

June 2008

The West Africa Water Initiative

**Bringing Hope to Children
and Families in West Africa**

**Semiannual Report
October 2007 through March 2008**



THE WEST AFRICA WATER INITIATIVE

Table of Contents

| | |
|---|---|
| Introduction | 1 |
| Water Development in Ghana | 1 |
| Semiannual Achievements | 1 |
| Inception-to-Date Achievements | 2 |
| Water Quality | 3 |
| Water Development in Mali | 3 |
| Semiannual Achievements | 3 |
| Inception-to-Date Achievements | 4 |
| Water Quality | 5 |
| Water Development in Niger | 5 |
| Semiannual Achievements | 5 |
| Inception-to-Date Achievements | 5 |
| Water Quality | 6 |
| Thank You | 6 |

World Vision is a Christian humanitarian organization dedicated to working with children, families, and their communities worldwide to reach their full potential by tackling the causes of poverty and injustice. Motivated by our faith in Jesus Christ, we serve alongside the poor and oppressed as a demonstration of God's unconditional love for all people. World Vision serves all people, regardless of religion, race, ethnicity, or gender.

Every 15 seconds, a child dies from a preventable, water-related disease. Most of these children are younger than 5, and a majority of them—80 percent—are younger than 2. Contaminated water and poor sanitation are factors in 88 percent of all disease in the developing world—diarrhea alone kills 2.1 million children annually. However, access to clean water, hygiene, and sanitation can reduce child mortality by as much as 65 percent, according to the World Health Organization.



*A higher standard.
A higher purpose.*



THE WEST AFRICA WATER INITIATIVE

Introduction

On behalf of impoverished children and families in West Africa, thank you for your generous support of the West Africa Water Initiative (WAWI). This report details accomplishments in rural water projects in Ghana, Mali, and Niger from October 1, 2007, through March 31, 2008. Highlights of achievements during this six-month period include the following:

- 147 successful wells were drilled in 123 communities, and 823 latrines were constructed in Ghana, Mali, and Niger.
- 110 wells in the three nations were sampled to conduct water quality tests.
- 479 volunteers were trained to repair hand pumps, and 258 individuals were trained to construct latrines.
- Literacy training was provided to 994 adults.

Thank you for your continuing commitment to children and families in these three countries. Your support is helping to bring safe, clean water to these West African nations, ensuring that children and families are educated about proper hygiene and sanitation, and providing benefits that can be sustained for generations to come.

Water Development in Ghana

During the reporting period (October 2007 through March 2008), drilling operations were carried out in community development areas in Savelugu-Nanton, Tolon-Kumbungu, West Gonja, West Mamprusi, and Zabzugu-Tatale. A total of 182 boreholes were drilled in 80 communities and five institutions. Of these, 60 boreholes were successful, and 132 were dry. The low success rate is due to difficult geology. World Vision's drilling efforts focus on Guinea worm-endemic communities in Savelugu-Nanton and Tolon-Kumbungu districts, where drilling success rates are very low. Our success rate in these regions is comparable to the normal rate in the Northern region. All the successful boreholes have been developed and disinfected.

Semiannual Achievements

Thanks to your generosity, the Ghana Rural Water Project (GRWP) accomplished the following in Ghana from October 1, 2007, through March 31, 2008:

- Drilled 60 successful boreholes in 39 communities and two institutions, benefiting 35,632 people.

Rainwater harvesting and well mechanizations currently under way in Ghana will increase access to potable water for more than 147,500 schoolchildren, teachers, patients, and health workers in four districts.

THE WEST AFRICA WATER INITIATIVE

Hydrofracture involves pumping highly-pressurized water down the borehole, attempting to crack bedrock in which the well has been drilled. When new cracks occur, they often connect to additional water producing veins of fractures adjacent to but not previously part of the well. This procedure has helped turn a number of low-yielding wells into good producers while other marginal wells have dramatically increased their productivity after being hydrofractured.



Meimunatu Alhassan, 40, lives in Kpalung, a Guinea worm-endemic community in the Savelugu-Nanton community development area in the Northern region of Ghana. Meimunatu lost a baby who got diarrhea from the contaminated water in a local pond. Meimunatu worries about the effect of contaminated water on Abdulai, her 2-year-old son. World Vision has been drilling in this community through WAWI, and Meimunatu's prayer is that the drilling team will reach water. So far, eight attempts to drill in this community have not been successful because of the difficult terrain.

