Why Sanitation and Water Supply are Important to Growth and Development in Mongolia

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

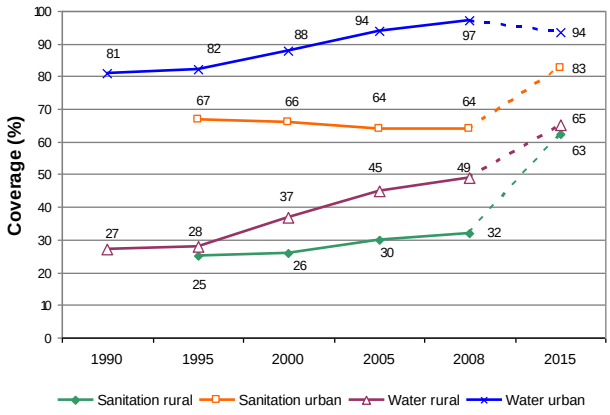
This briefing note for the Mongolia Ministry of Finance shows that **water supply and sanitation (WSS) need urgent attention**. Failure to finance water and sanitation is costing the country a notable portion of its GDP. Scientific studies show that access to **sanitation and water not only improve quality 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. While data are still incomplete, this briefing note demonstrates that even a little **spending on water supply and sanitation reaps enormous rewards**.

Sanitation and water supply in Mongolia require attention

According to data compiled by the WHO/UNICEF Joint Monitoring Program (JMP)[a], progress to achieve the sanitation Millennium Development Goal (MDG) target in Mongolia is off-track. Based on the most recent JMP coverage data for 2008, **Mongolia has seven years to raise sanitation coverage from 64% to 83% in urban areas, and from 32% to 63% in rural areas[b].** While the national sanitation coverage target for 2015 is lower at 40% sanitation coverage nationwide, the national statistics show lower sanitation coverage than JMP estimates at 26.6% nationwide in 2007. Also, the JMP does not count 'shared facilities' towards achievement even if they are of an acceptable technology. If shared facilities are counted, coverage is 31% higher in urban areas and 24% higher in rural areas.

According to JMP, urban water supply coverage has increased from 81% in 1990 to 97% in 2008, and has thus already surpassed the MDG target. Rural water supply has made good progress since 1990, but still needs to increase by 16 percentage points to reach the 65% MDG target. National monitoring shows in 2007 that water coverage was 39.2% nationwide, with 60% the national target in 2015. Therefore, continued investments are needed in water supply to maintain existing facilities and increase coverage to meet targets.

Mongolia'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 Mongolia requires a **total expenditure of MNT 140 billion (US$ 98 million) to meet the water and sanitation MDG targets, of which MNT 87 (US$ 60 million) is for sanitation**. This equates with roughly MNT 52,000 (US$ 36) per capita over a 10 year period, or MNT 5000 (US$ 3.5) per capita annually. However, if low cost technologies are used, these costs can be significantly reduced[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 Mongolia are sizable, especially compared to current spending. Mongolia will need to significantly increase investments in order to improve water and sanitation. However, **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 invest can be costly in the long-run

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

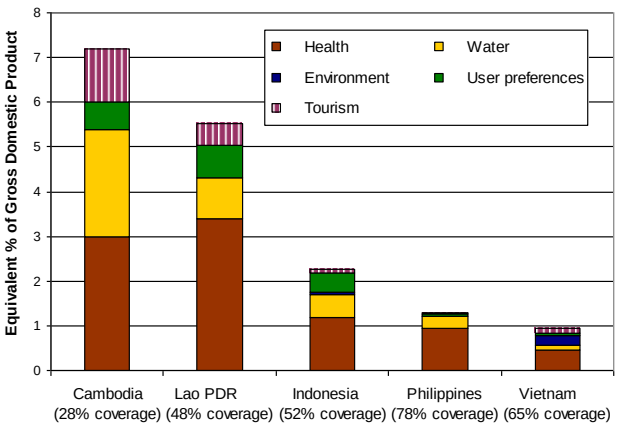
Economic research on water supply and sanitation is not commonly done, therefore findings must be borrowed from other countries. A World Bank country environmental analysis conducted in Pakistan has shown that health costs resulting from poor water, sanitation and hygiene cost the country the equivalent of ***1.8% 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 around ***5% of annual GDP in Pakistan***. An important contributor to this figure is child mortality: in Mongolia WHO estimates 500 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 Mongolia, at 27% and 5%, 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 Mongolia. 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 MNT 29,000 (US$ 20) of the total annual MNT 46,000 (US$ 32) per capita losses in Cambodia, and MNT 21,500 (US$ 15) of the total annual MNT 41,000 (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 Mongolia 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.

