RWEDP Report No.24

REGIONAL WOOD ENERGY DEVELOPMENT PROGRAMME IN ASIA
GCP/RAS/154/NET

REPORT

SUB-REGIONAL TRAINING COURSE

ON WOMEN IN WOOD ENERGY DEVELOPMENT

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7. STOVE DISSEMINATION PROGRAMME, SRI LANKA: AN OVERVIEW AND ASSESSMENT

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7.1. Progress of Stove Programmes in Sri Lanka

Sri Lanka is one of the few countries where significant and consistent progress is seen in woodstove development activities. In general this has been in the direction of sustainability or commercialisation.

One of the reasons for the success of the stove dissemination programme may be that the programme has been able reorient its objectives and implementation strategies to attract the interest of several actors with different perspectives to actively support and participate in the programme activities. In keeping with this trend the implementation organisation too has changed along with the organisations providing infrastructural support. Because of this flexibility it has been able to secure resource inputs and the technical assistance required from local as well as foreign organisations at various stages of development to sustain the momentum and continuity of the programme. Looking at the entire process of stove development activities this is a fact that can be clearly observed.

Many changes in the objectives, implementation strategies and implementers changed at various stages of development to facilitate the progress towards achieving commercialisation and sustainability can also be clearly observed.

- The stove models have changed from heavy mass mud stoves to mobile pottery insert stoves
- Development objectives have changed from macro level national concerns to micro level user, producer and social concerns
- Strategies have changed from subsidies to commercial orientation, centralised to decentralised activities, and individual management to participatory management
- Implementation responsibility and involvement have shifted from government to non government organisations.

Depending on the implementation organisation, specific and narrow objectives have been spelled out in the initial stove programmes in Sri Lanka related to such issues as energy or environmental conservation, deforestation etc which have been necessary when centralised implementation of activities were carried out at the initial stages.

In the National Fuelwood Conservation Programme document prepared in 1984 by the Senior Energy Advisor To H.E. the President it is stated that:

"*Since the potential savings from the national economic viewpoint are about Rs 2000/= - 3000/= per family for 3 years, or Rs 5000/= to 8000 million for all households, popularising the use of woodstove must be given the highest priority even if it has to be given at a nominal cost (e.g. R 25/=).*"

Although this was later realised to be a wrong conception it was the most significant event in the stove development activities in Sri Lanka which gave the programme considerable impetus and brought in very influential actors into the stove scene.

As the implementation process continued, there was a move, towards wider participation leading to a more decentralised and participatory implementation strategy. Thus the activities were planned to have a certain amount of flexibility to accommodate changes or to fit into an integrated development framework where a broad range of development issues are addressed at the micro level.

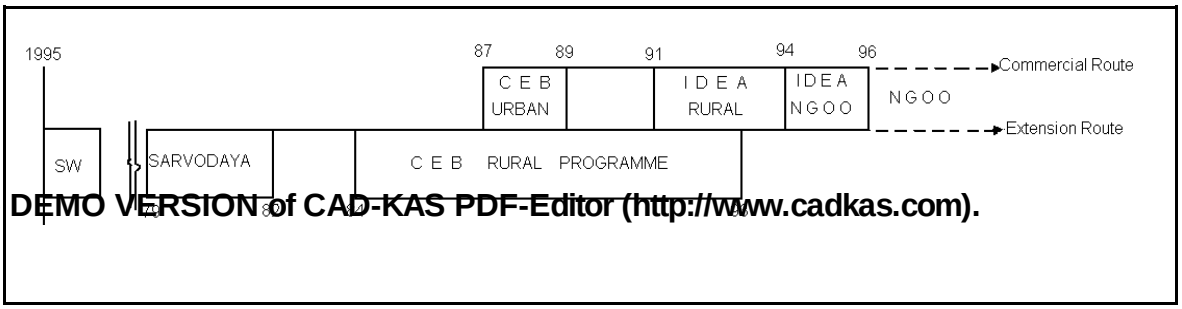
7.2. History of Stove Activities

There is historical evidence to show that improved stoves were used in Sri Lanka as far back as the 10th century. Pieces of clay stoves have been discovered in recent excavations carried out in the North Central Province in Sri Lanka.

