

## **Strategies and Solutions to Solve the Global Water Crisis**

Imagine you are a native of Nigeria and your mother and sister are both sick due to lack of clean water. You have no choice but to travel 3 hours each way to fetch clean water and come back in time. The water could be contaminated and maybe the journey is just too long for you. You also know that your mother and sister are very sick and if they keep drinking the dirty water, they could die. *What would you do?*

Millions of citizens around the world face this dilemma every day. UN estimates that 663 million people don't have access to clean drinking water and over 292,000 kids under the age of five die every year from diarrhea due to lack of safe drinking water, sanitation and basic hygiene.<sup>1</sup> In Uganda, 82% of the population has no hand-washing facility and only 15% have access to water on tap.<sup>2</sup> Given the severity of the problem, one has to design a program that deals with the urgent nature of the endemic problem at a tactical level so people suffering can get immediate relief and work on a strategic plan to help eliminate the clean drinking water issue long-term.

There are several causes for the lack of clean drinking water. One of the major reasons is global warming. The warmer temperatures are melting the glaciers which is causing floods and erosion of mountains and riverbeds and that in turn is contaminating the precious water sources. It also results in severe cataclysmic weather events that wipe out entire villages from storms. According to the UN estimates, over 530 million children live in areas with very high risk of flooding and a good majority of them live in the emerging markets.<sup>3</sup>

The next big problem is that of sanitation. Dirty environment and resources attract diseases. This causes many completely avoidable deaths. Often times, the lack of medicine and timely help leaves the suffering population helpless. Without solving the basic hygiene equation, we won't make any dent in the clean drinking water problem.

Finally, we need to find new ways to generate the supply of clean drinking water. This requires new technologies and techniques that are adaptable to the different regions where the water shortage is most acute. For example, solutions for Brazil which gets plenty of rain will be different than how we solve the water problem for the citizens of Nigeria. We also need to take the solutions that already work in some parts of the world to other regions which have not yet seen the benefits from them.

While we clearly need to focus our attention to the emerging and poorer regions of the world, in the western world, we should do our part in solving the global climate change problem by preserving our resources, using renewable sources of energy, eating vegetarian diet, and raising the funds for what is truly a global problem.

To address the problem holistically, I successfully applied for a grant of \$10 million to the Gates Foundation<sup>4</sup> and raised another \$5 million from governments, corporations, and other NGOs (Non-governmental organizations). I will divide the funds for three main goals:

- a) Education and Awareness
- b) Bring the solutions that already work to new areas, and

c) Invest in technologies and research to create new ways to generate clean water

I will focus my attention on four countries: India, China, Nigeria and Brazil which in aggregate have over 30% of the global water consumers.<sup>5</sup>

First and foremost, I will spend \$4 million in education and awareness efforts. Just by making people aware of basic sanitation and hygiene practices, we can achieve a lot. I will use celebrities, sports stars, and whoever I can find to help with the cause and create awareness through traditional channels as well as social media. This will have an immediate effect on maximizing our limited water resources.

Next, I will budget \$6 million on bringing already proven solutions to the four countries. For example, regions that get enough rain, we will work on creating rain catchment systems. Rain catchment systems cost about \$7,000-\$12,000.<sup>6</sup> For areas that don't get enough rain, we will spend resources on digging wells in appropriate locations. A long-lasting well for clean water can be prepared for \$8,000. Each well gives water to about 2,000 people for 20 years.<sup>7</sup> I will also spend part of the grant on distributing water purification kits<sup>8</sup> which can make existing polluted water resources usable. A \$70 Bio filter can serve a community of 10-15 people and kill 90% of bacteria and 100% of parasites.<sup>9</sup>

The final \$5 million of my grant money will go to research and development. My team will work with researchers at organizations such as University of California, Berkley, PATH, and IRC International Water and Sanitation Center<sup>10</sup> to bring some of the solutions that show

promise in the labs to field trials rapidly. Solutions such as Omniprocessor that burns sewage to make clean drinking water are exactly the types of innovative solutions we need urgently.<sup>11</sup>

I will keep a very close eye on how the money is being spent as well as the results we will see in the field so that we can minimize waste, save time, and maximize the impact of the grant for generations to come. I am confident that by working on a comprehensive approach with partners around the world who are committed to the common cause, I can make a lasting difference in the lives of billions of people who struggle and suffer due to lack of clean drinking water. I will work to ensure that a young kid in Nigeria caring for his mother and sister doesn't have to worry about clean water in the future.

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<sup>1</sup> "5 facts about Water," Philippa Lysaght, 20 Jan 2016, <<https://blogs.unicef.org/blog/5-facts-about-water/>>

<sup>2</sup> "The Uganda Vision," 23 Feb 2016, <<http://www.unwater.org/worldwaterday/learn/en/>>

<sup>3</sup> "5 facts about Water," Philippa Lysaght, 20 Jan 2016, <<https://blogs.unicef.org/blog/5-facts-about-water/>>

<sup>4</sup> I studied the types of grants that the Gates Foundation has given out in the past related to Water, Sanitation, and Hygiene to determine my strategy.

<sup>5</sup> "Getting Started, A Resource Guide for Students and Teachers," World Affairs Council, 13 Jan 2016, <<https://www.world-affairs.org/wp-content/uploads/2012/02/2016-WCEC-Getting-Started-Resource-Guide.pdf>>

<sup>6</sup> "Rain Catchment," The Water Project, <[https://thewaterproject.org/rain\\_catchment](https://thewaterproject.org/rain_catchment)>

<sup>7</sup> "What's the Cost, Water Wells for Africa," <<http://waterwellsforafrica.org/whats-the-cost/>>

<sup>8</sup> "6 Water-purifying Devices for Clean Drinking Water in the Developing World," inhabitat, <<http://inhabitat.com/6-water-purifying-devices-for-clean-drinking-water-in-the-developing-world/>>

<sup>9</sup> "How Biosand Water Filtration Systems Work," The Water Project, <[http://thewaterproject.org/biosand\\_water\\_filtration](http://thewaterproject.org/biosand_water_filtration)>

<sup>10</sup> More information can be found at - <<http://www.spo.berkeley.edu/>>, <<http://www.path.org>>, and <<http://www.worldbank.org>>. Source: The Gates Foundation, <<http://www.gatesfoundation.org/How-We-Work/Quick-Links/Grants-Database>>

<sup>11</sup> "Problems Too Disgusting to Solve," Maria Konnikova, The New Yorker, 18 Feb 2015, <<http://www.newyorker.com/science/maria-konnikova/recycled-water-problems-disgusting-solve>>