Pilot Area 2
Majhigaun, Sindhupalchowk
Nepal

Ganesha Cookstove Usability Survey Results

Pilot Area 2: Majhigaun, Sindhupalchowk, Nepal
Survey conducted October 2018
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Supported by:

BSP - Nepal

GANESHA
COOKSTOVE PROJECT

Abstract

In May 2018, 50 Ganesha stoves were donated to Majhigaun, Sindhupalchowk District, Nepal. Known as the “fisherman’s village,” Majhigaun is one of the poorest communities in the district. The village was completely destroyed by the 2015 earthquake and most people are still living in temporary shelters and practicing traditional cooking on open fires.

After villagers used the stoves for 5 months, we interviewed 20 of them to determine usability of the stove. Primary conclusions included:

1) 85% of users said they would buy the stove, for NRs Rs 500 to 3000.

2) Users cooked all of their traditional foods on the Ganesha stove, including boiling rice, boiling milk, dal (lentils), vegetables, fish, and sometimes *dhindo,* a dish that requires continuous, vigorous stirring.

3) 15% of respondents switched completely to the Ganesha stove, and stopped using their traditional stove.

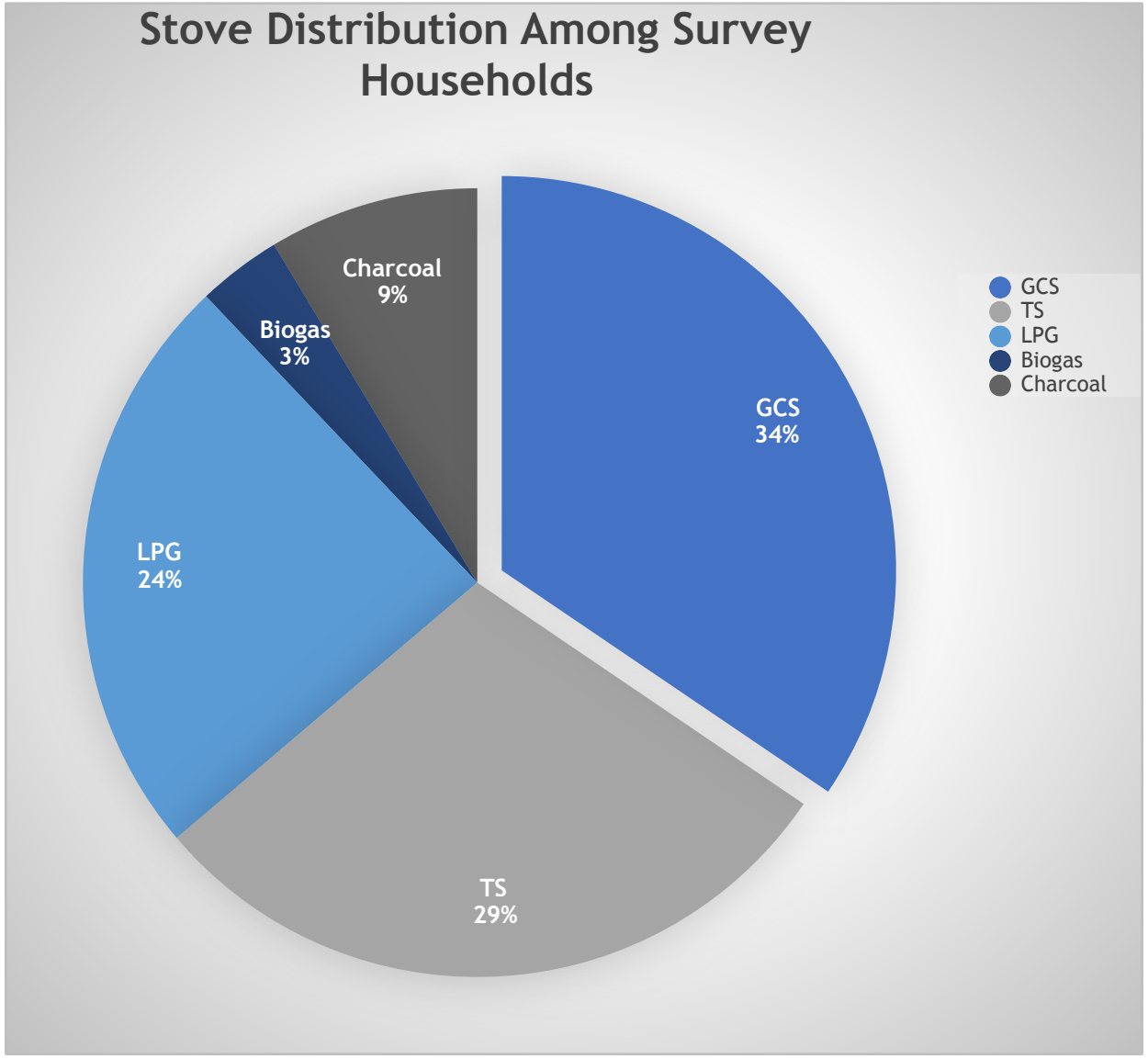
4) The Ganesha stove was considered to be safer than traditional or LPG stoves.

