Indoor Air Pollution in Rural India

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Great Problems Seminar: Heal the World with Professor Stoddard and Professor Rao

Problem

76% of Kanpur’s Rural population is reliant on solid biomass fuel for cooking. The traditional stoves have a low thermal efficiency and cause negative side effects because of the excess of fuel burned.

18% develop blindness

Low birth weight

Asthma

Chronic Bronchitis

Traditional three-stone stove

Our Solution: Modified Forced Draft Stove

Supports for a variety of cooking pots

Combustion area

Forced air supply

Fan & Thermo Electric Generator

Strong base to prevent tipping

Implementation

1. Contact Heifer International and share stove plans
2. Heifer will send the design to their manufacturer
3. Heifer will conduct a study to measure effectiveness

Criteria for measuring the effectiveness:
1. Rate of adoption
2. Reduction in household air pollution
3. Cultural appropriateness
4. Rate of decrease in health symptoms
5. General satisfaction from trial group

Current Solutions: Improved Stoves

Forced Draft

Most thermally efficient of improved stove

Easy to tip and not adaptable to various cookware

Natural Draft

Slightly more thermally efficient than traditional stoves

CO produced (g/kg)

Traditional Stoves: 45.05

Natural Draft Stoves: 10.33

References: