Why Sanitation and Water Supply are Important to Growth and Development in South Africa

A significant investment increase is required in South Africa in order to achieve the WSS MDGs.

This briefing note for the South African Ministry of Finance shows that **water supply and sanitation (WSS) need urgent attention**. Failure to finance and implement sustainable water and sanitation is costing the country a notable portion of its GDP. Scientific studies show that sustained, quality access to **sanitation and water not only improve quality of life, but also bring tangible health, environmental and economic benefits, and contribute to poverty reduction.** The rate of return of spending on sanitation and water can exceed other public investments such as in infrastructure, transport, health or education.

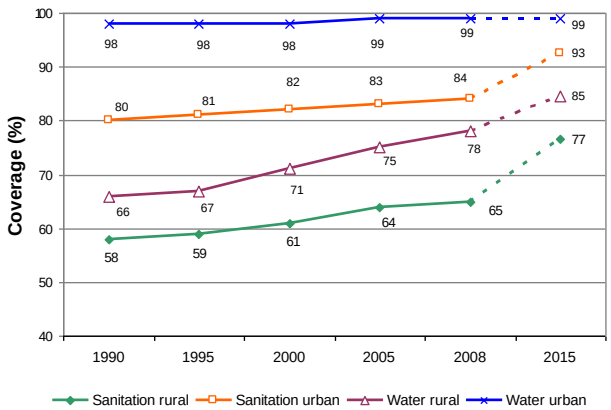
Sanitation and water supply coverage in South Africa requires attention

According to data compiled by the WHO/UNICEF Joint Monitoring Program (JMP)[a], progress to achieve the sanitation target in South Africa is off-track. Based on the most recent coverage data in 2008, South Africa has seven years to raise sanitation coverage from 84% to 93% in urban areas, and from 65% to 77% in rural areas[b]. The JMP does not count 'shared facilities' towards achievement even if they are of an acceptable technology. If 10% of the population using shared facilities in urban areas are counted as improved sanitation, South Africa would have achieved the MDG sanitation target in urban areas.

However, **even if South Africa meets the MDG target in both rural and urban areas, 23% of the rural population and 7% of the urban population would still be without access to improved sanitation**.

Access to drinking water, on the other hand, is on-track to meet the MDG target in rural areas, and has already achieved the target in urban areas. However, even if South Africa meets its rural water MDG target, it will still have 15% of its rural population without improved drinking water.

South Africa's progress towards the sanitation and water MDGs 1990-2008 and progress required to achieve the MDGs.



Money spent on sanitation and water pays dividends

Based on the average cost of a latrine and water supply, it is estimated that South Africa requires a **total expenditure of ZAR 15 billion (US$1.7 billion) to meet the water and sanitation MDG targets, of which ZAR 13 billion (US$ 1.5 billion) is for sanitation**. This equates with roughly ZAR 300 (US$ 36) per capita over a 10 year period, or ZAR 30 (US$ 3.6) per capita annually[c].

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[a] JMP data are presented as it reflects global monitoring of the MDGs and standardized definitions, while it is recognized that each country has its own targets and data.

[b] The rural – urban **target** breakdowns presented here are not official JMP, but are used to indicate what progress is needed in rural and urban areas separately to meet the overall MDG target.

[c] This sum will be met from a mixture of sources which include households as well as the government and donor budgets. Also, budgeting has to take into account program costs (program establishment, population sensitization, monitoring, evaluation) which can be significant, but have been excluded here due to lack of data.

Investment needs in South Africa are sizable, especially compared to current spending. South Africa will need to not only increase investments but improve implementation of appropriate sustainable services in order to improve water and especially sanitation. However, **correct investment in water and sanitation not only provides basic services, but also reaps benefits well beyond the water and sanitation sector**. Investments in water and sanitation in fact are investments in health, education, the environment and poverty reduction.

Failure to successfully implement WSS services can be costly in the long-run

The cost of WSS investment is off-set by the benefits that accrue in other sectors.

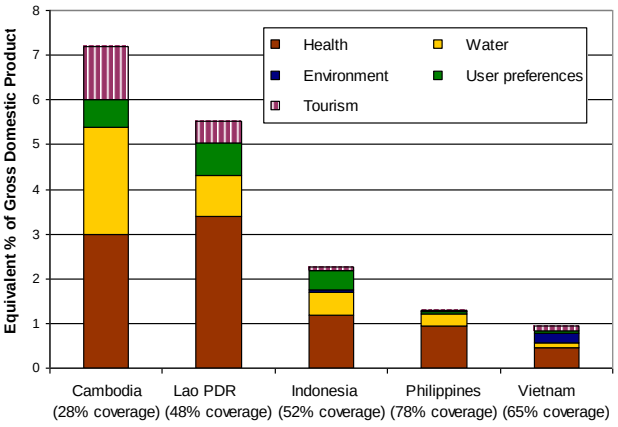
Economic research on water supply and sanitation is not commonly done, therefore findings must be borrowed from other countries. A World Bank country environmental analysis conducted in Ghana has shown that health costs resulting from poor water, sanitation and hygiene cost the country the equivalent of ***2.1% of annual Gross Domestic Product (GDP)***. The indirect effects of malnutrition – to which poor water and sanitation contribute 50%, according to WHO - cost even more than the direct effects, taking the total health cost to ***5.2% of annual GDP in Ghana***. An important contributor to this figure is child mortality: in South Africa WHO estimates 6,200 deaths of children under five caused by diarrheal disease in the year 2004. Further, studies demonstrate that poor water and sanitation significantly contribute to malnutrition which leads to lower school productivity and work productivity from impaired cognitive function and learning capacity. Rates of moderate and severe stunting and underweight are high in children under five in Ghana, at 27% and 12%, respectively.

