



## Sustainable Fuelwood Use through Efficient Cookstoves in Rural Mexico

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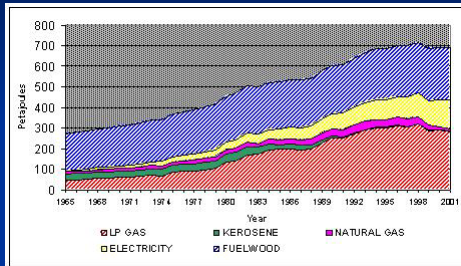
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[www.gira.org.mx](http://www.gira.org.mx)

## Fuelwood Use in Mexican Households

- One out of three households in Mexico cook with fuelwood
  - 28 million people ( 4.67 million hh)
- Average fuelwood consumption is 2.1 kg/cap/day or 4.6 ton/hh/yr
- LPG complements rather than substituting fuelwood in rural households → tends towards multiple-fuel use

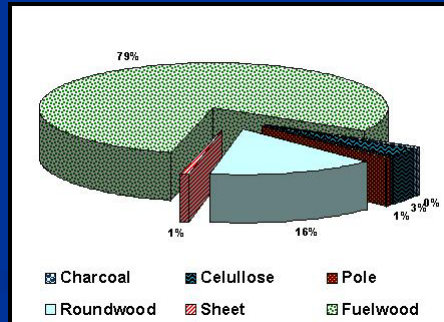
# Fuelwood Use in Mexico



Of the total residential energy use in Mexico (320 PJ/yr) half is Fuelwood

Source: SENER, 2000; Díaz Jiménez, 2000.

Fuelwood accounts for 79% of total wood use in Mexico



Source: SEMARNAT, 1999; Díaz Jiménez, 2000.

## Local Interventions

UNDERSTANDING FUELWOOD USE  
PATTERNS AND HEALTH IMPACTS  
WITHIN THE PUREPECHA REGION,  
MICHUACAN

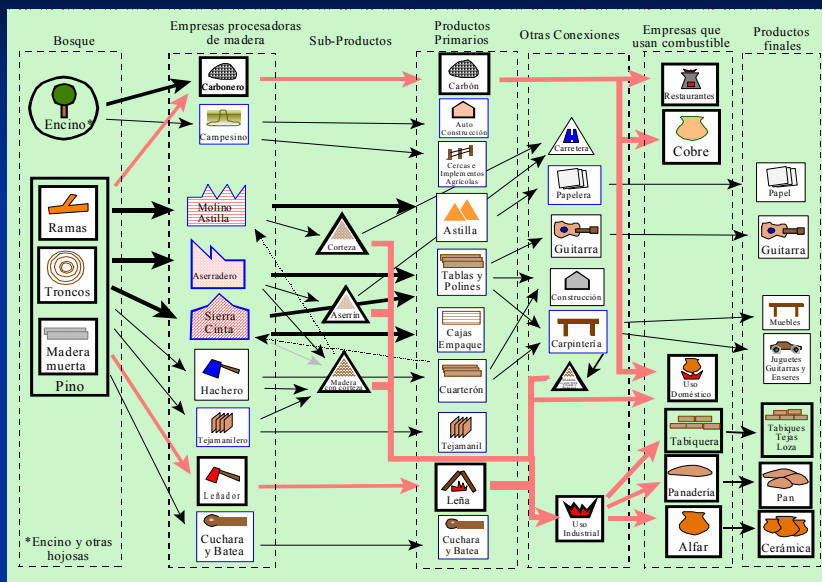
# The Purhepecha Region, Michoacan State



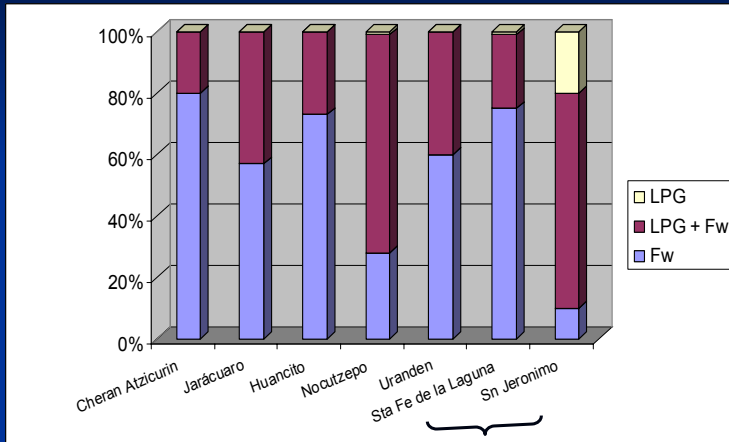
19 "municipios"  
220,000 fuelwood users



