Empowerment of Women for use of Improved Cook Stove to save energy and improve health

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Position of Women in the Household

- Traditionally, there has been a division of work in the society of Bangladesh:
  - men responsible for external works
  - women responsible for internal works: managers of households

- With time, the society is evolving; roles of men and women in the society and households are changing
Household Energy

- Energy for lighting
- Energy for cooling (e.g. fan, refrigerator, air conditioning)
- Energy for cooking

- Difference of energy availability and use, in quality, quantity and type
  - rural and urban area
  - electrified (43%) and non-electrified households
  - gas grid area (4%) and non-gas grid households
Women in respect to Household Energy

✓ Women are energy managers of households:

- rural or urban
- electrified or non-electrified households
- gas grid or non-gas grid connected households

➢ In non-gas grid area, the cooking fuel is solid biomass.
  - 24 million rural households
  - 3 million urban households and
  - 2 million institutional, commercial and industrial establishments
  - also in grid area towns, e.g. slums
Women in Non-gas-grid Households

- Cooking fuel in rural households:
  - Fire wood (mostly twigs, leaves)
  - Agricultural residues (rice straw, jute sticks)
  - Cow dung

- Cooking fuel in urban households: fire wood (+ LPG)

- The women
  - Collect
  - Prepare
  - Dry
  - Store
  - Use: cooking

- For cooking, traditional stoves are used.
Cooking with traditional stove in rural area
Impact of the use of traditional stoves

- Traditional stoves cause indoor air pollution – Smoke is hazardous to health (e.g. eye ailment, bronchial diseases, headache, even cancer)
  - 14,000 women and 32,000 children die every year [WHO]

- Wastage of fuel (efficiency: 5% - 10%)
  - (Consumption of biomass: >50 million tons/year)
    - Wastage of Money

- Degradation of forest and environment

- Kitchen is dirty, bottom of the pot is not clean
  - A lot of work to clean the pot and kitchen
What is improved cook stove (ICS)?

GTZ recognizes a stove as ICS if it has

i) a chimney to take smoke out of kitchen,
ii) optimum geometry to facilitate good combustion of fuel, and
iii) a grate to hold biomass in optimum distance from the pot.
ICS being promoted by GTZ

- Adaptation of technology (IFRD, BCSIR)
  - affordable to people (e.g. low cost)
  - acceptable by people
  - usable by all types of biomass available
  - by locally available raw material

Learning through doing & field testing
- 3-pot ICS with 1 chimney & 2 grates
- 2-pot ICS with 1 chimney & 2 grates
- 1-pot ICS with 1 chimney & 1 grate

Brand Name: Bondhu Chula
Bondhu Chula

✓ No smoke in the kitchen
✓ Energy Efficiency: 27% - 29%
✓ Fuel saving: 50% - 60% (compared to traditional)

- Cost of household ICS: 500-1000 Taka
- Cost of institutional/commercial ICS: 4000-7000 Taka

- Household buying fuel saves 250 – 400 Taka/month
  - payback period: 2-3 month

- Restaurant saves 100-200 Taka/day
  - payback period: 1-2 month
Impacts

✓ Significant reduction of indoor air pollution in kitchens
✓ Reduction of cooking fuel by about 50% - biomass saving

- Saving of money
- Less time (50%) for collection of fuel
- Less time (30%-40%) for cooking
- Clean kitchen & pots
- Reduced burden on forest resources
- Improvement of soil by increased use of bio-fertilizer

✓ Income generation for builders and trainers
1-pot Bondhu Chula
2-pot Bondhu Chula
3-pot Bondhu Chula
3-pot Bondhu Chula
“Bondhu Chula” in a restaurant at Jhinadah
Potential Market

- About 24 million rural households
- About 3 million urban households
- About 2 million restaurants, hostels, etc.
Achievement till 31 October 2008

- GTZ implements ICS program through partner organizations (POs)
  - ✓ Currently over 110 POs working all over the country
  - ✓ More are coming

- About 78,000 domestic ICS
- About 1,000 institutional/commercial ICS
- Dissemination is speeding up!
- Over 1000 persons are earning livelihood by making and monitoring ICS.
How does GTZ’s ICS program empower women?

- By making women aware about the advantages of ICS in comparison to traditional stoves

- By training up women on ICS promotion, manufacturing, inspection and monitoring
  » income

- By facilitating women individually or as organization to start and do business with ICS
  » income

- By encouraging women to use ICS

- [Indirectly] By encouraging women in using saved money for extra investment (e.g. children’s education / what they like) and saved time for extra income, recreation.
Training on ICS Construction
What has GTZ achieved?

- Over 110 POs
  - Almost all have women as members
  - Over 50% POs are women led organizations

- Out of 5000 trained ICS technicians 30% are women
  - Over 200 women earn their livelihood partly or entirely by ICS business
Long-term Vision of GTZ

- Replace all traditional stoves by Bondhu Chula.
- For that, GTZ wishes to cooperate with all.

Impact

✓ Saving of 25-30 million tons of biomass (current value: over Tk 50,000 million)
✓ Conservation / regeneration of forest
✓ Regeneration of soil fertility (putting cow dung / biomass back to soil)
✓ Less indoor pollution will save 46,000 lives/year
✓ Health benefit / saving cost for medicine
✓ Job creation for builders & trainers (mid term: 10,000 jobs)
✓ More time for women for extra income / recreation/family
Our goal: Sustainable energy supply for future generations