Living Energy Farm
May - June 2025 Newsletter

Teaching About Direct Drive at Wa Samaki Ecosystems in Trinidad

LEF has assembled a crew of people who can teach and install DC microgrids, some of whom live at LEF, and some who do not. Tim and John are part of that crew, though neither are current residents at LEF. They recently spent two weeks teaching and installing conservationist solar systems in beautiful Freeport, Trinidad at Wa Samaki Ecosystems, where the only thing better than Chef Maleah's delicious, local food was learning and working together with a core group of dedicated folks: Celine, Danielle, Erle, Rodjé, and Suze. While the start of the rainy season let Tim and John enjoy impressive downpours and endless lush vegetation—many houseplants familiar to us grow wild there—the dry season brings great challenges managing water, which is vitally important for fighting wildfires, irrigation, and supporting the farm's aquaculture business (Wa Samaki means "from the fish" in Swahili, owing to the founder's Kenyan heritage). Erle, the founder, is now joined by four generations of family living there, and Wa Samaki feels like a second home for a tight-knit network of permaculture practitioners who teach workshops on that land, throughout the Caribbean, and beyond. Our connection to Wa Samaki and the organization of the trip grew from a seed planted all the way back in 2021, when Onyx and Alexis met Rodjé Malcolm while working in Jamaica. Rodjé's group OneRegeneration (www.oneregeneration.life) coordinated the work at Wa Samaki with Debbie so that the installation could be a "teach the teacher" event, and the result could serve as a permanent demonstration and educational site in the heart of the Caribbean permaculture movement.

The two weeks proceeded with an ambitious schedule *largely* unhindered by weather, import customs, and national holidays. After a good amount of theory and perhaps more math than some would prefer, installation began of the direct-drive submersible pump—and the jetty to hold it in the pond. The pump, connected directly to 1000 watts of photovoltaic panels, exceeded expectations! It worked even while conditions were completely overcast with drizzle, and in merely cloudy weather, it was able to fill five 500-gallon tanks completely by 10 am.

Rodje, Erle, John, Suze, Tim, Danielle, Celine, and Johnny all attended the training at Wa Samaki.

The crew continued on to wire the Forever Home, an in-progress earthen structure that bears the fingerprints of many aspiring natural builders, and where many more will come to learn the craft. The home is now served by three small battery kits: a 100 amp-hour set for charging computers and phones, running fans, and powering a wireless internet connection; and two 12 amp-hour sets for lighting.

The spark of inspiration about what durable, conservationist, affordable solar systems can do is spreading. Rodjé already has projects planned in Jamaica and Colombia, and neighbors Johnny and Rory have ideas about how DC systems, direct or with small batteries, could meet their needs. Wa Samaki itself, with its diverse economy, still has many opportunities for future energy projects. Erle began preparations for a second solar pump before Tim and John had even left. We're excited for more work in Trinidad, and grateful that Tim and John received such a warm welcome in a delightfully multicultural place where regardless of your looks, "no one would think you're not a Trini until you open your mouth."

Related to this work in Trinidad, this link is about constructing homes in the Caribbean with 'clay, grass, plastic and glass,' instead of ecologically expensive concrete.
https://www.bbc.com/future/article/20250103-clay-grass-plastic-and-glass-the-materials-making-caribbean-houses-more-climate-resilient

Suze, Ceilne and Danielle plan the direct drive water pumping system.

Tim and Ceilne install PV on the Forever Home for refrigeration, lighting and charging devices.

Erle, Celine and John with the successful DC pumping system that filled five 500 gallon tanks by 10 AM on a cloudy day.

Easy Reaper Manufacturing in Zambia

The simplified combine harvester we developed at LEF, named the Easy Reaper, is now being produced in Zambia! They are making one there, supported by a private donation obtained by Kerry Clark at the University of Missouri. Kerry and several of her most respected agricultural equipment builders (all from very small companies scattered across Sub-Saharan Africa) are in Zambia right now working on the project. The plan is to take the Easy Reaper to an international agricultural exposition in Malawi in August. Kerry is putting plans, trainings, and some materials (such as the sickle bar cutters, which are hard to get in Africa) in place so more Easy Reapers can be manufactured in the months to come. This is all very exciting for us. We have put a *LOT* of work into this machine. The thought that it will be produced in numerous small fabrication shops, and used by many farmers in several countries in Africa feels like a success for us. We have included a few photos from Zambia.