Clay stoves resembling U Chula are believed to have been used in the Central Province in the 17 and 18th centuries. A few of these are exhibited at the museum in Kandy. However, it may be that these were used only by aristocratic families and not by ordinary people.

In the recent past, around 1953, some initial efforts were taken by social workers to introduce the Herl Chula which was popular in South India. However, widespread use or sustained efforts to popularise it are not evident.

The period after 1970 saw some remarkable interests being generated in stove activities. This was the crucial period when oil prices escalated and within a short period of two decades rapid deforestation took place mainly due to various development schemes launched by the government. During this period Sarvodaya Institute, Ceylon Institute of Scientific and Industrial Research (CISIR) and the Industrial Development Board (IDB) took a leading role in carrying out R&D work to develop suitable designs.



Stove programme continuity (1950-1995)

This pioneering work paved the way for large scale dissemination efforts after 1984 and the major involvement and commitment of the Ministry of Power & Energy (MPE) and the Ceylon Electricity Board (CEB). Despite the focus on narrow objectives, which of course was not very evident or realised at the beginning, this gave a tremendous impetus to stove dissemination efforts.

The major thrust towards large scale stove dissemination efforts was begun in 1984 with the dissemination of stoves in rural areas. Based on the experience gained efforts were later extended to cover urban areas with modified objectives and strategies.

The lessons learned and the experiences gained from these programmes are vivid and diverse. These are well documented and the subject of deep discussions and have been widely shared with local and international stove development agencies. Two international seminars were held in Sri Lanka in 1989 and 1993 to share the experience of the Urban Stove Programme implemented by the CEB and the Stove Commercialisation Programme implemented by IDEA.

It must also be mentioned that there are a few other organisations independently promoting stoves within their own agendas without much publicity. Such promotion is generally carried out in a small way, but consistently. Unfortunately, these organisations have very little interaction with other organisations which are more involve in stove dissemination activities. UNICEF and the extension unit of the Agricultural Department are two such organisations.

7.3. Important Events in the History of Stove Activities in Sri Lanka

1950 Introduction of the Herl Chula
1972 Interest shown by govt. research organisations, namely IDB and cisir in designing stoves
1979 Sarvodaya Stove Project with technical inputs from ITDG
1981 International Seminar on Stove Projects ITDG/Sarvodaya
1983 Formation of the National Fuelwood Conservation Programme under the Ministry of Power and Energy
1984 Pilot project to identify a suitable stove design for a large scale dissemination programme funded by the Ministry of Housing and Construction
1984 Pilot project to identify a suitable dissemination strategy for large scale dissemination funded by the CEB.
1985 Commencement of a three year large scale dissemination programme in Hambantota District under the IRDP and funded by NORAD.
1985 Launching of the national Rural Stoves Project jointly funded by the MPE and Royal Government of The Netherlands.
1985 Prof. Mohan Munasingha Award presented to the stove team for implementing the best energy project in 1985.
1985 High priority accorded to stove project activities by H.E. the President
1987 Launching of the Urban Stoves Programme jointly funded by MPE and ODA (UK)
1989 International Seminar on Urban Woodstove Dissemination, funded by ODA/CEB
1989 Pilot Project to identify suitable stoves for the plantation sector
1990 Extension of the Rural Stoves Programme (CEB)
1991 Omnibus survey on "Anagi" stoves (Woodstove promoted under the Urban Stoves Project)

1991 Stoves Marketing Project - Extension of the urban commercial strategy to rural areas. Implemented by Integrated Development Association (IDEA) in collaboration with ITDG.
1993 International Seminar on Commercialisation of Wood Stove Dissemination jointly funded by FAB/RWEDP, GTZ, ITDG, ARECOP.
1993 IDEA Stove Marketing Project 2 phase
1993 Termination of the CEB stoves project
1994 Continuation of the Stove Marketing Programme by IDEA
1994 Pilot project to identify a suitable strategy for marketing of woodstoves in the Plantation areas. Funded by the Plantation Housing Social Welfare Trust (PHSWT) of the Ministry of Plantation Industries.

