



The Appropriate Technology Collaborative

## The Women Wind Weavers Project Guatemala



**Women Weavers, Guatemala**

Thousands of women in Guatemala make their living by weaving textiles and selling them to "middle men" who then sell textiles in regional markets. Middle men can make a handsome profit but the women often make less than \$2.00 per day. This level of poverty leads to malnourished children and lack of opportunity for children, particularly girls, to get an education.

The Appropriate Technology Collaborative (ATC) and the University of Michigan BLUELab engineering students are creating new technologies and new markets for women artisans. We are breaking the circle of poverty and creating new jobs in clean technology.

Our collaborative design team ATC + BLUELab + a local Women's Weaving Cooperative in Nueva Santa Catarina Ixtahuacan, Guatemala are working together, hand-in-hand to design a new high value technology based on traditional practices.

Our goal is to provide new opportunity through collaborative design.

## **Background:**

Women bear the brunt of global poverty. Of the 1.2 billion living in abject poverty (less than \$1.00 / day) an astonishing 70% are women. Women's poverty leads to children's malnutrition, stunted growth and cognitive impairment.

## **Solution:**

We need to create new opportunities for women to take control over their financial destiny.

Our collaborative design team provides opportunity from the start. We are working with a local womens weaving cooperative to co-create a new technology that uses the traditional skills in new ways.

To help thousands of women, we will publish the Woven Wind Turbine online along with instructional photos and video. From our previous projects we expect dozens of nonprofits (NGOs) around the world to use our designs to help create new income for poor women worldwide.

## **Current Status:**

We started working on the design and method of construction for woven wind turbine blades in September 2010. In February / March 2011 we met with our local partners in Nueva Santa Catarina Ixtahuacah, Guatemala. Collectively we began the design process for weaving both traditional fibers and high-strength fibers to create strong fabric that can then be formed into high efficiency wind turbine blades.



**Students Learning Weaving**

The collaborative team made many different types of fabric and demonstrated how wind turbines can capture the wind to create electricity. The experience of seeing how magnets, wires and wind can be combined to power a home was a highlight of a very busy week.



### **Proof of Concept Wind Turbine Made From Local Parts + Woven Turbine Blades**

#### **The Need for Funding:**

We have proven that the team of ATC + BLUELab + the Women's Weaving Coop can collaborate on new technologies. We have created several types of fabric and formed preliminary blade geometries.

With Global Giving funding we will:

- Create a simple method to form our fabric into uniform, high efficiency turbine blades
- Design an easy to construct and easy to maintain generator
- Demonstrate how wind turbines generate electricity at local schools
- Document existing wind conditions and map best locations for wind turbines
- Install two demonstration wind turbines
- Monitor our demonstrations for 12 months

#### **Large Scale Impact:**

Our successful model of licensing our designs Creative Commons and making them available online has given us unparalleled success. Both our Treadle Pump and our Solar Vaccine Refrigerator have been downloaded over 2,000 times each with dozens of nonprofits building our technologies worldwide.