



Dediapada Training
Village – Vadhva
December 10th to 17th, 2019

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Introduction

About Smokeless Cookstove Foundation

The Smokeless Cookstove Foundation (SCF) is a non-profit organisation working towards curbing the problem of Household Air Pollution. With its training program - the Smokeless Cookstove Revolution, SCF seeks to train the rural, migrant and tribal population with the skill of making a 'virtually zero-cost, efficient & improved cookstove' that has a considerably reduced smoke output based on the principles of Rocket Stove Technology.

SCF's training program Smokeless Cookstove Revolution (SCR), imparts skills and knowledge required in making a virtually zero-cost, improved cookstove that significantly reduces the indoor emission of noxious fumes and use of biofuel input. Based on the Rocket Stove Technology, the Stove uses far less fuel than traditional chulahs and emits lesser fumes, improves efficiency and reduces cooking time so that the family members can use the rest of the time for furtherance of their livelihood (daily wage, education, etc.)

The raw materials used include locally available mud or clay, cut dry grass, rice puffs, cow dung and bricks. Individual metal molds with specific dimensions are used to make the base for the chulah – also known as the doughnut. The metal mold manufactures for under INR 500 (~USD 7) and after that be used to make several hundred stoves.

While the Chulha does not compete with other models of the Improved Cook Stoves available in the market, the solution provides immediate adaptability as it is not very different from a traditional chulha and is a 'no-cost' solution.

The Team

Smokeless Cookstove Foundation had a team of four members who were supported by 3 volunteers

- Nitisha Agrawal – Founder & Director and Project Lead
- Ralph Gomes – Lead trainer
- Kunal Kankhare – Assistant trainer
- Gourvi Srivastava – Content, Photography, Communication
- Parvati Nair – Volunteer, Culture and documentation
- Urvi Srivastava – Volunteer, Photography and research
- Shad Fatima – Volunteer, Photography

Training Programme location - Vadhva village in Dediapada Taluka

Dediapada is a town in the Southernmost region of Gujarat. It's a part of the Narmada District. The region is surrounded by forest and is abundant with diverse flora and fauna and home to many animal species as well. The beneficiary community in the village are that of the Vasavas. They are a part of the Bhil community from West India. The dominant occupation is farming and most households appear self-sustained, at the least. They mostly grow paddy, wheat, corn, among other crops. Grass roots organisation **Jeevantirth** works with the rural and tribal community in the context of Education, Livelihoods, Tribal & Dalit Rights and Preservation of Tribal Knowledge.



Geographical Placement of Dediapada, in the state of Gujarat

Vadhva / वाडवा is a large sized village located at distance of 30 Km from Dediapada Taluka of Narmada District. The village has 1000 to 1300 (approximately) number of households. The village receives sufficient water supply because it has access to water from local river, at a distance of 1.5 Km from the center of village. The village has one secondary school and one *Aanganwadi* center. It also has one Hospital under *Ayushman Yojana* of Government of India

Grass roots partner NGO - Jeevantirth

Jeevantirth is mainly working in the fields of Education, Environment, Rural Development and Human Rights related issues. Along with direct implementation of the innovative cost effective projects, Jeevantirth has specialized itself in capacity building of the grass-root organizations, teacher's training and material development.

Sundar and Sumitra from Jeevanthirth were our field coordinators who were instrumental in mobilizing the community participation

Funding partner NGO – Sparsh

Mumbai based Sparsh Trust has been supporting the funding requirements towards successful completion of the field training programme. Sparsh has been a funding partner for SCF since March 2019 towards Smokeless Cookstove Training programmes in Dediapada

Training programme

Highlights

- *Pre training* : SCF Team along with Jeevantirth field team successfully worked towards the following aspects for the training programme
 - Appropriate selection of the training location – centrally accessible, large & open, access to water; visible for the passer by; close to the field team's base
 - Procurement of mud
 - Making of donuts in advance
-
- Setting up a demo chulah before the community contact
 - Constant communication with *Sarpanch* for his support
 - Creating and displaying communication material – posters

Mud mixing in advance for better results



Building of demo chulah and getting the workshop location ready
SCF Team members Ralph & Kunal with Jivantirth field coordinator, Sundar