It is this chain of activities which has kept the programme moving forward uninterruptedly from 1972 to the present.

7.4. Shift of Development Objectives in Stove Programmes in Sri Lanka

1953 To improve kitchen environment (Taking away smoke using chimney stoves). Social Workers
1972 To develop stoves with high efficiency. CISIR & IDB
1979 To develop a socially acceptable stove. Sarvodaya
1984 (National Stove Programme - CEB)
To minimise deforestation and its ill effects
To increase the availability of firewood by helping to use firewood more efficiently, thus reducing pressure on existing resources.
To develop a built-in mechanism in the village infrastructure for a self sustaining programme for dissemination of fuelwood efficient stoves

1987 (Urban Stoves Programme - CEB)
The reduced consumption of fuelwood for domestic purposes using an improved design of cooking stove
To reduce the rate of deforestation
To enable households to reduce their expenditure on woodfuel
Generation of employment opportunities
Improving quality of life through cleaner kitchens, and the potential to increase the availability of hot meals and hot water
1991 (Integrated Development Association Stoves Marketing Programme - IDEA Programme)
To create additional income earning opportunities for potter families, including women potters
To improve household conditions, particularly for women through greater cooking convenience and savings of time spent in the kitchen
To provide information so that the experience and lessons learned from the project can be used to influence policy makers, donors, and others interested in household energy, health, and other development issues

To make provisions in the project for low income households, especially in the rural areas, to benefit from the stove
To establish fully commercial and sustainable production distribution and sales networks for stoves

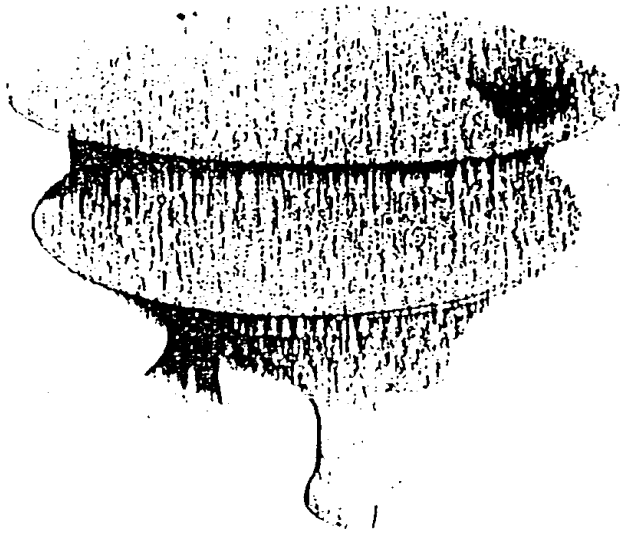
1994 (Plantation Housing & Social Welfare Programme - IDEA Proposed Programme)
Reducing the woody biomass (tea clippings & wood) that is removed from the vicinity of tea estates
Improving conditions under which women cook
Utilising stoves as an entry mechanism for social work of other types.

