



# Human Development Report 2006

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## Children and Water, Sanitation and Hygiene: The Evidence

UNICEF (United Nations Children's Fund)

## **UNICEF's work in rural water supply and sanitation**

### ***Children and Water, Sanitation and Hygiene: the Evidence***

#### ***The links to child health***

Surviving diarrhoea is the largest single hurdle facing young children. In countries with high child mortality rates, diarrhoea accounts for more deaths in children under five years of age than any other cause of death – more than pneumonia and more than malaria and HIV/AIDS combined. Globally, more than one-fifth of under-five deaths are caused by diarrhoea, and in some countries the proportion of child deaths due primarily to diarrhoea is as high as 44 per cent. Worldwide, 1.6 million of children die from diarrhoea per year; some 4,500 child deaths every single day. The largest single cause of these deaths is an unsafe and unhygienic environment: over 90 per cent of diarrhoeal deaths are attributed to poor hygiene, sanitation, and unsafe drinking water.

Although still very high, diarrhoea mortality rates are now less than half what they were in 1980. However, there has been no parallel decrease in diarrhoea morbidity rates over past decades. Children in developing countries still have an average of four to five bouts of diarrhoea each year. This represents a massive burden of disease. Children weakened by frequent diarrhoea episodes are more likely to be seriously affected by malnutrition and opportunistic infections (such as pneumonia), and they can be left physically and mentally stunted for the rest of their lives.

The only way to reduce the burden of repeated diarrhoea episodes and related serious long-term health consequences is through improved water, sanitation and hygiene (specifically: improved hygiene practices, the use of toilets or latrines, and the use of safe drinking water). Estimates based on the assessment of rigorous impact studies now show that water, sanitation and hygiene interventions can reduce the burden of diarrhoeal diseases by at least 42 per cent. Interventions that focus on improving hygiene practices seem to have the greatest impact.

Water, sanitation and hygiene are also directly linked to other diseases, including schistosomiasis, trachoma and hookworm disease. When diarrhoea and other directly related diseases are taken into account, current WHO estimates show that poor water, sanitation and hygiene account for approximately 4 per cent of all deaths globally (16% for under fives) and 5.7 per cent (13% for under fives) of the total disease burden. Due to the importance of the long-term developmental impairment of diarrhoea morbidity, the total disease burden may, in fact, be double this.

However, these estimates do not take into account diseases in which the links to water, sanitation and hygiene are less direct and thus more difficult to calculate, including malaria, filariasis and HIV/AIDS. Unhygienic environments and poor hygiene practices result in chronic diarrhoea, which is a leading cause of death in people living with HIV/AIDS and is associated with further depression of the immune system and an increase in opportunistic infections. Safe water is essential in areas where HIV-positive mothers use infant formula as a breast milk substitute and as part of an overall treatment, care and support package for people living with HIV/AIDS. In Uganda, for example, improved quality and storage of drinking water was shown to significantly reduce both the frequency and severity of diarrhoea episodes among persons living with HIV.

Neonatal disorders – another major killer of children – are also closely linked to hygiene. Clean delivery practices by birth attendants – including hand-washing and the use of clean instruments and delivery surfaces – has the potential to prevent over 400,000 neonatal deaths a year, or 4 per cent of all under-five child deaths.

There is emerging evidence that good hygiene practice can reduce the spread of acute respiratory infections, responsible for approximately 1.75 million child deaths (15% of total deaths) every year.

While to date attention on ARIs has focused on appropriate treatment, recent studies have given strong indications that hand-washing may be able to significantly reduce transmission of these diseases. A 2005 study in Karachi, Pakistan found that children younger than five years in households that received plain soap and hand-washing promotion had a 50 per cent lower incidence of pneumonia than children in control areas.

Finally, the current estimates of the disease burden attributed to water, sanitation and hygiene do not take into account diseases that are directly linked but for which no estimates are available on their impact on child mortality and morbidity rates. The two most important of these diseases are arsenicosis and fluorosis. These two diseases alone, both of which are caused by wide-scale contamination of water supplies, affect over 100 million people worldwide.

