



FOR IMMEDIATE RELEASE:

Solar Electricity Powers the Fight Against Hunger in Rural African Villages

Stanford Study Confirms Solar Market Garden's Positive Impact on Food Security, Nutrition and Income

Washington, DC – January 19 – The Solar Electric Light Fund (SELF) today announced the publication in the Proceedings of the National Academy of Sciences (PNAS) of the successful results of SELF's Solar Market Garden (SMG) project in the drought-stricken Kalalé District of northern Benin, West Africa. The Program on Food Security and the Environment (FSE) at Stanford University released its findings after two years of monitoring three SMGs managed by two women's farming collectives in the remote villages of Bessassi and Dunkassa.

Researchers at FSE found that income and nutrition have improved significantly for women and their families since SELF installed three solar drip irrigation systems in 2007. Robert Freling, SELF's executive director, visited the project in 2009 to view its progress. Mr. Freling said: "Last June I had a chance to see the remarkable transformation that has taken place in the villages of Dunkassa and Bessassi since the launch two years ago. I immediately noticed a difference in the women, who have filled out since our last encounter. Not only are the women better fed, but so are their families and the rest of the villagers who now have year-round access to a steady supply of highly nutritious fruits and vegetables. To have a recognized institution such as Stanford verify the efficacy of SELF's work is very exciting."

Without access to an electric grid or municipal water infrastructure, women and girls in Bessassi and Dunkassa previously relied on carrying water by hand—sometimes over great distances—to grow their food, a process that consumed many valuable hours of labor each day. Each farmer's plot was small and produced an inadequate supply to support a family's nutritional needs. SELF partnered with the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) to devise the marriage of solar-powered water pumps with highly efficient drip irrigation tubes, delivering water and fertilizer directly to plants even during the six-month dry season. The SMGs allow women farmers to cultivate larger plots and grow crops year round, breaking the cycle of starvation and malnutrition that accompanied traditional rainfall patterns in Kalalé.

Professor Dov Pasternak, principal scientist at ICRISAT, said: "It was a good combination—SELF came in with the solar and I came in with the drip, and we have now these two cutting edge technologies helping the women earn a good living. This changed their life totally, this combination, because now they can produce maybe 10 times more than before. They are making money, they are feeding their children...and the children are healthy." When asked about the prospects of solar, Prof. Pasternak delivered high praise: "Solar pumping is a fantastic solution, because you have two advantages: the pump doesn't break—it lasts ten years or even more—and you don't have to pay for the fuel. You can irrigate 24 hours a day, every day, all day, and this makes a big difference...This solar pump is only starting. It will be used in thousands of places, all over Africa, because it requires no fuel and little maintenance. What's more, the prices of the solar pump are coming down tremendously. In a very short time, everybody will be able to afford one."

The SMGs have been so productive the women have excess produce to take to market and sell, nearly doubling their income. The average income in Kalalé District is less than \$1.25 per day, but the women in the study group are earning an additional \$7.50 per week. Jennifer Burney, the study's lead author and a postdoctoral scholar with FSE, said: "The most significant moment for me came late one afternoon when Yarou Ganni, a member of the women's farming cooperative, stopped me and invited me to join her family for a meal. She told me, 'For so many months, you have been coming here, and I never had any money to buy any pounded yam to thank you. Now, after what we have sold, I can finally make you dinner. So sit down. You're not going anywhere.'"

The Stanford study concluded that SELF's Solar Market Garden not only considerably enhances household incomes and nutritional intake of villagers in sub-Saharan Africa, it does so in a cost-effective way. According to the research, the systems should pay for themselves in approximately 2.3 years. In addition, FSE researchers found the project's design to be environmentally sustainable, citing the systems as durable, emissions-free and more economical over time compared with gasoline- or diesel-powered water pumps.

Mr. Freling added: "While much remains to be done, we've gotten off to a promising start in Benin. The tandem use of solar energy and drip irrigation can be replicated in many other parts of sub-Saharan Africa that are poor in water resources but rich in sunlight. What's particularly exciting is the fact that in this one project we now have a sustainable model that is simultaneously combating climate change, improving food security, supplying clean water, alleviating poverty and empowering women."

SELF is a Washington, DC-based nonprofit working to combat climate change and reduce energy poverty by bringing solar power and wireless Internet access to remote rural villages in the developing world. SELF has pioneered innovative applications of solar power such as drip irrigation in Benin, telemedicine in the Amazon rainforest, vaccine refrigeration in Rwanda, online distance learning in South Africa, and microenterprise development in Nigeria. These successful pilot projects culminated in SELF's whole-village approach, or Solar Integrated Development model. Since 1990, SELF has completed projects in 20 countries, making it a leader among non-governmental organizations in realizing practical and cost-effective alternative energy solutions for rural villagers.

About the Program on Food Security and the Environment, Stanford University

The Program on Food Security and the Environment is a joint program between the international and environment initiatives at Stanford, with food security research organized mainly under the international initiative and environment research organized primarily under the environment initiative. Scholars centrally involved with the program have senior fellow appointments within the Freeman Spogli Institute for International Studies (FSI), the Woods Institute for the Environment (Woods), and/or professorial positions within university departments. They work as a team on a set of overlapping projects. For more information, please visit <http://foodsecurity.stanford.edu/>.

About ICRISAT

The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) is a nonprofit, non-political organization that does innovative agricultural research and capacity building for sustainable development with a wide array of partners across the globe. ICRISAT's mission is to help empower 600 million poor people to overcome hunger, poverty and a degraded environment in the dry tropics through better agriculture. ICRISAT belongs to the Alliance of Centers of the Consultative Group on International Agricultural Research. For more information, please visit www.icrisat.org.

About SELF

The Solar Electric Light Fund (SELF) is a Washington, DC-based nonprofit organization working to end global poverty by bringing solar power and Internet access to the world's poorest people in remote rural

areas. SELF utilizes clean, renewable electricity to reduce greenhouse emissions while improving the health, education and welfare of the two billion people living in energy poverty. Since its founding in 1990, SELF has launched sustainable projects in 20 countries, including Benin, Brazil, China, Haiti, India, Nepal, Nigeria, Rwanda, Solomon Islands, South Africa, Tanzania, Uganda and Zimbabwe. For more information, please visit www.self.org.

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