Altruism versus Profit: Clean Water in India

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INTRODUCTION

N. Sree Hari, Associate Partner of the Byrraju Foundation and coordinator of the SWEET Water Project, sat in his shared office, once again staring at the computer screen and wondering what he could possibly write. The air conditioning was turned off to save electrical costs and a slight breeze from the open window rustled the papers on his desk. He had reviewed the weekly village collections and had begun writing the monthly report to Verghese Jacob, his boss, CEO of the Byrraju Foundation. Sree Hari was at a loss for words. What could he recommend to keep his program alive and growing? The SWEET water project had developed a successful, technological model to address the growing social problem of clean drinking water in India. They had installed nearly sixty systems providing access to clean water for over 150 villages and almost 1.2 million people, but now had no funding to further scale the model by adding new systems. In fact, it was getting more and more difficult to determine how to keep the existing program running.

Not long ago things were very different for the Foundation. It all started when Ramalinga Raju founded Satyam Computer Services Ltd in 1987. Satyam grew to be one of the top companies in India, employing over 30,000 people (Mahinda, 2011). In 2001 Raju founded the Byrraju foundation in memory of his late father. Satyam and the Byrraju Foundation are both located in Hyderabad, India to develop the foundation Raju hired Verghese Jacob, a renowned international business man as CEO. Byrraju quickly was acknowledged for philanthropic efforts and award-winning programs. The mission of the foundation is to "To create a world-class platform for sustainable rural transformation"**.**

The accolades, the donations and the support all abruptly ended on January 7, 2009, when Raju confessed to accounting fraud at Satyam and falsely reporting over a billion dollars in profits. "Immediately following Raju's confession, Satyam's shareholders took a direct hit as the company's share price crashed 77% to Rs. 30 (approximately 60 cents), a far cry from its 52-week high of Rs. 544 ($11.35) last May". (Scandal, 2009). In news reports Satyam was commonly referred to as "India's Enron". (The Consequences, WSJ 2009). Until that day over 90% of the Byrraju Foundation's funding came from Raju and his family members. Now with Raju facing a trial and prison, there would be no more family donations and the limited corporate donors would consider the foundation a much less desirable grant recipient. Writing on why the fraud had continued so long and for such a large amount of money, Raju stated in his confession; "It was like riding a tiger, not knowing how to get off without being eaten."

Sree Hari knew that the" tiger" was still able to cause harm. The future was dependent on Verghese and him to figure out how to continue to support the foundation that had won

numerous awards and international accolades. If not, the villages and people adopted by the foundation could be severely hurt. The water systems they had been so successful in developing were in danger. How could they possibly continue to deliver these critical services year after year without the donations from the Raju family?

WATER AND HEALTH

The 2006 UN human development report on clean water states "the roots of the crisis in water can be traced to poverty, inequality and unequal power relationships, as well as flawed water management policies that exacerbate scarcity. Access to water for life is a basic human need". Clean water is critical to good health. The India Water Forum 2011 (a joint effort of the Energy and Resources Institute and the Ministry of Water Resources of India) declared water an integral part of economic development and ensuring livelihoods of their people. In India, clean water demand has already outstripped supply and climate change is further aggravating this problem (Water Forum, 2011). The Vice President of India, Shri M. Hamid, opened the 2011 Water Forum with a speech acknowledging: *' the essential role water plays in our life and the need for adopting better governance to tackle the key challenges that are stemming from changing demographics, shifting geo-politics, wide-spread poverty and under-development, climate change phenomena and shifting weather patterns, and the elements of globalization and its attendant consequences'.*

Lack of safe drinking water is a global issue. One of the United Nations Millennium goals is to "halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation". As the 2015 target approaches, poor and rural disparities have become even more evident. One of the contributing issues was determined in 2007, when the British water group, WaterAid, began looking at the success of their previous water projects in Africa and found that only nine of the thirty-five they had built were still functioning. This project abandonment seemed to be a common issue, not only with WaterAid, but other organizations that work on "providing clean water in poor countries estimate that about half the projects fall into disrepair soon after their builders move on" (Rosenberg, 2010). As the water projects are abandoned, not only does access to clean water diminish, but also the trust and the initiative of the local people to try to address the problem. In many ways by not building a sustainable system that can continue to be operated and maintained by the local people, well intentioned projects actually left the villagers worse off than if the venture had never been attempted. For the villagers, their limited resources were further depleted and their faith in innovation had been diminished. For a successful long term solution to water problems, it is important that the local people can maintain the system, gradually take ownership, and then assume responsibility for continued operation.

