Biogas Brings Smiles!

Chennampalli village in Bukkarayasamudram mandal is about 20 km from Anantapur District Headquarters. It is a typical village where it's routine for women from the lower income group to collect firewood, cook meals and work hand in hand with family members for a living. On any given morning one can find women cooking meals in their dingy kitchens, where the walls are black with soot and women choke from the smoke generated by firewood stove. As in many other villages, it is a common practice in Chennampalli for men and women to collect firewood. While a man fells the tree, the woman collects the firewood, bundles it and carries it home. "*My husband and I were going for collecting firewood in an area full of prickly thorns and shrubs. My arms and legs were frequently cut and bruised over the years because of the thorns and sharp edges of firewood and I continuously suffered from backache because of carrying such heavy loads,*" laments Pramila, a 60 year old.

This was the plight of many women before "Biogas" was introduced in Chennampalli. Biogas is a Clean Development Mechanism (CDM) project implemented by Sahajeevan Trust, an implementing partner of Accion Fraterna (AF). This project is under CDM of United Frame work Convention on Climate Change (UNFCCC). AF is the project holder, registered with UNFCCC and works as aggregator on behalf of beneficiary farmers for next 21 years. In collaboration with Fair Climate Network (FCN) this project is being implemented in 117 villages in 10 mandals of Anantapur covering 2,500 families at one unit per family. So far 88 units have been installed in individual households in Chennampalli alone in the last one year (2015-2016), with an approximate cost of Rs. 15,000 per biogas unit and another Rs. 10,000 in administrative expenses. The project bears the entire cost including repair and maintenance for 8 years. Households with cattle were selected to implement this project since cow dung is used as the main resource to generate gas. This gas, in turn, is used as cooking fuel. This project is a unique arrangement, pre-financed by Indigo Airlines, a corporate partner, through FCN.

It takes 2 -3 days to build a biogas unit and another 20 days for curing of concrete. A biogas unit has 3 parts – an inlet to put in cow dung, a dome (usually dug below ground level and covered with mud) which generates gas, and an outlet from where the slurry comes out. A pipe is laid from the dome to the kitchen stove for supplying gas. Initially the unit is filled with cart load of cow dung and it takes 4 – 5 days for the gas to form. After that it can be filled with 25 – 30 kg of cow dung

everyday or on alternate days for fresh gas production. The unit generates sufficient gas for a family of 4 to 5 members to cook and heat water for bathing. The stove is also provided by the project.

"*Earlier we had to blow vigorously for the firewood to catch fire. The house would be filled with smoke. We used to choke and our eyes used to constantly water due to the smoke of firewood. Almost every month we had to go to the doctor due to respiratory and eye problems. Now after installing the biogas stove, our lives have changed. Once the stove is lit, the flame is even and gives high heat, there is no need to blow, there is no smoke and cooking is done in a very short time*" says Lakshmi Devi. The important aims of this project are: 1) save time and drudgery for women; 2) save environment by preventing cutting of trees; and 3) reduce health problems caused due to the smoke of firewood. Biogas stoves produce more heat than firewood stoves, which means women can spend less time in cooking. They are now able to spend more quality time in agricultural activities or with children or women's group activities or attending to other household duties.

Vaani lives in a family of 6 members. Like many other women in her neighbourhood, she bears the entire responsibility for running the household. Apart from cooking meals twice a day she takes care of her two school-going children, husband, in-laws, cattle and also works as an agricultural labourer. "*Mornings were always hectic. Sometimes I could not even pack lunch for my children before they left for school as the firewood stove wouldn't burn properly. Our cooking vessels and clothes were covered with soot, ash, and dirt because of the firewood stove. I had to spend a lot of time cleaning the vessels and washing the clothes. I was very tired at the end of the day. For me, life has changed completely a year ago when the project installed a biogas stove in our house. Now there is no soot or ash and it takes much less time to clean the vessels and clothes …*" she says with a smile.

Under this project each Biogas unit reduces 3.77 tons of Certified Carbon Emissions (CERs) per year for 21 years (as the estimated life of each Biogas unit is 21 years). These CERs are also called as carbon credits, which are sold in the carbon market. The carbon credits "to be generated" are pre-sold to FCN and in turn to Indigo Airlines. The carbon credits are pre-sold at Rs. 1,277 per ton and that amount is used as an investment for construction and maintenance of the biogas units. This investment would be repaid to FCN/ Indigo Airlines in carbon credits in 8 years. Post repayment, the farmers are free to sell the carbon credits

to any other buyer. The Indigo Airlines has come forward for pre-purchase as a climate-friendly initiative in partnership with FCN.

The benefits arising from the biogas project are manifold from improving health to protecting the environment, reducing pollution, and providing livelihoods, etc. Users of biogas have stopped cutting trees for firewood in the desert like environment, with little vegetation. This, to some extent, arrests deforestation. Cow dung which contains methane is harmful to the environment, but when methane is used as cooking fuel environmental pollution is reduced. The project coordinators have educated the users about the residue- rich natural manure that comes out as slurry. The users are already experiencing the benefits of this natural manure in their small vegetable patches or in their fields. While these are the direct, tangible benefits, the project is also helping the community realize indirect benefits as well. The time and energy saved in cooking is spent on income-generating activities such as dairy maintenance and cultivation of vegetable patches that provide fresh vegetables that help improve the family's daily nutritional requirements. Moreover dependence on chemical fertilizers has also reduced to some extent.

As part of the women empowerment all the biogas units have been registered on the names of women owners. There is also scope for providing livelihoods for women in the future as local repair persons for the stoves. The responsibility to maintain the unit and the stove lies with the individual owner. If more households can be provided with biogas units in the future then the gas generated can be sold to nearby industries providing additional income to the families. The ease of usage and the benefits associated with biogas have a positive impact on the community, especially on women. Shakuntala's words say it all, *"We don't have to suffer with backache carrying firewood anymore. We never knew that our lives could be changed for the better with the natural resource (cow dung) which is already available with us, and best of all, the boon came to us not only at free of cost but also generates carbon income after about 8 years*." Pramila agrees wholeheartedly with a smile!