### ***The links to education***

There is an increasing body of evidence showing that improving water, sanitation and hygiene in both communities and schools can have a significant impact on enrolment levels, on the ratio of girls to boys in schools, on educational achievement and on the quality of education.

Water availability in households is an important factor in the enrolment, attendance and drop-out rates of children. In areas where safe water sources are distant, girls are often obliged to miss school to help fetch water. This is most often seen in African countries with low water coverage rates, but the correlation has also been documented in countries in Asia, the Middle East and Latin America. When water access is improved in communities, school enrolment rates have been shown to increase: in Tanzania, India, Bangladesh and other countries, by up to 15 per cent. Back-to-school campaigns in countries in transition are especially dependent on water supplies. Teachers are hesitant to re-locate to communities without a reliable and safe source of water.

Illness caused by poor sanitation and hygiene conditions in communities can also have a significant impact on education. Helminth infections – including roundworm, hookworm and schistosomiasis – affect about 400 million school-aged children a year. These parasites aggravate malnutrition and retard children's physical and mental development. Helminth infections have been shown to have a significant negative impact on school attendance and on learning ability. Other diseases, including diarrhoea, can have similar effects. Improvements in sanitation and hygiene in communities – along with de-worming in schools – increase school attendance in countries throughout the world.

There is also evidence that a lack of clean and private sanitation and washing facilities in schools discourages girls from attending school full time and forces some to drop out altogether. This becomes more pronounced as girls reach puberty and privacy and security concerns become more important. UNICEF supports programmes that focus on providing girl-friendly sanitation and washing facilities in schools to address this. Much is yet to be done – in some countries in Africa and Asia as few as 10 per cent of schools have adequate and separate sanitation facilities, while student-to-latrine ratios can be as high as 150:1.

Programmes that combine improved sanitation and hand-washing facilities and hygiene education in schools can improve the health of children for life and can promote positive change in communities. Teaching children the importance of hand-washing and other good hygiene habits promotes increased knowledge and positive behaviour change, provided that the schools have an adequate number of safe toilets and sufficient water for washing. In some cases the results are dramatic: UNICEF-supported school-based hygiene education projects in China and Nigeria have reported increases of between 75 per cent and 80 per cent in hand-washing with soap amongst students. When school-based programmes are designed in a coordinated way with wider community programmes, children can be helped to become 'agents of change' – to pass on the health and hygiene information learned at school to family and community members – leading to benefits for the entire community.

## ***The links to sustainable development***

There is a growing awareness by decision makers in governments and stakeholder institutions that water, sanitation and hygiene are critical for ensuring sustainable development and reducing poverty. This recognition is based on a better understanding of the links between water, sanitation and hygiene and the economic and social development of communities and nations.

Poor hygiene, sanitation and water exacerbates poverty in many ways. The burden of disease caused by unsafe and unhygienic environments results in reduced productivity and elevated health-care costs. In a recent study, WHO estimates that if everyone had access to basic water and sanitation services, the health sector would save over US\$11 billion in treatment costs and people would gain 5.5 billion productive days per year due to reduced diarrhoeal disease.

The burden of fetching water from distant sources and travelling to sanitation facilities outside the home takes time away from productive activities, child-care, education or leisure. UNICEF data shows that in rural sub-Saharan Africa, people (mainly women) spend an average of just under half an hour for *each* trip to a water source. Since in most cases several trips are made per day, this represents a significant amount of time lost. And because poor hygiene, sanitation and water reduce education enrolment and achievement levels, it has serious long-term economic and social consequences. In a 2003 study linking poverty to deprivation faced by children (including shelter, water, sanitation, health, nutrition, education and information), poor sanitation and water supply were second only to inadequate shelter as the most important causes of absolute poverty.

The consequences of poor water, sanitation and health affect women and girls the most. It is usually women and girls who fetch the water and who care for the children and other household members who fall sick from water-related diseases. Distant or non-existent sanitation facilities have greater health and safety repercussions for women than for men, and girls are affected the most by poor water and sanitation facilities in schools. Improvements in hygiene, sanitation and water can help reduce the drudgery that contributes to gender inequities, and have the potential to improve the status of women within the family and community.

