

PROJECT:

CIECO

PROMOTING CLEAN MULTIPLE-FUEL COOKING FOR IMPROVED RURAL LIVELIHOODS IN LATIN AMERICA

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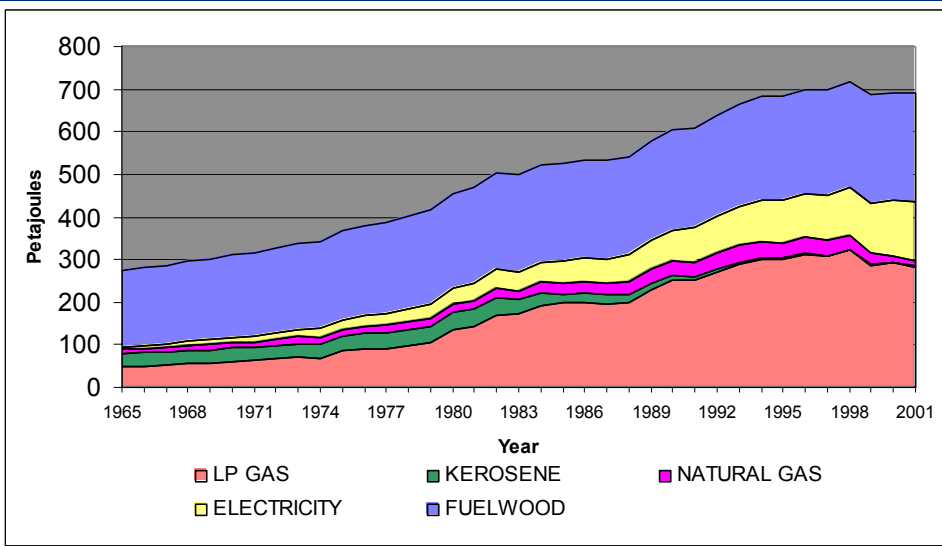
January, 2004

General Approach

- Challenge conventional wisdom
 - From Fuelwood gap and Fuel ladder to *“Multiple fuel” strategies*
- Systemic approach
 - From stove construction to *integrated dissemination programs*
 - Include:
 - Technology Innovation/ Users Involvement/ Financing /Monitoring