At LEF, our Easy Reaper was put to the test in a bigger way this year. We harvested some wheat at LEF and several acres of wheat at a nearby farm. We were confronted by a few mechanical annoyances, but for the most part, we drove the machine up and down the field harvesting wheat. We made some improvements from last year. A better sickle drive proved a big help. The grain cleaning aspect of the machine needs some improvement, as does the operating speed. It's pretty clear for us what changes would help with those issues. For now, we are working on the next iteration, the Grain Goblin, which is considerably simpler (even) than the Easy Reaper. We will keep you posted as these projects develop.

Easy Reaper assembly in Zambia. Building the frame. (We weren't given the names of any of these folks, but golly we wish we had a crew like that!)

Installing the thresher drum.

Draper triangle and augers at the front of the Easy Reaper.

Easy Reaper, almost complete, in Zambia.

Direct Drive in Cuba, Malawi, and...?

We have learned some hard lessons about renewable energy. The big one is that you can't put renewable energy on the same table competing with fossil energy. The high impact of fossil fuel, coupled with the nearly universal assumption that respectable people *should* have powerful on-demand energy sources, leads to a marginalization of renewable systems (or deceptive solutions about industrial "renewable" energy). That is why we have been pursuing projects with select organizations in the U.S. and abroad. People have to value what we offer for ideological reasons, or because they do not have abundant fossil energy or grid power. To that end, we have been planning a trip to Sub-Saharan Africa where, at least in rural areas, grid power is often absent. We have a few friends and organizational connections in Ghana. Recently, we made a great connection with a permaculture center in Malawi. See https://permacultureinstitutemw.com/

On another front, through an old friend, we were recently put in touch with some folks at the Cuban Embassy in Washington D.C. Like Puerto Rico, Cuba has a lot of power lines strung through mountainous areas where they are easily damaged by storms. Cuba has a much lower per-capita income than Puerto Rico. Almost all islands rely on imported fuel oil (diesel) to run generators, which is expensive. Cuba is now investing in solar energy, but they are building large solar fields. That does little to improve the overall vulnerability of their grid. Our discussions with Cuban representatives are just beginning, but indications are positive.

Easy Reaper Demonstration Day

Working with The Common Grain Alliance and the Virginia Association of Biological Farmers, we conducted a field day to show off the Easy Reaper and talk about durable, affordable renewable energy systems. It was a warm day, and a well-attended event. Unfortunately, the day was planned months in advance and the timing was such that we were not able to run the Easy Reaper through the field as we hoped, though we were able to do so a week later. It was a good day, with a sizable crowd of folks interested in our technologies.

Video of the Easy Reaper harvesting wheat this year is at
https://youtu.be/rkK_l7nztSA

Easy Reaper demonstration day.

The Farm

Our farm is doing well. We had a wet, very cold spring. That set back the watermelons (a major concern for the younger set). The wildlife is a constant source of... something. The squirrels are eating our nuts, in spite of our efforts to stop them. The deer are numerous and eating our berries, though respecting the fence lines around the seed crops so far. We had a large black bear walk by right in front of the house, without a care in the world. Probably checking to see how the pears are doing. (They ate a bunch of them last year.) The mid summer lull will give way to harvest soon. We have the best crew we have ever had at LEF.

The Reach of Living Energy Farm

We are a small group of volunteers (and farmers and parents). We feel like we are having a greater impact than many organizations with budgets ten or a hundred times our size. While it's inspiring that some people like our Direct Drive DC Microgrid (D3M) for ideological reasons, we would very much like to see a demonstration set up in a place where people really need it. D3M makes grid power obsolete in tropical regions, and possibly far beyond. To achieve that dream, we need demonstration sites in places where people do not have grid power. It is clear that we cannot support multiple (more) projects in Sub-Saharan Africa and the Caribbean. We are pleased to be making progress with both D3M and simplified harvesting technologies. We will be making choices based on the resources we have at our disposal. Please support us if you can.

Living Energy Farm is a project to build a demonstration farm, community, and education center in Louisa County that uses no fossil fuels. For more information see our website www.livingenergyfarm.org, or contact us at livingenergyfarm@gmail.com or Living Energy Farm, 1022 Bibb Store Rd, Louisa VA, 23093. Donations to the Living Energy Farm Institute are tax deductible. Click here to make a tax deductible donation. **Make sure to designate your donation for Living Energy Institute**.

Articles, Videos, and Podcasts about LEF are here.
https://livingenergyfarm.org/articles-and-videos/