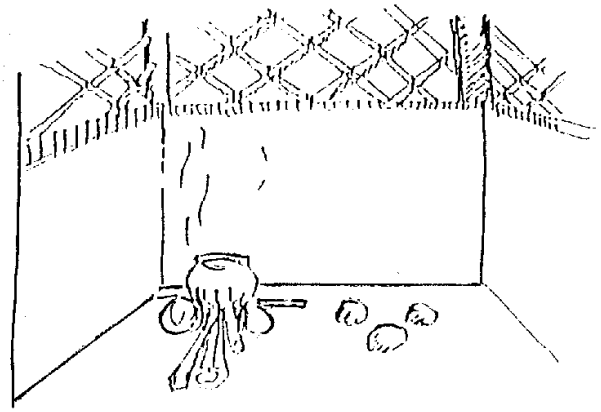
7.5. Change of Stove Models

1953	Herl Chula - Two pot mud stove with chimney
1972	Two pot brick & cement stove - IDB model
1978	CISIR two pot pottery liner chimney stove
1982	Single pot clay stove with built-in grate
1979-1983	Sarvodaya
	Lorena Stove
	Two pot mud stove with chimney
	Dian Desa Chimney Stove
	Dian Desa Chimneyless Stove (2 pot)
	Sri Lankan Chimneyless Stove (2 pot)
	Sri Lankan pottery liner stove (2 pot)
1983	Single pot clay stove with grate - CISIR model
1986	CEB "Anagi" Stove (2 pot, clay)

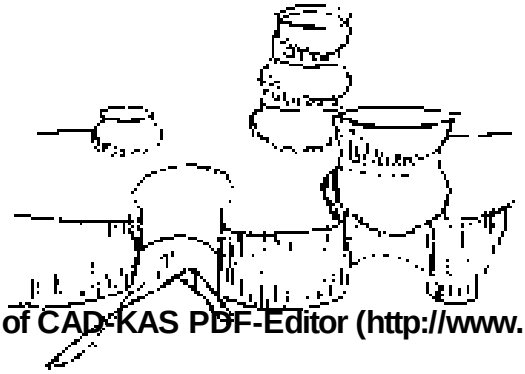
Various Actors in Stove Programmes

Year	Implementer	Technical Assistance	Donor	Activity
1950	Social Workers			
1972	IDB/CISIR	IDB/CISIR	IDB/CISIR	Design & Testing
1979	Sarvodaya	ITDG	VITA, ATI	Design & Field Evaluation
1984	CEB	Sarvodaya	Helvitas Novib, ITDG	Field Evaluation
	CEB	CEB	Prime Minister	Pilot Dissemination
1985	CEB	CEB	CEB	Rural Dissemination
		Hoffman Eng	Dutch govt., MPE	
1987	CEB	ITDG	& CEB	Urban Dissemination
1990	IDEA	IDEA/ITDG	ODA, MPE	Commercialisation
1993	IDEA	IDEA	Future Publishers/ ITDG	Commercialisation
1994	IDEA	IDEA	ODA/NORAD/ ARECOP/JTF (TTBWT)	Pilot Project

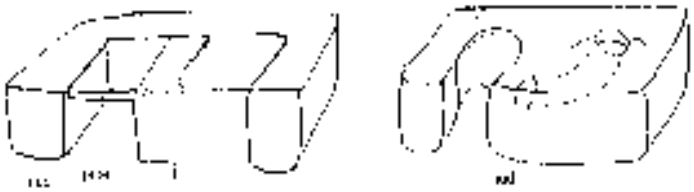




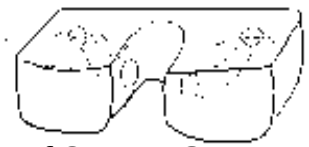
3 stones open fire



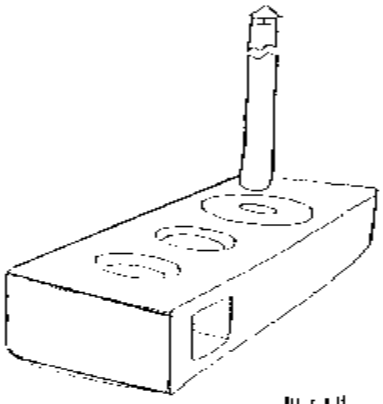
Semicircular mud stove
"Sinnala Lipa"



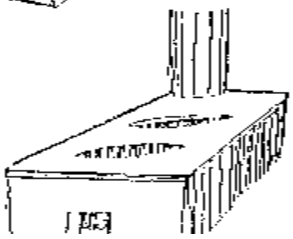
Stove used in the Plantation
areas by the South Indian Community.