5) Ganesha stoves were also ranked as the cheapest to operate, at NRs 9 per hour of cooking, as compared to cooking with gas (LPG) at a cost of NRs40 per hour and traditional stoves at a cost of about NRs 16 per hour.

Cooking Habits in the Survey Area

- In this part of Nepal, corn is the staple crop and many kinds of dishes are cooked out of it. Most common is a boiled corn flour dish known as *dhindo*.
- Rice, dal (lentils) and vegetable soup is the most common food item combination for both lunch and dinner. They usually skip breakfast and compensate with early lunch. They occasionally cook fish and other meat.
- Traditional stoves are common, and include the three stone fire, metal tripod, and bricks or blocks arranged as tripod. Different-sized flat-bottomed aluminum vessels are the major cooking pots, but pressure cookers are also used by some of the households with smaller family sizes. A few households owned LPG (gas) stoves too, but preferred not to use them very often as the fuel is expensive. Some houses had locally made charcoal stoves but didn't use them. 2 out of 20 households owned biogas digesters, and said they cook on biogas occasionally.
- Firewood and corn cob constitute the major fuels. The wood and furniture of the earthquake destroyed houses have been the most-used fuel sources, since villagers do not own the nearby private or community forests.

Types and Number of Stoves in Use



- Before this Ganesha stove pilot project, the most commonly used stoves in the project area (85% of sample households) were traditional stoves (TS) comprising three stone fire; metal, rock or cement brick fire; and metal tripod stand.
- 70% of users also had gas stoves (LPG).
- 25% of users had charcoal stoves, and 10% of users had biogas stoves.
- The 20 sample households in the survey had 32 stoves total prior to the pilot project, and 52 total after distribution of Ganesha stoves.
- All the sample households were given the Ganesha stove (GCS) to understand its usability in comparison to other stoves.