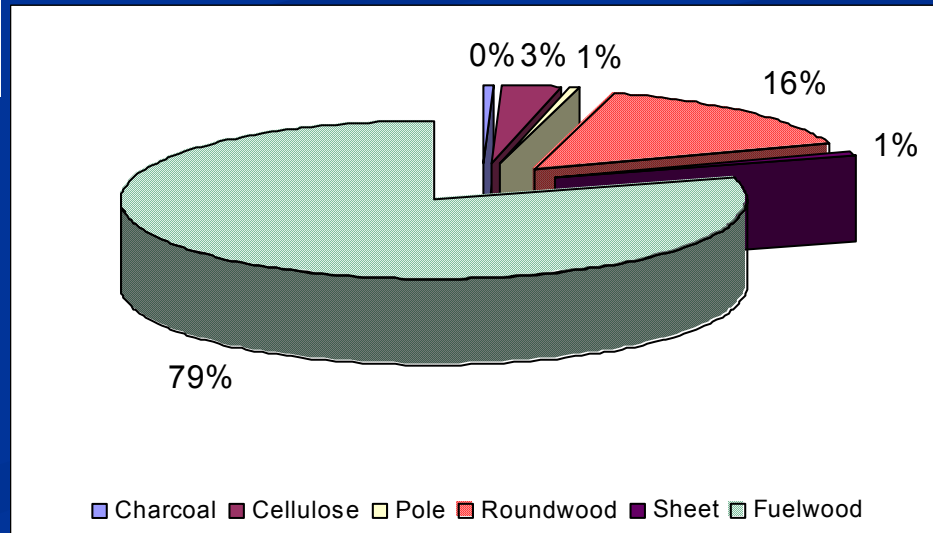
FUELWOOD USE IN MEXICO

Of the of total residential energy use
(320 PJ/yr) HALF is Fuelwood



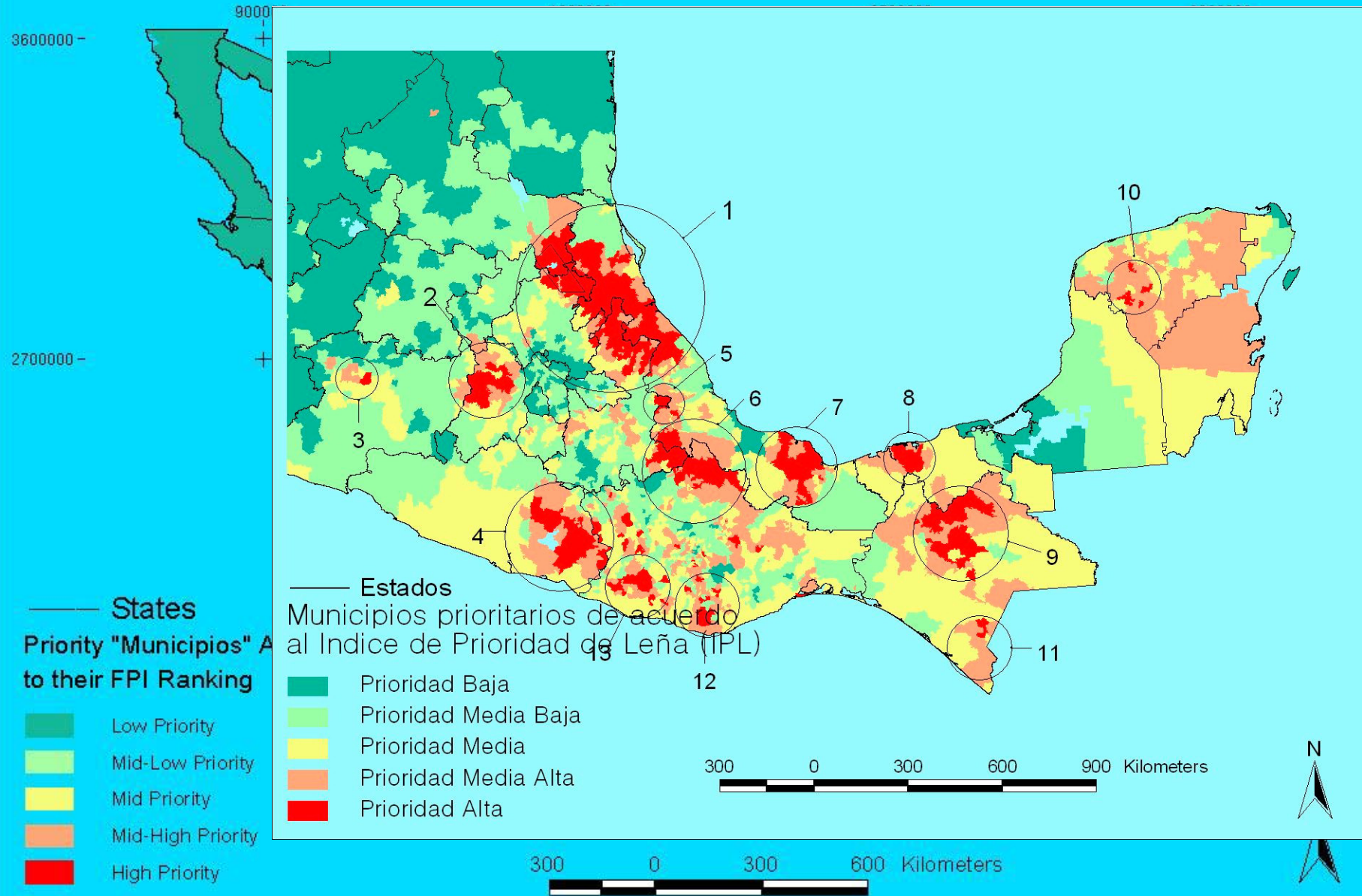
Source: SENER, 2000; Díaz Jiménez, 2000.

Fuelwood accounts for 79% of total wood use in Mexico



Source: SEMARNAT, 1999; Díaz Jiménez, 2000.

Priority Municipalities for Fuelwood Consumption





Traditional Stoves

High fuelwood use

High IAP

PROJECT GOAL & PURPOSE

GOAL:

Facilitate the transition of local households and micro enterprises to a cleaner and more sustainable pattern of energy use

PURPOSE:

- Facilitating the dissemination and adoption stoves (*self replicating mechanisms*)
- Improving local tortilla-making micro-enterprises
- Reducing local and global environmental impacts (*current Fw use pattern*)
- Educating local woman and stove builders (*health & environmental problems associated with IAP*)

Project Structure

- Stove Design: The “Patsari” Stove
- Stove Dissemination
 - Participatory Approach
 - Stove Builders (30)
 - Users (1,500 stoves in 30 villages)
- Financial Mechanism – “the Tandas”
- Monitoring Program

