

Role of Charcoal in Hurricane Matthew Relief and Recovery

J.D. “Zach” Lea, Ph.D. Agricultural Economist

Relevance: “the extent to which...a development intervention [is] consistent with beneficiaries’ requirements, country needs...”

Making and selling charcoal is a primary component of rural Haitians’ response to disaster and other financial shocks. Maybe first they sell livestock. After that they cut down that tree they planted years ago as insurance against hard times. In this hurricane disaster, converting downed trees into charcoal achieves two goals: produces quick cash and clears gardens for replanting.

The Haitian charcoal industry is the largest agricultural industry in Haiti, employing thousands of workers in a value chain that connects Haitians at every socio-economic level. The charcoal industry saves Haiti millions of dollars in foreign exchange that would be spent on non-renewable fuels, based mostly on petroleum or natural gas. Haiti’s reliance on renewable fuel (charcoal and hydro) is estimated at 50%-60%. That is, Haiti gets some 50%-60% of its fuel from renewable sources, primarily, charcoal. That puts Haiti in a leading position as the world strives to become less dependent on non-renewable fuels. For example, Germany has set the goal of moving to 25% reliance on renewable fuels.

Efficiency: “how economically resources/inputs are converted to results”

The inputs (destroyed trees and other plant material) are available. Haitians know how to produce and market charcoal via the traditional system. Efficiency of the traditional charcoal cooking process is less than ideal; but, very practical. We can provide small charcoal-making retorts to significantly improve the efficiency of converting wood to charcoal. See below.

Effectiveness: “the extent to which the development intervention’s objectives...are expected to be achieved.”




The objectives are to provide market-based cash to hurricane victims and to clear hurricane debris from affected areas. Assisting with the production and marketing of charcoal will effectively achieve these objectives. In fact, project activities will simply enhance on-going, traditional disaster relief activities.

Modern Charcoal Making Techniques

Techniques vary from very small scale to very large scale. Here I share a couple

Google <https://www.youtube.com/watch?v=tR6MslcJayk>

Adam Downing, Agriculture and Natural Resources Extension Agent, demonstrates the process of loading the kiln to make charcoal out of ailanthus and walnut timber. See following page...

 <p>Putting after-burner chimney on barrel of burning wood soon to be charcoal</p>	 <p>Two hours later, the charcoal is done.</p>
 <p>a partnership between: United States Forest Service National Resource Conservation Service</p> <p>The eXtension Forest Farming Charcoal Video Series is provided by the USDA National Agroforestry Center. nac.unl.edu</p>	<p>visit www.extension.org/forest_farming for more information</p>

Here's a system from South Africa. It's larger-scale than the one seen above.

Google <https://www.youtube.com/watch?v=cDkHLXddjkh>



Here's a British design on wheels.

<https://www.youtube.com/watch?v=fojgpct6dBA>



Small-scale barrel in a barrel. Shows wood-gas burn-off

https://www.youtube.com/watch?v=J9W_PDhu3fY&list=PLKw_KSTb6QnvZBoE4HZqBY9Nvpht2tED9



Barrel in a barrel



Wood-gas burning off. This gas should be routed into other uses: cooking stoves, bread ovens, sugar kettles, alcohol distillers, electric generators, etc.

Larger-Scale Retort from Mexico

https://www.youtube.com/watch?v=AD_8fbArUqk Larger-Scale Retort from Mexico

