

Mitigation of climate change through installation of newly modified Matribhumi Improved Cooking Stove (M-ICS)



Firewood from forest to Kitchen

Community Forest in Lele.

A woman in Lele spends 5 hrs. for a headload of firewood.

Firewood stacking in the front yard.

Cooking in traditional stoves

Cooking in M-ICS

Project No.	NEP/SGP/OP5/Y1/CORE/12/07		
UNDP,GEF-SGP funding	US\$ 37,887	Community Co-funding	US\$20,000
Project duration	July 2012 to December 2013		
Project Areas:	Lele, Champi, Bungmati, Lamatar VDCs- Lalitpur		

Background:

In Nepal, 88% of people use fuel wood energy for cooking. Collection of firewood and cooking food for family are routine chores of village women in Nepal. A Nepali woman spent 6 hours and 14 to 49 hours per week in firewood collection and cooking food respectively.

The cooking environment is even worst. The traditional stove produces a lot of fumes and soot. The smoke trapped inside the poorly ventilated rural kitchen has a negative repercussion to both women and children and cause of many deaths. The annual death of 7500 persons due to indoor air pollution earned such a kitchen as the silent killer (WHO, 2007).

In order to improve the kitchen environment, reduce the workload of women and employment generation, the project has successfully installed 1016 Matribhumi-Improved Cooking Stove (M-ICS).

Project Achievements

- 1. Reduced firewood consumption and CO₂ emission**
As of Sept 2013, the project installed 1016 M-ICS which had helped to save 2960 tons of firewood and reduced 4191 tons of CO₂ emission per annum.
- 2. Improved public health**
As per record from Leprosy Mission Nepal, Ananda Ban Hospital, Lele, less cases of respiratory illness had been recorded from Lele and Champi.
- 3. Reduced drudgery of women**
The M-ICS users, especially women had expressed their sincere gratitude as the stove had significantly reduced

S.N.	Item	Before	After
1	Firewood collection time	121 days/yr/hh	36 days/yr/hh
2	Cooking time	3 hrs/day/hh	1 hrs/day/hh
3	Cleaning utensils	2hr/day/hh	30 min/day/hh
4	Firewood expenses	NRs.36300/yr/hh	NRs.10800/yr/hh
5	LPG expenses	6 LPG cylinder/yr/hh (NRs. 9000)	2 LPG cylinder/yr/hh (NRs. 3000)

(NEW Initiative Survey 2013)

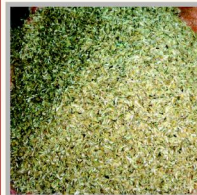
What is a Matribhumi Improved Cooking Stove (M-ICS)?

The advent of M-ICS has brought revolution in development of ICS. It is similar to the two hole mud stove with slightly raised second hole. But it consists of an air supply disk (burner) and a small fan operated by 12 volt. These accessories help burn firewood more efficiently. The efficiency of the stove ranges from 24-27% (efficiency of normal ICS is 12-18%) and consumes 60% less firewood.

The use of fiber dye set has made construction of M-ICS more innovative and easy. By using proper combination of mud, rice husk, cow dung and small bricks, the stove can easily be made within 3-4 hours. Unlike in other ICS, making of separate mud bricks are not required. (Mr. Madhukar K.C. has designed both the M-ICS and fiber dye.)



Fiber Dye sets and its accessories for M-ICS

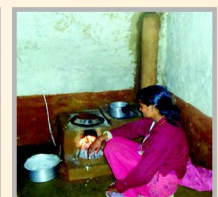


Rice husk

Soil

Cow dung

Local materials required for M-ICS



Chimney blocks

A newly built MICS

An M-ICS in operation

"I can relax or do other household chores while cooking in M-ICS as fire burns steadily without any support.

"Mrs. Brinda Poudel, Lamatar-6

"After using M-ICS, I have stopped using LP gas."

Mrs. Nanu Maya Nagarkoti, Lele-7

"My wife just delivered a baby. I am using M-ICS as it is very effective to keep food warm. It also kept smoke away from my wife and baby."

Mr. Pushpa Nagarkoti, Lele-7



Mr. Madhukar K.C., Director of Matribhumi Urja Pvt.Ltd. honored with Surya Nepal Asha Social Entrepreneurship Award 2013.



M-ICS at Champi



M-ICS at Lele



M-ICS at Bungmati

4. Increased employment opportunity

20 locals including 8 women M-ICS technicians are engaged in M-ICS making in project area.



After M-ICS training, we have installed more than 250 M-ICS in Lele VDC and earned Rs. 80,000. We have invested the saving in organic vegetable farming." -Mr. Gupta and Mrs. Kalu Maya Nagarkoti, Lele-7



"My husband lost his job, but we did not have to suffer from financial crises. After M-ICS training, I am working as a M-ICS technician in my village, which has helped my family financially." -Mrs. Anju K.C., Lele-6.

5. Reduced 'untouchability'

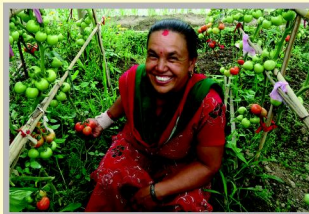
M-ICS technicians from lower caste are allowed to construct M-ICS in the kitchen of upper caste as they believe in their efficiency. Thus M-ICS is reducing the social discrimination.

6. Promoted organic farming

By mobilizing revolving fund via 2 groups, more than 30 farmers were engaged in organic vegetable farming in 5 ha of land. 4 lead farmers were trained on organic farming which was organized by MRC Nepal and NEW Initiative.



CBO using revolving fund for organic vegetable farming, Lele VDC



Mrs. Rita Shrestha, Lele-1 has earned NRs.50,000 within 4 months from organic vegetable farming.

7. Developed Lele as M-ICS demonstration and replication

Matribhumi Urja P Ltd offers M-ICS training course. But for practical exercise, the trainees are sent to Lele to construct M-ICS. In this way, 37 personnel from 16 districts of Nepal have been trained and this has also helped in replicating additional 1269 M-ICS.



M-ICS Installation training at Lele.

8) Conducted research on air supply disc (burner)



Air supply disc which require electricity, 3 volt fan and adapter for operation



New modified air supply disc, operates without any electricity.

9) Awaring the locals



Sensitising local community for M-ICS installation.



Awaring school students on indoor air pollution.

Nepal Environmental Watch Initiative (NEW Initiative)

NEW Initiative was formed in 2005 (2062 B.S.), by a group of environmental graduates, aiming to provide socio and environmental service especially to local community. NEW Initiative has emerged as a prominent organization to deal and lead local community in the road of sustainable development.

Our Resources

Qualified, experienced, professional, dynamic staff with full cooperation of Local CBOs, GOs/INGOs and private organizations.

Professional Networks

NEW Initiative has established professional networks with UNDP, GEF/SGP, Nepal, Matribhumi Urja Private Limited, Lele Community Development Project Good Neighbor Nepal and MRC Nepal.

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Use Matribhumi Improved Cooking Stove! Reduce Firewood Consumption!! Help conserve Forest !!!