

## ACON<sup>1</sup>

**Region:** Africa

**Country:** Kenya

**Crop/Feedstock:** Water Hyacinth

**Practices:** Improved cookstoves (IC); Development or Improvement of Energy Infrastructure (DE); Gender-sensitive corporate conduct (GC); Women in leadership positions (WL)

**Issues:** Local Food Security; Energy Security and Local Access to Energy; Gender Equity

AirTerra Inc.<sup>2</sup> has participated as an adviser for an NGO in Western Kenya called “African Christians Organization Network (ACON)”. AirTerra’s involvement was limited to a one week visit to teach the basics of biochar production and use as a soil amendment. During this time ACON provided its most highly trained agricultural experts and engineers to be available and to learn and brainstorm on the potential for implementing biochar production and soil amendment activities. Our first initiative involved training ACON on how to establish small test plots with biochar amended soils and non-amended “control” plots to make comparisons between traditional farming and biochar amended soil farming. Since AirTerra did not have biochar production technology of its own, ACON was encouraged to learn how to make the EveryThingNice (“ETN”) stove from directions made publically available on the WorldStove Website<sup>3</sup>. The creative young people of ACON took on the challenge and have since been making and selling ETN stoves to small-scale farmers to use as means of producing biochar. ACON has also been training a large number of farmers in their region (approximately 750 farmers) to set up these small-scale test plots on their own land. These activities have been ongoing since October of 2009.

**Issues:** Local Food Security; Energy Security and Local Access to Energy

**Practices:** Improved cookstoves (IC); Development or Improvement of Energy Infrastructure (DE)

ACON reports that the vegetables and cereal crops grown in the test plots fared better than those grown in the control plots. ACON’s plot preparation includes making use of a 15 percent solution of human urine as a fertilizer. Recent developments show further improved results. ACON has been removing an invasive species from Lake Victoria, Water Hyacinth (“WHY”) to allow it to dry on the shores for eventual conversion into fuel briquettes for efficient cooking stoves. The WHY has invaded Lake Victoria to a point where it has become a crisis in the region. It has literally eliminated the ability for fishermen to make a living on the lake since WHY has virtually choked out most other species.

ACON is using hand-operated briquette presses to press the moisture out of this material and form briquettes that burn well in either their own traditional efficient cooking stoves (home-made rocket stoves), or their new ETN stoves. The ETN stoves have the added benefit of producing biochar as a by-product of cooking with the WHY briquettes.

One further innovation ACON is researching is the collection of the moisture driven off of the Water Hyacinth to serve as a pretreatment for the biochar (a liquid fertilizer). The production and sale of this material could be an additional revenue and employment generation source.

1 The information included in this document is based on information provided directly by the producer, which was not verified by the Food and Agriculture Organization of the United Nations (FAO)

2 [www.airterra.ca](http://www.airterra.ca)

3 AirTerra in no way should be construed to be representing WorldStove, this was conducted entirely as a non-profit venture with no exchange of funds or consulting fees to ACON

This activity has numerous benefits both to the local economy and for the environment:

1. Eliminates (or at least begins the process of eliminating) an invasive species from taking over Lake Victoria;
2. Making use of the liquid extracted from the Water Hyacinth as fertilizer may (this is still being researched) result in an additional revenue source and further reduce chemical fertilizer input requirements for rural farmers;
3. Provides valuable fuel for cooking in the local market place and as such generates revenues and jobs for the local economy;
4. Provides a fuel that burns well in a pyrolytic stove (the ETN stove is one of these);
5. Offsets the use of forest materials;
6. Eliminates the need for women to travel long distances to hunt for firewood in the region;
7. The efficient stoves reduce the amount of indoor air pollution that is caused by traditional cooking stoves;
8. The biochar by-product from the ETN stoves is providing a supplemental soil restructuring material that has all of the benefits that biochar offers to local agriculture<sup>4</sup>; and
9. Incorporation of biochar into soils is a carbon negative activity and may benefit from carbon offset revenues that could be generated in the future. This has not yet been realized for this activity, but given the rate at which ACON has been introducing the technique to the rural population, there could be a measurable volume of biochar production in the near future for this part of Kenya. This will ultimately add to the revenue generation along with additional revenue from increased crop productivity and reduced fertilizer requirements.

**Issue:** Gender equity

**Practices:** Gender-sensitive corporate conduct (GC); Women in leadership positions (WL)

ACON's top agricultural expert is a woman! ACON's vice president is a woman. Women are benefiting at several levels:

1. Additional revenue generating activities: briquette making, liquid fertilizer making, and biochar making (as a by-product of cooking);
2. Less time walking and hauling wood from the forest;
3. Lower levels of indoor air pollution; and
4. Access to higher quality food from household gardens.

**Main challenges:**

Access to funding for training of ACON executives to determine the right market price for the new products of WHY fuel briquettes, WHY liquid extraction, and WHY biochar.

<sup>4</sup> For further information consult the IBI website, [www.biochar-international.org](http://www.biochar-international.org)