Microturbines and “Free” Electricity in Rural Honduras: But for whom…and for how long?

Jeff DeGrave
Department of Geography, Environment and Society
Ph.D. Candidate

I. Introduction
According to the United Nations World Food Programme, Honduras is the “third poorest country in Latin America” and “extreme poverty affects...75 percent of the rural population.” These harsh realities were greatly exacerbated by the impact of Hurricane Mitch in 1998. However, rebuilding efforts have since led to a number of technological innovations that have transformed the lives of many Hondurans. Río Negro is a coffee-producing region in the cloud forest of central Honduras that has experienced significant changes due to the introduction of hydro-microturbines. The electricity created through the microturbines was initially applied to previously hand-powered coffee depulping machines to accelerate and increase coffee production. Area residents soon desired microturbines for domestic use and a form of participatory governance, including participatory mapping, was established in order to prioritize locations of need. However, local power relations, and issues of class and gender emerged during the decision-making processes, excluding various residents from both the participatory decision-making processes as well as access to electricity. As a result, many of those who are alienated from access to power advocate the introduction of municipally supplied electricity to enable a more equitable distribution of this valued resource. Inclusion onto the grid, however, will impose fees all residents of Río Negro—including those who already receive “cost-free” electricity via the microturbines. Owners of the microturbines do not support city-powered electrical service out of fear that inclusion of Río Negro into the power grid will eventually create energy dependency for the community, resulting in continually higher fees and costs. The purpose of this project is to assess the degree of empowerment and marginalization created through participatory mapping of the microturbines and how this empowerment and marginalization have manifested themselves within both the cultural and physical landscape of Río Negro.

II. Financial Summary
The Consortium grant that I was fortunate enough to receive has allowed me to make multiple trips to Honduras to help ensure and maintain accuracy, validity, and depth within my research. Consortium funding covered my airfare, in-country travel, room and board, map and data acquisition, and virtually all other research-related expenses, allowing me to efficiently and thoroughly complete all of my field research. In addition, in order to gain access to nearly every community member of Río Negro, funding allowed me to entice a Peace Corps volunteer, Gabriel Sidman, who recently served in Río Negro, to serve as my entrée into the rather close-knit mountain community. Through Mr. Sidman, I quickly gained the trust and confidence of nearly every single resident of Río Negro which greatly facilitated my research and also helped me forge new and meaningful relationships with dozens of community members. Without Consortium funding, access to the local residents would have been limited, at best. And, should I have been able to reach an equal number of individuals without Consortium funding, I am quite certain that the data I would have acquired, the willingness of the subjects to fully participate, and the comprehensiveness of my research would have all been significantly compromised in terms of its quantity and quality.
III. Results
Although I am currently in the process of writing my dissertation—containing the data that was largely acquired through Consortium funding—I have already begun to disseminate and produce results in a variety of formats. For example, I have formally presented my partial and completed results on several occasions, most recently at the AAG (Association of American Geographers) national conference in April, 2013. These presentations are listed below:


I was also successful in parlaying my research into another research grant. Through the University of Wisconsin-Eau Claire’s Office of Student Research Programs (ORSP), I received a summer research grant for $4,500 to work with a geography undergraduate student, Corrin Turkowitch, and apply the lessons learned in Honduras to the hopeful installation of a microturbine in an indigenous community in Panama, in collaboration with the La Mica Biological Station (http://www.lamica.org/Casa_Home.html).

IV. Future Project Plans
I plan to complete and successfully defend my dissertation in May of 2014 and ideally produce several publications from the dissertation as well as from the aforementioned presentations. I will also be incorporating broader themes and concepts from my research into my Geography of Latin America course, including “real-life” issues of inequity, postcolonial legacies, women’s issues, environmental questions that emerged within my findings. In addition, as part of my dissertation, I will be “giving back” to the residents of Río Negro by creating two maps to help them manage and distribute microturbines more equitably in the future: a “Map of Empowerment” and a “Map of Marginalization.” The Map of Empowerment will display not only those who have received a microturbine, but also reveal their cultural and physical geographic characteristics. Through these attributes, trends in the data will become apparent, which will perhaps allow residents of Río Negro to more effectively understand the various biases of current microturbine ownership. Coupling this map with the Map of Marginalization, revealing the attributes of those who do not own a microturbine, I am hopeful that the residents of Río Negro will also gain greater awareness of which families have been unable to acquire a microturbine and the societal biases that continue to reinforce a history of their marginalization.

This fall, I will also be applying for additional funding through UW-Eau Claire’s Students of Sustainability (SOS) office, to install a working prototype of a microturbine on UW-Eau Claire’s campus to help enable students to learn about alternative forms of energy, social justice, gender and class inequality, among other issues that are of paramount concern in the developing world. In fact, as part of the grant, I will be applying for funding to support the travel of the two microturbine engineers from Honduras to come to Eau Claire during Hispanic Heritage Month and present the installation of this microturbine prototype. Through this funding opportunity and with the connections I have made in Minnesota, Wisconsin, and Latin America through my research project, I am looking forward to sharing my knowledge, expertise, and skills in geography and international development with students, colleagues, the public, and anyone
who welcomes my assistance. And I sincerely thank the Consortium on Law and Values in Health, Environment and the Life Sciences for their invaluable assistance with my research—without whom this research project would not have been possible.

Sincerely,

Jeff DeGrave  
Ph.D. Candidate  
Consortium Student Scholar  
Department of Geography, Environment, and Society  
University of Minnesota  
degra021@umn.edu