Water is needed every day, several times a day, by all people. This makes long term sustainability critical to any water project. In 2009, 20% of the rural population of India did not have access to clean drinking water and the average distance travelled to fetch water from a well was one half to one kilometer (Kumar,2009). This inaccessibility continues to be a serious health and economic issue in India and globally. "Provision of safe water supply

is one of the most effective tools to improve the health status of communities. It is estimated that the burden of sickness in the world would be reduced by nearly 80% if it were possible to supply safe water to people everywhere" (Kumar, 2009). According to the World Health Organization "More people die from unsafe water annually than from all forms of violence, including war" (World Water Day, 2010). UNICEF found that unsafe water worldwide causes 4 billion cases of diarrhea annually and "in India alone, the single largest cause of ill health and death among children is diarrhea, which kills nearly half a million children each year." (World Water Day 2010).

In India, one of the solutions for their water problems includes retail for-profit water sales and buying from mobile suppliers. Both Coke and Pepsi bottled waters are present in shops and restaurants in India, through their Dasani and Aquafina brands, as are a variety of local providers, all part of the $100 billion global bottled water industry. The World Resources Institute report (2007) finds bottled water comes at a significant price penalty compared to surface or piped water systems. Studies show mobile distributors charge up to 10x more than public utilities (Kariuki and Schwartz , 2005). An Asia Times article quotes research from for-profit companies stating "consumers are readily paying for bottled water typically costing a thousand times more per liter than high-quality municipal tap water" and the lack of water access is failure of the government to provide basic services (Raja M, 2008). Unfortunately, India faces many "basic service" issues and a fully functioning water system is very costly.

There are several socially responsible companies exploring the market in India, one example is WaterHealth International. They were profiled in Inc. Magazine as the "Do Good Capitalist of the Year" in 2007. WaterHealth installs a water filtration system and offers financing to local villages to purchase their water center packages. The villages then repay their loans with the profits of the water sales. Many critics express concern at the expense of the Water Health Systems. The Byrraju Foundation is quoted as saying "WaterHealth has good intentions, but unless they can bring the costs down it's really not sustainable". WaterHealth responded, "the model adopted by Byrraju Foundation was not sustainable as it depended on subsidies" (Faheem, 2010). Initial cost and financing issues are challenges for rural India and many areas trying to expand access to clean water.

Another developing for-profit enterprise is Hyderabad's Waterlife. It is a franchise opportunity that offers a franchisee the ability to pay Rs. 30,000 (approximately 45 Rs. per US dollar) for the right to sell water at Rs. 5 per 20 liters, and the franchisee keep Rs. 2 per 20 liters for themselves and pay Rs. 3 to Waterlife. Gaurav Dwivedi, author of *Public-Private Partnerships in the Water Sector; Partnerships or Privatization*, writes that these for-profit enterprises "are being designed to enhance private profits without taking any serious responsibilities for extending coverage, or improving efficiency" (Dwivedi, 2010). One concern in letting the market decide water access is that large areas of rural India will be left without coverage and continue to face poor health and continued poverty. According to a KPMG study, rural access to safe water in India is at 32% of the population and in large cities 73% of the population has access (Gauri 2010). The challenge of assuming the private market will respond is that it is not lucrative enough to help the poor and the rural

areas; the challenge in waiting for governmental response is that the priorities of the Indian government are overwhelmed by even more urgent social and economic issues. Could there be another option?

