



# **Why uptake of Improved Cook Stoves and Biogas plants has been slow in rural India?**

**Priyadarshini Karve**

Samuchit Enviro Tech

[www.samuchit.com](http://www.samuchit.com)



# The “Samuchit” Evolution

- 2006:
  - Selling improved cook stoves and biogas plants to rural poor.
  - Create a network of enterprises to cover the last mile.
- **2010: Life and Death situation!**
- 2014:
  - Selling improved cook stoves and dungless biogas plants to urban middle class households, commercial establishments, and donor-driven/government programmes.
  - Consultancy to organisations and households for energy efficient and sustainable practices.

# How much energy for one day's cooking?



Quantity of gas required: 250 g

Energy input to the stove: 3000 kcal

Energy output of the stove: 1800 kcal

Cost/day: Rs.8 (subsidised LPG)

Benefits: Smokeless, Extremely user friendly, Negligible global warming impact

**Drawbacks: No pay-per-use option available**



Quantity of firewood required: 4 kg

**Cost/day: Rs.20 OR Rs.100 (half a day's labour cost for collection)**

Benefits: 'Free' or 'low cost' fuel, Significantly user friendly

**Drawbacks: Smoke, substantial global warming impact**

# How much energy for one day's cooking?



Quantity of gas required: 250 g

Energy input to the stove: 3000 kcal

Energy output of the stove: 1800 kcal

Cost/day: Rs.8 (subsidised LPG)

Benefits: Smokeless, Extremely user friendly, Negligible global warming impact

**Drawbacks: No pay-per-use option available**

Quantity of firewood required: 1.5 kg

**Cost/day: Rs.10 (sized fuel) OR Rs.20 (processed fuel) OR Rs.100 (half a day's labour cost for collecting and sizing fuel)**



Benefits: Low smoke, Moderately user friendly, No or negligible global warming impact

**Drawbacks: Standardised fuel is not easily accessible, cost of stove as well as fuel higher than traditional stove**

# How much energy for one day's cooking?

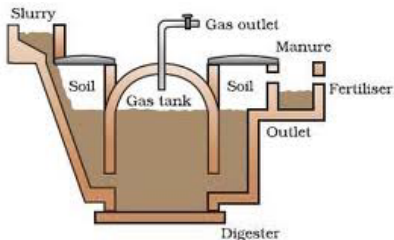


Quantity of gas required: 250 g  
Energy input to the stove: 3000 kcal  
Energy output of the stove: 1800 kcal  
Cost/day: Rs.8 (subsidised LPG)



Benefits: Smokeless, Extremely user friendly, Negligible global warming impact

**Drawbacks: No pay-per-use option available**



Quantity of gas required: 1 kg  
Cowdung input to the plant: 40 kg (+ 40 lit water)

**Cost/day: Rs.100 (Half a day's labour to source the dung and water, feeding, dealing with the effluent)**

Benefits: Smokeless, Zero global warming impact, generates manure for the farm.



Drawback: **Not very user friendly, manure can be used only if plant is in the farm.**

# What is on offer to the rural household?



- Policy makers:
  - MNRE: Push for improved cook stoves and biogas (and solar cooking?)
  - Petroleum ministry: Push for expanding LPG access
- Manufacturers:
  - Oil companies supply LPG, LPG stove manufacturers are well established, mass scale producers, market already well established and growing, nobody cares much for those who cannot afford or access what is being offered.
  - Improved cookstove manufacturers claim to be social enterprises and are driven by health/environment/climate change agenda, most of which is rather abstract and obscure for the rural poor.
  - Biogas installers are typically NGOs or small businesses driven to a large extent by organic farming agenda.
  - Food waste to biogas technologies on offer are irrelevant to rural India, and driven more by waste management considerations.



## Let's ponder...

- Are we looking to solve the problem of access to clean cooking energy for rural poor, or are we looking to 'sell' whatever technology that happens to be our favourite hobby horse, to address whatever is our favourite social/environmental problem?
- Why are we trying to sell rural India something that we, urban Indians, are not willing to use in our kitchens?
- **Can we really blame rural India if it does not take us seriously?**



# The Subsidy Issue

- Proposed subsidy for Improved cook stove: Rs.800
- Subsidy for biogas plant (available once in a lifetime): Rs.8000
- **A typical urban middle class LPG user, using about 6 cylinders per year for the last 20 years, has availed of a subsidy of Rs.25,000+ for LPG for cooking, and will continue to avail more.**