

Call for Tenders

Objective: to provide for innovative, low cost, efficient space heaters/water heaters/cook stoves for community gathering spaces in selected villages in Meghalaya and Nagaland

Organization: North East Slow Food and Agrobiodiversity Society, Kerrie Ville, Arbuthnott Road, Laitumkhrah, Shillong 793003

Last Date for sending Proposals: **March 14, 2020 , 5 PM**

Background:

NESFAS and its three partner organisations, working in 130 villages in the States of Meghalaya and Nagaland, in consultation with and participation of communities, are interested in helping the communities in selected villages to upgrade existing spaces or create new spaces that would enable the community to gather and share and talk and undertake community actions. Some of these spaces may be multi-use spaces like kitchens and eating spaces of mid-day meal schemes and ICDS Centres or they could parish halls of village churches or even purpose built spaces for the community to meet and work together and to house community libraries. The upgradation and creation of new spaces, in order to make them more attractive and convivial, would require the installation of simple, low cost but efficient devices that could heat the space, provide hot water and even cook. The states of Meghalaya and Nagaland are mountainous regions with high temperatures that range from 10 to 25C and low temperatures that range from 2 to 14C, and the coldest months are usually from October to March, which are also the driest part of the year. The rainfall in these states is very high with a high number of rainy days. Gathering together to discuss, celebrate, work as a community therefore becomes problematic during the cold months. People try to cope with warm clothing and gathering around the hearth to gather, work and undertake community chores. Communities and households spend time and considerable effort collecting firewood from community and clan forests and drying and storing it during the winter months and use it all year. The effort to collect firewood, dry it, and transport it usually carried on backs is considerable and diverts people from other work and particularly children from school and play. With increasing populations and demands for firewood there is fear, confirmed by experience, that existing landscapes accessible to communities may not be able to sustainably supply the need. And there is an increase of households and enterprises buying firewood at considerable cost. Alternate fuels are charcoal, burnt in small metal stoves but are seen as secondary to fuelwood. Natural gas and electricity used for cooking and space heating is rare and sometimes used for water heating. Electrical supply is widespread but irregular and expensive.

The Himalayan Rocket Stove Company's ECO 1 model was demonstrated in Mawhiang Village, East Khasi Hills District, Meghalaya, where in consultation with the community NESFAS had undertaken a study of the problems encountered by the community in the areas of cooking, water heating and space heating. The community was quite interested in the stove and particularly liked

the idea that it also heated its surroundings and heated water, while being extremely efficient with fuel (2kg/hour) and being smokeless. However, they felt that the stove was too large to accommodate and use in small rural household and would be ideal for community halls, mid-day meal kitchens and other community gathering spaces.

NESFAS is looking to procure and install around such devices in selected villages of Meghalaya and Nagaland, that would be efficient, safe, of low cost and have the ability to heat community gathering spaces and also provide hot water and cooking stations to facilitate community gatherings

Design Brief:

1. A low-cost, fuel efficient and safe stove with at least two cooking stations that heats its surroundings in rural community gathering spaces and provides hot water for washing and other uses is necessary. Designers and manufacturers while attempting to design and produce innovative alternatives, should broadly keep in mind that the Himalayan Rocket Stove ECO 1 Model was broadly appreciated by the community except for its cost.
2. The stove should be able to use fuel wood of different sizes, from twigs to small logs typically available to the community to collect from community and clan forests. Variants that enable use of charcoal and biomass based briquettes that can be retrofitted to existing fuelwood stoves reasonably easily at low cost would be worth considering as later add-ons.
3. The stove should be efficient and smokeless, though it would be necessary to have the option to generate smoke particularly to smoke out insects from bamboo and thatch constructions and roofs.
4. The two cooking stations should be designed for local and traditional cooking practices and utensil types and sizes, which vary with some preferring more boiled foods and others both boiling and frying foods. Barbecuing is common and smoking of meats and fish are practised along with cooking in many areas. Variations of cooking stations that can be chosen by the communities depending on their cooking practices and utensil sizes and shapes would be an important requirement.
5. The water heating aspect is primarily for washing and for boiling water for consumption and should be enough for small community gatherings.
6. The space heating aspect is important as in the colder months of October to March this may be required almost all the time to facilitate comfortable gathering and working...resulting in comfortable temperatures in the range of 20-24C in average size community gathering spaces.
7. Chimneys should be designed so they can be easily assembled and retrofitted into a variety of traditional housing/roofing systems used.
8. While NESFAS and its Partner Organisations will undertake some studies of cooking practices and needs, given the technical nature of such user experience study the stove designer/manufacturers should undertake studies as necessary to be able to create a stove with variants to suit the needed variety of the communities.
9. The stoves and associated water heating, space heating and chimneys should be packaged to be transported by people of a-frames on their backs, which in many areas is the only way to reach some of the communities. Therefore, the stoves should be easy to assemble and retrofit into existing households. Further, the stoves and its attachments should be easy to clean and maintain.

10. Training of community members and local artisans, especially women, to assemble, install and demonstrate its use as a paid for input who can also provide cleaning and maintenance services at cost may be a sure way to ensure safe use of the equipment and should be designed for not only in terms of easy to use manuals and training processes but, in the future, as a customer care-after sales service mechanism that the manufacturer could put into place.
11. The stoves and attachments should be designed to be durable with trouble free service for at least ten years of regular heavy use.
12. Accessibility of the stove and attachments to large numbers of rural communities will depend on competitive pricing but may require innovative financing processes like hire-purchase schemes and the possibility of paying in instalments, facilitated by financial institutions working in tandem with the manufacturers. An option that manufacturers may want to consider to reduce costs and transportation costs would be to consider joint ventures with local enterprises in the North East working under license, which will generate livelihoods both in manufacture and in providing installation/assembly/retrofitting and after sales maintenance and repair personnel.

Time Line and Funding: Designing, testing selected prototypes, manufacturing and installation of at least in selected villages in different the 6-7 Agroecological and Cultural areas, should be completed to enable introduction and installation just as the cold season sets in around October 2020.

The costs of the stoves, including assembly and installation and training of selected community members in assembly/installation/user training/maintenance and repair will be covered by NESFAS, as part of its REC Project, with clear contributions from communities in cash and kind to be negotiated by NESFAS.

Designs and Prototypes for final selection by NESFAS and its Partner Organisations, working closely with Communities should be completed by April 2020 to enable production and testing of selected prototypes to meet the target of introduction and installation in communities by October 2020.

Submission of Proposal : March 14, 2020 by 5 pm.

Technical and Financial Proposals:

- The Technical may include a CD which demonstrates the functioning of the stove. It should also contain the time line for completion of the work
- The Financial Proposals should include the costs of all components.

Contact:

- The proposals should be sent in sealed envelopes addressed to the Executive Director, NESFAS Kerrie Ville, Arbuthnott Road, Laitumkhrah, Shillong 793003.
Email: melari.nesfas@gmail.com

Process of Selection:

- NESFAS Procurement Team will examine the proposals and will select the most suitable stove at the most competitive price.
- Selected firm will be communicated and an Agreement will be signed between the two parties so as to be able to take things forward.
- Pilot demonstration of the stove in the community is required before final selection