

Home

[Home](#) > [Kyoto World Water Grand Prize Applicants](#) > [Water for Sudan, Inc. - Drilling Fresh Water Wells in South Sudan](#)


 Advanced Search

Kyoto World Water Grand Prize Applicants: Water for Sudan, Inc. - Drilling Fresh Water Wells in South Sudan

Title of the local action	Water for Sudan, Inc. - Drilling Fresh Water Wells in South Sudan
Description of the Problem and Activity	<p>The overall goal and missions of Water for Sudan, Inc. (WFS) is to increase the quality of life and health of families in South Sudan by drilling wells to provide fresh, safe potable water. As of last May 2008, WFS has installed twenty nine (29) pumping systems in 29 villages serving an estimated 87,000 South Sudanese. Last season, WFS purchased a second drilling rig and trained an additional team of drillers. Now, yearly drilling capacity is anticipated to be 35 pumps drilled per annual dry season. We estimate an additional 110,000 South Sudanese annually will receive clean water daily. Please see <i>Just Add Water, a Documentary Film</i> about details regarding this project at www.waterforsudan.org. Mailing address is: Water for Sudan, Inc., P.O. Box 25551, Rochester, New York 14625 USA</p>

Articulating water problem- *Why the Need for Clean Water* The irony of Sudan's need for water is that the largest aquifer in the continent of Africa lies beneath Sudan. Yet, each day hundreds of thousands of people in South Sudan drink unsanitary surface water that they have spent hours walking to obtain. This water is contaminated with parasites and Cholera bacteria. Over one third of hospital cases reported in Sudan pertain to parasitic intrusions. For their very survival people are forced to drink from these contaminated waters and subsequently become infected; resulting in diminished immune systems that fall prey to other opportunistic diseases. This exposure results in pain, sickness, and often death for these destitute families. The only real measure to stop this preventable suffering is to provide them fresh, clean water.

South Sudan villages have migrated seasonally to areas to collect this polluted water. Their communities have not developed a sustaining economy with markets, cottage-type industries, educational or medical facilities due to their annual migration. For thousands of years they have sustained their families by gathering nuts and fruit; planting squash, millet, beans and sorghum while herding their cattle, goats and sheep in their search for water.

As of date, Water for Sudan has drilled twenty nine (29) wells in remote villages in South Sudan; serving 87,000 people (United Nations figures). Presently, only one pump is installed in a village. Each of the pumping system serves an average of 3,000 people (South Sudanese villages which range in size from 2,000 to 6,000 people).

Goal: WFS's goal of installing 35 pumps per year provides about 110,000 additional people each year with clean water daily to fulfill their basic needs.

Difficulties in bringing water to the people of South Sudan The war torn country of Sudan is 40% the size of the U.S. Water pumping systems are being drilled in the most destitute area of South Sudan. Water for Sudan teams

are working in a completely undeveloped area of Africa the size of Texas. Most areas there are no roads, however if rough, dirt roads exist; the land and roads are covered in a muddy muck in the wet season. Therefore, work may only proceed in the November to May dry season. The teams work seven days a week in temperatures of 120 degrees Fahrenheit.

There is no electricity, stores, facilities, cell phone communication or gas stations. All provisions – pumping equipment, food, diesel fuel, maintenance equipment, welding equipment, camping equipment and supplies must be carried with the WFS convoy. There are no roadside services; the teams must be totally self reliant. Medical clinics may be several days drive away. Few people speak English. There are no cell phone towers for communication. Replacement equipment parts take weeks to arrive from the USA. If some replacement pump parts are depleted, the staff makes the part by hand. All vehicle repairs are done by the staff.

Wells may only be installed in the dry season (November-May) for 28 weeks when the roads or pathways are passable and the water tables are “true.” (Wells drilled in the rainy season likely dry up in the dry season.) There is no travel in the wet season.

Description of divides that were bridged

Governmental: To begin the journey of drilling fresh water wells in South Sudan, organizational and governmental certifications needed to be established. Water for Sudan, Inc. (WFS) was organized in 2003 by Salva Dut and the Board of Directors as a US not-for-profit corporation under section 501(c)3 of the IRS code and is based in Rochester, NY. Its mission is to create access to and monitor safe drinking water for communities located in southern Sudan. By 2005, WFS installed the first five water pumps in Sudan. Water for Sudan, Inc. is authorized and registered by the:

- § U.S. Department of the Treasury to conduct humanitarian activities in Sudan including the transfer of funds (Reg. No. SH-98179);
- § Republic of Sudan Government Southern Sudan (GOSS) - Southern Sudan Relief and Rehabilitation Commission; and
- § Government of Southern Sudan Ministry of Legal Affairs and Constitutional Development.

