

*“Smokeless and Efficient Biomass Fuel  
Micro-Enterprises to Reduce Carbon  
Emissions and Deforestation”*

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Mitigate Climate Change***

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# Challenges

- Killer in the kitchen
- TB claims 1 death every minute in India
- Women inhale benzo-a-pyrene equivalent to 400 cigarettes
- Forest Load - 5 times more than sustainable withdrawal
- Burning cattle dung instead of making compost

# Potential

## Crop Residues :

- 320 Million Tons of Agricultural Residues per year (2000)
- **252 Million Families can be benefited**

(Assumption: 5 cakes/day/family of 5 persons)

## Industrial Wastes :

Waste from Sponge Iron Factories etc.

# Energy Cake Technology



This technology converts Bio-mass into smokeless high temperature ( $T_{\max} > 500^{\circ}\text{C}$ ) energy source for cooking, heating in domestic and commercial units with high entrepreneurial potential.

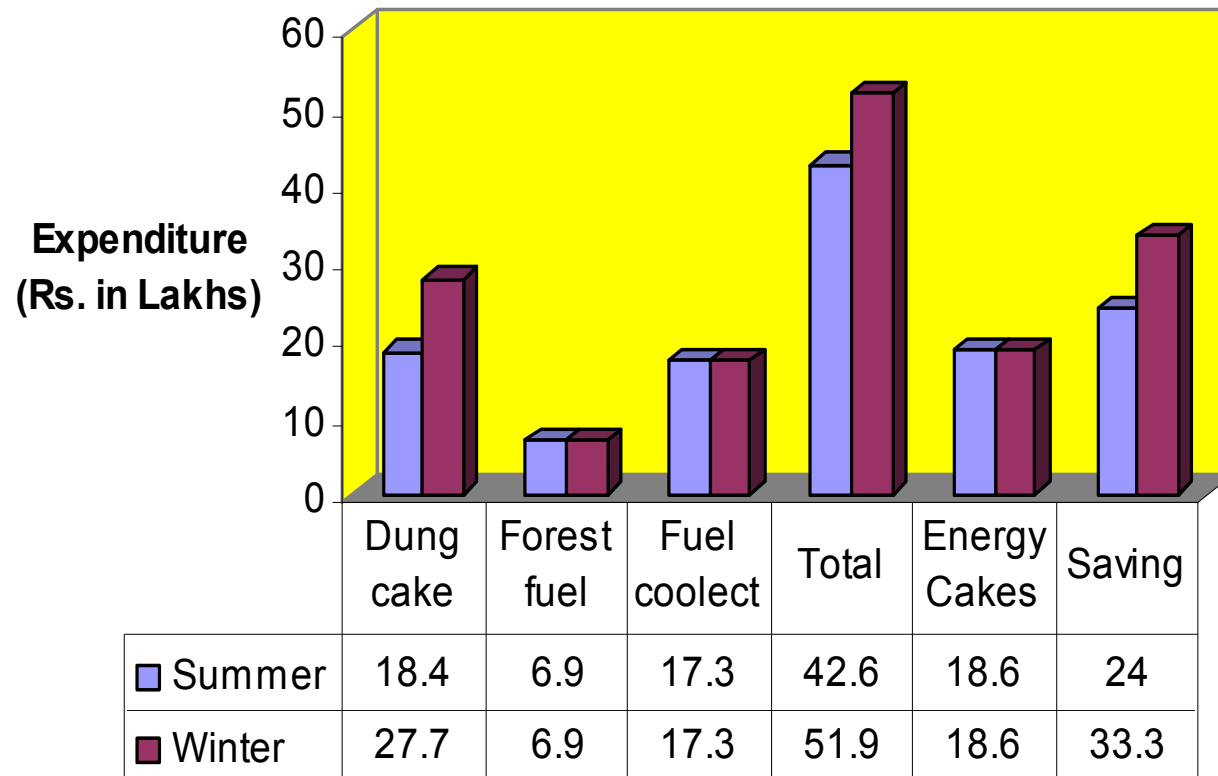
# Energy Cakes – Key Features

- Without Smoke,
- Less Fuel Consumption,
- Less Cost & Cooking Time,
- Less Skill to Produce,
- Less Drudgery,
- Less Infrastructure

# S & T Component

- **Chemical Engineering**
- **Geotechnology**
- **Mechanical Engineering**
- **Applied/ Fluid mechanics &**
- **Renewable Energy Technology**

# Economic-Analysis



# Project - Approach

- Setting-up of Technical Back-up Unit for live demonstration of the technology, the products and their benefits.
- Identification of the 12 GEF-UNDP-SGP Partners in six zones in India to Collaborate for Implementing the Technology for its benefits.
- Setting-up of 12 Systems for the Energy Cakes' Production

cont.



## Project - Approach

- 3 days-2 Training Programs for each of the partners, one during the installation of the unit and one after 2/3 months of the unit at their door step.
- Exposure visit of 2 Representatives of the communities and 2 of the NGOs to the Technology back – up unit.
- Regular Feedback & Monitoring Mechanism to be set up with Partners

# Project - Outcome

- One Central Technical Back-up Unit  
120 trainees from 12 Partners' sites in different corner of the India
- 12 MOUs between ERA and GEF-UNDP-SGP-NGOs –Partners for onward Maintenance, Knowledge Sharing, Self Use and Carbon Credit.
- 12 Micro Enterprises one each in the partner.

# Conclusion

This Efficient Energy Technology Promises:

- Economic Efficiency
- Social Equity
- A Source of Income Generation
- Mitigation of Climate Change by enabling Sustainable use of Natural Resources, and
- Improved Quality of Life for the Rural People.