



Clean Cooking: At the Heart of Gender and Climate Issues



Fardosa cooks with collected fuelwood on a traditional three-stone fire.

Cooking and Climate Change: The Facts

- Estimated 2 million tons of biomass burned daily for cooking, contributing to soil erosion and desertification around the world.¹
- Black carbon emissions from burning traditional biomass (wood, dung, crop residues) responsible for 18% of global GHG emissions.²

The use of traditional fuels contributes to climate change and creates hardships for families.

Clean Cooking Solutions

Tackling Climate Change & Gender Issues at the Root Cause: Polluting Stoves

Efficient stoves and clean liquid fuels make a cross-cutting impact by reducing deforestation and mitigating emissions that contribute to climate change.

Gaia works with the alcohol-fueled CleanCook (CC) stove by Dometic. It is clean-burning, operates at 65% efficiency and has an exceptional safety record. Indoor Air Pollution monitoring results with the CC stove show an 85% reduction of Particulate Matter (PM) emissions in field studies (99% in the lab) from traditional wood fires and a 93% reduction of CO in the field (93% in the lab). The ethanol stove meets WHO guidelines for safe levels of both CO and PM.³



Asha and her family live in Kebribeyah camp. They are 1 of 3,600 families cooking daily with the CleanCook stove.

The CleanCook Stove by Dometic

- Adapted from a leisure stove to fit a rugged refugee camp environment.
- Logged 2.5 million stove-use-days without a single accident. Received safety rating of 39/40 from Aprovecho Research Laboratory.
- Substituted ethanol fuel for woodfuels and kerosene, saving approximately 35,000 tons of CO₂-e to date.
- Won an Ashden Award in 2008
- Voted by refugees in UNHCR Kebribeyah camp as best stove and fuel.



Dometic
GROUP

A Gender Perspective: Women's Health and Security

Women around the world collect and use natural resources as part of their primary traditional roles. As caregivers and laborers, they depend on natural resources: water, fuelwood, food, fodder and medicinal plants. ◆

These resources are put at risk by climate change through deforestation, soil erosion, droughts and natural disasters. ◆

As resources become more scarce, the cost of collecting and using them increases. There is a high socio-economic cost in spending several hours per day gathering fuelwood and cooking with inefficient traditional stoves. (UNDP 2005). ◆

There is increasing evidence linking smoke from solid fuel use in developing countries with child pneumonia, chronic obstructive pulmonary disease (COPD), and lung cancer.⁴ These illnesses, among others, affect women and girls disproportionately. ◆

Gaia Case Study

In its studies in the refugee camps near Jijiga, eastern Ethiopia, Project Gaia found that women and children walk as many as **10 kilometers** for **2 to 5 hours** to find and collect firewood. This laborious task leaves fuel collectors vulnerable to a harsh, desert environment and physical and sexual assault. Competition for scarce natural resources increases tensions between refugees and local communities.



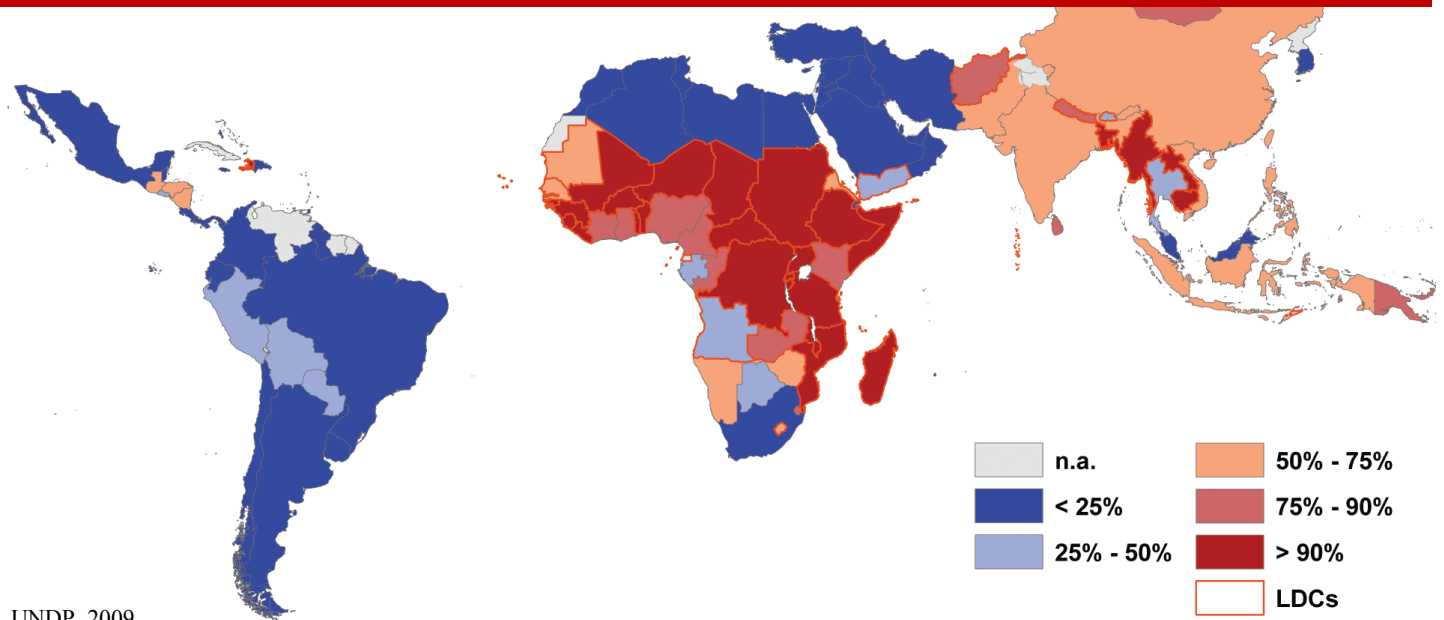
Clean Stove and Fuel Solutions:

