

Fuel Efficient Stoves Prove their Worth

Paribartan Project, India



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For the womenfolk of coastal areas of Rajnagar block of Kendrapara district cooking is a chore that they wish they could avoid. In the village of Gobardhanpur of Brahmansahi GP live 140 HH who depend on agriculture and fishing for their livelihood. The village is 6 kms from the sea, the Bay of Bengal. According to Nilima Swain, the GPC President of the village the village women depend on chullahs constructed of mud for their cooking. This has a number of disadvantages but for her joint family consisting of 30 members, 17 male and 13 female, there is no other option.



The kitchen of the house is a separate thatched house containing two mud chullahs, one large and one small, to feed 30 mouths. At any time three female members of the family are present in that small space keeping the fire alive with twigs, cow dung cakes, and wood, cutting vegetables, and attending to the utensils boiling on the chullahs. For the ladies of the family cooking is a full time

job starting from breakfast and tea in the morning, lunch in the afternoon, snacks in the evening, and dinner at night. There are also small children and infants whose needs are different. When guests drop in the pressure mounts.

“We use the smaller chullah for cooking vegetables and sundry jobs while the larger chullah is used for cooking rice,” says Nilima. “We need a separate cottage for cooking as the smoke from the chullahs is overwhelming and would fill the entire house with soot. There is also the fear of fire as we live in thatched houses. The kitchen space is crowded with the chullahs, cooking material, fuel for cooking, and it can accommodate only three of us at a time to attend to the cooking and cut vegetables. There is no ventilation as we have to shield the chullahs from drafts of air. The claustrophobic atmosphere filled with smoke and heat of the chullahs makes things very uncomfortable for us. The chullahs require proximity to blow at the fire and keep it alive with constant fuel inputs and the smoke gets into our eyes

and lungs. Most of the women in our village suffer from respiratory disorders as a result.”

“Collecting firewood and cow dung for our constant cooking needs is another aspect that weighs heavily on the womenfolk,” she continues. “Though our family has a garden from where we collect twigs and wood, we require around 20 to 30 kg per day, and we get the dung from our own cows – we also use the hay from our field, the others not so fortunate have to trudge a long way and spend a lot of time collecting firewood. Collecting cow dung and preparing cakes also takes time and energy.”



“Cooking during summers takes a toll on our health and tests our patience. The increasing temperatures outside and the heat generated by the chullahs inside makes life unbearable for us. But the worst crisis we face is during the rainy season with the current sudden heavy downpours and winds. Not only do we get drenched moving the distance from the house to the kitchen across the open courtyard during our many sorties throughout the day but the leaking thatched roof and the soaking mud floor affects the mud chullahs. The fuel also is wet and as a result cooking time gets extended and the smoke is more. Blowing into the chullah saps much of our energy.”



“We would be very happy if our chullahs are modified and made smoke free, safe, and more efficient,” she concluded.

Noting the problems faced by the women, in an effort to free them from the drudgery and for more productive work, and in a bid to save the forests from which most of the firewood is collected also leading to confrontations between forest officials and the firewood collectors, not to mention the inevitable man-animal conflicts, a decision was taken to introduce fuel efficient and minimum smoke emitting stoves in the region. At first three such stoves were provided to three

needy small families, two in Kendrapara district, and one in Jagatsinghpur district. Based upon the positive feedback received 90 more such stoves costing Rs. 1100/- each were provided to vulnerable families of small size, this time 27 going to Jagatsinghpur field area and 63 being provided to Kendrapara field area.

That the stoves have helped was obvious from the interaction with a sample of the families provided at Rajnagar block of Kendrapara. Sabitri Rout is a 70 year old widow from the same village who lives alone. She has six daughters who are now married and live with their in-law's, and her only son is a migrant labourer. She was provided the fuel efficient stove last year and she has been using it since then. "I have a mud chullah on which I was dependent before I received the stove," she informs. "Using a mud chullah is inconvenient for the smoke and delay in cooking. This stove scores well on both the counts. There is much less smoke and much less fuel is required. The cooking is also faster as the stove manages to generate a lot of heat."