Water for Sudan, Inc. addressed the issues of “doing business” in a war torn country in Africa by obtaining the proper governmental certifications both in the United States and Sudan to implement this project. Faced with challenges of environment, geography, politics, customs and traditions as well as language, Water For Sudan is successful due to the project management and process of completing the project – *village by village*. To meet the funding needs, a dedicated group of volunteers serves the organization in its operations and fund raising. Thousands of individuals and civic organizations provide needed financial support annually.

To further explain:

WFS’ project management: Salva Dut, President of *Water for Sudan, Inc.* is also the Project Manager. He is of the Dinka community from Tonj, Sudan. Currently, he resides in Rochester, NY. Salva is a U.S. citizen with education in Business and International Business. Salva is one of the *Lost Boys of Sudan* who fled the war torn southern regions over the past 20 years. His family still lives in South Sudan. Salva’s determination to use his education to help the people in his hometown and the surrounding communities has come to fruition. He manages drilling operations during the dry season. He fund raises for WFS when back in the USA.

Team Supervisors: There are two Team Supervisors based in Africa who work with the two teams. They are Ater Thiep, a Dinka refugee in 1986 now living in Dallas, Texas; and Dep Tuany, a Nuer villager, who since 1993 resides in San Diego, California and is Vice President of WFS. Both men are *Lost Boys of Sudan*.

Volunteers and the Need for Funding: Water for Sudan has a dedicated board of fifteen volunteer directors as well as volunteers who donate gifts and professional services to the organization. These volunteers along with Salva Dut raise thousands of dollars annually to support this project. Thousands of dollars of in-kind gifts and services are secured to operate this organization. Annually, WFS launches an annual appeal for project support.

Impact of Implemented Activity

With the installation of the WFS pumps, the water is brought to the villages. They have drinkable, safe water for their families and animals. "Pot" gardens are grown to provide more staple crops. Cottage industries such as making bricks enable the village to build schools, homes and buildings. The village no longer needs to migrate to live. With a water pump, a community develops.

Results of the New Wells – Indicators of Success: In 2008, representatives of Water for Sudan returned to some of the villages where WFS installed wells since 2005. All wells are operating in a normal fashion providing adequate clean water. In all villages, significant life changes had occurred that positively enhanced the life of the families, especially the children. The women and female children do not spend hours walking in search for water. The girls are in school. The residents in villages do not need to migrate for water.

Several new school structures have been built or under construction. Trade markets were established – locations where people could barter or sell their goods and produce and purchase needed goods from the outside world. Permanent homes were built from bricks that could be made near the well. Families, especially the women developed "cottage-type" industries to provide income for their families. More gardens were visible to provide more stabilized food sources. By merely drinking safe water, the families are healthier. Brick buildings were also viewed being built to house future medical clinics and community markets.

Most remarkably was the new schools and attendance growth in the schools. In one village only 60 students attended school prior to the well being built in the village. Within one year, the school increased to 850 students with twelve teachers. The curriculum includes English, mathematics and religious education.

For centuries, the two large tribes, the Dinka and Nuer, where WFS is installing pumps have been warring communities. The WFS Team and leadership contain members from both tribes. This project which instills a spirit of common good has developed into mutual respect and working relationships between these former warring peoples. Thus, regional stability has been enhanced with the installation of pumping systems.

In Sudan, water is life. Clean, safe, potable water is community development, life enhancement and good health.

Stakeholder Participation / Consultation

All WFS monies are directed to this project. WFS has purchased the capital to implement the project as well as employed fund raising methods to raise needed funds.