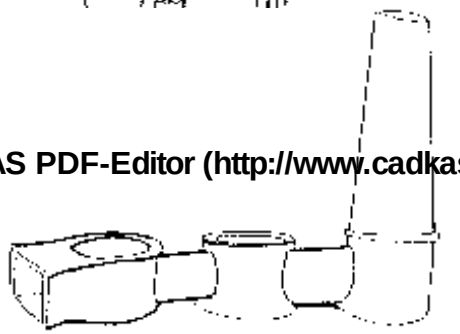
Traditional stoves used in Sri Lanka.



"HERL CHULA" 1953



I.D.B. Stove 1972

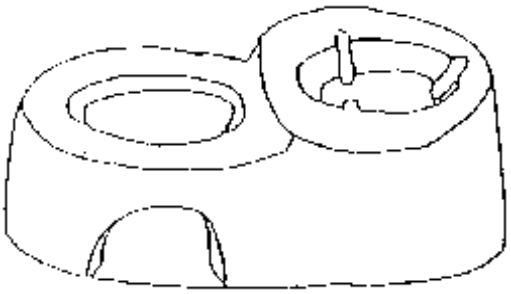


CISIR Stove 1978

CISIR Charcoal Stove 1978

CISIR Stove (urban)

SEEDS Two-pot Stove (urban)



Sarvodaya Mud Insulated Stove (rural)

7.6. Some Important Findings of the Omnibus Survey 1991

This survey was carried out by a private marketing consultancy firm SRI BRANDSCAN on behalf of IDEA/ITDG. 1,000 urban and 1,000 rural households were interviewed.

- 75% of the urban and 31% of the rural users have modern stoves while 1/3 of the urban and 3/4 of the rural users have biomass stoves
- Under 30% of the urban and rural homes have pottery stoves and 1/3 of these are "Anagi" stoves
- 12% of the population have purchased "Anagi" stoves
- Over half of urban homes and around one quarter of rural homes have two or more stoves
- Stove users spend on average 1.5 hours a day cooking food on electric stoves, 1.9 hours on gas and 2.3 - 2.9 hours on biomass stoves
- In urban areas three quarters of users purchase firewood and only one third collect it. In the rural areas the ratio is reversed
- 99% of the "Anagi" stove users were using it regularly, 93% for cooking and 71-76% for boiling water
- Of the "Anagi" purchasers 62% have an income below R 2500
- The main motivation for buying the "Anagi" stove was to save firewood -- 66% mentioned it as the main advantage. The second main advantage was that it has two pots so that two items can cook simultaneously. The third main advantage is that it cooks quickly
- The source of awareness of "Anagi" stoves differ between urban and rural areas suggesting different promotion strategies.

	Urban	Rural
TV	25%	15%
Neighbours & Friends	15%	21%
Officials & Societies		18%
Dealers	11%	10%
Radio		9%

- Over 50% were purchased by women and in 2/3 of all cases the decision was taken by a woman. This pattern is equally strong for rural and urban areas. The clear implication is that marketing has to be focused on women
- 39% of the urban "Anagi" users and 46% of the rural users do not use any other stove which indicates that the "Anagi" meets the full range of the cook(s) needs
- An "Anagi" is reported to have a life of at least 2-3 years
- 83% of users mentioned that there are no disadvantages while 5% identified its inability to cook large meals.

According to the latest Ominibus Survey (report not yet ready) the penetration level of "Anagi" stoves is assessed to be 19%.

7.7. Present Situation

The CEB, IDB, CISIR and Sarvodaya, the four pioneering organisations in stove activities are no longer active. The Integrated Development Association (IDEA) which took over dissemination activities in 1991 is implementing the second phase -- the Stove Commercialisation Programme.

