85% of Haitians use biomass for fuel, mainly charcoal, even though Haiti is over 96% deforested. Since the earthquake, charcoal now costs up to 40% of a family’s income.

Many cookstoves were already available for dissemination in Haiti.

Gadgil Lab - Stoves provided an unbiased, independent assessment instead of designing a new stove.

Comparison Testing of Haitian Cookstoves

Water Boiling Test (WBT)
Lab test based on the energy needed to bring water to a boil and keep it simmering.

Three phases: Cold Start, Hot Start, Simmer

<table>
<thead>
<tr>
<th>Traditional</th>
<th>EcoRecho</th>
<th>Prakti Rouj</th>
<th>StoveTec</th>
<th>Mirak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time to Boil (minutes)</td>
<td>Cold Start</td>
<td>Hot Start</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>20</td>
<td>60</td>
<td>100</td>
<td>140</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Traditional</th>
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<th>Prakti Rouj</th>
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<th>Mirak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Fuel Consumption (g/kg)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
</tr>
</tbody>
</table>

Cons:
- Not necessarily representative of stove performance in the field
- Does not consider cultural needs

Pros:
- International standard
- Can be used for cross-comparisons of stoves (different countries or types)
- Repeatable
- Incorporates culture-specific cooking practices
- More representative of stove behavior in the field

Emissions data varied between the WBT and CCT.

CO / CO₂: The relative ranking of the Mirak and traditional varied greatly between the two tests. Prakti consistently had low emissions of CO. EcoRecho consistently had high emissions of CO.

CO / CO₂: EcoRecho and Prakti had higher percentages (more incomplete combustion) for the WBTs than the CCTs, while the Mirak and traditional stayed constant.

Conclusions and Future Considerations:
- More tests need to be conducted to reduce sampling error.
- Smaller error (from more tests) would allow a rigorous comparison of CCT and WBT data to determine the key differences obtained from conducting each test.
- Research needed into what determines the difference in emissions between WBT and CCT
- Differences in flow rates, possibly due to different pot sizes?
- Differences in power cycles of tests?

For both WBT and CCT, all improved stoves save charcoal compared to the traditional stove.