# C:\Users\kcrill\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\6ZZF0PYB\MC900383872[1].wmfWorld With More Phones Than Toilets Shows Water ChallengeC:\Users\kcrill\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\8JZ2OHNX\MC900389534[1].wmf

By *Randall Hackley* - *Mar 22, 2013*

There are more mobile phones on Earth than clean toilets, one of the most vexing challenges facing governments on the 20th anniversary of the [United Nations’ World Water Day](http://www.unwater.org/fileadmin/user_upload/watercooperation2013/doc/WWD2013prog_web.pdf).

Solving that developmental dilemma has confounded leaders, some of whom met today in The Hague to discuss water cooperation. There are 6 billion mobile phones, according to the International Telecommunication Union, while 1.2 billion of the planet’s 7 billion people lack [clean drinking water](http://www.water.siemens.com/en/about_us/Pages/worldwaterday.aspx) and 2.4 billion aren’t connected to wastewater systems.

The most vulnerable -- whether in [China](http://topics.bloomberg.com/china/), India or sub- Saharan [Africa](http://topics.bloomberg.com/africa/) -- may be the young that must survive poor- quality or insufficient water while supplies are overused in other countries such as the U.S. An American taking a five-minute shower uses more water than the average person in a developing-country slum uses for an entire day, according to research.

Statistics [show](http://www.unwater.org/water-cooperation-2013/water-cooperation/facts-and-figures/en/) at least one in three people don’t have a toilet. More people die from diseases caused by not having a clean, safe place to go to the bathroom than from HIV/AIDS, malaria and tuberculosis combined. Almost three-quarters of all diseases in India are caused by water contaminants.

## Water Sanitation

“One of the biggest reasons for child mortality is water sanitation, we are still very underserved when it comes to water sanitation facilities,” Andreas Lindstrom, program manager at the Stockholm International Water Institute, said at a conference in Vina del Mar, [Chile](http://topics.bloomberg.com/chile/). “It’s still more risky to go to the bathroom in many countries than any other activity.”

The world’s population is three times larger now than it was in 1950. In the past 40 years, water use has doubled. With fresh water unevenly distributed across the world, businesses from beverage companies to power utilities and the agricultural industry face challenges securing access to the resource.

Increased water consumption and failure to manage the resources available may have “significant” economic impacts, according to Paul Street, director of sustainable solutions at BVL, an infrastructure company. “Water is central to our well-being and prosperity, and it is finite.”

## Water Footprint

Ninety gallons of water are needed to grow 1 pound of corn and 40 barrels of water to produce one barrel of oil, Street said. It takes 3,000 gallons of water to make a quarter-pound burger, data show. The average water footprint per calorie for beef is 20 times larger than for cereals and starchy roots.

“It’s not only providing basic services,” he said. “If we continue to consume the way we do, we will not have the water to cater to all these different needs.”

Math Comprehension Questions

1. Identify and record four ratios mentioned in this article.
2. If there are 1,000 diseases causing Indians to become sick, how many of them are caused by water contaminants?
3. Draw a bar graph representing the world’s population growth since 1950. (Note: Our population is now 6 billion)
4. Draw a bar graph showing the growth of water use over the past 40 years.



# More mobile phones in India than toilets, says UN report

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**United Nations :** A new UN report says that a far greater number of Indians have access to cell phones than to toilet and basic sanitation. “It is a tragic irony to think that in India, a country now wealthy enough that roughly half of the people own phones, about half cannot afford the basic necessity and dignity of a toilet,” said Zafar Adeel, Director of United Nations University Institute for Water, Environment and Health.

“Popular education about the health dangers of poor sanitation is also needed. But this simple measure could do more to save lives, especially those of young people, improve health and help pull India and other countries in similar circumstances out of poverty than any alternative investment. It can also serve as a very significant boost to the local economy,” he added.

The report is produced by experts who prescribe ways to meet the Millennium Development Goal (MDG) on sanitation by 2015. The research shows roughly 366 million people (31 per cent of the population) in India had access to improved sanitation in 2008. Other data, meanwhile, shows 545 million cellphones are now in service in India’s emerging economy.

The number of cellphones per 100 people has skyrocketed from 0.35 in year 2000-01 to about 45 today.