As well as valuing health-related productivity and loss of life associated with inadequate WSS, other economic impacts have been valued for countries other than South Africa. These costs include treatment seeking for illness; time to access unimproved drinking water and sanitation; and water pollution. The latter includes the cost of water treatment to ensure the safety of hauled and piped water, or access to safer but more distant water sources.

Not every country has the luxury of a full economic impact study on poor sanitation. World Bank studies from Southeast Asia show the non-health costs of poor sanitation are comparable with the health costs, contributing ZAR 170 (US$ 20) of the total annual ZAR 270 (US$ 32) per capita losses in Cambodia, and ZAR 130 (US$ 15) of the total annual ZAR 290 (US$ 34) per capita losses in Lao PDR (see figure). **The results are indeed alarming: the total economic losses associated with poor sanitation are equivalent to *7.2% of annual GDP in Cambodia*** and ***5.4% of annual GDP in Lao PDR***.

The graphic shows the equivalent cost, as a proportion of annual GDP, of not investing in improved sanitation in 5 countries of Southeast Asia. (in brackets, sanitation coverage in 2006)

Source: World Bank



As well as the direct household effects of poor sanitation, poor water and sanitation can also have larger scale effects. First, it can impact on ***foreign tourists*** choosing South Africa as their holiday destination. Second, it can affect business and play an influential role in where ***foreign businesses*** invest their money. Emerging evidence from Asia suggests that a country's reputation of poor environment, polluted water and an unhealthy workforce can affect the earning power of foreign currencies, and hence hinder economic growth. Furthermore, as the effects of **climate change** are felt – with increased predictions of extremes such as flooding and droughts – it will become even more important to invest in resilient WSS systems to ensure the availability and safety of the water supply, as well appropriate sanitation options that do not further stress water supplies nor pollute dwindling water resources.

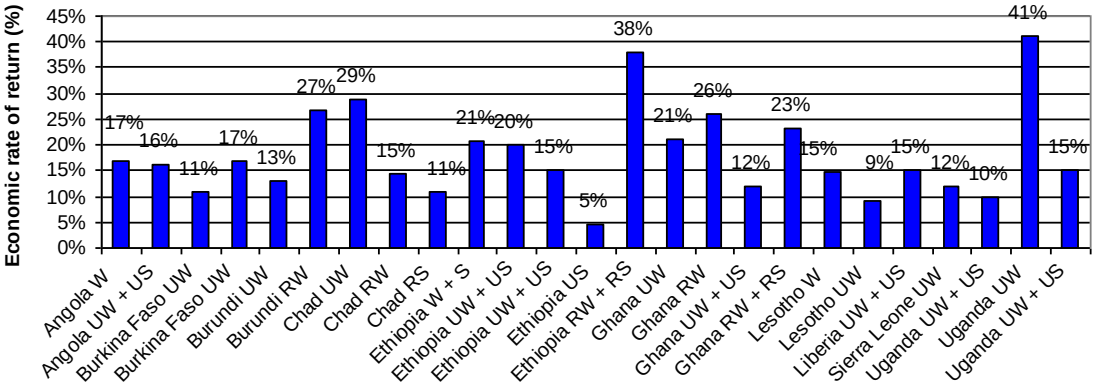
WSS services can yield a major return on investment

Sanitation and water projects in South Africa are likely to have a 9-21% (or greater) economic rate of return.

Economic returns on water and sanitation projects are highly favorable. Information on past loans from development banks is not available for WSS in South Africa, hence evidence from other countries is cited here. In neighboring Lesotho, a water supply project appraisal carried out for the African Development Bank in four urban centers estimated an ***economic rate of return*** of ***9%***. Also in Lesotho, a World Bank water sector improvement project in 2009 was estimated to have a rate of return on 15%. In Ghana, the Millennium Challenge Corporation estimated an average return of ***21%*** on 11 water and sanitation projects. Rates of return for sanitation projects show rates of return of 16% in Angola, 21% in Ethiopia, 11% in Chad and 15% in Uganda (see Figure below).

Global ***benefit-cost studies*** on water supply and sanitation for Africa, including the value of health improvements and time savings, estimated the benefit per currency unit invested was estimated at a return of ***5.5*** currency units or ***6.6*** for sanitation alone. While the results of these studies demonstrate a strong case for increased investment in water and sanitation, in fact, **these studies actually underestimate economic benefit as they include diarrheal disease only, thus excluding other positive health effects of improved water and sanitation**.