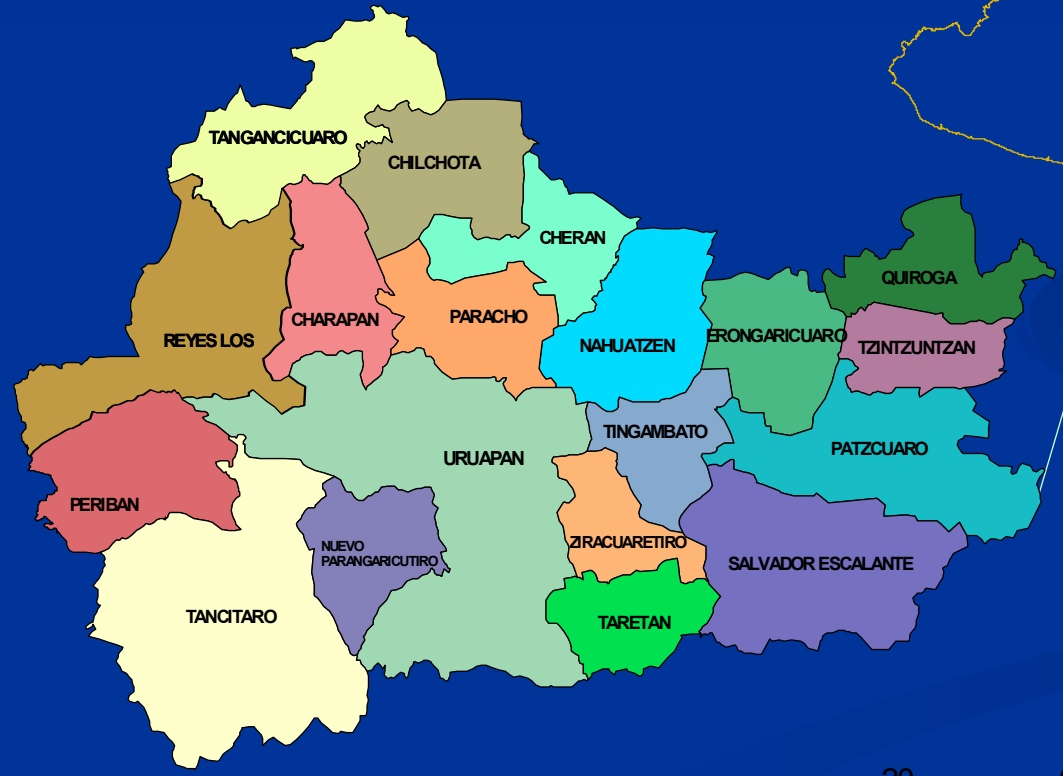


THE PURHÉPECHA REGION

México

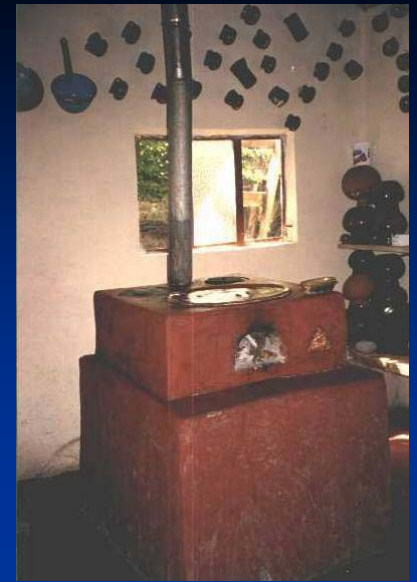
Michoacán State

Purhépecha Region



19 “Municipalities”
220,000 fuelwood users





The “Patsari” Stove

Stove Design

■ Efficiency and Robustness

- Temperature and emission profiles (SO_2 , NO_x , CO , CO_2)
- Combustion tests
- Controlled Cooking Test (tortilla and be...)
- Water Boiling Test



Stove Design

- Design and construction of mould
 - Materials tests
 - Performance (Stove construction in Lab & Villages)
 - Durability
 - Support to local micro-enterprises



The “Patsari” Stove

- Optimized design of combustion chamber and tunnels
- Use of a mould (2 hr construction)
- Custom designed parts for durability
 - Metal Chimney support
 - Ceramics Stove Entrance
 - Metal “comales”
 - Metal Chimney pieces made locally
- Locally available materials: sand, mud, and cement
- Stove cost (16 dlls materials plus 14 dlls labor)
- 60% fuelwood savings in tortilla making
- Substantial reductions in IAP
- Support to regional economy: local producers of metal and ceramic custom parts