The CC stove paired with clean ethanol and methanol fuel provides an easier, safer and modern way for women to cook and provide for the family. ◆

Women can use the time spent collecting fuel to engage in income-generating and educational activities, contributing to the stability and advancement of households and communities (UNDP 2005). ◆

Freeing a woman's time gives her the opportunity to improve her family's well being, attend to her health, educate her children, better her community, and contribute to her community's economic development. ◆

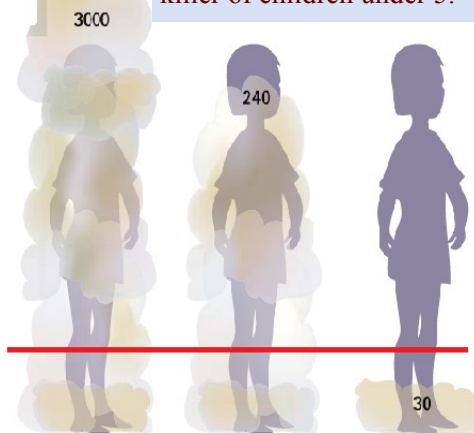
Share of population without access to modern fuels for developing countries, 2007



UNDP, 2009

- ◆ Use of the CC stove and ethanol fuel eliminates violence related with fuel collection.
- ◆ Gaia case studies show that women and children experience immediate reduction in headaches, eye irritation and coughing after they start using the CleanCook stove.
- ◆ Please visit www.projectgaia.com for field reports and other project information.

Smoky Homes: Typical 24 hr exposure to PM from polluted air. Children are most exposed to indoor air pollution from traditional stoves. This air gives rise to pneumonia and other respiratory infections; the biggest killer of children under 5.



Hut with an open fire | Bangkok roadside | Berlin city center

WHO, early 2000's: Indoor Smoke: Breaking Down Respiratory Defences, www.who.int

Gender Perspective in Climate Policy

Environmental, socioeconomic and health burdens of fuel collection and cooking impact the lives of women around the world. Yet, government policies typically do not account for these burdens in country energy plans or in climate change plans. ◆

Climate policies must support the different needs of men, women and children with gender-specific objectives and indicators as core components of national climate change strategies. ◆

These policies must incorporate a thorough gender analysis. ◆

Design of policy should involve participation of civil society and communities, including women and women's organizations. ◆

“Promoting gender equality and women’s empowerment is not solely a plea for justice. Where we fail to capitalize on the potential and talents of one-half of the population, we also squander the potential to reduce poverty, hunger, disease, environmental degradation and violence.”

— Michelle Bachelet, Executive Director of UN Women



Project Gaia is a global clean fuel and stove initiative working to replace polluting solid fuels and imported petroleum fuels with clean-burning alcohol fuels. Gaia aims to build energy markets that encourage local production of renewable bio-ethanol and methanol and clean stoves. Project Gaia’s sister organization, **Gaia Association**, is an implementing partner to the UNHCR, running large stove and fuel operations in the Horn of Africa. The CleanCook stove has been thoroughly tested and is being used in Ethiopia, Nigeria, Madagascar, and Brazil, with new projects beginning in Kenya and Haiti.

For more information, please visit: www.projectgaia.com

¹ SEI. Household Energy in Developing Countries: A Burning Issue. Policy Brief

² Bond, T. (2007) Testimony for the Hearing on Black Carbon and Climate Change

³ CEIHD/Gaia Association, IAP Results 2007; Madagascar: Assessment of Ethanol as a Household Fuel, World Bank 2009-2011; Energy for Sustainable Development, Vol 14, Issue 3, 2010. N. MacCarty et al.

⁴ Dherani, M et al, 2008. ‘Indoor air pollution from unprocessed solid fuel use and pneumonia risk in children under 5: systematic review and meta-analysis.’