Highlights

- Training programme was largely executed based on availability of the community participants over a period of four days.
- SCF trained 41 community participants in the process of making donuts, creating a rocket cut and chulah installation process.
- The training continued during the entire day as the community participants would find time amidst their farm work; and immediately build the donut set for their individual chulah.
- SCF team along with a community participant was constantly onsite for the entire duration to help any member who would come to the location to learn.
- SCF team created 4 Master trainers along with Sundar & Sumitra who then took on the mantle of training and installing chulahs for the community.
 - Ram Singh (Host family)
 - Savitha Ben (Host family)
 - Bharat Bhai
 - Bipin (Host family)
- SCF team conducted a baseline survey for all 41 participants who attended the training programme (*key results are detailed in subsequent pages*)
- There was an enthusiastic participation from men and women alike.
- *Sarpanch* – Karan Singh visited the location several times and SCF team installed a chulah at his house as well.
- SCF's team stay within the community was of huge advantage as the team was accessible all the time.
- This also led a great bonding and interaction with the community which resulted in more enthusiasm in chulah making process.
- By the end of the training programme, SCF team had installed about 23 chulahs.

General Observations about the community

- Most households where Rocket chulahs were installed under the guidance of our trainers, had women who were in the age group of early 20s to mid 30s - which means the younger generation was more acceptable towards change.
- Maximum households were mid-sized families of about 5-6 people in one house.
- While some children from these families had left the village for good to pursue further studies, some stayed back with absolutely no exposure to education whatsoever.
- 90% families had their own cattle – cows, bulls, hens, roosters, goats, buffaloes.
- 100% families consumed Toor Dal on a daily basis in all meals as all of them either had Toor dal and cotton crop in their fields or grew it right outside their homes.
- Many HHs had small farms right outside their houses where they grew ladyfinger, brinjal, gourd, coriander, lemon grass, curry leaves, chilly, cherry tomatoes, cabbage etc.
- Many HHs built the Rocket Chulah in the verandahs in the open, which could make cooking in this chulah in the rains impossible.
- All HHs had a phone for connectivity - the 45 years+ generation used a basic phone whereas the younger generation used smart phones and were exposed to social media platforms like Facebook & Instagram.

Baseline Survey results

We conducted the baseline to determine, prevailing parameters we look at – health and productivity indicators. We asked them about their solid fuel usage, average time spent in cooking and about health issues related to the smoke output from traditional chulha.

The survey was with the participants of the training programme, with about 40 respondents. The medium of data collection were one-on-one discussions with the SCF team members. The survey process also served as attendance mapping for the community participants

Type of Chulhas:

- Before the training, it was observed that while 40% of the population used LPG, 100% of them still used the traditional Chulahs.
- Also, the villagers preferred using chulha over LPGs due to lack of education and experience

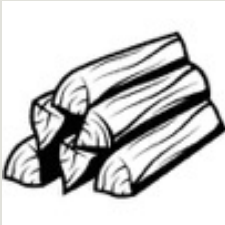
Mode of Cooking	Numbers in %
Mud Based chulahs	58
Mud Based & LPG Stove	49

- From the above table it is evident that the use of chulahs is predominant and the concept of LPG unexplored and more so because of the high cost involved.
- Hence, we aim at replacing the traditional Cookstoves with the smokeless chulahs due to easy adaptability for the villagers without trying to eliminate the practice and tradition of cooking on chulahs



Alternate cooking methods

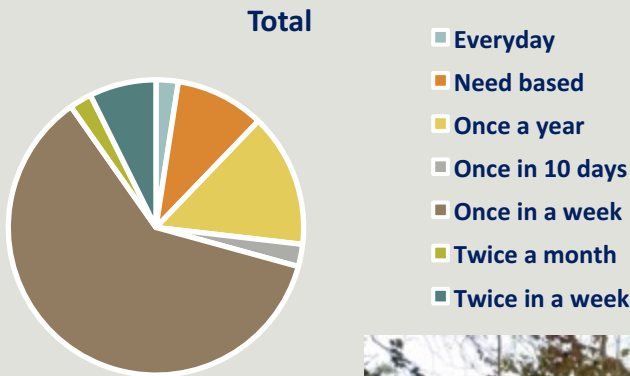
Fuel related findings



Approximate Firewood Usage per Household	
Daily	3.5 kgs
Monthly	42 kgs
Annually	1277.5 kgs

Collection of Wood and Challenges Involved:

- During the survey it was observed that the collection of wood for cooking comes with excessive effort and cost.
- The frequency of wood collection is high for most of the households, which again is a massive cost and unsafe at times given that the wood is mostly collected from the nearby forests which are prone to encroachment by wild animals from the neighbouring national park.



