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### **Our Part in Clean Water for South Africa**

South Africa is a country with unequal access to clean water. Today in South Africa, most women walk 2 to 3 kilometers just to get in line for water that could be contaminated. Those women will have to make the journey back with 20 to 25 liters of water in jugs on their heads. Although, the Constitution of South Africa states that every person has the right to clean water, the rural subsistence farmers continue to tackle the problems of water scarcity.

Over 3 million people worldwide die each year because of contaminated water. 1.8 million of those deaths are children who developed severe diarrhea from microorganisms in water that has been contaminated by sewage. These problems are seen frequently in South Africa because it is a developing country. In South Africa the Community Water Supply and Sanitation Programme was established in 1994 to provide clean water to every person. Almost 20 years later, inefficient water utilities are deteriorating and are being privatized, widening the gap of inequality for safe water. Water scarcity no longer only affects the subsistence rural farmer. Currently, water shortages are also adversely affecting industry and municipal consumption. Regardless of how the water is acquired, from walking a great distance to find safe water for human consumption or from accessing recycled waste water for industrial use, scarcity exists. Some water scientists believe by the year 2015 there will be a shortage of easily assessable freshwater.

South Africa is located on the southern tip of the African continent. It has an area of 470,462 square miles or 1,200,000 square kilometers, that contains mostly savannas, deserts, and plateaus. The country has three capitols: Pretoria the administrative capitol, Cape Town the capitol for the legislative branch, and Bloemfontein the capitol of the judicial branch. The climate is not arid and most would compare it to the climate of southern California.

The government of South Africa is a parliamentary democracy that is a part of the Commonwealth (June, 1994). It consists of three branches, Executive, Legislative, and Judicial respectively, with a bicameral system in the legislature. There are nine provinces (Eastern Cape, Free State, Gauteng, KwaZulu-Natal, Mpumalanga, North-West, Northern Cape, Limpopo, and Western Cape) and several political parties.

They have a current GDP of \$287,000,000,000 with a growth rate of 3.7% -the five year average. Their unemployment rate is 25.2% as of 2010. They have many natural resources including fuel manufactured from coal. Their industries are mainly minerals, mining, motor vehicles and parts, machinery, textiles, chemicals, fertilizer, information technology, electronics, other manufacturing, and agro-processing.

They are also one of the largest producers of platinum, manganese, gold, and chrome in the world.

Southern Africa has been inhabited for thousands of years, the oldest known language is Khoisan, and is now mainly composed of people who are descendants of the Bantu. Europeans did not arrive in South Africa until 1488. They were from Portugal and did not settle right away. In fact, the first official European settlement was made by the Dutch East India Company in 1652. As European countries tried to claim and settle South Africa, many wars broke out causing much chaos and disorder. By the end of the 18th century, the Cape of Good Hope was controlled by the British igniting the conflict between the Afrikaners and the English. Starting in 1836, the Zulu were considered the most formidable tribe under their famous and powerful leader, Shaka. Under Shaka's leadership, they claimed most of the territory between the Drakensberg Mountains and the sea. After Shaka's assassination, Dingane took over which lead to the battle of Blood River and the defeat of the Zulus. In 1912, the African national Congress otherwise known as the ANC, was founded with the goals of elimination the restrictions based on color

and the enfranchisement of and parliamentary representation for blacks. However, the government ignored them and continued to pass laws persecuting blacks. In May 1961, South Africa broke free of the British dominion status and declared itself a republic. A reason for the withdrawal was the international protests against apartheid. A new constitution came into effect in 1984. Under this constitution, people of color were allowed a limited role in the government and control over affairs in specified areas. However, all power was still in white hands in spite of the population being mostly black and thus mostly unhappy.

The ANC and PAC, the Pan-African Congress, were forced to go underground and resolved to fight apartheid by using guerrilla warfare and sabotage. In 1976 and 1985, uprisings occurred in townships throughout the country; the NP or National Party, soon realized that change was needed. Secretly, members of the NP had conversations with Nelson Mandela leading to the unbanning of the ANC, the PAC, and all other anti-apartheid groups in September 1989. Two weeks later, Nelson Mandela was released from prison and on May 10, 1994, he became President of South Africa. Since then, many strides have been taken to increase democracy and justice in South Africa.

Given their history of political turmoil and racial inequality, the government of South Africa has ignored the problems of over population, food security, water scarcity, infrastructure of basic municipalities, and education. The barriers for South Africa, as for any developing country, are rooted in economic, institutional, and policy issues.

The people of South Africa are mainly black (79.4%) with the rest of the population composed of white (9.2%), mixed (8.7%), and Asian (2.7%). Their languages include Afrikaans, English, isiNdebele, isiXhosa, isiZulu, Sepedi, Sesotho, Setswana, siSwati, Tshivenda, and Xitsonga. The religion of South Africa is predominantly Christian, but traditional African, Hindu, Muslim, and Jewish practices are also seen throughout the country.

In South Africa the man is the main provider with the wife or wives also working to support the family.

Domestic responsibilities usually fall on the shoulders of the oldest daughters who are expected to maintain the home while going to school. Traditionally, when a woman was married to a man, the bride's family received payments from the groom in the form of livestock for the reproductive domestic duties the bride was to perform. It was also once a custom that if the family had only one son, the husband would take another wife to ensure the family name. As the country is now predominately Christian, polygamy is uncommon and daughters are wedded based on relationships rather than based on the wealth or power of a family. The government is working on instilling equality for race and gender throughout the country by creating programs that give aid to widows and creating laws that punish those who persecute based on skin color.