The graphic shows a high Economic Rate of Return on sanitation and drinking water projects.



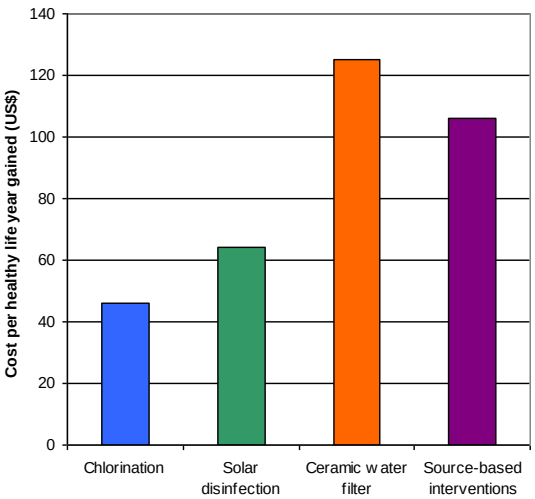
Key: W – Water; S – Sanitation; R – Rural; U - Urban **Source: Development banks**

The health returns on investment in WSS are considerable

Investing in sanitation and water can help South Africa tackle its basic economic challenges as well as improve health.

If health impacts are valued in units of Healthy Life Years (HLY) – defined as 'a year of life lived in full health' – they can be compared with other health interventions. In Africa, the cost of basic water and sanitation was estimated at US$ 534 per Healthy Life Year gained. Add 'water treatment at the point-of-use' and the cost reduces to US$ 242 per HLY gained. When a cost per Healthy Life Year is below the GDP per capita of a country**, the intervention is deemed a cost-effective use of health budgets**. **In South Africa, where GNI per capita is ZAR 49,000 (US$ 4,820), the cost per Healthy Life Year of ZAR 4,500 (US$534) is a strong argument for investing in basic water and sanitation interventions** – even more so for the ZAR 2000 (US$242) per HLY cost when including point-of-use treatment.

In another Africa study (see graphic) rates of health return on different interventions to improve water quality were measured and cost per HLY ranges from ZAR 390 (US$ 46) to ZAR 1,050 (US$ 125). These rates of health return are similar to other preventive health interventions such as for malaria and HIV/AIDS.



An important role of government is to catalyze private investment.

Households are willing to pay for services when they see a benefit

Economic research indicates that households, even poor ones, are willing to pay for reliable and quality WSS services. World Bank studies in Ghana in the early 1990s estimated the average willingness to pay per month per household was roughly ZAR 13 (US$1.50) for each of water and sanitation services, which equates to a combined ***annual willingness to pay of ZAR 590 (US$ 70)*** in today's values. Furthermore, willingness to pay is enhanced when water supply has benefits beyond general household uses, in revenue-generating activities such as a small-scale household business or agriculture (irrigation). **Evidence from willingness-to-pay studies demonstrate that government investments in ensuring services are available leverage household investments. When reliable services are available, households are willing to invest themselves.**

Intangible aspects of water and sanitation are crucial in household decision making

Other benefits of improved water and sanitation rarely captured in economic studies are 'intangible' impacts, so-called because they are difficult to measure. These aspects may include dignity, comfort, privacy, security, and social acceptance. An undeniable basic need is to have a near-by, safe and private place to defecate, and this is especially true for women, the elderly, the sick and also children. As well as facilities at home, water and sanitation at schools can improve school enrolment, attendance and completion, and at the workplace can increase female participation in the urban workforce. **Hence water and sanitation promote social equality and economic growth.**

Conclusions and recommendations

Spending on water and sanitation is not only politically popular and socially beneficial, but it **makes good economic sense and contributes importantly to the achievement of other MDG targets. Sanitation and water interventions, when effectively and sustainably implemented, deliver economic returns of at least 5 times on investment, commonly with an annual rate of return of 20% or more.** Furthermore, **WSS services are basic services that are demanded by the population, with often strong willingness to pay for these services -- when services are reliable.** As decisions are made to strengthen WSS planning and implementation capacity, an efficiency comparison of alternative water and sanitation policies, programs and technologies can assist the government to respond better to the needs of its population. Going forward, policy makers are recommended to address:

- **POLICY:** Implement **policies that lead to appropriate, sustainable** water and sanitation services. This includes a focus on increased responsiveness to population demand through community planning, sensitization and marketing campaigns, which will result in increased household investments and appropriate selection of technologies.
- **SUSTAINABILITY:** Ensure funds and mechanisms for **adequate operations and maintenance** in order to sustain services and maximize cost-effectiveness of investments.
- **SCALING-UP:** Focus scaling-up efforts on the **most affordable and sustainable services** that are demanded by the population and those that have proven health and environmental benefits.
- **TARGETING:** Provide additional support to increase **access to the poorest and most vulnerable households.**
- **MAXIMIZING EFFICIENCY:** Improve WSS delivery to the population and seek to maximize **efficiency gains through large scale implementation**.

References are available from UNICEF