



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

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





ICS Fair





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