The use of safe and sustainable supplies of water are essential not only for health and well being, but also for industry, agriculture and the livelihoods of households, communities and nations. There is increasing recognition that household demand for water goes much further than simple domestic use. Water is used for a range of small-scale productive activities including backyard gardening, livestock keeping, micro-enterprise that often represent a critical part of the livelihoods of the poorest.

Available water supplies are under threat worldwide. Due to poor management, over-use, pollution and other factors, there is less safe water available to meet the needs of more people. Competition for water is now the norm, increasingly at the local level pitting community members against each other, and it is often the poor – poor households, poor farmers and poor communities – who do not get their share. The result is increased hunger and poverty.

## ***The UNICEF Programme Experience***

UNICEF works in more than 90 countries around the world to improve water supplies and sanitation facilities in schools and communities, and to promote safe hygiene practices. UNICEF sponsors a wide range of activities and works with many partners, including families, communities, governments and like-minded organizations. In emergencies UNICEF provide relief to communities threatened by disrupted water supplies and disease. All UNICEF water and sanitation programmes are designed to contribute to the MDG targets for water and sanitation: to halve, by 2015, the proportion of people without sustainable access to safe water and basic sanitation.

The experience, expertise and credibility built over 40 years of working with governments and communities gives UNICEF a unique position in the sector.

## ***Lessons learned in UNICEF-supported WASH programmes***

1. Effective targeting of activities requires high-quality, disaggregated information.
2. Inter-sectoral approaches maximize impact.
3. Household water security is dependent on the good management and equitable distribution of the freshwater environment.
4. Water quality must be assured.
5. Hygiene behaviour change is a key factor for improved health.
6. Sustainability depends on decentralized authority, resources and expertise, with adequate central support.
7. An enabling policy environment and adequate funding are prerequisites for going to scale.
8. UNICEF must work with partners, within national frameworks of support.
9. Preparedness and coordination are key prerequisites for an effective response in emergencies
10. Reaching the poor and addressing gender inequities requires priority attention and specific techniques.

## ***UNICEF support for WASH***

### ***Three packages of support***

#### **I: Strategies of support for 60 priority countries (a comprehensive package)**

##### ***1. Promoting a balanced national WASH programming framework***

UNICEF encourages a three-pronged approach including the provision of water supply and sanitation services, complemented by the promotion of improved hygiene behaviour and supported by an enabling policy environment.

##### ***2. Supporting inter-sectoral approaches***

Maximum child survival and development benefits are realized when hygiene, sanitation and water programmes are coordinated or integrated with other sectoral programmes. UNICEF works in several different sectors precisely because inter-sectoral approaches have a greater impact on child survival, development and protection.

##### ***3. Providing catalytic and continuous support for scaling up sustainable WASH programmes***

Targets will be met only when national sector programmes are significantly scaled up, and UNICEF will prioritize support activities that contribute to this. However, increased coverage without improved sustainability is not true scaling-up, and UNICEF will actively work to identify and promote models to improve the sustainability of WASH services.

##### ***4. Supporting community management through effective decentralisation processes***

UNICEF supports measures that help create strong institutions at the intermediate level (municipal, district, province, etc.), since they are critical to supporting community managed service provision, which is in turn essential to the sustained scaling up of WASH coverage.

##### ***5. Promoting safe and sustainable water supplies through improved water resources management***

UNICEF and its partners in the WASH sector have a responsibility to promote and support measures to protect the freshwater resource base.

#### 6. *Focusing on sanitation, water quality and hygiene at the household level*

There is increasing evidence that a greater focus on the household level increases the effectiveness of sectoral programmes, especially in the areas of sanitation, water quality and hygiene promotion. UNICEF promotes affordable, safe household latrines, supports technology development in the area of household water treatment, and programmes that seek to improve key household hygiene practices, esp. hand-washing with soap.

#### 7. *Addressing a child's right to health and education through the provision of WASH in schools*

UNICEF is committed to ensuring that all children have access to high quality water and sanitation services at school, and the benefit of hygiene education. School-based WASH activities represent an opportunity to directly address a child's right to both education and health.

