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## Solar Power Brings Brighter Future for Western Tanzania

On a warm, humid night in late October 2012, Mary Simon appeared at the Bitare Health Center in western Tanzania. She told the clinical officer she was in labor with her first child.

Simon was ushered into the maternity ward. A midwife was called. And then— in a move still rare in many of Tanzania’s rural medical clinics—the hospital staff turned on the overhead fluorescent lights when it was time to deliver.

Simon, 20, gave birth to her daughter under the lights because the clinic had received solar panels and electric lights as part of the Millennium Challenge Corporation’s five-year, \$698 million compact with Tanzania.



Solar panels line the roof at Bitare Health Center.

The activity—part of the compact’s \$207 million Energy Sector Project—is the largest solar-powered electricity project in Tanzania. Fourteen health centers, 116 dispensaries, 130 vaccine refrigerators, 25 village markets, and 45 secondary schools in Kigoma region will receive solar power.

The arrival of solar power has already made a major impact in places like the Bitare Health Center, a collection of concrete buildings in Kigoma region. The clinic avoided scheduling any procedures at night, said Dr. Festus Bavuma, the clinic’s top medical officer, and nighttime cases typically were limited to births and traumas, such as car accidents.

Women who would call the clinic to tell them of an upcoming delivery were previously asked to bring a flashlight or kerosene.

“If there’s no good light, the practice of medicine will be poorer,” Bavuma said. “If we can’t see a bleeding blood vessel, we can’t ligate it properly. Sometimes you can’t stitch properly because you can’t see everything. Patients have died of complications because of poor performance at night.”

Women are now told to come straight to the clinic to avoid complications, Bavuma said.

Each clinic and dispensary being wired for solar power will also receive a refrigerator capable of storing vaccines and blood for transfusions. The panels and solar batteries are set up to continue providing power during western Tanzania's rainy season, when thick clouds can block out the sun for days.

The solar power also allows crucial tests like blood and stool samples to take place on demand, which will ultimately benefit patients.

“When I just used sunlight, there were problems,” said laboratory assistant Aisha Kasumbwa. “We couldn't test during the rainy season because there was not enough light. Now we can do the tests whenever we need.”

## Commerce under the lights

Hundreds of people gather each night under the metal roof of the market at Msimba, a village several miles from the Bitare Health Center. Women set up piles of products—tomatoes, lettuce, corn, salt, and anything else purchased or harvested earlier in the day—on top of long concrete slabs to sell to customers from around the region.

The market has no set start or finish time. Until earlier this year, merchants arrive in mid-afternoon and sold until nightfall, about 7 p.m. But as one of 25 markets to receive solar-powered lights, business now starts around dusk and winds up when the customers leave—sometimes as late as 10 p.m. This allows farmers to spend more time in their fields and draws more customers.

Four nearby merchant stalls will also be wired for solar power, allowing businesses to charge cell phone batteries and offer other services.

“Before the lights, business was difficult, and we used candles or lamps,” said Kurusumu Hassan, a member of the village committee. “Without light, you can't always see the money as it changes hands or watch the inventory. If you were out of kerosene and your neighbor didn't lend it to you, you couldn't do business.”

Mwajuma Maulidi, another village committee member and a sardine merchant, said most merchants needed to purchase kerosene for lamps for about 13 cents each night. Now, each merchant's share of the monthly power bill is about that much.

Maulidi previously purchased and sold one kilogram of sardines each night at the market. Because of the cost savings, she has been able to buy an additional kilogram each day and sell it to the larger customer base.

Ashura Moshi has sold tomatoes at the market each night for two years. Before the lights, she would arrive at 5 p.m. and sell until about 6:30 p.m. During that time, she would sell one basin full of tomatoes, which fetched her about \$3.

Moshi now arrives around 7 p.m., and on most nights she sells two basins of tomatoes in less than an hour.

“There are so many more sellers and buyers than before,” she said. “Business is good.”

## More time to study

Life is also improving for students at Nyarubanda High School. For years, they experienced a real-world lesson in economics: If they wished to study after dark or in the rainy season, they needed to pay for their own kerosene for lamps.

No money meant no kerosene. No kerosene meant no studying.

“If you don’t have enough money for kerosene, you can’t study,” said Elias Yohana, a boarding student from Geita. “You just go to sleep at night. It always happens to us. For me, it happened yesterday. And it happened the day before.”

Yohana and many of the school’s 650 students—including about 150 boarders—are hopeful those days are coming to an end. The school received solar-powered lights in October 2012, helping illuminate two classrooms, the dormitory and the staff office.

“When I can’t study, my grades worsen,” Yohana said. “That’s why these lights are so important.”

It can be difficult to study, even during the day, come the rainy season, teacher Yavan Damas Nkundwa summarized; and many students suffer eye irritation from kerosene smoke.

Student Leonard Masanja said his fellow classmates often gather in the school’s classrooms to study after classes let out; teachers often provide extra sessions. While some day students can study at home at night, the boarders needed to provide their own kerosene or batteries if they wished to continue studying.

Masanja, whose parents are small-holder farmers who live more than 100 kilometers away, is also hopeful that with lights in the dormitory, theft will decline.

“These lights will help us so much,” he said.



MCC has brought electricity to dozens of schools, hospitals and dispensaries across Kigoma.