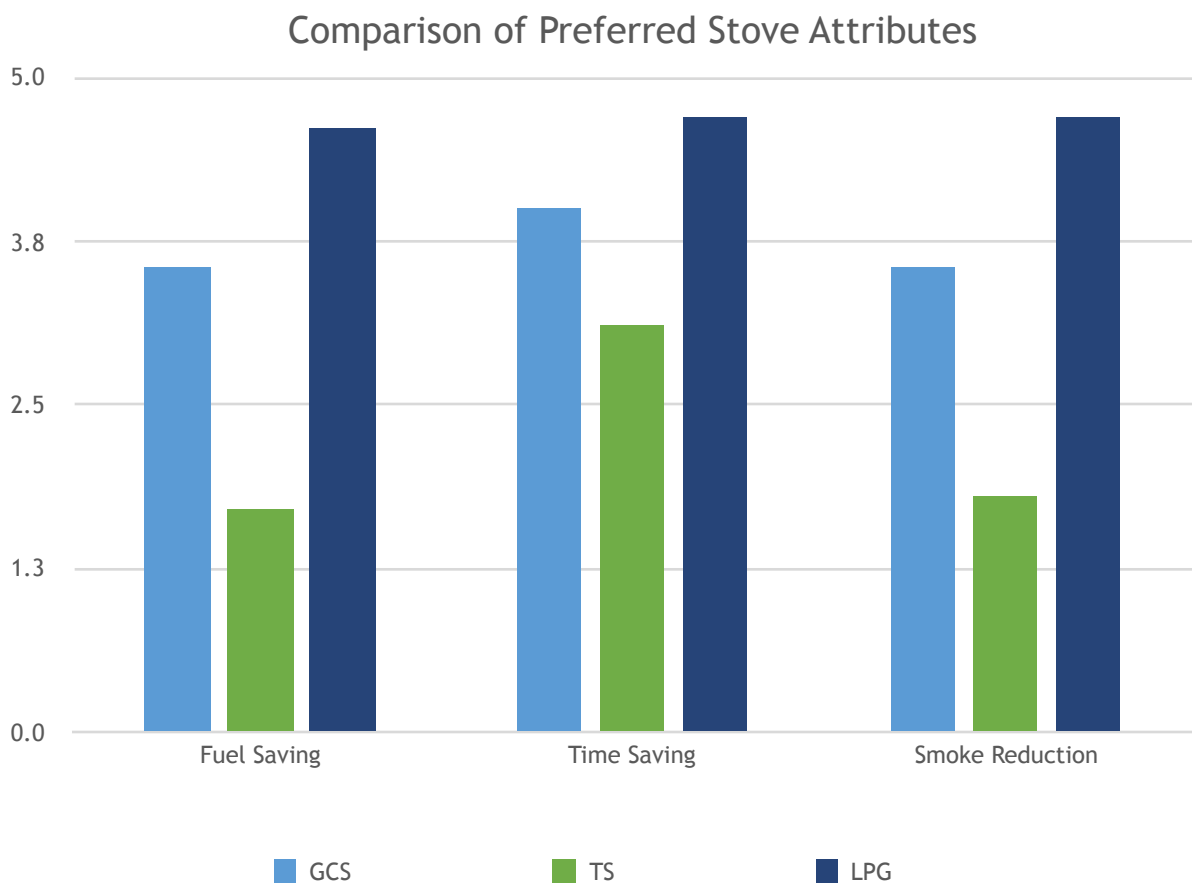
Comparing the most preferred attributes of a cookstove

According to a 2017 World Bank study, the three most preferred attributes for stoves in Nepalese households are a) fuel savings, b) time saving and c) emissions reduction. Comparing these three attributes among the six different stoves in use in the survey area indicates that:

1) Among biomass stoves, users ranked the Ganesha stove best for all three attributes.

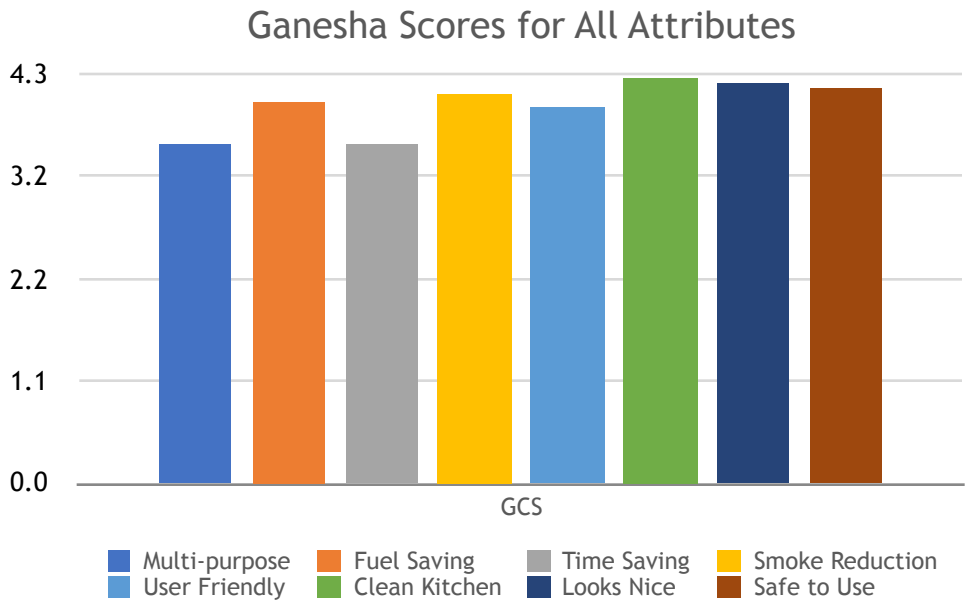
2) Users ranked the Ganesha stove's fuel and time saving second, after LPG.