Funders as Stakeholders: The annual budget of Water for Sudan is approximately \$550,000 per year. The contributions from individuals, religious congregations, civic clubs, corporations and foundations provide monies for this humanitarian work. Our supports become "well sponsors," "partners" and "donors." In 2009, twenty percent (20%) of our direct support may come from individuals; 10% from corporations/foundation; 6% from religious

congregations; 63% from civic organizations (Rotary: capital equipment) and 2% from events and miscellaneous income. No government or United Way monies are received. Water for Sudan provides regular progress reports to these stakeholders

Volunteers as stakeholders: The Board of Directors is comprised of 15 professionals who provide operational management and fund raising activities for WFS. Numerous volunteers provide the necessary in-kind services for all WFS activities totaling thousands of dollars annually.

Sudanese Families as Stakeholders: The families drink fresh, safe water. We estimate that 87,000 people have been served by WFS.

Village Leaders as Stakeholders: S. Sudanese leaders in the villages participate in the decision-making process of the well building. Many villages assist in the building. Village managers are trained in the repair and maintenance of the wells. The village runs the water distribution system. The community develops with the fresh water pump.

Staff as Stakeholders: The staff of WFS is Sudanese men that escaped the war 20 years ago and immigrated to the United States. They are part of the thousands of Lost Boys. They are returning to their regional homeland and providing water.

Sustainability

Assuring sustainability The challenge for Water for Sudan, Inc. is to meet the financial needs in order to carry out this humanitarian work. In doing so, Salva Dut and the volunteers actively fund raise. An annual appeal has been established that raises funds. Much national public relations has occurred through the Associated Press International and donations sent from distant locations. WFS has recently produced a documentary film viewable through its website www.waterforsudan.org that contains a fund raising message as well as reports to the community. Contributions may be made through its website *PayPal*. Fund raising will continually be the challenge for this organization. No government funds or United Way monies are received.

Replication of Project: Water for Sudan serves as a model and reference resource for not-for-profits with parallel missions and efforts. WFS continues to actively seek and work with collaborating partners in this region.

We have found that Water For Sudan is one of the few South Sudanese organizations developing water systems in South Sudan. Prior to the 2005 Peace Agreement, UNICEF and World Vision were installing pumps in the refugee camps, but left when the Agreement was signed. Many of these wells no longer function. Perhaps this breakage is due to inadequate maintenance or no repair of the equipment. Also, many wells dried up because they were drilled in rainy season. Islamic Relief also was installing systems but it has left South Sudan. Catholic Relief is installing some in a few areas where Catholics are located. Other organizations are drilling water systems in other parts of Africa. PlayPumps International is, for example, is serving South Africa, Mozambique, Swaziland and Zambia.

Commitment

Plans for Continuance

Water for Sudan, Inc. drills wells for potable water for villages in the southern part of Sudan. This area is called Bahr al Gahzal. Team A will continue to install pumps in different villages in this area. Team A's objective is to install about 20 pumps annually in this region.

This year, WFS added the second drilling rig and a second team of drillers, Team B. They will drill wells in the Upper Nile region near Ethiopia. This area

is even more remote. Due to the difficulty with no roads, added installation challenges and excessive distances between the villages, Team B's objective is to install 15 pumps per year.

With two drilling rigs and two teams our target is to install 35 pumps per year (barring equipment breakdowns

and unforeseen challenges). Each year we may provide an additional 110,000 people with water. By 2011, three years from now, we plan on installing 135 water pump systems; providing 425,000 people with clean water. With continued peace in the region, our work will continue indefinitely.

At this time, there are no plans for expanding to a third drill or third team.

Commitment to assure sustainability

In Sudan: In 2009, Water for Sudan, Inc. will purchase two new trucks and a Landover vehicle for operations. Additionally it will purchase land and build two secured compounds for equipment and supplies storage. One will be in the east region, the second in the west region where the teams work.

Building collaborations for financial stability Currently, Water for Sudan, Inc. has partnerships with Rotary International District 5340 in California and District 7120 in New York State as well as religious congregations Water for Sudan, Inc. seeks collaborative partner-ships with other organizations that may provide water systems in Africa as well as funding and humanitarian organizations.