Stove Builders

- Selection of one stove builder per village (30 in total)
- Stove builders receive
 - a mould free of charge
 - intensive training in stove construction and maintenance
 - training in health, environmental issues and micro-credit
 - are helped by GIRA to generate an initial market of 50 stoves within each village
- Builders are expected to initiate independent operations



Stove Builders

Training course



Stove Users

- GIRA helps with the formation of Village Stove Committees (50 users)
- Users receive basic training in health aspects of fuelwood use, stove use and maintenance as well as environmental aspects (**training package**)
- Specific training on micro-finance (tanda)



Stove Users



Financial Mechanism

- 20% discount on stove costs for first 50 stoves built within each village
- a “Tanda” type of micro-finance is set up -where needed- to help users to overcome front costs (stoves are paid in 5 installments, the whole operation is run entirely by local women)
- Support: ANADEGES, specialists in rural micro credit.



Training in Micro-finance



Tortilla Making Micro-Enterprises

Main features

- 500 micro-enterprises
- Largest income source for poorest households
- Need large cookstove that allows cooking tortillas and nixtamal

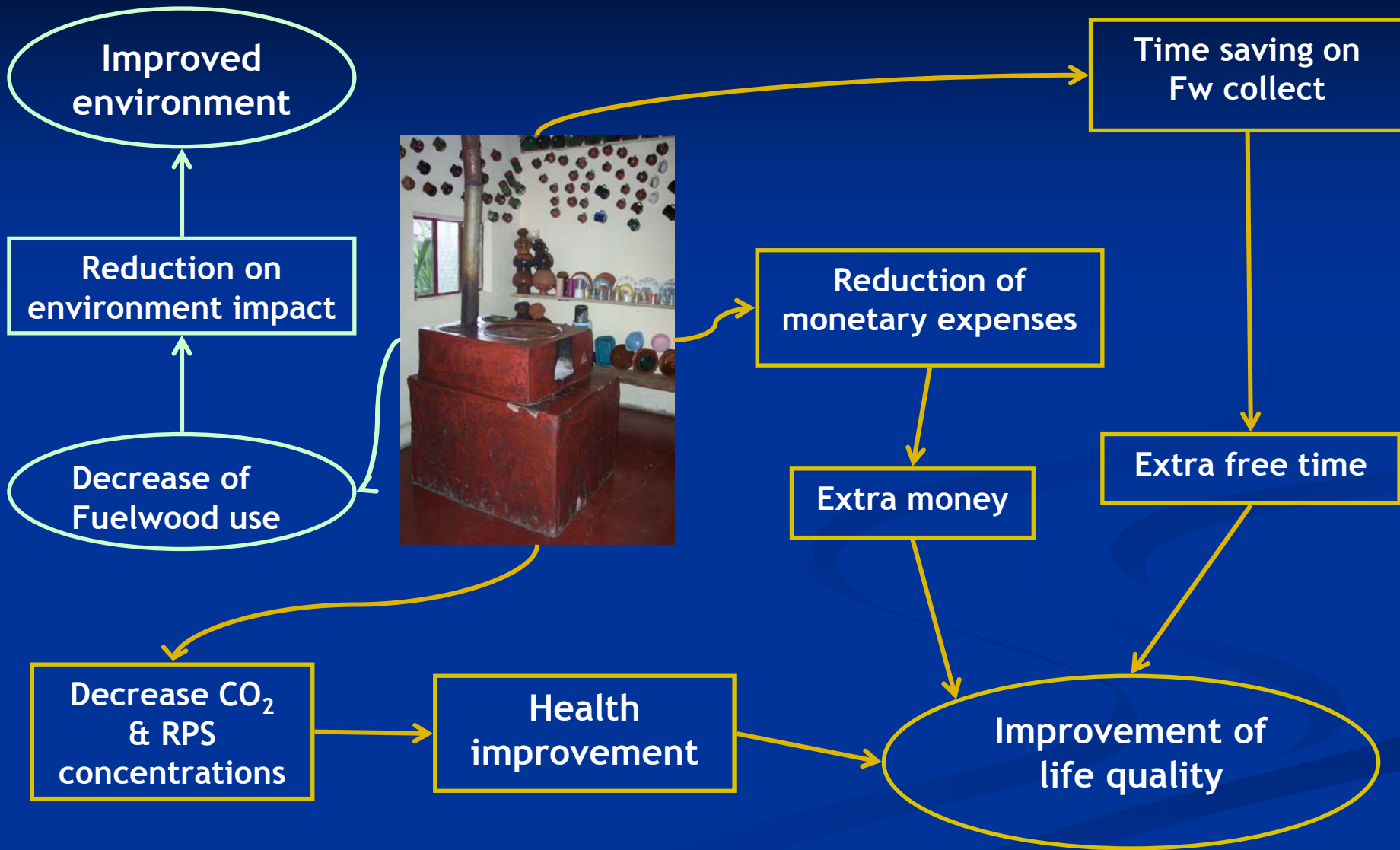


Monitoring & Evaluation

- Stove Performance
- Users' Preferences and sustainability assessment
- Stove GHG Emissions
- IAP
- Health



BENEFITS OF "PATSAARI" STOVE





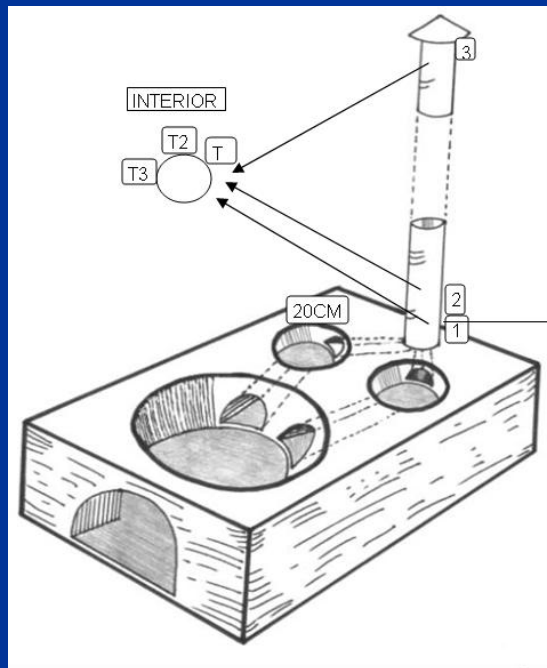
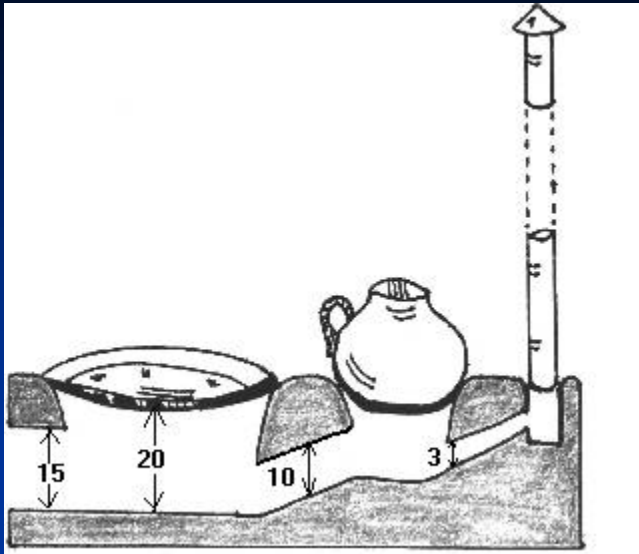
Participants Shell Workshop Dec 2003 Pátzcuaro, Mexico

Thanks!