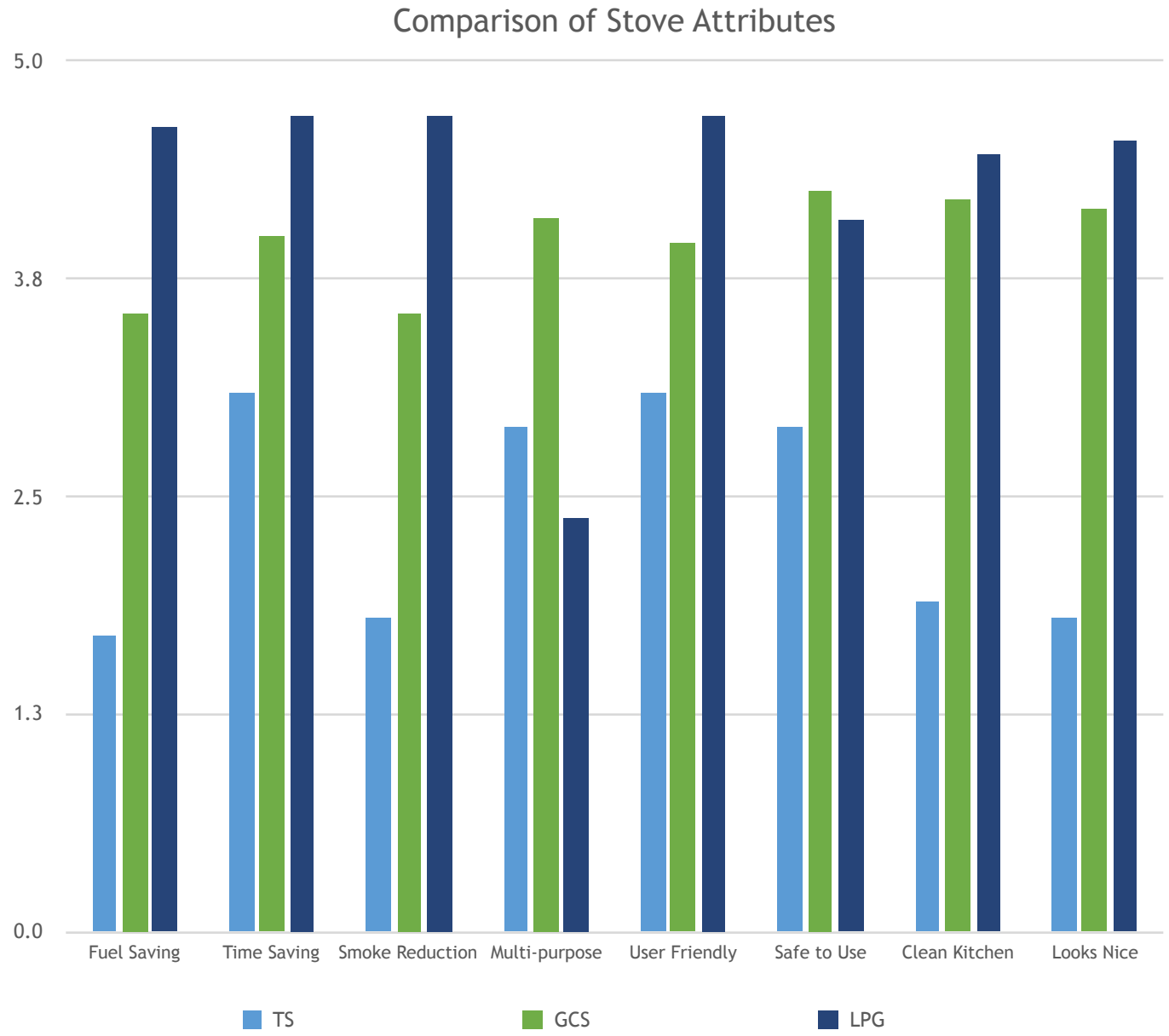
3) Users ranked the Ganesha stove's smoke reduction as second, after LPG.



