



CREATE!

Center for Renewable Energy and
Appropriate Technology for the Environment

NEWSLETTER

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The Miracle of Water

Brown, brittle grass. Dusty, skeletal trees. Persistent and widespread drought impedes plant growth for much of the year in rural Senegal. During the short rainy season, however, green trees and grasses flourish in the desert and farmers cultivate fields of peanuts, millet, and watermelons. Within this short period of abundant water, much is possible in rural Senegal. *CREATE!* is finding new ways to bring an abundance of water to our partner communities throughout the year.

Most Senegalese communities have traditional wells, dug during the French colonial era and later abandoned when the newly independent Senegalese government installed commercial borehole wells during the 1960s.

Meanwhile, water from the commercial system remains very expensive, rendering it unsuitable for agricultural purposes. In many villages close to the coast, including most *CREATE!* partner communities, rising seas have inundated commercial water tables. Salty water from commercial wells is now negatively impacting the health of many people living in rural communities.

Thousands of traditional wells still dot rural Senegal, offering untapped potential as sources of clean, affordable water. *CREATE!* works with volunteers in our partner communities to rehabilitate these abandoned wells and install solar pumps



"L'eau c'est la vie!" Water is life, and it is one of the first interventions that *CREATE!* brings to new partner communities, like Mboss.

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Communities like Back Samba Dior can now grow and harvest produce year round, with their improved access to clean, affordable water from their rehabilitated wells.

and gravity-fed irrigation systems. In the past few months, *CREATE!* has helped volunteers in Dahra and Santhie restore abandoned wells in their communities. Read more about the well rehabilitation in Santhie on page three.

Much is possible in rural Senegal with abundant water. *CREATE!* strives to expand access to water from rehabilitated wells, because without an affordable and reliable source of water, year-round vegetable cultivation is impossible for rural villages. Thanks to this water and extensive training from *CREATE!* field technicians, garden cooperative members are now able to grow nutritious vegetables, fruits, and nuts for their families and sell these products in local markets, providing a much-needed source of household income.

Restoring access to abandoned wells transforms the landscape of rural communities – encouraging the flourishing growth of the rainy season throughout the whole year. Rokhe Sarr of Darou Diadji says, “Before *CREATE!* our village was like a desert, but now thanks to the garden and the annual rainy season tree planting campaign, we have green space and many trees around the village. Darou Diadji is now an oasis.”



Rokhe Sarr of Darou Diadji has seen the difference that rehabilitated wells have made in her community.

Taking the Initiative in Fass Koffe



N'deye Kass, of Fass Koffe, is now able to water further sections of the garden with the new raised platform.

Since graduating from *CREATE!*'s integrated, community-based development programs in March 2016, cooperative members in Fass Koffe have continued to expand and sustain their flourishing garden. Recently, the cooperative demonstrated their commitment to *CREATE!*'s philosophy of sustainability and self-development by improving the gravity-fed irrigation system in their community garden using funds saved through their Voluntary Savings and Lending Association (VSLA).

The Fass Koffe cooperative noticed in June that their gravity-fed irrigation system wasn't producing enough pressure to pipe water to the farthest sections of the garden. “We know

that without water, we can't do anything,” said cooperative president Khady Kebe, “so we decided to elevate the platform to see if it would improve the water pressure problem.”

Under Khady's leadership, the cooperative voted to use money from their garden contingency fund, which includes savings from the sale of vegetables and poultry, to cover the costs of improving the irrigation system. They contributed nearly \$500 in total– a sum equivalent to the average annual household income for many rural Senegalese families.

“Since the elevation of the platform, we have noticed increased water pressure in our garden,” said Khady Kebe, enabling them to better irrigate the entire garden site. This story exemplifies how *CREATE!* training builds community empowerment in rural Senegalese communities. The Fass Koffe cooperative had the technical expertise, the funds, and the leadership skills needed to fix their gravity-fed irrigation system - without any help from *CREATE!*.



The newly completed elevated platform has improved the amount of water that can be drawn from the reservoir.

A Letter from the Founder and *CREATE!* Country Director

Dear Friends,

An important component of *CREATE!*'s philosophy is our collaborative approach to tackling challenges in rural Senegal. We work together to discuss implementation tactics and overall strategy; the critical importance of village participation and social mobilization; the development and introduction of new techniques and small-scale appropriate technologies; and how to adapt these technologies to changing conditions.