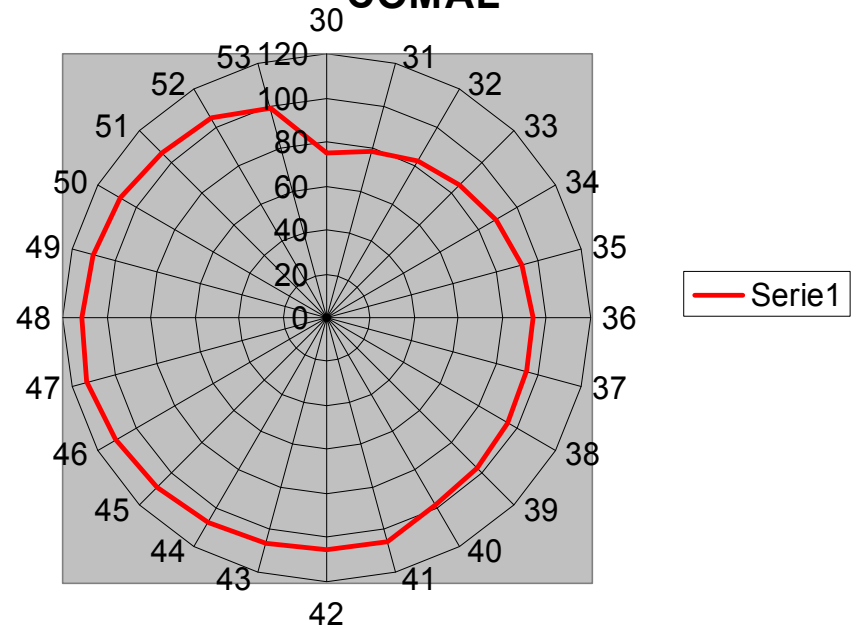


Silvia Pamatz de Casas Blancas

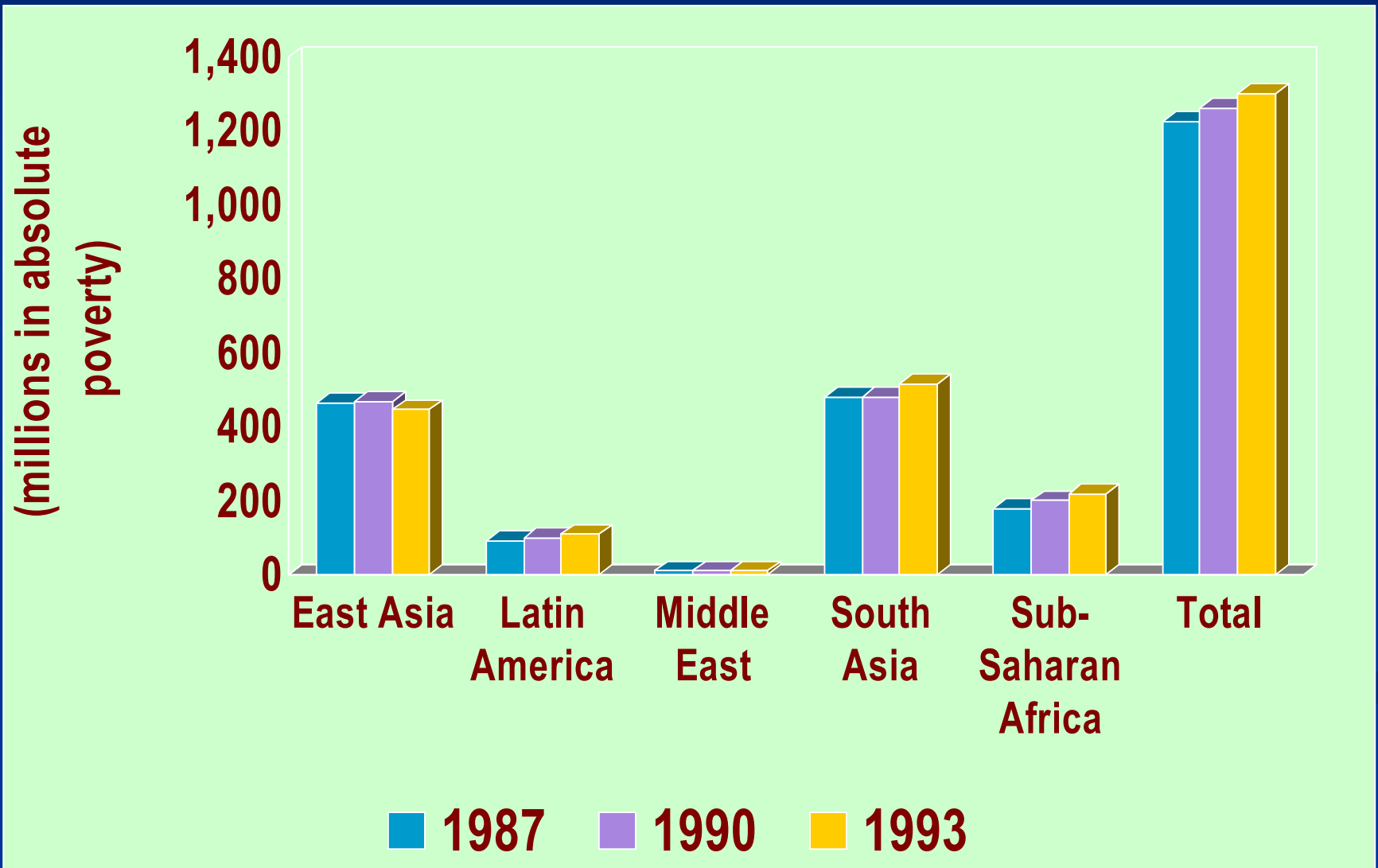
Stove Design



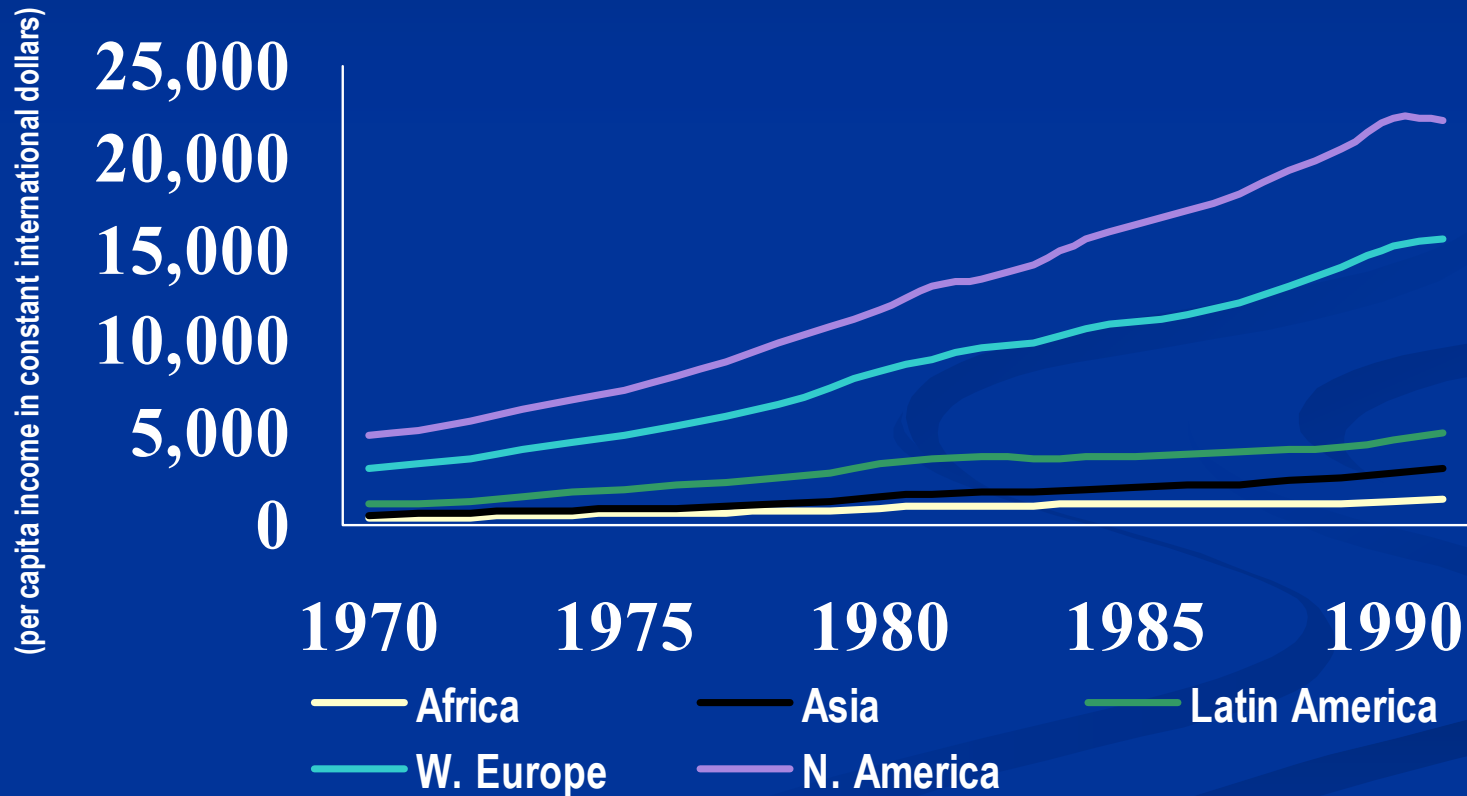
TEMPERATURA EN LA SUP. DEL COMAL



The number of poor continues to grow

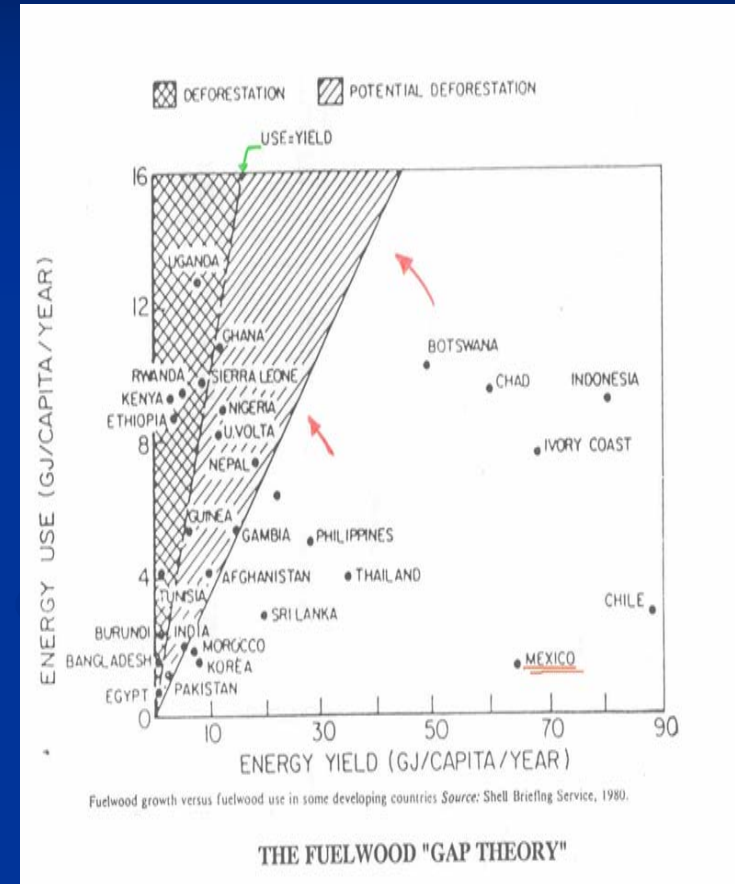