- Hydrofractured 34 low-yielding boreholes (13 drilled in fiscal 2007 and 21 drilled in fiscal 2008), which will be developed to assess whether there is an adequate improvement in yield.
- Conducted pump tests on 45 boreholes, some of which were drilled earlier.
- Sampled 48 boreholes to conduct water quality tests.
- Installed seven fluoride removal systems on wells in four communities.
- Constructed 59 concrete aprons in 48 communities and 120 laundry pads in 83 communities.
- Installed hand pumps on 61 boreholes in 39 communities and one school.
- Facilitated the construction of two rainwater harvesting systems in a health center and a hospital. Twenty-one additional water tanks are being constructed in schools and health centers in 19 communities, and are between 80 and 95 percent complete.
- Began to mechanize five high-yielding wells in four schools and one health center. Construction is about 70 percent complete.
- Built 283 latrines in 23 communities.
- Established or reactivated 54 water and sanitation (WATSAN) committees.
- Trained 726 committee members from 82 communities in management skills.
- Trained 251 pump maintenance volunteers from 50 communities.
- Educated 49 communities on the causes and prevention of trachoma, Guinea worm, malaria, and diarrhea, and on personal and environmental hygiene.
- Provided literacy training to 300 adults.

Inception-to-Date Achievements

Since the beginning of Phase IV of the GRWP in October 2003, the project in Ghana has accomplished the following:

- 443 of the 1,045 boreholes drilled have been successful.
- 92 percent of 480 targeted wells have been drilled.
- 329 communities have been provided with at least one well—exceeding the project target of 275 communities.
- 1,649 latrines have been constructed—59 percent of the project target of 2,800 latrines.

THE WEST AFRICA WATER INITIATIVE

- Health and hygiene education regarding malaria, diarrhea, Guinea worm, and trachoma has been provided to 142 percent of the project target.
- 225 WATSAN committees have been formed or reactivated—82 percent of the project target.
- 1,086 hand pump volunteers have been trained—60 percent of the project target.
- 209 volunteers have been trained to construct latrines—23 percent of the project target.

Water Quality

A total of 48 wells were sampled for major ions, fluoride, and trace elements analyses from October 2007 through March 2008. Samples for major ions analyses were sent to the Water Research Institute in Tamale, Ghana. Samples for fluoride and trace elements analyses were sent to the Desert Research Institute (DRI) in the United States. Results were received for 34 samples and indicated that nine wells exceeded the World Health Organization (WHO) Recommended Guideline Limits for fluoride, and three wells exceeded the limit for arsenic. Treatment systems will be installed on these wells to make the water safe for consumption.

Water Development in Mali

From October 2007 through March 2008, the Mali Rural Water Project (MRWP) drilled 66 wells in the Bla, Koro, San, and Tominian districts. Of these, 61 were successful, and five were dry—a success rate of 92 percent.

Semiannual Achievements

The MRWP accomplished the following in Mali from October 1, 2007, through March 31, 2008:

- Drilled 61 successful wells in 61 communities, benefiting 24,400 people
- Installed hand pumps on 21 wells
- Sampled 34 boreholes to conduct water quality tests
- Constructed 12 concrete aprons and 33 laundry pads
- Trained 228 volunteers to repair and maintain hand pumps
- Distributed repair kits and maintenance tools to 57 communities and ordered them for 12 more
- Trained 220 volunteers to construct latrines

Guinea worm was nearly endemic in the Mopti, Timbuktu, and Gao regions of Mali, however, this situation is improving, largely due to the provision of safe water and sanitation. A total of 16,024 cases of Guinea worm were monitored in 1991 and 1992, and 643 cases were observed in 2005. In 2007, only 312 cases were identified in Mali.

THE WEST AFRICA WATER INITIATIVE

Where our witness can be fully expressed, such as in parts of Ghana, World Vision intertwines serving physical needs with enhancing spiritual maturity. Due to the strong Muslim culture in Mali, Niger, and some regions of Ghana, Christians cannot share their faith unless they are asked about it. In these places, World Vision staff members reflect Christ's love through their actions and lifestyle. Sometimes this leads people to inquire about our staff's motivation and beliefs.

Often, the provision of water opens a community to the Word of God, as it provokes questions that allow staff members to share about the "Living Water." People can better understand the concept of Jesus as the Living Water when their water is clean and life-sustaining. People also have more time for Bible study and to listen to God's Word if they are not spending so much time gathering water. In addition, providing safe water in a village often is an entry point to gain community support and interest, so other development initiatives, including spiritual nurture, can be introduced.