"However I still continue to use the mud chullah even as I have adopted the new stove. This is mostly because I find using hay the most convenient and easy to obtain as I can get it from the farmers of the village. The stove does not operate well with hay. Another setback is that as the opening for feeding the fire is small, it takes a lot of time to break the wood and cow dung into small

pieces and keep on feeding the fire. I cook rice on the mud chullah whereas I depend on the stove for cooking vegetables and making tea for myself. It would be good if we can get a bigger stove."

Pramilla Pradhan is a 60 year old widow also from Gobardhanpur who has received the fuel efficient stove. She heads a household of two with her daughter living with her. Her two sons work outside as sanitary pipe mechanics. She too says that while using the mud chullah exclusively she depended on hay for fuel. Now for the stove she has to collect wood and cow dung. She says that if small bits of wood are coated with cow dung and dried that would be the ideal fuel for the stove.

She however says she is getting used to the stove for its advantages. "Yes the stove emits very less smoke, requires less fuel and is convenient because I can carry it around to cook wherever I like unlike the mud chullah which is stationery."

The case of Lakhmipriya Sethy, a deaf and dumb widow of 30, is very tragic. She has been married twice in her life and both the times she has lost her husband. She lives with her mother, who is also deaf and dumb, and a daughter of five. Her minor son of 16 is a helper in a truck and rarely comes home. Hers is a very needy family and she somehow ekes out a living working as a maid for others.



When she received the stove she was very happy as her house is devoid of assets. However making fun of her innocent nature a villager joked that the stove would burst if she used it. She believed it to be true and kept the stove aside. She was also afraid that if she displayed the stove to others it may be taken away from her. It took a lot of cajoling by the project staff to overcome communication barriers and

convince her to use the stove. After she was shown how to use it she has gradually started using it. She gestures that she is happy but also conveys that the stove does not work well with the most easily obtained fuel – hay.

However at the hamlet Padmanavpatna of village Kathuaganda of Dera Panchayat, many of the misconceptions about the stove were cleared by its astute use by Phula Samal, a 70 year old widow. In this hamlet of 25 HH consisting of farmers and fishermen she lives with her daughter-in-law Bijuli Samal of 26 years and two very young grandchildren, one still a breastfeeding infant. Her son is a migrant labourer who comes home once or twice a year. The family does not own any agricultural land and the irregular remittances from her son is the only source of income for this family of four.

Phula has been using the stove for eight months. During the rainy season she is entirely dependent on the stove because the mud chullah gets wet from both soaking from below and dripping from above. For fuel she uses twigs and branches she collects from the mangrove forest, though it is officially out of bounds, pieces of wood, cow dung cakes, and hay. She judiciously uses all of this to quickly set a fire burning.



"Normally I collect wood from the forest, but the foresters often seize our collection and burn it besides abusing us. So when my son comes he purchases wood for our cooking needs. We usually require one quintal of wood per year. Cow dung cakes also need to be purchased and cost Rs. 80/- per 100 pieces."

"I am very satisfied with the stove," she says. "The cooking is much quicker and my time is reduced considerably. My fuel consumption is down by half. I can now cook within the house or in the compound according to the weather. There is very little smoke and no soot. And very important, if we have to relocate during a disaster or an emergency I can take the stove with me."

She has a few suggestions. "If the mouth of the stove and the opening for inserting the fuel was wider I could use bigger utensils and also need not break the wood and dung into small pieces to constantly feed the fire."

"My neighbours are also inquiring about the stove and are appreciating it. They wish to have one. They are inquiring about the price and availability."



Clearly the decision to introduce the fuel efficient stove as a pilot option has been a fruitful one. In all the households the womenfolk are happy with it, though they have suggestions for improvement. However it is usually observed that community members tend to use and sustain only simple options and tend to reject even viable solutions if they are complex. Considering that angle the stove is

just right. As the next step the project could focus on improving the mud chullahs used by the bigger families as suggested by Nilima Swain of Gobardhanpur village. This could be done with institutional help. **(This is a case study from the Rajnagar block of Paribartan project being implemented in India by RCDC with facilitation from Concern Worldwide and Funded by the European Union.)**