Worldwide, some 1.1 billion people defecate in the open and data shows that progress in creating access to toilets and sanitation lags far behind world MDG targets, even as mobile phone connections continue their march towards the predicted 1 billion in India by 2015, according to the study.

Another report released last year by the WHO and UNICEF found that India has the largest number of persons who defecate in the open worldwide —- around 665 million.

The report says it costs about 300 dollars to build a toilet, and worldwide an estimated 358 billion dollars is needed between now and 2015 to reach the MDG for sanitation. “The world can expect, however, a return of between 3 and 34 dollars for every dollar spent on sanitation, realised through reduced poverty and health costs and higher productivity, an economic and humanitarian opportunity of historic proportions,” said Adeel.

If current global trends continue, the World Health Organisation and UNICEF, in a report titled “Progress on Sanitation and Drinking Water” in March, predicted a 1 billion person shortfall from the sanitation goal in 2015 — with about 2.7 billion people lacking access.

Math Comprehension Questions (Solve on the back if you need more space)

1. How many toilets can be built if $3,000 is donated? What if $6,000 was donated? $9,000?

# The LifeStraw makes dirty water clean

By [Mike Hanlon](http://www.gizmag.com/author/mike-hanlon/)

**Q1. What is LifeStraw?** LifeStraw is a portable water purification tool that cleanses surface water and makes it safe for human consumption. It is just 25 cm long and 29 mm in diameter and can be hung around the neck. LifeStraw requires no electrical power or spare parts.

**Q2. What does LifeStraw do?** LifeStraw filters up to 700 litres of water and effectively removes most of the microorganisms responsible for causing waterborne diseases.

**Q3. Which diseases will LifeStraw prevent?** LifeStraw kills disease causing microorganisms which spread diarrhea, dysentery, typhoid, and Cholera.

**Q4. Are there any tests to prove this?** LifeStraw has been tested by independent and qualified research laboratories.

**Q5. How does LifeStraw function?** LifeStraw contains PuroTech Disinfecting Resin (PDR) - a patented, extraordinarily effective material that kills bacteria on contact. Textile pre-filters are used in the LifeStraw to remove particles up to 15 microns. Active carbon withholds particles such as parasites.

**Q6. What do the tests and research studies indicate?** The studies indicate the following:

The level of bacteria in the water will be reduced to levels that will provide water safe for human consumption. ‘Safe’ implies water from which any health risk is minimal. The particulate removal suggests that the number of any parasitic ova in raw water will also be reduced significantly. The released amount of iodine in water treated from LifeStraw is not normally damaging to human health. However, people having thyroid problems and allergic reaction to iodine must seek medical advice before using this tool.

**Q7. What is the life expectancy of the LifeStraw?** One year from the start of usage (calculation based on consumption of 2 litre water per day) or 700 liters. Use beyond expiry will not deteriorate existing water quality.

**Q8. What is the required daily water consumption?** The WHO default levels for the quantities of drinking water (reference to WHO drinking water quality guidelines Third edition 2004, Annex III), are: For a 10 kg child, 1 litre water per day - thus 700 days tool For a 60 kg adult, 2 litre water per day - thus a 350 days tool

**Q9. Who can use the LifeStraw?** Adults and children of any age can use the LifeStraw, provided they have capacity to suck water

**Q10. How can LifeStraw be effectively utilised?** At regular intervals, it is recommended to blow out the last mouthful of water as well as some air through the LifeStraw. This will clean the pre-filters of whatever sand, silt and debris that might have got stuck in the textile filters.

**Q11. Can I share my LifeStraw with other people?** It is not recommended that you share your LifeStraw with others. Any outside contamination of the LifeStraw will not be compensated by inside purification.

Math Comprehension Questions (after reading article and watching Lifefamily Video)

1. One life straw cleans 1,000 liters of water, if a person uses 2.7 liters a day, how long is it good for?
2. How many gallons of water will that be? (Note: We will estimate 3.75 liters per 1 gallon)
3. Lifestraws cost $3.00 to make and distribute. In a community of 65 people, how much money would it cost to provide them each with one Lifestraw? In a community of 100? 300? 2,000?
4. Life straw family 18,000 liters. How many gallons would that filter? How long is it good for if a family includes 2 adults and five children?
5. To distribute the Lifefamily systems, 4,000 workers visited on average 10 homesteads a day. How many days will it take them to distribute these systems to all 360,000 homesteads in the area?