SOCIAL ENTREPRENEURSHIP

As in the India example, often the government of a developing nation is overburdened and unable to address basic needs. What can be done to attract businesses to provide basic services for the poorest of people? Is it possible to make "profit for good"? The Financial Times describes social entrepreneurship as a potential "big driver of India's growth but achieving scale at speed remains a challenge" (Murray, 2009). According to Sushimita Ghosh, senior advisor to Ashoka, "The biggest driver in India is its vast potential market of low end clients. India is home to 1/3 of the world's poorest people, according to the World Bank, which estimates that 42% of the country's population lives below the poverty line." The density of the population and the great need of one of the most populous and poorest nations offer an excellent opportunity for both achieving social missions and addressing market demand. While India is making progress on reducing poverty per the World Bank estimates, "The estimated poverty rates correspond to 267 million people living below a dollar a day in 2005, down from 296 million in 1981. However, the number of poor under $1.25 a day has increased from 421 million in 1981 to 456 million in 2005." (Mozumdber, 2008).

The Skoll Foundation defines a social entrepreneur (Martin, 2007) in the following way; *"The social entrepreneur should be understood as someone who targets an unfortunate but stable equilibrium that causes the neglect, marginalization, or suffering of a segment of humanity; who brings to bear on this situation his or her inspiration, direct action, creativity, courage, and fortitude; and who aims for and ultimately affects the establishment of a new stable equilibrium that secures permanent benefit for the targeted group and society at large. This definition helps distinguish social entrepreneurship from social service provision and social activism."*

The definition of social entrepreneurship is still evolving and includes a hybrid approach of not for-profit and for-profit enterprises that focus on a social mission. As discussed by R. Scott Marshall, founder of the Center for Global Leadership in Sustainability, there is "an emerging debate that SE manifests in multiple forms – not for-profit, for-profit, and ''hybrid'' or cross-sector." (Marshall 2011) The hybrid spectrum, as described in work of Kim Alter, managing director of Virtue Ventures and founding member of the Social Enterprise Alliance, shows a continuum incorporating four sections between the traditional nonprofit and the traditional for-profit model: nonprofit with income generating activities, social enterprise, socially responsible business and corporations practicing social responsibilities. (Exhibit 1). It is in this hybrid spectrum that the Byrraju foundation is trying to define itself. It no longer has the continuous support of its primary donors as a nonprofit, and its commitment to mission and adopted villages limit Byrraju's ability to increase income options for the SWEET water project as a for-profit enterprise.

BYRRAJU AND THE SWEET WATER PROJECT

The Byrraju SWEET (Safe Water for Everyone using Effective Technology) water project was started in 2004. As of 2011 they currently have nearly 60 water plants serving 1.2 million people (Byrraju, 2011). The water goes through a seven step filtration process designed specifically for the Byrraju foundation. (Exhibit 2). The filtered water is 99.7% pure. Each plant can produce 1000-2000 liters per hour, providing clean drinking water at "2-3 litres…per person, per day at a nominal charge of 16 paise" (100 paise per rupee equals approximate cost of Rs.0.064 per liter). The overall user charge of Rs.2.5 for 12 liters meets operational and maintenance costs of the system (price per liter Rs. 0.208). Delivery is available for a small additional price. A sample system presented by the Byrraju Foundation in 2009 at a rural development panel (Raju, 2009) showed the initial capital cost of the system at 1,000,000 Rs./$21,000 USD (capital expense) and the operational costs at 30,000 Rs./ $630 USD per month for the first six months. The projection made at six months was that the water sales would cover operational costs and a surplus would be available for the village. The model called for the community to provide 250,000 Rs./$5,250 USD, the government to provide free land and access to water, and the donor (Byrraju) to provide 750,000 Rs./$15,750 USD initial capital and the first six months of operational expenses. This system not only provides affordable access to clean water for communities but also provides livelihoods for three or more villagers.

