Improved Cooking Stoves (ICS) : Adapting to changing climate while improving lives of Women

Summary

ICS is a multi-purpose technology combining higher fuel efficiency and health benefits. It is constructed with an optimum geometry enabling good combustion of fuel and a grate to hold biomass in optimum distance from pot including a chimney to take smoke out of kitchen. It has been easily adopted by local income smallholders, who rely heavily on biomass energy for cooking. It is an effective means for sustainable supply of cooking energy to vulnerable communities in the face of climate change and limited access to energy resource.

Climate change effects

The implemented region is very highly dependent on forest resources for their livelihood, which increases vulnerability to climate change impacts (ranked as highly vulnerable area as per NAPA 2010). Increasing trend of climatic variability has brought unpredictability in rainfall

pattern, affecting inflow of ground water. This has induced pressure on forest resource availability. With intervention of this technology, it ensures the sustainable consumption of resources with its efficient utilization, hence reducing the pressure on resources which are strained by overuse (and therefore more vulnerable to climate change) and/or by climate change which is exacerbating existing problems.

Chaila Village, Mangre-4 of Mugu district, is highly benefitted from his method covering 41 HHs. Being rainfed agriculture and livestock as the major economy and residing in remotest fragile place, they are at high risk of poverty and hazards to the livelihood opportunities. Further, vast dependency on local resources (99%) for energy, severely challenges their socio-economic condition in the face of climate change. With adoption of this technology since 2010 they are benefitted as saving 50% of energy, thus saving time and money to engage in other IGAs like vegetable production, improvement in health of women and children, reduction of sexual violence, consumption of more food items, which are more of the effects of the project intervention. Further, men showed support in cooking activities, involving their wives in community development activities.

Contribution to Climate Change Adaptation	Co-benefits	Target groups	Supporting conditions
❍ Reduces the pressure on forest resources, hence supporting their regeneration and strengthening the adaptive capacity of target groups. ❍ Strengthen the capacity of the target group to deal with scarce resources which may even decrease with climate change	❍ Reduces 30-90% indoor air pollution and improves the health of women and children (respiratory, eye diseases) ❍ Save fuel wood up to 20-67% and hence the time and money ❍ Reduction in GHGs emissions by about 2.5 ton per year per stove ❍ Poverty alleviation and women's empowerment as women will use save time and money in other IGAs.	Economically weak households, particularly women who utilize mainly fuelwood for cooking	❍ Familiarity with the importance of ICS for efficient resource utilization ❍ Taking responsibility for local and global environment ❍ Beneficiary's acceptance of technology.

Measures	Inputs	Time frame	Costs
Mud brick ICS ❍ Selecting a site safe from rain to build stove ❍ Making mixture of clay- straw-dung and keeping in a tray of maximum depth 20-30 cm and allow to dry for 7 days ❍ Wall of stove varies 30-60 cm raises around the combustion chamber and ends in a wind-break ❍ The hole to keep wood sticks, is in the form of a circle or a square. ❍ The stove must be allowed to dry in the shade for at least 7 days	Mud brick: clay as raw material and dung and straw to make mixture Metallic ICS: made from recycled metals, drum, iron bar and pipe labour inputs (household owner/local technician	For mud ICS users it will take around 14 days from mixing to finishing for use	Cost of ICS per unit varies depending upon the material used: USD 20-45. Cost will be reduced on using local materials in case of mud bricks.
Maintenance: - Cleaning of chimney in every 15 to 25 days, wipe water of pot before using in stoves, always use dry wood, while using two hole stoves always put pot in both stoves, in case of using one then cover the another hole, plaster stoves with the mud daily			

Gender consideration

It effectively incorporates the gender issues, taking consideration of major female burden on finding the energy sources and poverty as they have vital traditional household and community roles. With application of this method, it ensures to reduce the drudgery of women as they spend less time collecting firewood, cooking and washing dishes. It improves their health and provides the opportunities to get involved in education and income generating activities, leading to improving their socio-economic and ultimately raising standards of their families and communities.

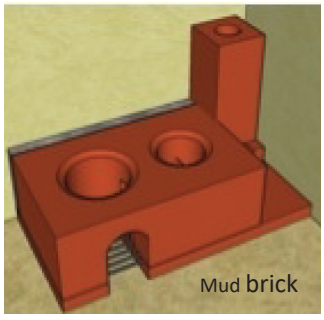
Conflict sensitivity:

None documented

Advantages

It is easy and quickly build with the available local resources within a period of 14 days. Locals are easy to adapt as it is similar with conventional stoves. Its adaptability increases as it improves local environment with reduction of indoor air pollution, improves health, saves time and money, gender sensitive as it encourages women to engage in other community development activities.

Mud brick ICT is common in use as it can be build with local resources and local forces. However, metallic ICS is widely use in high Mountain and Hilly region (above 2,000 m).



Constraints

Holes are too small to accommodate large pots in some households, it may take time until the new user get used to lighting the fire; in case of metallic-materials will be expensive and one has to go to a specialist workshop to complete the construction.

Contact and further resources:

Group of Helping Hands (SAHAS) Nepal
info@sahasnepal.org.np
www.sahasnepal.org.np