### **II: Strategies for countries in crisis and transition (emergencies)**

1. Support to national emergency preparedness planning.
2. Coordination of UN and NGO emergency response programmes (as the Inter-Agency Standing Committee designated lead agency for WASH in emergencies).
3. Acceleration and adaptation of existing programmes to rapidly and efficiently respond in emergency situations.
4. Ensuring that emergency response inputs during emergencies reinforce best practices in the sector and contribute to national priorities as defined by government, UNICEF and partners.

### **III: Strategies for all other countries where UNICEF works (the basic package)**

1. Advocacy and technical support for improving hygiene awareness and promoting behaviour change.
2. Technical support for water quality.
3. Development of emergency preparedness plans for WASH.
4. Support to national monitoring for achievement of MDG target 10.

## ***Guiding Principles***

In all its work – within and outside the WASH sector – UNICEF is guided by a set of core principles and approaches. The following seven guiding principles are most important for the WASH sector.

### ***1) Human rights-based approach to programming***

UNICEF-supported WASH programmes have always contributed to the realization of a child's right to water, and to survival and development. However, a human rights-based approach to programming goes further. In a rights-based approach, the aim of all programme activities is to contribute directly to the realization of one or more human rights, and human rights principles should guide all phases of the programming process. In addition, programmes should explicitly contribute to the development of the capacity of duty-bearers to meet their obligations and of rights-holders to know and claim their rights. There are five key human rights principles that guide UNICEF-supported WASH programmes: (1) universality and non-discrimination; (2) best interests of the child; (3) participation; (4) indivisibility and interdependence; and (5) accountability.

A rights-based programming framework for hygiene, sanitation and water not only helps to ensure the fulfillment of rights, it improves the effectiveness of UNICEF inputs in the sector. There are many examples of this, including:

- Greater participation of women and young people in water and sanitation committees ensures that these committees make better decisions and ultimately become more effective;
- Participation of children in the design of school facilities helps to improve acceptance and usage rates, and thus minimizes wastage of inputs on poor designs;

- Carrying out duty-bearer and rights-holders analyses not only contributes to the fulfillment of rights, it helps to identify new stakeholders who can contribute skills and resources towards improving sector programmes;
- Identifying marginalized and vulnerable populations ensures that resources are directed where they have the greatest impact;
- Collecting and disseminating evidence that shows how the rights to survival and development are dependent on improved water, sanitation and hygiene promotion services can help to increase the allocation of funds to sectoral programmes.

## **2) Working in-country, with governments**

*Government, at both the national and intermediate level, is UNICEF's principal partner in country activities. UNICEF uses its resources to strengthen governments to more effectively meet the demands of people to their right for high quality, sustainable WASH.*

UNICEF increasingly focuses on the development of government capacity at the intermediate level, complementing support at community and national levels.

UNICEF has a more substantial presence at the country level than any other external support agency working in the sector. This continuing in-country presence allows UNICEF to maintain its unique role as trusted advisor to government.

## **3) Working with partners to develop innovative approaches and leverage resources**

*UNICEF uses its position as a lead WASH agency to encourage greater coordination and collaboration, improve knowledge management, use and sharing and actively leverage resources for the sector.*

UNICEF works with a wide range of sector partners, including governments, other UN agencies, bilateral agencies, development banks, international and local NGOs, civil society organizations and the private sector. Given the complexity of WASH, the need for balanced strategic and programmatic approaches, and the enormity of the challenge posed by meeting the MDG targets for water supply and sanitation, working alone is not an option.

UNICEF develops and works within partnership frameworks for WASH, including sector-wide approaches (SWAs) and joint UN programming initiatives. These aim to capitalize on the different competencies and resources of each contributing organization.

## **4) Gender**

*Women and girls have a special role in WASH, as the main providers of domestic water supply and sanitation and maintainers of a hygienic home environment. UNICEF strives for the full involvement of women, particularly in decision making roles, in all supported WASH activities.*

In much of the world, women and girls are traditionally responsible for domestic water supply and sanitation, and maintaining a hygienic home environment. As managers at the household level, women also have a higher stake in the improvement of services and in sustaining facilities. Effective programmes recognize this by ensuring that women (and where relevant children) are directly involved in the planning and management of water supply and sanitation programmes, and that hygiene promotion interventions are specifically designed to reach women and girls.