Unlike in the Urban Stoves Programme where the focus for production was limited to the formal sector, mainly the tile factories, the IDEA strategy was to bring in the rural potters into the commercial network. With the "Anagi" stove gaining popularity there emerged a large number of untrained potters producing sub standard "Anagis" which was a cause for concern for the project officers creating an antagonistic attitude towards these producers. They were even labelled as "Pirate" producers. This was in one way justifiable because sub standard "Anagis" were posing a double threat: they could undermine the reputation of the "Anagi" hence limiting the potential for commercial success and secondly, they could restrict the benefit of "Anagi" use. However being an associated with NGO with a broad development outlook, the project officers were made to realise that this was an indicator of success and that they needed to capitalise on this entreprenial effort of the potters. Thus the "Pirate" producers became Look Alike Stove (LAS) Producers -- a more respectable name which amply recognises their resourcefulness.

In phase 1 of the programme it was seen that with the process of commercialisation, the poorest users and producers did not reap any benefits from the programme activities. It was mostly the affluent users and producers who had access to commercial markets and networks. Being an NGO devoted to uplifting the living conditions of the poor IDEA was concerned and had to incorporate activities in the second phase to ensure that IDEA's development and social obligations were not diluted by the commercial interests of the stove programme.

Accordingly the following actions were taken.

- It was decided to strengthen grassroots level NGOs both financially and technically, to establish a revolving fund and to carry out promotion activities so that stoves could be sold to the poor users with the cost to be recovered on an installment basis. There are nearly 20 such NGOs in operation and most of them are women's groups
- Marketing assistance was to be provided to link up isolated producers with stove distributors and to set up producer cooperative societies wherever a sufficient number of producers could be grouped together. This also avoided elite producers having a bigger share of the market.

In addition to the need to access a large number of poor users through grassroots level organisations there are other reasons and benefits from working with them.

- There is better feedback of genuine responses, needs and immediate priorities of the beneficiaries over a wide geographical area. It was felt that this could guide future strategies

- Planning and implementation are exposed to broader participation so that the perspectives and needs of partner organisations could also be accommodated in the project activities

- Over a period of time, activities can be decentralised and phased out so that the institutional capability of the partner organisations could be built-up to take the responsibility of continuing the programme independently in their respective areas with a minimum of outside inputs
- It provides an opportunity to integrate stove initiatives with other NGO development programmes.

7.8. Impact of the Programme

To quantify or assess the impact at a national or macro level programme is a difficult task. It was a misconception to have expected stoves to save the forests or reduce national firewood consumption. Even a crude estimate therefore may not be realistic.

In an evaluation (carried out by ITDG in 1989), of the Urban Stoves Programme, it was estimated that 100,000 stoves disseminated under the programme would provide 0.4% of savings relative to deforestation (saving of forest cover is 16.4 ha while annual deforestation rate is 42,000 ha). This indicates that even a very successful stove programme would have only a marginal impact on the rate of deforestation.

The evaluation highlights the substantial financial savings at household level that could be achieved from using stoves as the pay back period is 3 months for users buying their firewood.

The stoves have brought in positive changes at the household level as a result of savings of firewood, and savings of women's time in collecting firewood and cooking. These effects in turn have also had associated health benefits.

Certain households do not save firewood but do more work such as boiling water which is also a positive impact. Recent tests carried out in the estates households indicate lower CO levels (reduced by 31%) in the smoke emissions when using "Anagi" stoves.

The following are the results of a survey carried out in 120 households in 1987.

Per capita consumption of firewood & boiled water per day

Village	Wood in Gms			Boiled Water Lts		
	Trad	Sarv	Anagi	Trad	Sarv	Anagi
Pusselle	1164	1051	918	2.8	3.8	3.66
Kobeigane	1843	1262	1083	1.64	4.12	3.94
Average	1503	1157	991	2.02	3.95	3.80

Smoke emissions tests in plantation households - Peter Young & IDEA staff, 1994, Comparison between "Anagi" and traditional stoves.

Test	Anagi (5 tests)	Trad (6 tests)	% Change
CO ppm	18.9	27.3	31
RSP ug/m^3	682	727	6

CO: Carbon Monoxide
RSP: Respirable suspended particulates

From the producers side, benefits are very visible. In some of the pottery villages a considerable social and economic transformation can be seen. Improved housing conditions, land ownership and social status are some of these. Some producers have become distributors making use of their own lorries. A number of them have also made other profitable investments.