Health Indicators

- Villagers suffer from various health issues owing to the excessive smoke from the traditional chulhas.
- While almost 100% of the population complained about the smoke, below id the list of the other issues they face:

Health Issues	Numbers in %
Coughing	76
Pain in the Neck or Back	51
Heat Burn	54
Watering of eyes	88
Headache	41
Respiratory Issues	34



Some Results achieved

S.No	Activity	Numbers
1	No of training & installation days	7
2	No of community participants	41
3	No of community participants responding to base-line survey	41
4	No of smokeless chulahs installed as part of the training process	23
5	No of community master trainers	6



HHs where SCF team installed the chulahs during training process

Community Participants log

Name	Age	Chulha installed by SCF Team
Savita Ben RamSingh (Host)	49	Yes
Mani Ben Manshi Bhai	70	
Rukma Ben Uttara	70	
Sami Ben Ram Singh	65	
Madhu Ben Aswin	27	
Bharat Surya	63	Yes
Dinesh Dabdiya	48	Yes
Heera Ben Dabdiya	40	
Sumitra Mansingh	45	Yes
Lalita Ben Murji	45	yes
Sumitra ben Pravin	23	Yes
Savita Ben Gulab Singh	35	yes
Sukma Ben	65	
Vasha	63	Yes
Meena Ben	31	Yes
Sharda Ben	40	yes
Sarjana	45	Yes
Ujma Ben	40	Yes
Varsha Ben	45	Yes
Murtha Ben Mani Lal	55	
Savita Ben Jai Singh	48	
Ralu Ben Sambla	70	
Varghi Ben Mohan	75	
Murtha Ben Mania Bhai	65	
Sharda Ben	37	
Navi Ben	38	yes
Sunita Ben Anil bhai	22	yes
Saraswati	23	
Neema Ramsingh	37	Yes
Vasava Champa Ben (Sarpanch's Mother)	55	yes
Aruna Ben	35	Yes
Vanita Ben Magan	45	Yes
Amita Ben	39	Yes
Nanda Ben Vanish Bhai	38	
Savita Ben Malji - old lady staying by herself	55	
Vasantha	30	
Asha Ben Ashwin	24	yes
Naina Ben Rajindra	25	yes
Ravina Ben Sanjay	25	
Sumitra Ben Amar Singh	50	
Vasava Girija Ben Chandu bhai	56	
Par Singh		yes

Community profiles – Host Family/ Master Trainers

Ram Singh Ji – Our host and a Community Trainer.

Ram Ji built chulahs in more than 6 households. He was one of the most skilled trainers of the community and his family was one of the most hospitable hosts.

Like most other villagers, he owned a farm where the family worked together on *Toor* dal and cotton crops.



Savita Ben – Ram Singh's wife and our host.

Savita Ben had learnt the process of chulah making well. She was one of the sufferers of traditional cooking practices. Our supper was cooked by her. Freshly grown organic food was served with great respect always.



Bipin – Ram Singh's son, our host and a Community Trainer.

A 22 year-old enthusiastic boy who installed Rocket chulahs in more than 5 households. A quick learner and an avid observer, was constantly helping SCF Team to feel more comfortable at every step.



Sundar Bhai – Field Coordinator and member of Jeevantirth.

Sundar Bhai has been our right hand in organizing the workshop and has been a part of this project since March 2019. Right from arranging the raw materials to making the community aware of our workshop, his role has been crucial.

He was the bridge between our team and the community.

Next Steps

- The community will be making a 100 chulahs within the 6 weeks of training programme
- The community participants who had their chulahs installed together with SCF team to start the use of it
- SCF to follow up on a weekly basis to monitor progress
- SCF team to plan an assessment visit post the following indicators are met – tentatively targeted for March
 - 100 chulahs installed
 - Installed chulahs in use (at least 75%) for 6 to 8 weeks post installation
- SCF and *Jeevantirth* to work on scaling up of training programme based on funding





Smokeless Cookstove Foundation, (SCF) is a 100% non-profit venture Licenced under section 8 (1) of the Companies Act, 2013; SCF has received 12AA and 80G . ***(Donation to Smokeless Cookstove Foundation is exempt as per the provisions of Section 80 G of The Income Tax Act, 1961 vide Certificate No. CIT(E)/80G/2997/2019-20 dated 28th May, 2019 valid from A.Y. 2019-2020 onwards until rescinded.)***

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