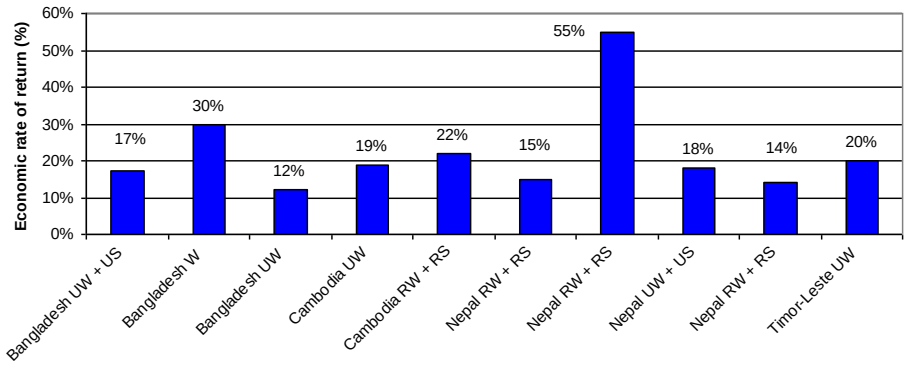
WSS services can yield a major return on investment

Sanitation and water projects in Mongolia could have a 12-55% or higher 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 Mongolia, hence evidence from other countries is cited here. A small towns water supply and sanitation project in Nepal, supported by the Asian Development Bank, was estimated to have an ***economic rate of return*** of ***18%*** in 2009. A national rural WSS project in Nepal, of the World Bank, had an evaluation conducted, showing rate of return of ***55%*** in 2008. A national water supply program in Bangladesh, also supported by the World Bank, was estimated to have a rate of return of ***30%*** in 2004. WSS programs supported by development banks in selected Asian countries have an estimated economic return of ***15-55%*** per annum (see Figure).

Global benefit-cost studies on water supply and sanitation for Asia, including the value of health improvements and time savings, estimated the benefit per currency unit invested was estimated at a return of at least 6 currency units per unit investment. 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.

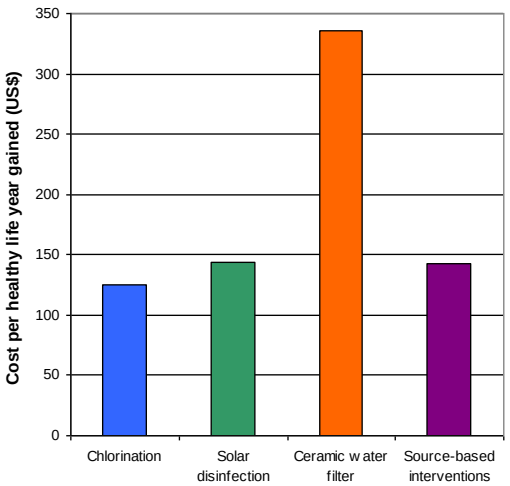


Key: W – Water; S – Sanitation; R – Rural; U - Urban **Source: Development banks**

The health returns on investment in WSS are considerable

Investing in sanitation and water can help Mongolia 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 Asia, the cost of basic water was estimated at US$ 94 per HLY gained and sanitation estimated at US$ 270 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 Mongolia, where GNI per capita is MNT 2.4 million (US$ 1,680), the cost per Healthy Life Year of MNT 135,000 (US$ 94) or MNT 390,000 (US$ 270) is a strong argument for investing in basic water and sanitation interventions.** In another global study (see graphic) rates of health return on different interventions to improve water quality were measured. Cost per HLY ranges from MNT 180,000 (US$ 125) to MNT 480,000 (US$ 336). These rates of health return are similar to other preventive health interventions such as for malaria and HIV/AIDS.



Therefore, taking into account that WSS interventions – in addition to gain in health – also have health productivity and non-health benefits, it is rational to invest in WSS services.

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 MNT 2,200 (US$1.50) for each of water and sanitation services, which equates to a combined ***annual willingness to pay of MNT 100,000 (US$ 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**. Economic evidence supports that meeting and going beyond MDG targets to achieve universal water and sanitation coverage not only improves quality of life, but also bring tangible health, environmental and economic benefits. Improving access to sanitation and water **contribute importantly to the achievement of other MDG targets.**

Sanitation and water interventions 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 increase investments, 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 increased public and private spending** on water and sanitation services, especially sanitation, where progress is slowest. This includes a focus on increased population demand through sensitization and marketing campaigns, which will result in increased household investments.
- **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