Outcome Objectives: Water for Sudan, Inc. desires to achieve the "United Nations' Millennium Development Goals" to:

- § **Eradicate extreme poverty and hunger - Clean water is THE fundamental basis upon which communities can subsist. WFS wells have increased basic health; aiding the Sudanese's livelihood and general well being.** The crisis is most extreme in the south where the impact of poor climatic conditions is most severe. Nearly one-third of the population in Southern Sudan is highly food insecure (*US Aid*).
- § *Reduce child mortality.* Numbers of children die from water and sanitation-related diseases such as diarrhea.
- § **Achieve universal primary education** – With clean fresh water, children especially girls are healthier and are enabled to attend school with increased attendance.
- § *Improve maternal health.* Women experience healthier pregnancies resulting from clean, non-contaminated drinking water, better personal hygiene, not carrying heavy loads of water great distances and safe delivery spaces now made possible with clean water. **Lifetime risk of death due to pregnancy or childbirth** in Africa is 1 to 16; compared to the US which is 1 to 3,700.
- § *Combat malaria, HIV/AIDS and other diseases* - Clean water makes people less vulnerable to pathogens causing diarrhea, a major cause of death, Guinea Worm, Schistosomes, Cholera and skin and other water-born diseases; improved nutrition, ingesting of medications and person's recovery. Current mortality rates for the south of Sudan verses the north are men 48.4 yrs and women 51.2 yrs versus men 55 yrs and women 59.1 yrs, respectively.
- § *Promote gender equality and empower women* - New water wells are located in close proximity of the community. Women and girls no longer need to walk miles to collect one bucket of water; thus enabling them to attend school
or do work to enhance their livelihood.
- § *Develop a global partnership for development to enable community stability* - The WFS staff organizes the village leaders in the decisions

process. The community participates in the building and caring of the pumps. This project empowers local leadership to gain the technical and managerial skills to hire on-site well managers and operate a communal utility.

Actual Outcomes: As of this date, Water for Sudan has installed water pumps in 29 different villages. The impact of these wells is listed in IMPACT OF ACTIVITY: *Results of the New Wells – Indicators of Success*. Indicators of success resulting from fresh, potable water within the village includes: no need for the community to seasonally migrate to seek water, building and establishment of schools, community buildings, homes, community markets, medical facilities and cottage-type industries. Increased student participation in school, especially by girls represents improvements in education.

Evaluation of project: Each year, Salva Dut and the teams visit some of the villages that WFS has installed pumps since 2005. They may be traveling to these villages en route to the new villages where they will work.

During their travels, they will view the progress of these villages and observe the changes that result due to having fresh, potable water nearby.. Salva is photographing and documenting as much information that is possible. He observes progress and discusses these changes with the village leaders, any medical personnel or human service personnel as well as school masters, clergy, families and children.

Originality and Innovative Ideas

Overcoming unsolved problems: *It takes a village to drill a well.* Therefore, understanding WFS' process for implementing this project in one of the most challenging and remote countries of the world is possible.

§ Management. Salva Dut, President of Water for Sudan, Inc. is the founder of the organization. He works in Sudan in the dry season and fund raises when he returns to the US. Two WFS project managers, one managing Team A in the western part of S. Sudan and another managing Team B in the eastern part of S. Sudan assist Salva.

The Staff. These managers in Sudan are originally from the region. They speak the language, represent the various tribes, are familiar with the terrain, customs, traditions and politics of the area.

§ The staff oversees the entire construction and trains the local villagers (two persons per village) how to maintain and repair the machinery. Also, the staff trains the village leaders how to run the water system; distributing water 24 hours per day.

Also, villagers assist with the construction site preparation and installation of the well.

§ Community Development. Before the project begins, Salva works closely with the elders and leaders of the village or community. As a team, a determination is made as to the regional areas where wells need to be located. The wells are located within close proximity of the community; to relieve the women and children (mostly girls) from walking great distances to get water. The women walk as far as six miles daily with containers on their heads.

§ Technical Training of Villagers. Villagers assist in the site preparation of the well. Villagers are trained in the maintenance of the pumping system as well as repair of the equipment. The village leaders are trained to manage the communal utility on an on-going basis. Two villagers are managers of the well and are paid by the village to manage (on site) the well water distribution. People are scheduled to come and get water at a specific time, day or night.

§ Pumping Locations: Salva conducts the geographic study to determine the exact location of the pump within the area, and procures all necessary equipment for the pumping system and construction site.

