

CASE STUDY 17

SIMI STOVES



stove that will use clean burning fuels more efficiently than developing a more efficient improved combustion stove. The outcome was development of Simi Stove, which was specifically designed to use ethanol. Simmi Stove gives a high thermal efficiency rating of 67% (BUET). The stove at the moment is one of the least expensive stoves in the market that uses ethanol gel, one of the safest and perhaps the most effective clean cooking fuel available. It can boil 1.5 litres of water in 17 minutes using only 25g of Ethanol Gel.

IMPACT:

The adoption of Simi Stove has helped the underserved communities access cleaner air, who previously, due to pricing issues were unable to afford improved cookstoves. Simi Stove is an extremely viable solution. The ethanol fuel per month, for a family of five would be approx. INR 300, this is 800 cheaper than the LPG cylinder. The amount of air pollution and HAP eliminated has the potential to save thousands of lives. Additionally, the stove is not susceptible to blackouts or brownouts. The stove can also be used as a secondary cooking source by families who rely primarily on electricity. The stove will save women from the drudgery of collecting firewood and enable them to spend time on other productive tasks. The stove doesn't require any maintenance for the initial two years but beyond that only the burner needs to be replaced, which would roughly cost only around INR 100.

ABOUT THE ORGANIZATION:

Simi Stove manufactures improvised stoves which run on Bio-ethanol gel and which produces almost negligible CO and any harmful component compared to traditional improved cookstoves.

PROBLEM:

Every day, three billion people cooking with solid fuels produce dramatic levels of Household Air Pollution (HAP). This not only contributes to 4 million deaths a year, but also releases tonnes of pollutants into the atmosphere, such as black carbon, methane, carbon monoxide and carbon dioxide. The Clean Cooking Energy Roadmap which has been developed in collaboration with NITI Aayog and GIZ envisions to eliminate the use of all cooking arrangements that cause HAP in India by 2025. But the numbers in India itself are alarming. According to a World Health Organization report, 789,600,000 people in India are still dependent on wood, charcoal and kerosene for cooking, and every year 481,700 people die because of the emissions released.

INTERVENTION:

During the research for a table top cooking product, the team at Simi Stove came across the shocking number of deaths caused by HAP and decided to address the situation with a solution. The idea was to build an economically viable stove to keep the cost down, hence they focused on designing a

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KATIDHAN



between 92-98%, it becomes an effective tool to keep animals such as elephants, tigers, leopards and wild boars off the farmland. The product is ideally placed at the boundary of the agricultural land at a pole of the customer's choice, keeping in mind the height of the animal that needs to be kept away from the crops and land. The product gets charged during the day and can easily go on for 15-20 days without sunlight. It is designed in such a way that at night it forms different patterns. The wild animal intercepts the light from the product as a larger predator from the forest and hence leaves the area undisturbed. For low sunlight-receiving areas, the product comes with a micro-USB option with which the product can easily be charged with a normal phone charger.

IMPACT:

Farmers who used the product witnessed a 140% increase in their income. It reduced the wildlife movement around the farm area and ensured that the farmers had surplus crops. On an average, the farmer sees return on these products within two months of its usage. As of today, Katidhan has directly/indirectly resolved issues of more than 750 farmers across the country and established partnerships with various developmental organizations and state forest departments to mitigate human-animal conflicts.

ABOUT THE ORGANIZATION:

Katidhan has a vision to build high impact technological products that disrupt sectors while creating new ones ensuring that they bring about positive climate change solutions. Currently, their area of focus involves research and building relevant tech solutions that could reduce economic losses faced in the agriculture sector due to wildlife attacks and also to reduce the human wildlife conflict potentially.

PROBLEM:

Wild animals attacking agricultural lands and livestock/cattle stock destroying crops, vegetation and fruits is a common occurrence in the agricultural regions, thereby resulting in economic losses for land owners/stakeholders, leading to an increasing human wildlife conflict issue. The present methods of tackling this issue are not automated and not consistent to be effective in the longer run. It depends on the presence of humans on the ground to drive away wild animals who intrude into the agricultural land areas.

INTERVENTION:

Katidhan has built Parabraksh, a solar powered autonomous light which is designed with a focus that enables it to work well against farm intruding animals. With an efficiency of