In recent months, *CREATE!* has used our collaborative problem-solving methods to address an issue that we have frequently encountered when rehabilitating long-abandoned wells in our new partner communities. Because it has been so long since people drew water from these deep wells, many, especially children, have forgotten that they were once a source of clean water and now see them simply as degraded deep holes for trash and other debris. This trash complicates *CREATE!*'s well rehabilitation work, because we have to send someone down into the well to clean out the trash by hand. It's very time consuming and labor intensive work.



Barry and Seck have been working together to come up with a solution to rehabilitate abandoned wells, using local and appropriate technologies and labor.

solution to this challenge – a human-powered winch system that can lower people and equipment into a well. We then worked with a local metal worker in Gossas to design and build such a technology. The winch is affordable and efficient; it costs about \$500 to build and we can load it in the back of our pickup truck.

The *CREATE!* field team successfully used the winch system during the recent well rehabilitation in the community of Santhie. Strong community mobilization, led by the village chief and cooperative president, provided the enthusiastic local labor to turn the hand crank and power the winch. Now fully rehabilitated and outfitted with a solar powered pump, the Santhie well is once again providing the village with a renewable source of clean, abundant water. A technology by itself cannot do this; it literally takes a village!

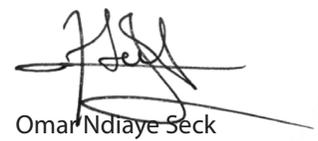
CREATE!'s team in Senegal will continue using the winch in the future as we tackle the challenge of community access to clean water and renewed village well rehabilitation. It's an impressive example of how appropriate technologies, combined with active participatory community mobilization, can solve a longstanding problem.

None of our work would be possible without your ongoing support for *CREATE!*. We very much appreciate your care, concern, and dedication to our continued success. Thank you!

Best wishes,



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Volunteers from *CREATE!*'s new partner village, Santhie, organized to rehabilitate their abandoned well so it can be used once again.

Renewable energy and appropriate technology, coupled with appropriate participatory implementation strategies, lie at the core of *CREATE!*'s village self-development model. We wanted to develop an effective, low-cost, and local solution to clean out these abandoned wells. Small-scale, appropriate technology is a vital part of *CREATE!*'s identity, and one of our founding principles. For us, "appropriate" means a technology, approach, or implementation strategy that is adapted to the local environment, accessible to the local population, low-cost, uses locally available resources and materials, can be easily taught and understood, and is easily replicable.

Together, we conceived an efficient, affordable, and elegant

Staff Spotlight: Mame Souka Diouf

As *CREATE!*'s Program Administrator in Senegal, Mame Souka Diouf manages financial transactions and ensures the payment of taxes and salaries. Souka also maintains relationships with local banks and vendors and is responsible for purchasing materials that cooperative groups will use for agriculture and income generation activities, managing materials going in and out of the stockroom, and supervising household staff and guards.



Souka likes working for a young and dynamic organization that focuses on preserving the environment and helping people improve their lives. He says, "I appreciate the team spirit among *CREATE!* staff, and I find the direct contact I have with participating community members especially motivating." Souka likes "supporting people by teaching them technologically and culturally appropriate techniques to improve their living conditions and preserve their environment."

Souka holds a diploma as a Senior Technician in Management Science as well as a Specialized Diploma in Computer Science. In his leisure time, Souka follows European soccer and basketball teams, and Senegalese wrestling. His favorite soccer team is Marseille. Souka also enjoys visiting relatives and friends and listening to his favorite musician, Youssou N'Dour.

Climate Change and Water Resources in Senegal

10-15_{mm}
decrease in rainfall per decade
since 1960

70%
of agriculture is rain fed

90%
of water resources
are used by agriculture

43%
of rural households do not have
access to improved water sources

0.9°C
increase in mean annual temperature
since 1960

110,000
people in Senegal at risk with 1m sea
level rise in the next 80 years

74%
of Senegal's coastal housing
threatened by sea level rise

Climate change is a big issue that can be difficult to wrap your head around. But for the communities that *CREATE!* works with in rural Senegal, its impacts are very real and tangible – especially when it comes to water. Farmers in Senegal depend on scarce water resources to make a living. Advancing climate change impacts and desertification have made access to this resource increasingly precarious. These numbers show how the effects of climate change affect local water resources in Senegal.