The Customers:

Research has determined that 53% of the Byrraju customers "have household incomes of less than 2,000 Rs. /$40 USD per month, indicating that the price charged is affordable even to those earning as little as Rs.60-70 ($1.30) per day." (Monitor, 2009). However, the research showed that the price was not the only issue. 32% of those surveyed said they would not purchase it even if the price was lower. They cited concerns with taste, and preferred their unfiltered tap or other water sources. At the villages with access to the water, adoption rates typically range between 20-45% and according to Monitors research "all users of Byrraju water had begun use in the first three months of operation". Research done by a visiting college group through Virtue Ventures showed an apparent difference in adoption rate skewed towards higher income and education levels. It can be very difficult to market and educate a potential consumer that is accustomed to getting a need met for "free" despite what that "free source" is costing them in latent health issues. Another student group (Gita, 2009) quotes local villagers as saying "they would rather spend their money on new clothes or to save for a television than for Byrraju water. We were surprised people chose to spend on what were essentially luxury goods for them instead of such a basic necessity as clean water. Many villagers here expressed skepticism about the health benefits of Byrraju Foundation water, citing the longevity of their parents and grandparents who drank only well water". Serving the lower income, lower educated market requires education about adoption of a product that does not have the immediate gratification of other purchases.

The Process:

To build a water treatment plant a village will contact the Byrraju Foundation and submit an application, Residents are then asked to raise (donate) 75% of the total plant, building and equipment costs (approximately $15,000). Byrraju adds the remaining funds (25% loan) and provides expertise, supervision, and quality control. The village hires at least two residents to run the facility and offers a delivery route to enterprising entrepreneurs who earn a commission with each delivery. This system is scalable, efficient, provides safe drinking water and job opportunities. The water treatment plant is a "shared investment" between the foundation and the village. The village pays a percentage of sales to Byrraju for the 25% initial cost and for continued maintenance and water quality testing. This allows the "loan" to be paid back and villagers to have continued access to technological resources. The entire plan that had worked so well for the last several years was now in jeopardy due to Raju's confession.

THE DECISION

Sree Hari paced in his office, thinking about this process. Originally, following repayment of the initial costs, Byrraju would reduce the percentage charged to the villages. With these new financial issues there was a need to consider renegotiation of the contracts. The foundations only stable income comes from the village water sales.

He had spoken to many people about a variety of options. These were some of the suggestions:

1. Do a cost/benefit analysis, and then determine whether to raise prices or lower costs (a standard business response). However, he felt that approach may conflict with the foundation's mission.

2. Sell the existing systems to competitors or merge with their more profitable systems.

3. Work to increase market share in the villages that had systems, although with limited resources he would not be able to hire any new people.

4. Meet with government officials and apply for local and international grants.

5. Close down the operation and explain to the villages the problems and find another job for himself. Almost any form of employment would be easier than this!

Sree Hari had some choices he needed to make. What should he put in his report to Verghese? Not only was he trying to keep the SWEET water project alive, his recommendations would impact the health and well being of Indian families trying to gain access to clean water, and for the youngest members of the village it could become a matter of life or death.

Works Cited:

Alter, Kim. "Hybrid Spectrum | The Four Lenses Strategic Framework." Web. 12 July 2011. <http://www.4lenses.org/setypology/hybrid_spectrum>.

"Byrraju Foundation Web Page." *Rural Transformation, Rural Development Services Andhra Pradesh, India, Asia by Byrraju Foundation.* Web. 28 July 2011. <http://www.byrrajufoundation.org/>.

Dwivedi, Gaurav. "Public Private Partnerships in the Water Sector: Partnerships or Privatization - A Report and Video by Manthan Adhyayan Kendra | India Water Portal." *India Water Portal | Safe, Sustainable Water for All*. Manthan Adhyayan Kendra, 2010. Web. 26 July 2011. <http://www.indiawaterportal.org/node/9614>

Faheem, Hadiya, and Debapratim Purkayastha. "WaterHealth International - Oikos International." *Www.oikos-international.org - Oikos International*. Oikos International, 2010. Web. 26 July 2011. <http://www.oikos-international.org/academic/case-collection/inspection-copies/alphabetical-list/waterhealth-international.html>.

Geeta Anand. "The Satyam Scandal: Friends Try to Reconcile 2 Sides of Indian Executive. " *Wall Street Journal* 8 Jan. 2009, Eastern edition: Wall Street Journal, ProQuest. Web. 5 Jul. 2011.