- Built 256 latrines in 32 communities
- Established 229 refuse dumps in 25 communities
- Educated 18,911 people in 72 communities, as well as teachers and students in 22 schools, on trachoma and other water-related diseases
- Educated 19,182 people in 68 communities on personal hygiene and sanitation
- Broadcast messages on trachoma, Guinea worm, diarrheal diseases, and personal and environmental hygiene on radio stations in 72 communities
- Involved more than 40,870 people from 92 communities in environmental cleanliness and sanitation activities
- Established or reactivated 80 WATSAN committees
- Trained 228 committee members in management skills
- Provided literacy training to 219 adults

Inception-to-Date Achievements

Since the project began drilling in Mali in September 2003, the MRWP has accomplished the following:

- 267 of the 296 boreholes drilled have been successful.
- The overall drilling success rate is 90 percent.
- The project target of drilling 260 wells has been surpassed.
- 227 samples from wells have been analyzed for major ions and 230 for trace elements.
- The project target of providing 210 communities with at least one well has been surpassed.
- 3,583 latrines have been constructed in 568 communities—far exceeding the project target of 2,000 latrines.
- Health and hygiene education regarding malaria, diarrhea, Guinea worm, and trachoma has been provided to 894 percent of the project target.
- 534 WATSAN committees have been formed or reactivated—267 percent of the project target.
- 1,216 hand pump volunteers have been trained—106 percent of the project target.
- 1,671 volunteers have been trained to construct latrines—279 percent of the project target.

THE WEST AFRICA WATER INITIATIVE

Water Quality

During this semiannual period, 34 boreholes were sampled. Forty-one samples (including some from previously drilled wells) were sent to the government water quality lab in Bamako, Mali, for major ions analyses and to DRI's laboratory for analyses of trace elements. All the results met WHO Recommended Guideline Limits for safe drinking water.

Water Development in Niger



A water pump attendant looks after the pump in her village in Niger. She works from 7 a.m. until 6 p.m., collecting money from those using the pump, which she gives to the village water committee's secretary. "It's very easy to use, and it's clean," she said. "This water we can drink directly."

During the reporting period, drilling was delayed several weeks due to difficulties in purchasing spare parts. Despite this delay, the Niger Rural Water Project (NRWP) drilled 27 wells, of which 26 were successful, and one was dry—a success rate of 96 percent.

Semiannual Achievements

Thanks to your generosity, the following activities were accomplished in Niger from October 2007 through March 2008:

- Selected 23 sites for drilling
- Drilled 26 successful boreholes, which will provide safe water to 5,250 Nigeriens
- Sampled 28 boreholes to conduct water quality tests
- Installed hand pumps on 24 boreholes
- Installed fluoride treatment systems on two boreholes
- Trained 38 volunteers to construct latrines
- Built 284 household latrines in seven communities
- Provided health and hygiene education on diarrheal diseases and personal and environmental sanitation to 27 communities
- Provided literacy training to 475 adults

Inception-to-Date Achievements

Since the project in Niger began in March 2004, the NRWP has achieved the following:

- 173 boreholes have been drilled, of which 150 were successful—an overall drilling success rate of 87 percent.
- 86 percent of the targeted 175 boreholes have been drilled.
- 117 hand pumps have been installed on wells that met WHO Recommended Guideline Limits for safe drinking water.
- 1,852 latrines have been constructed in 122 communities.

THE WEST AFRICA WATER INITIATIVE

- 192 communities have been educated on water-related illnesses including trachoma, Guinea worm, malaria, and diarrheal diseases.
- 181 WATSAN committees have been established or reactivated.
- 96 volunteers have been trained to repair and maintain hand pumps.
- 296 volunteers have been trained to construct latrines.



The governor of Maradi and the national director of World Vision in Niger educate community members on water and sanitation facilities management.

Water Quality

A total of 28 boreholes were sampled and tested during this period. Samples were sent to the regional water quality lab in Maradi, Niger, for major ions analyses and to DRI's laboratory for analyses of trace elements. Water quality results for major ion content were received for 17 borehole samples, and trace element results were received for seven samples, one of which was collected in the previous reporting period. All of the boreholes met WHO Recommended Guideline Limits for safe drinking water.

Two boreholes that previously were found to contain fluoride in excess of the WHO

Recommended Guideline Limit of 1.5 milligrams per liter were fitted with fluoride treatment systems. This has increased the success rate for boreholes drilled and in use, and the number of people benefiting from NRWP wells.

Thank You

World Vision is thankful for your ongoing commitment to rural water projects in West Africa. Because of your generosity, children and families in this region are gaining access to safe, clean water, improved sanitation, and hygiene education. These interventions are leading to improved health and quality of life. Thank you for your continued partnership.

