

## Manual for Stove design, selection and dissemination R.M.Amerasekera, Executive Director, IDEA

In many developing countries over 60% of the households use biomass for cooking . Cooking is possibly the greatest occupational hazard to women. The WHO has revealed that indoor air pollution resulting from inefficient cooking to be responsible for the death of nearly two million women and children every year. Moreover the use of biomass is also a significant factor in environment pollution and degradation. However due to the economic and energy situation prevailing in the developing countries biomass will continue to be the major cooking fuel in the developing world simply because the poor will not have access to modern fuels despite its availability. Therefore promoting efficient and improved stoves is one of the highest priorities in the development agenda.



Nevertheless designing and selecting an appropriate stove for promotion is a complex task which require in depth knowledge of the local conditions where the stove has to be used and disseminated. Stove designing is connected to diverse factors, a few of which are the kitchen environment, types of biomass used, available stove material, cooking habits and patterns, local skills and expertise, type of foods commonly cooked, cost, educational levels of the cooks and non cooking functions such as space heating, culture etc. Also since the kitchen environment is related not only to energy but health, environment, architecture, income generation, gender concerns and host of other factors focus on technical or engineering considerations alone is inadequate and disastrous to produce a socially accepted stove design or a dissemination programme, The success of the "Anagi" stove in Sri Lanka is due to the efforts taken at the designing stage to accommodate user concerns and needs which invariably take time and warrants patience, flexibility and humility from the designing team to



accept the concept "user knows the best". "The Sarvodaya" stove design which provided the basic design for the "Anagi" stove took almost three years in the field and was not developed in a laboratory. This was a clear case where the success can be attributed to the orientation of NGO outlook based on micro level concerns as against the Government orientation based on more macro level and engineering considerations.

From the above explanation it has to be clear that any stove developer whether involved in designing, selecting or promoting stoves need to acquire and be oriented towards adopting holistic and multi disciplinary approaches which require empowerment through proper training.

In this respect the Trainee manual titled "Improved Stove Selection and Dissemination" developed by the Asian Region Improved Cookstove Program (ARECOP) is an excellent resource which covers many topics.

This manual consist of 122 pages divided into seven chapters. The training manual is designed to transfer skills so that the trainees are able:

- (a) to evaluate stove designs based on combustion and heat transfer concepts, knowledge of material and stove components.
- (b) to determine an appropriate modification/improved stove design based on the needs, wants and conditions of the target group in addition to technical knowledge.
- (c) to become familiar with stove construction techniques
- (d) to determine the appropriate dissemination strategy based on existing technology dissemination channels and the improved stove design to be disseminated.
- (e) to incorporate gender analysis into stove design, dissemination and introduction.
- (f) to monitor the progress of stove programmes and trouble shoot where necessary.

The chapters deal with the following topics.

1. Some Issues- An overview of biomass use
2. Assessment - Community context, the kitchen, user and gender analysis

3. Stove Design- Combustion, heat transfer and heat loss, raw materials and stove parts.
4. Stove installation- Mud stoves, pottery stoves, metal stoves and brick stoves.
5. Stove Dissemination- Local systems of technology dissemination, local systems and improved stoves, which system is best, what to do to support the dissemination system.
6. Monitoring and evaluation- Benefits, monitoring, indicators, trouble shooting, evaluation.
7. Stove selection as a process- Why use a process, reviewing a process.