

# Effect of Improved Stoves on Wood Consumption, Particulate Matter, and Carbon Monoxide Production

# Romero-Perezgrovas<sup>a</sup>, Ricardo, Mildred Linkimer<sup>b</sup>, María Fernanda Romero<sup>b</sup>, Víctor Arboleda<sup>b</sup>, Sam Bentson<sup>c</sup>, Alejandra Arroyo<sup>b</sup> and Bert Kohlmann<sup>b</sup>.

a Sustainable Harvest International, Field Programs, Ellsworth, United States Email ricardo@sustainableharvest.org b EARTH University, Center of Research and Development for Renewable Energy, Guácimo, Costa Rica c Aprovecho Research Center, Cottage Grow, United States



# Introduction









Panamá





#### **Rural comunities**

Traditional stoves/Biomass

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#### Deforestation, Health, Climate Change, Biodiversity, Water Pollution, Mudslides, etc

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# What is the impact of improved stoves?

# A)Data collection



### **B)** Analysis

 $y_{ijklmnp} = \mu + a_i + \beta_J + \gamma_K + \delta_l + \vartheta_m + a\beta_{ij} + \beta\gamma_{jk} + \beta\delta_{jl} + \beta\vartheta_{jm} + b(a)_{in} + \varepsilon_{ijklmnp}$ 

#### Weight

### Survey

### The adjusted model for average PM(ug/m<sup>3</sup>) and CO(ppm)

### Results

Table 1. Average Particulate Matter (ug/m<sup>3</sup>) estimated by the model including wood stove models and countries

	Honduras		Par	Panama		Maan
Wood stove model	n	Mean	n	Mean	IN	wear
Improved	14	2,6 c	46	440,7 b	60	91,1 b
Traditional	33	967,4 b	45	4057,7 a	78	2156,7 a
Mean	47	178,5 b	91	1634,7 a		

Table 2. Average Carbon Monoxide (ppm) estimated by the model between wood stove models and countries

### Conclusions

# Adoption and Use

Local

	Honduras		Pan	Panama		Moon
Wood stove model	n	Mean	n	Mean	IN	Ivicali
Improved	31	0,3 a	51	19,7 a	82	4,9 b
Traditional	27	20,1 a	47	52,3 a	74	33,7 a
Mean	58	5,0 b	98	33,4 a		

 Table 3. Average wood consumption (kg) per day by country and stove model

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	Honduras		Pan	Panama		Mean
Wood stove model	n	Mean	n	Mean	IN	Wiedn
Improved	157	5.59	176	5.64	333	5.6
Traditional	100	10.9	99	11.52	199	11.21
Mean	257	8.24	275	8.58	532	8.4

### Wood + Biomass

Health

 $< CO_{(ppm)} \& < PM_{(ug/m^3)}$