"Human Development Reports - Beyond Scarcity, 2006." *Human Development Reports (HDR) - United Nations Development Programme (UNDP)*. United Nations, 2006. Web. 22 July 2011. <http://hdr.undp.org/en/media>.

Gita, Johar. ""Byrraju Foundation SWEET Water Project"" *Columbia Business School* (2010). *Columbia CaseWorks*. Web. <ID#100509>.

Kamath, Gauri. "Special Report: Water, "Off the Beaten Path"" *Http://www.businessworld.in*. BusinessWorld, 10 May 2010. Web. 22 July 2011. http://www.businessworld.in

Karachandani, Ashish K. "EMERGING MARKETS, EMERGING MODELS Business Models That Work." *Monitor Group*. 25 Mar. 2009. Web. 28 July 2011.

Kariuki, Mukami, and Jordan Schwartz. 2005. "Small-Scale Private Service Providers of Water Supply and Electricity." Policy Research Working Paper 3727, World Bank, Washington, DC. (accessed http://www.wri.org)

M, Raja. "Asia Times Online: South Asia News, Business and Economy from India and Pakistan." *Asia Times Online: Asian News Hub Providing the Latest News and Analysis from Asia*. Web. 02 Aug. 2011. <http://www.atimes.com/atimes/South_Asia/JE08Df04.html>.

M. K. Kumar, D. R. Gaur, M. Goel & R. Mishra: Water Collection & Consumption behaviour in Rural Haryana. *The Internet Journal of Epidemiology.* 2009 Volume 6 Number 2

"Mahindra Satyam - Quick Facts, Offices, Subsidiaries, Joint Ventures." *IT Services, Outsourcing Services, Information Communication Technology Company, Business Consulting – Mahindra Satyam*. Web. 09 Oct. 2011. <http://www.mahindrasatyam.com/about-mahindra-satyam/vision-value.asp>.

"Map of India." *Hyderabad City - Your Personal Online Guide to Hyderabad, India*. Web. 28 July 2011. <http://www.hyderabadplanet.com>.

Martin, Roger, and Sally Osberg. ""Social Entrepreneurship: The Case for Definition." *Stanford Social Innovation Review: Ideas for Socially Responsible Businesses*. Spring 2007. Web. 11 July 2011. <http://www.ssireview.org>.

Marshall, R. "Conceptualizing the International For-Profit Social Entrepreneur." *Journal of Business Ethics* 98.2 (2011): 183-198. *Business Source Premier*. EBSCO. Web. 11 July 2011.

Mozumder, Sudip, and Merrell Tuck. "New Data Show 1.4 Billion Live on Less than $1.25 a Day, but Progress against Poverty Remains Strong." *India*. The World Bank, 26 Aug. 2008. Web. 09 Oct. 2011. <http://www.worldbank.org.in/WBSITE/EXTERNAL/COUNTRIES/SOUTHASIAEXT/INDIAEXTN/0,,contentMDK:21880805~pagePK:141137~piPK:141127~theSitePK:295584,00.html>.

Murray, Sarah. ""Profit for Good"" *FT.com / Special Reports / The New India*. Financial Times, 27 May 2009. Web. 26 July 2011. <http://www.ft.com/intl/reports/newindia>.

Prasad, Durgas. "Movie on Drinking Water Initiative-Byrraju Foundation - YouTube." *YouTube - Broadcast Yourself.* Byrraju Foundation, 2008. Web. 03 Aug. 2011. <http://www.youtube.com/watch?v=vBMo2Bbb_qo>.

Raju, VSN. ""Experiences from the Field: A Transformation Journey at Byrraju Foundation"" *Rural Transformation, Rural Development Services Andhra Pradesh, India, Asia by Byrraju Foundation.* Presented at the Rural Development Panel, TANA Convention 2009, 2 July 2009. Web. 22 Aug. 2011. <http://www.byrrajufoundation.org/>.

