

FIRE UP MAHARASHTRA

FELLOW REPORT

BY YUMIKO YAMADA • KOPERNIK FELLOW • DECEMBER 2012

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Executive Summary

We connected 200 Greenway Smart Stoves with farming families living in the rural region of Maharashtra, India, working with our local partner, Rural Communes. We reached families in the districts of Raigad and Thane, in the Konkan region of Maharashtra. Kopernik Fellow, Yumiko Yamada visited the project in September 2012.

Women in these communities use traditional cook-stoves to prepare meals. These cook-stoves require long cooking times, use a lot of firewood, and generate toxic smoke. Regular exposure to this indoor pollution causes chronic respiratory disease and infant deaths. The Greenway Smart Stoves greatly reduce exposure to harmful smoke by automatically pulling in air to maintain optimum air-fuel ratio, ensuring that the cook-stove burns fuel cleanly and efficiently.



The cook-stoves were sold through local self-help groups with close ties to the community. As of November 2012, more than 1,000 people have benefited from the stoves. Women who are using the stoves reported that the Greenway Smart Stove:

- **reduced cooking time**; and
- **decreased firewood use** (saving women time and energy gathering cooking fuel).

All customers were very satisfied with their Greenway Smart Stove purchase.

Project Background

Snapshot of Maharashtra

The customers are low income families living in rural communities in Rajgad and Thane Districts in the Konkan region of Maharashtra, India. They largely depend on agricultural activities such as ploughing and weeding as well as fishing and selling forest produce to earn a living. Their approximate annual household income is US$300. Many households have debt with local moneylenders.

A typical household has four to five family members with a collective average monthly income of Rs. 6,000 (US$109) to Rs. 12,000 (US$118).



Prior to cooking with the Greenway Smart Stove, tribal communities cooked with their traditional *chulha cook-stoves*.

The traditional cook-stove consumes higher levels of fuel/firewood and has a cooking time of approximately two hours.



Chulha stove (left) vs Greenway Smart Stove (right)

Local Partner: Rural Communes

Rural Communes (RC) is a volunteer organization working on training and rural development. It conducts various programs to support, train and develop grassroots groups for sustainable development of the rural communities. It organizes programs in formal and non-formal education, skills training, and community health. Conservation of bio-diversity and agro-biodiversity, environmental consciousness and regeneration, comprehensive watershed development and sustainable agricultural practices are other focus areas for the organization.

RC covers 13 out of 26 districts within the State. In addition to their headquarters in Mumbai, they also have an office in a village between Mumbai and Pune. The village office owns residential and agricultural spaces for those who receive trainings from Rural Communes.

Recognizing the extreme need for clean cook-stoves in rural areas, specifically in tribal communities, RC decided to partner with Kopernik to provide clean cooking tools, thus reducing dependency on wood and the amount of fuel consumed by the communities.



A woman in Maharashtra shows how to use a Greenway Stove

Project Implementation

The Technology



A single burner, high-efficiency cook-stove designed for long-term, everyday use which can use any type of solid biomass fuel. This includes, but is not limited to, wood, cow dung and agricultural waste. The patent-pending design produces 70% less smoke and uses 65% less fuel than traditional mud cook-stoves. It adds convenience to users' lives by reducing the time and/or money they must spend collecting or buying fuel and allows for a more comfortable cooking experience. It has been tested and certified by the Ministry of New & Renewable Energy (MNRE), Government of India.

Distribution Mechanism, Pricing & Payment

The technologies were distributed by engaging Self Help Groups (SHG) after product demonstrations were performed in village meetings. The target villages, Amba Valley cluster and Vavoshi Shedashi cluster welcomed about 12-14 SHG's to the demonstrations; all members of the SHGs live below the poverty line, as defined by local government and Gram Panchayat, local self-government institutions.

SHGs consist of 10 to 12 women who manage the demonstration, distribution, and financial dealings with the customers. They have the ability to positively influence the local population and maintain strong credit history with the lenders.

As of November 2012, 200 stoves have been distributed through NGO's and Women's Networks.



The distribution of Greenway Smart Stoves

Raigad District

In the proposed village clusters of Amba Valley and Vovshi-Shedashi in Raigad District, Kopernik distributed 180 biomass stoves. Each family paid Rs.200 (US$3.60) for the stove which totalled Rs.36,000 (US$654.00) across the district.