Comparing the 8 attributes measured

- Users ranked the Ganesha stove as safest, and perceived safety to be one of the best aspects of the stove.
- The Ganesha stove also scored highly on ability to cook different kinds of food items, keeping the kitchen clean, and saving time.





Cost of cooking

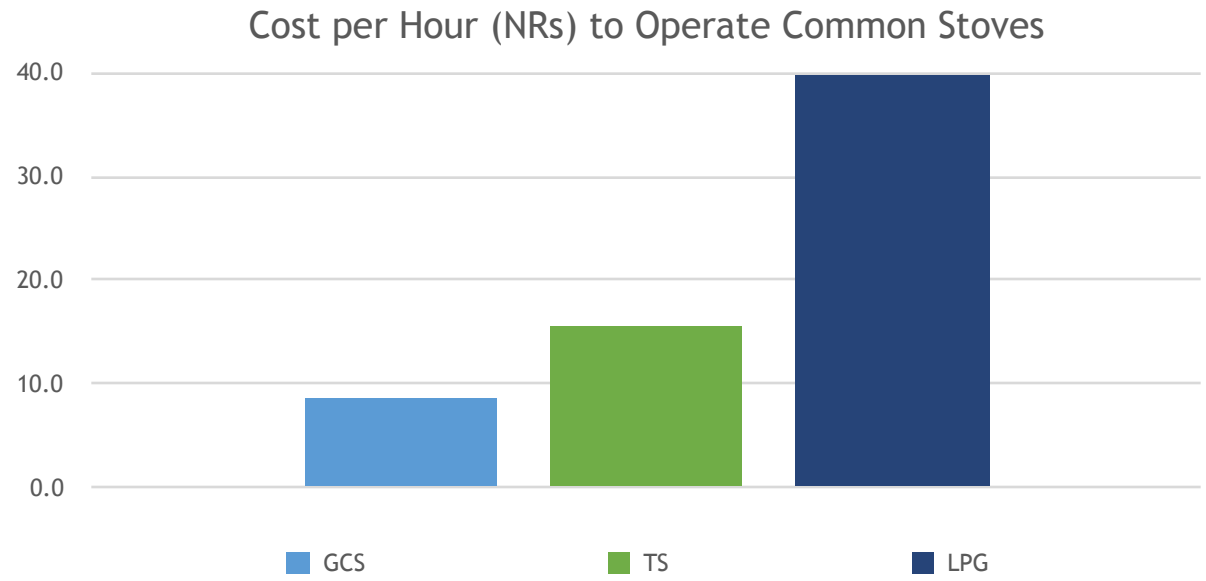
In the survey area, the cost for fuel wood was reported to be about NRs 6 per kg, if purchased. Majhigaun villagers collect wood from the edges of their fields, but are not allowed to harvest in the community forest. They also use wood from the remains of earthquake destroyed structures and other biomass such as corn cobs. But if not sufficient, they buy. Monthly fuel expenses in this study are based on the total amount of fuel they used and the cost if they had to buy. Findings included:

1) Users ranked the Ganesha stove as much less expensive to operate than traditional stoves and LPG.

2) Although users like many of the qualities of LPG stoves, they often don't use them because of the difficulty of obtaining LPG and the associated cost.