Rosenberg, Tina. "Clean Water at No Cost? Just Add Carbon Credits - NYTimes.com." *Opinion - Opinionator - NYTimes.com*. New York Times, 15 Nov. 2010. Web. 26 July 2011. <http://opinionator.blogs.nytimes.com/2010/11/15/clean-water-at-no-cost-just-add-carbon-credits/>.

"Satyam to Name Winning Bidder| Reuters." *Business News - Indian Stock Market, Stock Market News, Business & Finance, Market Statistics | Reuters India*. 13 Apr. 2009. Web. 08 Oct. 2011. <http://in.reuters.com/article/2009/04/13/us-satyam-idINTRE53C0B020090413>.

"Scandal at Satyam: Truth, Lies and Corporate Governance - India Knowledge@Wharton." *Knowledge@Wharton*. India Knowledge @ Wharton, 9 Jan. 2009. Web. 09 Oct. 2011. <http://knowledge.wharton.upenn.edu/india/article.cfm?articleid=4344>.

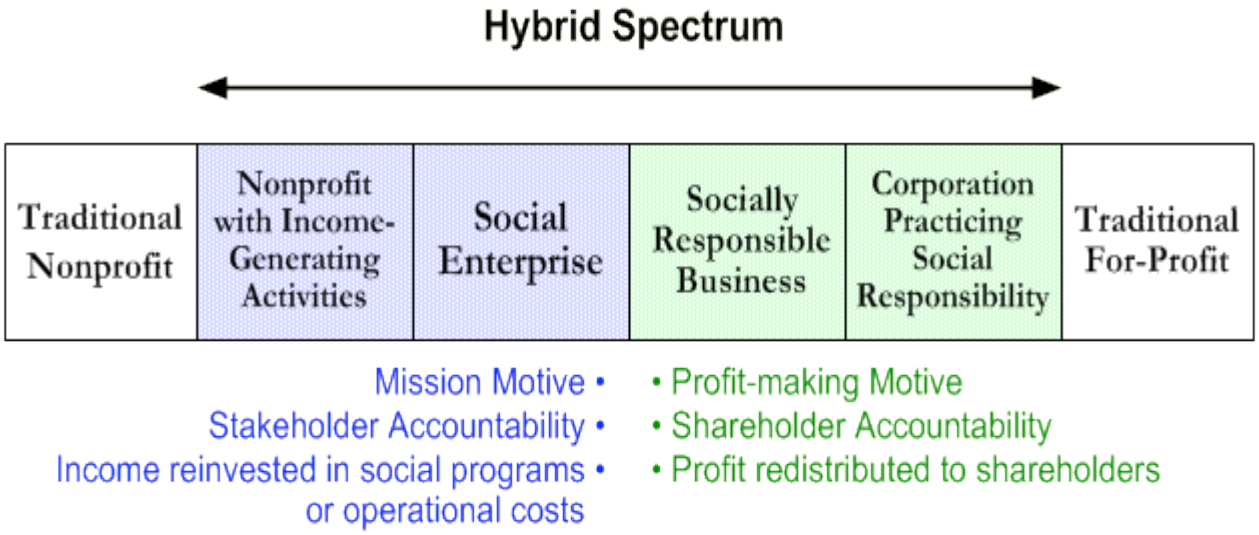
"The Consequences of Satyam - YouTube." *YouTube - Broadcast Yourself.* Wall Street Journal Digital Network, 2009. Web. 03 Aug. 2011. <http://www.youtube.com/watch?v=jvQWD6KcZcY>.

"The India Water Forum 2011." *TERIIN*. The Energy and Resources Institute (TERI). Web. 26 July 2011. <http://www.teriin.org/index.php?option=com_pressrelease>.

"United Nations Millennium Development Goals." *Welcome to the United Nations: It's Your World*. United Nations. Web. 26 July 2011. <http://www.un.org/millenniumgoals/environ.shtml>.

