development Report* (see Section 1.2).
- 7 “Evaluation of the Economic Impacts of Sanitation in Cambodia,” WSP, August 9, 2007 (draft).
- 8 *Guidelines for drinking-water quality*, Third Edition, WHO, 2006.
- 9 *IPCC 4th Assessment Report, Working Group II (Impacts, Adaptation and Vulnerability)*, Summary for Policymakers, 2007 and WHO Climate and Health Factsheet, 2005.
- 10 This figure is based in part on the Hygiene Improvement Framework, developed by the United States Agency for International Development (US AID) Environmental Health Project.
- 11 Fewtrell et al., “Water, sanitation, and hygiene interventions to reduce diarrhoea in less developed countries: a systematic review and meta-analysis,” *Lancet Infect Dis* 5 (2005): 42-52.
- 12 MTSP baseline data from 2006 UNICEF annual reports.

Water and sanitation coverage for UNICEF programme countries in East Asia and the Pacific

Country	Population		Sanitation coverage			Water supply coverage						
	<i>total</i> (x1000)	% urban	% rural	% <i>total</i>	% <i>urban</i>	% <i>rural</i>	% <i>total</i>	% HC	% <i>total</i>	% HC	% <i>total</i>	% HC
Cambodia	13,798	19	81	17	53	8	41	9	64	36	35	2
China	1,307,989	40	60	44	69	28	77	69	93	87	67	57
Indonesia	220,077	47	53	55	73	40	77	17	87	30	69	6
Kiribati	97	49	51	40	59	22	65	36	77	49	53	22
Korea, DPR	22,384	61	39	59	58	60	100	77	100	81	100	71
Lao PDR	5,792	21	79	30	67	20	51	14	79	44	43	6
Malaysia	24,894	64	36	94	95	93	99	94	100	98	96	87
Mongolia	2,614	57	43	59	75	37	62	28	87	49	30	1
Myanmar	50,004	30	70	77	88	72	78	6	80	16	77	2
Papua New Guinea	5,772	13	87	44	67	41	39	12	88	61	32	4
Philippines	81,617	62	38	72	80	59	85	45	87	58	82	23
Solomon Islands	466	17	83	31	98	18	70	14	94	76	65	1
Thailand	63,694	32	68	99	98	99	99	38	98	85	100	16
Timor-Leste	887	8	92	36	66	33	58	12	77	28	56	11
Vanuatu	207	23	77	50	78	42	60	39	86	74	52	28
Viet Nam	83,123	26	74	61	92	50	85	24	99	73	80	6

HC = household connection

Source: WHO/UNICEF Joint Monitoring Programme(JMP) for Water Supply and Sanitation (2004 data set)

For full global, regional and country coverage data see JMP website: www.wssinfo.org

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