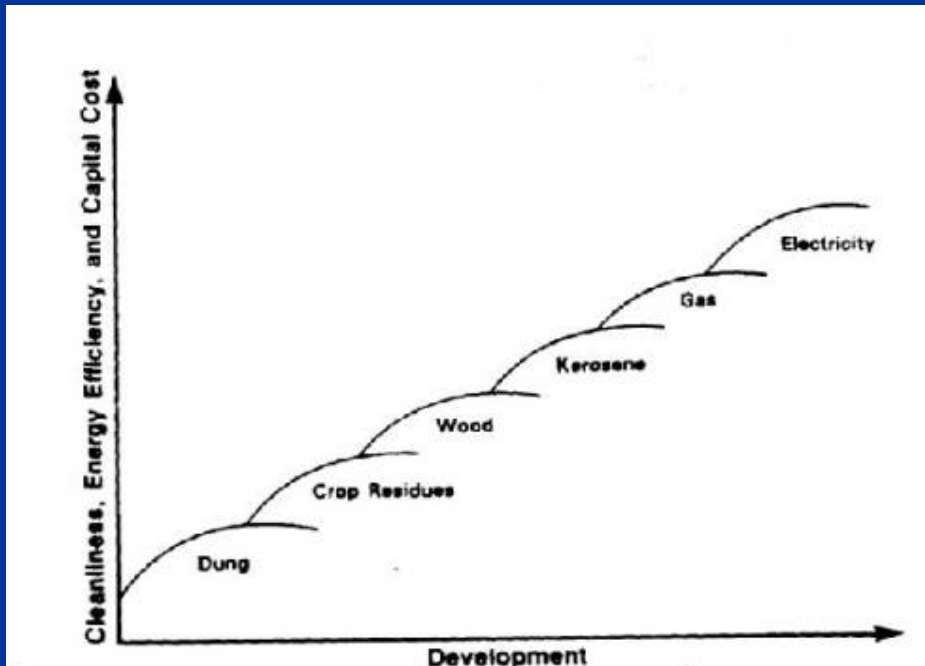


Growing disparities in incomes among regions



Conventional Wisdom

- Between “fuelwood gap” and linear “fuel switching”



Not good enough!!

PROJECT GOAL & PURPOSE (2)

- Dissemination of 1,500 cookstoves for household use
- Dissemination of 70 stoves for tortilla making micro-enterprises
- 25 stove builders operating in 30 villages
- 9,000 people benefited from the program
- Several small enterprises that produce stove parts (chimney, ceramics entrance, metal stove parts, new “comales”)