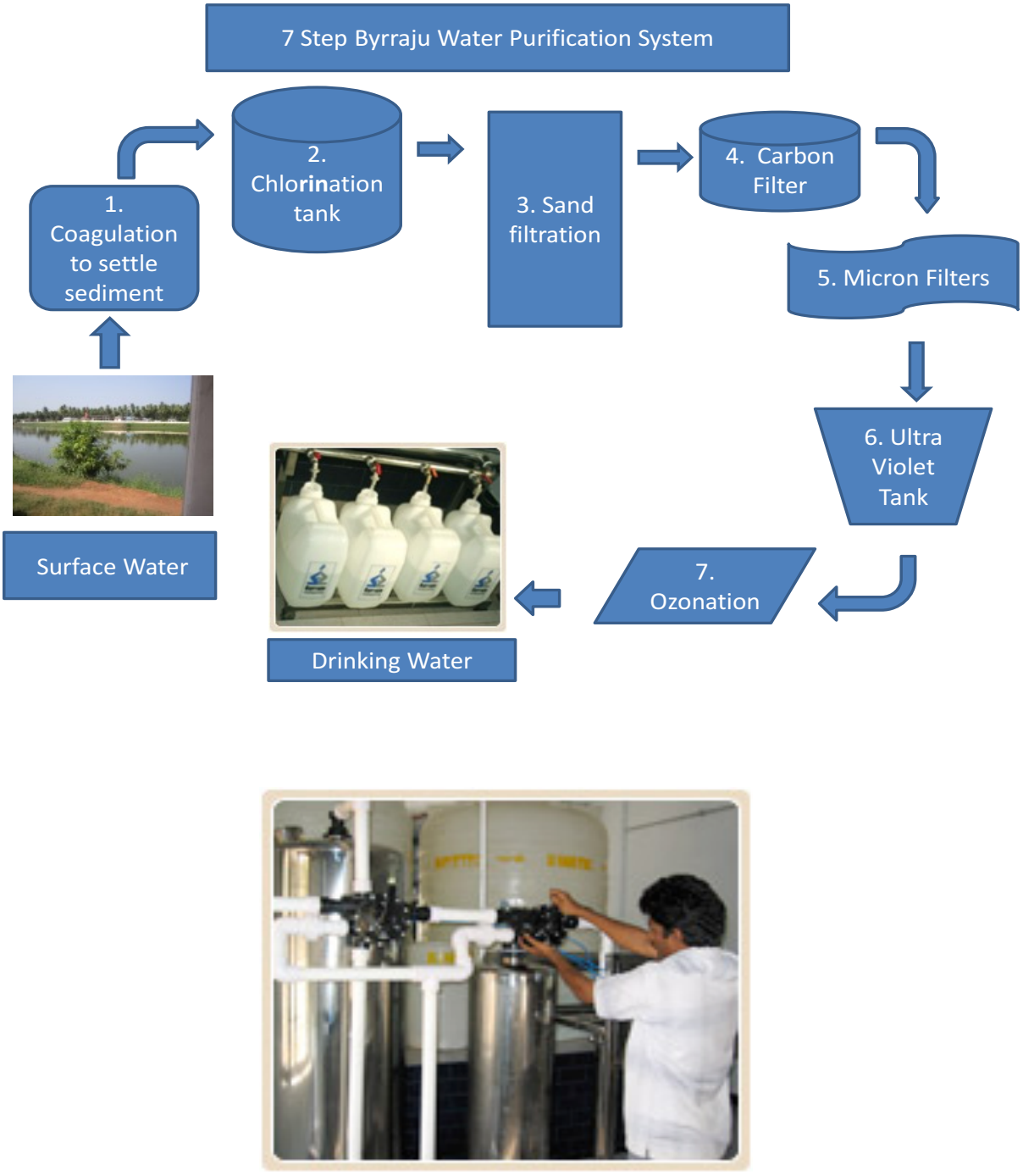
"World Water Day 2010, Water Quality Facts and Statistics." *Welcome to UN-Water*. United Nations, 2010. Web. 26 July 2011. <http://www.unwater.org/>.

Exhibit 1: “Hybrid Spectrum/ the Four Lenses Strategic Framework”



Source: Alter, Kim www.4lenses.org

Exhibit 2: Filtration System



Source: Based on ByrrajuFoundation.org/ Delivery Modules