A human rights-based approach dictates that UNICEF-supported programmes should ensure that women's participation goes beyond tokenism – that women do not simply participate but begin to assume a level of decision-making authority consistent with their central role in household WASH. This requires innovative approaches that challenge negative gender stereotypes and empower women

with the knowledge and tools to take on new roles. It also requires active monitoring of the role of women in UNICEF sponsored WASH activities.

The special water- and sanitation-related needs of women and girls must be considered in WASH programmes supported by UNICEF. Security and privacy issues related to the location and design of water and sanitation facilities is one area where special attention is required, as is the need for taking into account menstrual hygiene in the design of facilities and of hygiene education programmes.

### **5) Pro-poor approaches**

*Meeting the rights of the poor to WASH is at the heart of UNICEF's mission. UNICEF undertakes concerted efforts on advocacy for the rights of the poor, the development of improved poverty-specific approaches, and improved monitoring and mapping to identify and effectively target the poor.*

Focusing attention and resources on the poor is both an imperative of a human rights-based approach to programming and a sound strategy for increasing the impact of sectoral inputs on child survival and development. National policies and legislation backed up by effective regulatory mechanisms that favour the poor are a necessary starting point and already exist in some countries. But actually reaching the poor with improved services also requires the tailoring of interventions to their needs, priorities and capabilities.

Reaching the poor also assumes that it is possible to know who the poor are and where they live within the community. As countries come close to meeting the MDGs and coverage levels rise, the need for more detailed and better mapping of poverty and of the needs and demand of the poor will become increasingly important. This is because, as broad coverage increases, it is increasingly the poor, and disproportionately women and children, who will fall into the gaps between the larger programmes. As the easier to reach parts of the population are dealt with it will increasingly be the rural and urban fringes that will continue to see high levels of lack of service. These populations need to be reached, not only because their rights as humans demand it, but because they can act as pockets for communicable diseases that at times of stress break out into the wider population. Accurate and effective sub-national mapping of demand and needs is therefore crucial.

UNICEF has traditionally focused on rural areas, as these were where the worst poverty and greatest challenges to providing WASH were found. However, with continuing rural-urban population movement, and the growth of peri-urban areas and slums, more and more of the poor are now found outside rural areas. UNICEF's primary target is poor children, and the poor generally, wherever they are found. In situations where UNICEF can make meaningful WASH contributions in urban areas, it will take up the challenge of supporting programmes for the urban poor (see Section IV (c) for more information).

### **6) Evidence-based advocacy and programme design**

*In all its work, UNICEF seeks to ensure that programme designs are based on the best available information and knowledge, and will ensure that advocacy is based on rigorously analyzed evidence.*

UNICEF has amassed a wealth of organizational experience through the implementation and assessment of long-standing programmes of support in numerous countries around the world. The context-specific lessons learned from this organizational experience at the country level is a key resource for improving programmes, both those supported by UNICEF and by its partners. At the same time, there is an increasing body of evidence from the research and scientific community that points the way towards different and improved approaches to programming for child survival and development. UNICEF will make full use of research-based and local empirical evidence in both the design of supported programmes and in advocacy with other sector stakeholders.

**7) Learning-based approaches guided by effective knowledge management**

*UNICEF is using its role as a sector leader to encourage an open, enquiring and learning based approach to providing WASH services to the poor. It will also support the consolidation of quality sector knowledge, both nationally and globally.*

An improved knowledge base at global and national level is essential to achieving the WASH MDGs, as is the capacity to apply it. Locally valid solutions can only be created by locally acquired knowledge, gained through active experimentation and learning. Sometimes this learning can be catalyzed by the introduction of existing information from other countries or regions. Sometimes it has to be created locally from scratch. In all cases, once knowledge has been created and validated within a country it is critical that it not be lost – systems must be created to ensure that knowledge is consolidated, managed and disseminated.

UNICEF supports the consolidation and use of knowledge about best practice in providing the poor with sustainable WASH services. Where it has the means and a comparative advantage it will seek to support sector learning platforms in the identification of priority national knowledge needs, and in filling these needs through activities funded both by UNICEF and other external support agencies. In addition it will use its global network of country offices as a means of channelling and sharing relevant information and knowledge globally.