Thane District

In the Jawhar and Mokhada Tribal Blocks of the Thane District, 20 biomass stoves were distributed to 20 families comprised of 12 tribal families (a village where lower castes reside) and eight non-tribal families. The tribal families agreed to pay Rs.200 (US$3.60) and the non-tribal families agreed to pay Rs.600 (US$10.90) per stove. The total collected was Rs.7,200 (US$130.80).

The total sales revenue, Rs. 43,200 (US$784.80) will be transferred to Kopernik as repayment for the technologies provided on consignment. Those funds will then be reinvested to support a second phase of the project.

Annex

Case Studies

Case One

Name: Mrs. Bhima Kisan Hirve, Age 29
Village: Karambeli Thakurwadi

Bhīma is from the tribal community and lives with her five family members. She works as a labourer and used to cook food by using the traditional *chulha stove*. She struggled to get firewood and kerosene for cooking purposes. One day she saw several ladies purchasing the Greenway Stove from Rural Communes. She was interested in knowing more about the technology, so she visited the Rural Communes office right away. The RC staff showed her a short demo of the Greenway stove and she was impressed, especially by how little firewood the stove needed. Since then she purchased the stove and uses it regularly, she is now able to cook her meals more efficiently and with minimum fuel. It also saves her time to collect firewood.

Case Two

Name: Ms. Nirmala Anant Jadhav. Age 55

Village: Narangi Katkarwadi

Nirmala is from the tribal community. She works as a labourer and earns daily wages. She has six family members and used to cook food on the traditional *chulha stove*, which required 8-10 kg of firewood daily. She purchased the

Greenway cook-stove after the demo from Rural Communes. She is happy with the stove and now uses almost 50% less firewood.

She likes the ability to carry the stove anywhere. In the past, during paddy harvesting and threshing, her family stayed in the farm and cooked food by using stones with the *chulha*. This season, they can carry the Greenway stove to the farm and cook food more easily.

Ms Nirmala expressed her satisfaction with the technology and believes that more women should have this stove in their house.



Nirmala, a member of the tribal community is preparing lunch

for the family using the Greenway stove

Case Three

Name: Smt. Nanda Shantaram Tamboli, Age 55

Village: Wanvate

Nanda used the traditional *chulha* stove before purchasing the Greenway cook-stove. She used to purchase firewood or kerosene for cooking food daily. One day she visited the co-operative, located on the Rural Communes campus and noticed the Greenway cook-stove. RC staff gave her a quick demonstration of the technology. Nanda was so impressed that she purchased the stove on the spot. Now, she uses the stove regularly to cook meals for her family. The amount of firewood she has consumed since has been greatly reduced.

Field Stories

Kopernik in Action Blog 1

September 2012

By Yumiko Yamada

As a Kopernik fellow, I was based in Chattarpur (Madhya Pradesh) and Delhi to conduct a rapid impact assessment of the Smarter Cooking for Indian Women project . One day, I was told that the new stove project had become fully funded so I flew to Mumbai to meet Kopernik's new partner NGO, Rural Communes (RC). They will soon receive 200 units of Greenway Smart Stoves.

RC is a large NGO based in Maharashtra States. They cover 13 out of 26 districts within the state. Though their headquarters are located in the largest city in India, Mumbai, they have a big office in a village between Mumbai and Pune, where they also own

residential spaces and huge agricultural spaces for those who receive various trainings from RC.



RC's Office and the Centre for Experimental Learning at Narangi village

RC has been working in a wide range of development areas, such as comprehensive watershed development, sustainable agriculture and sustainable rural livelihood for 35 years. Also, to benefit other NGOs, Community Based Organizations, youth, women, farmers and traditional healers in the area, they hold various training courses in their center such as "Village Level Workers Training", "Youth Leadership", and "Skills for Conservation & Sustainable Utilization of Biodiversity, Traditional Knowledge and Agriculture"

Vaishali, who is a member of the senior management team at RC was kind enough to welcome me and accompany me to field visits throughout my stay in Maharashtra. He explained that RC has previously worked with Greenway Grameen Infra, the company behind the Greenway Smart Stoves, in piloting several stoves. Due to the effectiveness of the stove, RC then submitted a project proposal to Kopernik as per Greenway Grameen Infra's recommendation to receive funding for a larger scale stove project. RC is keen on delivering more improved cook-stoves to the area with the intention to reduce

dependency on wood and subsequently reduce the amount of fuel consumption by villagers.