§ Drilling Equipment and Capacity: By 2006, Water for Sudan, Inc. purchased its own drilling equipment. (No longer does WFS rely on

contractors and significant cost savings are now realized for the cost of each drilling.) In 2008, WFS purchased a second state-of-the-art drilling rig, new trucks and startup equipment to have two rigs working simultaneously. This rig, *150 Deep Rock Drilling Rig*, goes to 150 meters deep (about 400 feet). WFS plans on installing two pumps per week with the two work teams.

- § The Pumping System: The pumps installed are *India Mark II*, a hand pump that is able to yield 15 liters of water per minute; 21,000 liters of water per day. Average water strikes occur at 90-100 meters (300 feet) lending credibility to their geographic survey acuity. Each pump system includes water survey, borehole drilling, equipment installation, fencing to keep out animals, and final operation of the well to provide potable drinking water.
- § Building of the Wells: Many villagers assist in the gathering and preparation of stone materials used in the building of the well.
- § The Wells: Are safely installed and may be operated by women and children easily. The areas are fenced to protect against the domestic animals drinking at the well and contaminating it.
- § Sponsorship Signage: Water for Sudan, Inc. imprints signage in the well platform for the organization or individual who has sponsored the construction of the well.
- § Communal Management. Salva and his project assistants work with the community leaders in all decision-making activities. He trains the community in the technical and management skills required to operate and maintain this communal utility.
- § Water Distribution: Village leaders manage the water distribution timetable. An average of 3,000 people per well

obtain water daily. The village leaders hire two people from the village to oversee on site distribution of the water to

residents throughout the 24-hour day. There is a schedule that indicates daytime, evening and nighttime water

collection times for each resident in all 29 villages.

Topic

Topic 2.3 - Water and Food for Ending Poverty and Hunger

Intended use of the funds if you win the prize

Direct project and capital expenses. With the Kyoto World Prize, all monies will be directed to installing water pumps in South Sudan. The cost of the water pump equipment and the on-site installation expenses only is about \$8,500. WFS, however, factors the “cost of doing business in Sudan”, that is, the expenses incurred to implement the project such as air/ground transportation, accommodations, the capital expenses, supplies, etc. Therefore, the cost/well is approximately **\$12,000/well**. This calculation represents a more conservative and realistic view of providing wells to remote villages. Our production estimate based on past years actual accomplishments is that Team A will install 20 wells and Team B will install 15 wells, totaling 35/year.

Additionally, two trucks and land cruiser (\$80,000); two secure supply and vehicle compounds and land (\$16,000) are needed to be purchased this year. Also, two secure fenced-in compounds in both regions need to be purchased and constructed to house the equipment and vehicles in the wet season. Therefore, monies from this award will be used for direct project and capital expenses. Enumerated below are our estimated expenses for 2009.

In summary, award monies will be used for project and capital expenses.

EXPENSES - 2009

2009 Anticipated Expenses

Salaries & Benefits: Manager and 2 team supervisors

\$54,000

Professional fees	\$6,000
Capital Expense: Two trucks and land cruiser (\$80,000); two secure supply and vehicle compounds and land (\$16,000).	\$96,000
Equipment Expense: Pumping system, pump site equipment	\$120,000
Project supplies: Diesel fuel, project and camping & food supplies	\$100,000
Maintenance & Repairs: Pump stations, vehicles, equipment	\$24,000
Project air and ground travel expenses, meals, lodging	\$20,000
Publicity, supplies, signage, printing expense and postage	\$16,000
Training expenses	\$4,000
Telephone, fax, computer expense	\$2,700
Occupancy & utilities (see in-direct resources)	\$0
Fundraising Expenses (special events; air travel for solicitation trips; annual appeal expenses, etc.)	\$18,000
Depreciation expenses	\$80,000
TOTAL PROJECT EXPENSES	\$540,700
Operating Expenses: audit; bank fees; licenses; insurances; administrative services; payroll taxes	\$15,300
TOTAL DIRECT EXPENSES	\$556,000
INDIRECT EXPENSES (In-kind Gifts & Services) *	\$37,000
TOTAL DIRECT & INDIRECT EXPENSES	\$593,000

Any other details

Contact person	Barbara Jablonski John Turner
Status	3. Pre-selected candidate
Presentation date and time	18/03/2009 13:30

Created at 27/11/2008 03:32 by Barbara Jablonski

Last modified at 22/04/2009 21:04 by Colin Herron (5th World Water Forum - Turkey 2009)