## WOOD ENERGY FLOWS

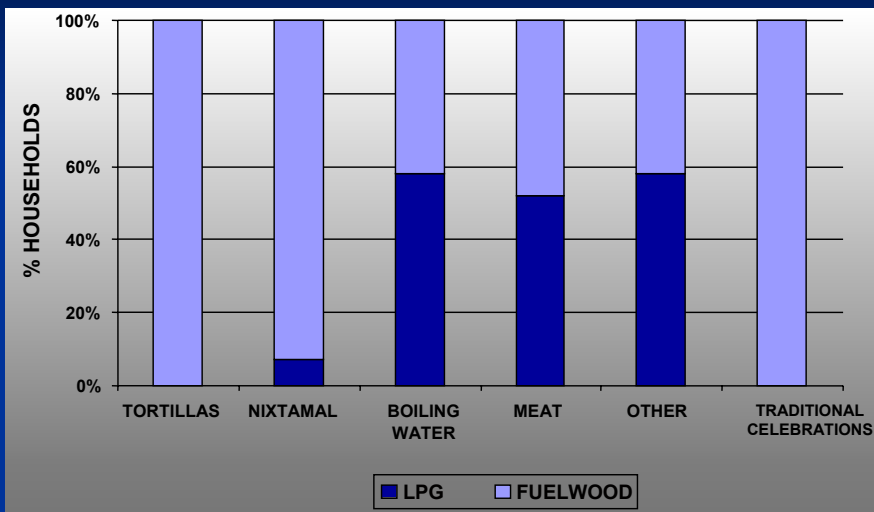


### PERCENTAGE OF USERS BY TYPE OF FUEL



Small Towns

### Percentage of households by type of fuel used for different cooking practices



## Pollutant concentrations at the location of household cook



## Alternatives: Efficient Woodburning Cookstoves

## The niche for appropriate technologies



TRADITIONAL  
TECHNOLOGY

MODERN  
TECHNOLOGY

APPROPRIATE  
TECHNOLOGY

## The Lorena cookstove dissemination program

### APPROACH

- ✓ Integrated and participative strategy (environmental and local socio-economic benefits)
- ✓ Centered on understanding local women priorities, needs and preferences
- ✓ Providing capacity (fw use, environmental, health, stoves construction)
- ✓ Small in-kind subsidy
- ✓ A strict stove monitoring and evaluation program

## **The Lorena cookstove dissemination program**

### **RESULTS**

#### **LOCAL LEVEL**

- ✓ Stoves field tested and adapted to local conditions since late 80`s
- ✓ 1,500 stoves built without major programmes within the region, 1,500 more in the next two years
- ✓ 87% of stove use
- ✓ 40% of fuelwood savings (measured in field conditions)
- ✓ 30% IAP reduction

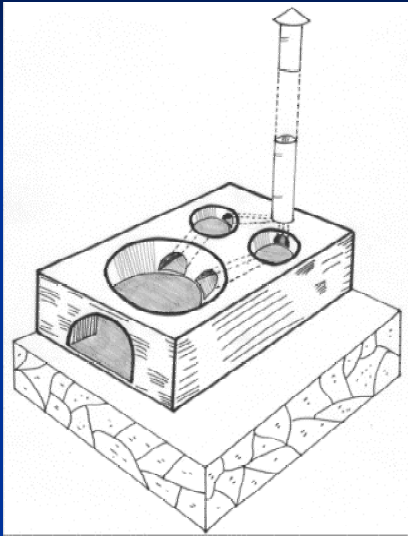
## **The Lorena cookstove dissemination program**

### **RESULTS**

#### **REGIONAL AND NATIONAL LEVEL**

- ✓ One hundred promoters from all over Mexico have been trained
- ✓ At least three other regions have started similar programs (with GIRA's advising)
- ✓ Governmental institutions are interested in the program and have requested advisory

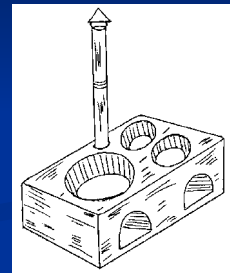
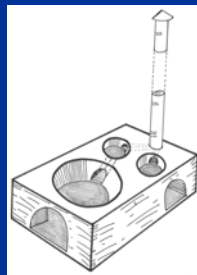
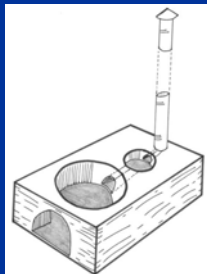
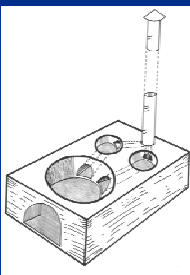
## LORENA COOKSTOVE: "Región Lago de Pátzcuaro"



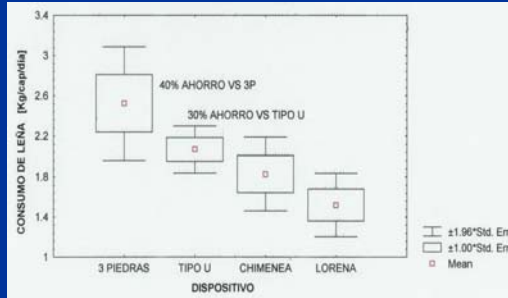
### ADVANTAGES & BENEFITS

- 40% savings
- Built with local materials
- Fast and simple construction 3 hr/stove
- Low cost (25 dlls)
- Long-lasting (> 3yr and up to 10 yr)

### Different possibilities and models...

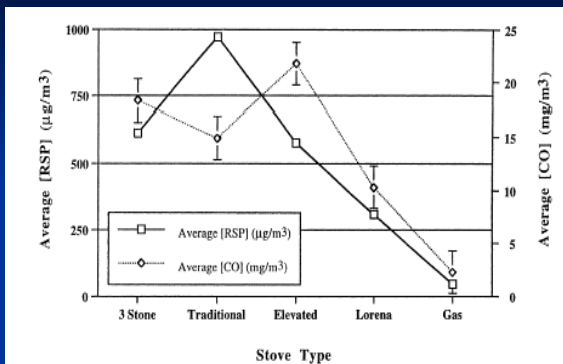






## Fuelwood Consumption Per capita

## Pollutant concentrations at the location of household cook



Saatkamp *et al.*, 2000.



# Benefits from clean and efficient cookstoves