To get a sense of what the future beneficiaries of the Greenway Smart Stove are like, we visited Kholanda village, which is located approximately 80km from center of Mumbai. The village has approximately 150 households. Women work as housekeepers in other cities and men work as farmers and daily laborers.

We visited a household that received the Greenway Smart Stove about four months prior as part of the pilot project conducted by RC and Greenway Grameen Infra. The woman told us that she is very happy to have received the stove because it is easier to prepare meals, requires less firewood and emits noticeably less smoke. This is the same stove that Kopernik and RC will distribute 200 more of in the area.





She is using the Greenway Smart Stove to prepare chai tea in her kitchen

After drinking tea and chatting with the family and their neighbors, a woman showed us around her “forest home garden”, where her family cultivates various vegetables, fruits and medicinal plants thanks to the training conducted by RC. It was RC’s idea that each household grow vegetables on their own and expand their garden little by little so that they gradually become self-sustainable and are also able to sell extra produce in the market to generate income.



I then visited another village and also had the chance to talk with a Greenway Grameen Infra staff member during my stay in Mumbai. I will write about this in my next blog post.

Kopernik in Action Blog 2

September 2012

By Yumiko Yamada

During my stay in Mumbai, I visited another village called Shedashi, where Rural Communes (RC) is going to distribute Greenway Smart Stoves.



Shedashi village

The village is located between Mumbai and Pune (the second largest city in Maharashtra) and it took around 2 hours from the center of Mumbai by car. The village is just 15 minutes away from RC's office where all the trainings for beneficiaries are conducted.

Shedashi is a tribal village (a village where people with lower castes reside) and consists of 45 households. Though working occasionally as day labourers, most villagers are farmers who cultivate rice, vegetables and millet.

I visited Shedashi with Vaishari from RC and Mr. Shoeb Kazi from Greenway Grameen Infra, who did the initial stove demonstration at the Haritika project sites and wrote a guest blog post for Kopernik in Action. Greenway Grameen Infra has previously distributed 4 Greenway Smart Stoves to this village about 3 months ago; hence Shoeb has returned to conduct user feedback surveys this time.

Together we visited three families in Shedashi, Shoeb was kind enough to share the feedback from the stove users at each of these households.





Shoeb (center in first photo and right in second photo), conducting surveys with households that use Greenway Smart Stoves

All three households have six to seven family members, work in either agriculture or the service sector and earn an average monthly income of Rs.6,000 (US$109) to Rs.12,000 (US$118). Users stated that the time to cook with a Greenway Smart Stove is about one hour, which is approximately half of that with *chulha cookstoves*. All users cooked with *chulha cookstoves* prior to obtaining the Greenway Smart Stoves. The Greenway Smart Stoves also dramatically reduced the amount of firewood each household used and collected for cooking; daily firewood requirement decreased from 12kg to 5kg in one household, from 6kg to 1.5kg in another and from 7kg to 2kg in the third household. After the survey, Shoeb told me that in general, Greenway Smart Stove is expected to reduce fuel consumption by 60% in comparison with the traditional *chulha*. General user feedback is also very good: people like the Greenway Smart Stove because it creates less smoke, reduces fuel consumption and fuel collection time; it's portable; it cooks faster; it requires virtually no maintenance; and it's easier to clean.





The Greenway Smart Stove was used to prepare tea and boil water, in respective kitchen settings

RC is going to give a live demonstration of the Greenway Smart Stove at the Centre for Experimental Learning (their main campus between Mumbai and Pune) and will run subsequent awareness campaign and technical training for proper stove usage before distributing the 200 Greenway Smart Stoves. These stoves were purchased through funding from Kopernik's donors and arrived in their office in August. RC is going to distribute the stoves to 200 households that they've identified in various villages in Maharashtra; these households will all pay for the stoves at a subsidized rate of US$2. I look forward to hearing about positive changes that the stoves will bring for those people.