In general, most village markets sell the produce of local farmers. Unsafe use of pesticides in rural farms is attributed to their lack of literacy skills. The same problem is seen in the health care system; most subsistence farmers are uneducated, their main medical knowledge comes from what has been passed down. This is especially a problem when AIDS, Malaria, and other dangerous diseases occur in a village/town that has no licensed resident doctor or medical facility within 20 miles which is outside walking distance. Contaminated water causes disease and infections such as flurosis, cholera, typhoid, guinea worm disease, intestinal worms, and schistosomiasis. A family with basic medical knowledge and limited access to health care does not have the resources to understand and treat disease resulting from contaminated water.

The typical South African subsistence farm owner/poor urban family has about 3.65 people per household and they have an average farm size of 5.2 hectares which is roughly 12-13 acres. Their diet consists of maize, coffee, millet, oil palm, okra, sorghum, teff, wheat, and yams. South African field crops include grains such as corn and wheat, sugar, fruit, wine, vegetables, cotton, tobacco, and tea. Livestock is the largest agricultural sector in South Africa, which includes dairy, beef, and sheep farming. The farming

practices are mainly traditional which maintains the culture, but also decreases the efficiency of the farm because modern machinery is a tad faster and doesn't need to take a break. Most farmers sell their produce to local markets which is also where they buy their food. They usually gather water from streams and wells which are used by an entire village. In isolated areas, subsistence farmers make use of limited resources as economic inequality is further broadened with inadequate road conditions, poor health care, substandard schools, and water scarcity.

The road network in South Africa is about 754,000 kilometers and a little over 70,000 kilometers of it is paved/surfaced. The Department of Transport is responsible for overall policy and road building.

However the maintenance is the responsibility of the South African National Roads Agency or Sanral, as well as the nine provinces and local governments. There are approximately 3,000 kilometers of national toll roads and about 1,800 kilometers of them are maintained by Sanral, the rest are open for bid to private companies to develop, operate, and maintain on their own.

The market has been deregulated, allowing farmers the opportunity to seek the most competitive suppliers and purchasers. Farmers can use the South African Futures Exchange more easily than before, resulting in the exchange of futures contracts and hedge prices for their products. This system has been effective since the 1980's and has allowed for easier, more widespread sales for those farmers who are provided access. Rural subsistence farmers are not afforded this option due to their isolation. Even large-scale farmers recognize that deteriorating water supplies put their European export markets at risk. From fear of jeopardizing their export relationships, farmers are reluctant to discuss water contamination as produce standards are more stringent in Europe. According to TAU Vice-President Louis Meintjes from the Fresh Plaza: Global Fresh Produce and Banana News, if farmers lose foreign customers, they will be forced to dump their produce on the local market, with knock-on effects for other farmers who depend on domestic customers. Subsistence farmers who depend on sales from local markets cannot afford this competition.

South Africa can learn from their neighbors. Many countries like America, Britain, and Russia, greatly improved their water sources because they developed filter technologies and set those new technologies as regulations in their respective countries. Australia is investing more money into water infrastructure, "and has constructed large seawater desalination plants as well as looking at water reuse and recycling," according to WASH News Africa.

The lowest rates of literacy in South Africa are among farm workers. There is a potential to increase the food production significantly if the rural farmers of South Africa can be taught how to better manage their water sources. Water supplies are contaminated with inadequate sanitation systems. Providing adequate sanitation for rural homes along with training about proper hygiene are necessary components to keeping water supplies safe. By educating subsistence farmers about farming methods which include seed saving, composting, mulching, trenching and natural pest control, they will be better able to manage their food supply. Irrigation training, water preservation, and environmentally-friendly farming methods will increase the productivity levels. Increasing water efficiency by at least 35% could reduce crop water consumption from 80% to 20% making the dry season more livable and less costly.

Organizations throughout the world have brought aid to South Africa in many forms. Aid for Africa works to alleviate poverty. The World Health Organization has several programs in place within South Africa. Working for Water is a South African public works program. RAIN is a Coca-Cola foundation program co-funded by USAID which is focused on reducing, recycling, and replenishing the amount of water used in beverage production. They work on community based water interventions.

Water scarcity and food insecurity bring nations together to provide aid and education. Teenagers from any part of the world have experienced the phenomenon of invincibility. Grasp this attribute and put their eager attitude to work for others. Children of the 21st century are "green" with their unripened youth as

they lack worldly experiences, yet are eager to make a difference in the lives of others. Equally as important, youth today are “green” with their earth-friendly knowledge. These two combined character traits make them the ideal candidates to lead the way to make changes world-wide. Students from schools, churches, and community organizations can serve as youth ambassadors to join forces with the organizations already in place. The wheels need not be re-invented. Successful organizations have already implemented services to the poor rural farmers of South Africa, but it is time to engage the youth of today to work in great numbers. They will willingly partake in these endeavors if the initiative to pull them together exists.

In conclusion, the problems of contaminated water, lack of education, inadequate health care, and escalating spread of disease are compounded for those living in isolation. People will not have access to clean water if there are improper sanitation systems or deteriorating municipalities providing water. Lack of infrastructure, shallow sanitation, and unsafe water are conditions with which the rural South African farmer has learned to live. South Africa’s continued progress depends on educating the rural farm family, in particular, the children of the rural farmers. Relief organizations which educate and provide aid to the poor of South Africa must solicit the help of youth organizations world-wide as these young people are willing to lead the way with their own green footprints. The havoc of everyday life for the rural South African farmer must not be ignored.

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