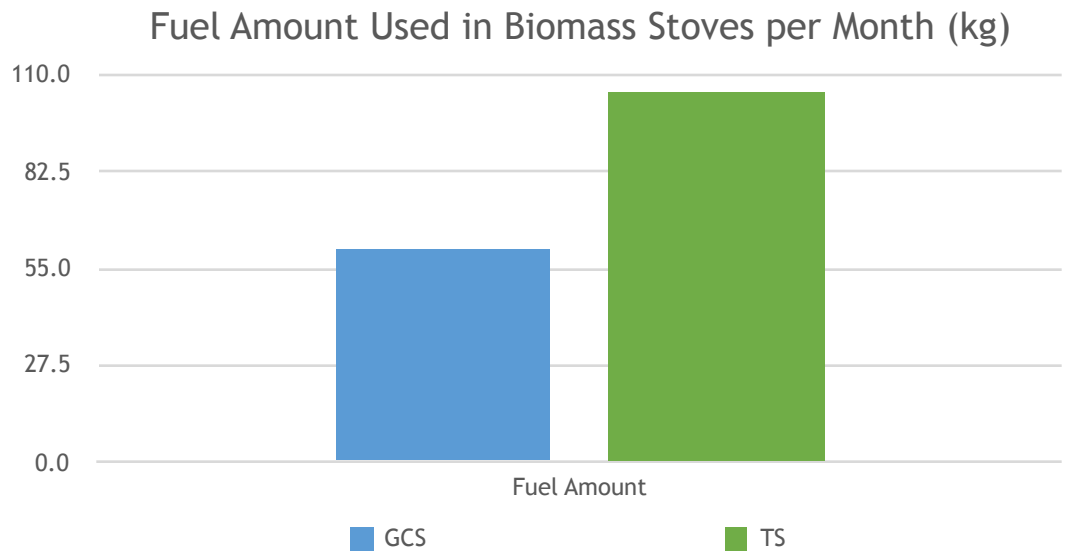
3) Users reported that fuel use was cut in half with the introduction of the Ganesha stove.

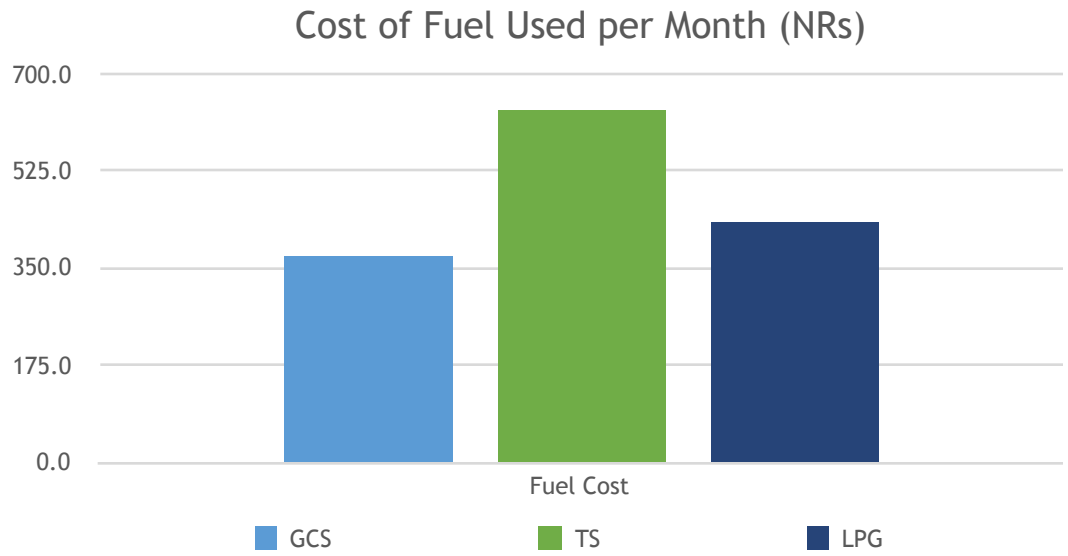
4) Cooking cost per hour was lowest for Ganesha stoves, followed by traditional stoves and LPG (highest).

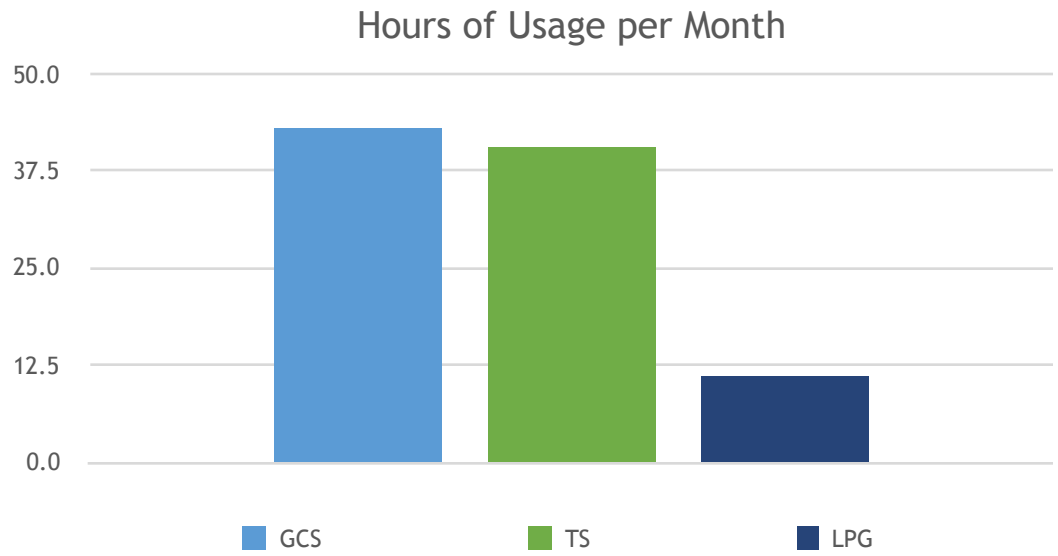


Fuel Use and Cost

- Villagers used the Ganesha stove for an average 43 hours per month, and estimated the stove consumed 60 kg of wood (avg 1.4 kg/hr).
- By the time of the survey, users were spending more time cooking on the Ganesha stove than on traditional stoves.
- Estimates of use and cost by users confirmed that the Ganesha stove was significantly more efficient and cheaper to use than traditional or LPG stoves.







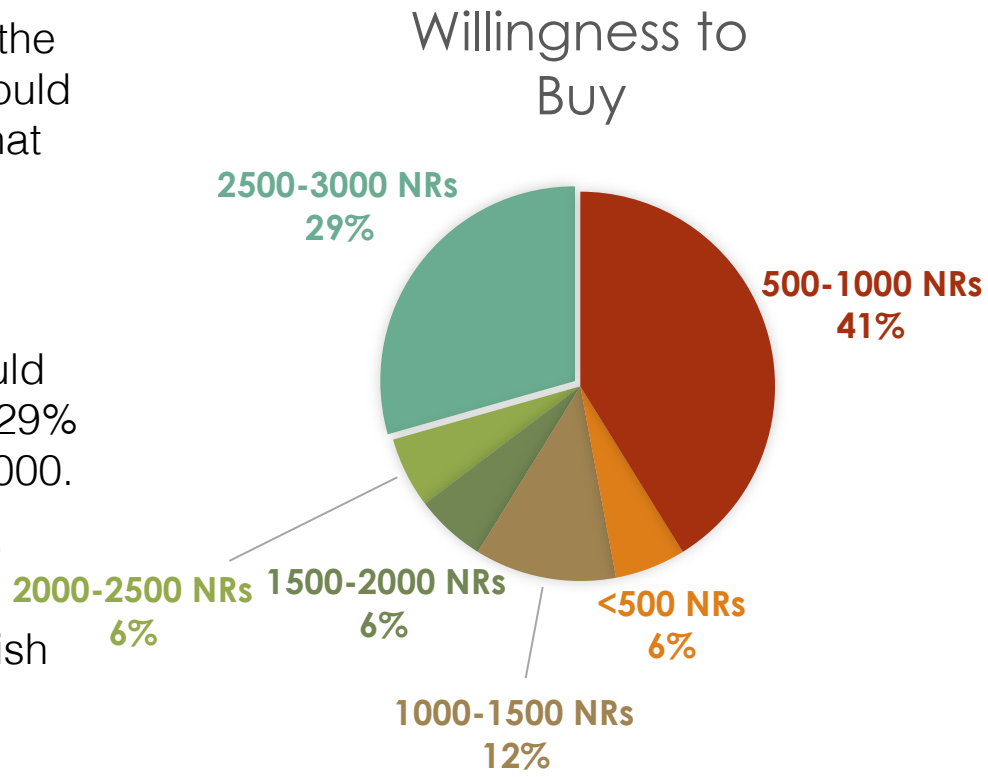
Would users buy a Ganesha stove?

To determine user satisfaction with the Ganesha stove, we asked if they would buy it, what they would pay, and what they would use it for. Findings included:

1) 17 of the 20 sample households wished to buy it. 41% said they would pay NRs 500 to 1000, and another 29% said they would pay NRs 2500 to 3000.

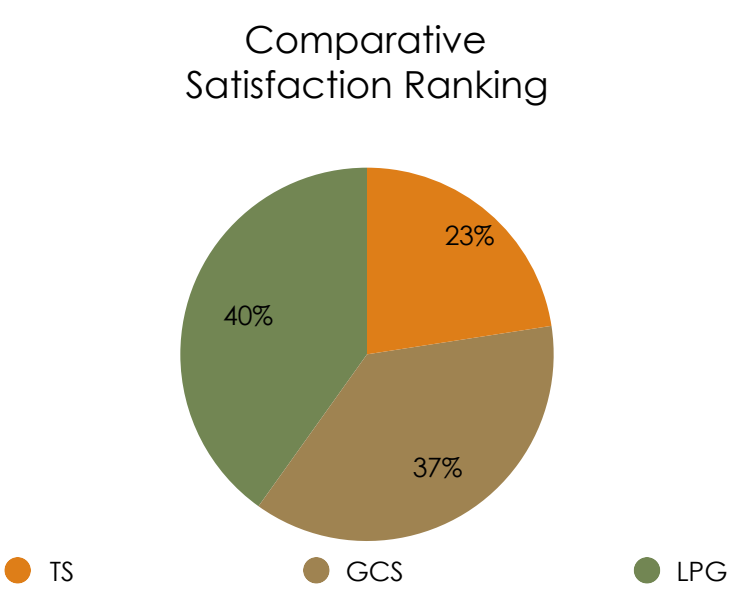
2) Villagers said they would use the Ganesha stove to cook all of their normal foods including *dhindo*, a dish that requires continuous, vigorous stirring.

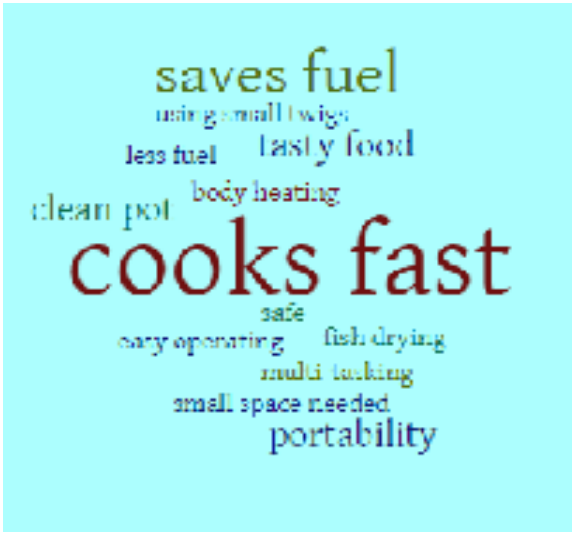
3) Users reported they could cook food faster on the Ganesha stove; they could multitask while cooking on it; and food cooked on it was "delicious."



Comparative Functional Satisfaction With the Ganesha Stove

- Almost all users aspired to LPG stoves, but couldn't afford to use them.
- Villagers ranked the Ganesha stove best in terms of saving time and saving fuel, as compared to their traditional cooking practices. They also noted its portability, and said it made their kitchens more organized and clean.
- Several users mentioned that they really enjoyed the taste of food cooked on the Ganesha stove.
- 3 out of 20 users (8%) completely stopped using their traditional stove, and used the Ganesha stove instead.
- This comparison is based on the total scores that users assigned to different stove types (the sum of attribute scores).





Stove type	Before	After
TS	20	17
GCS	0	20
LPG	11	11