The following data is from a survey carried out in Kumbukgete which is a pottery village comprising 24 families mainly producing stoves.

INCOME	No of Families	
	Before	After
< Rs 3,000	12	3
Rs 3,000 - 5,000	5	4
Rs 5,000 - 7,000	0	7
Rs 8,000 - 12,000	0	3

New Possessions

ITEMS	Families	
	Before	After
TV	1	12
Cassettes	2	10
Radio	1	3
Cycles	2	8
Hand tractors		1
Vidoe decks		1
Lorries		1
Motor cycles		4
Bullock carts	1	

The Stove Cooperative Society, established with assistance from ITDG and ODEA, has earned Rs 459,640 over a period of 14 months and each member has been provided with Rs 4,000 from profits to open a savings account with the bank.

It is estimated that donor agencies have provided nearly $800,000 for stove activities in Sri Lanka. Users are likely to have spent nearly $400,000.

Since 1983 about 500,000 stoves have been disseminated either through the extension or commercial routes. Neglecting the future production, the donor investment is around $1.6/stove. Assuming a life span of 2.5 years these 500,000 stoves have been used by 125,000 households over a period of 10 years. Thus, the investment is little over $5/household. How do these indicators compare with donor investments in other fields of development? At present, without exaggeration it can said that at least 100,000 stoves are sold annually through the commercial route established as a result of this investment. If this output is also considered the benefits will spread over 250,000 households over a period of 10 years, making the indicator a little over $1/household.

7.9. Lessons Learned

- It is not only the stove design which has to be appropriate but the entire dissemination process, viz. design, production, promotion and marketing. Because it may be impossible or impractical to have a clear picture of the total process at the beginning it is necessary to adopt a flexible and responsive approach to dissemination. This will enable diverse and complex issues related to all aspects all phases of stove development to be addressed effectively whenever they come to light. Such flexibility is required from donors, implementors and project staff alike.

- Appropriate and timely monitoring and evaluation activities facilitate the progress towards a responsive approach and ensures sustainability. Regular monitoring and evaluation provides data to enable a quick change to new strategies before the project activities are interrupted. Continuity of activities needs to be maintained despite different actors taking over from one stage to the next.

- Sharing of experiences and the effective interaction and communication among national and international organisations facilitate project success. (Inputs provided by ITDG, RWEDP, Hoffman Eng, ARECOP, DianDesa experience are examples.)

- Commercialisation need not be seen as a process which prevents or inhibits provision of benefits to poor users outside the commercial network. In other words, a focus on social objectives and concerns is possible within a commercial framework if appropriate strategies are used. (Involvement of grassroots level NGOs in the extension route, establishing revolving funds etc.)

- Although in many projects, the emphasis is on the user, the project cannot isolate or neglect the producer. Therefore, project activities have to incorporate a strategy to address social and technological needs of the producer as well e.g., technical assistance to potters to maintain quality of stoves, decentralised production making use of poor rural potters, establishment of potter cooperative societies, training in entrepreneurship etc.

- Highly efficient stoves may not be the most acceptable type of stove. For example, the failure of IDB, CISIR & CEB stoves is noted as is the acceptance of the less efficient Sarvodaya stoves in the CEB programme

- Institutional support to cover R&D work, training, institution building & promotion are essential and justified as it can facilitate and create a conducive environment for development of commercial mechanisms, e.g. Investments in stove activities in Sri Lanka led to sustainability and a multitude of user and producer benefits

- Subsidised stoves may hinder sustainability despite the fact that large numbers are disseminated. For example, 400,000 stoves were disseminated under the CEB rural programme, but the institutional structure for dissemination dissolved after subsidies were withdrawn. However, subsidies provided under the CEB rural programme have had a positive effect in that they have created a substantial degree of awareness among the users and project officials and created a conducive environment for pushing the case for stoves in the development arena

- Formal sector participation is not an essential ingredient in commercialisation, e.g. poor rural potters in Sri Lanka were heavily involved.

- In the Sri Lankan context, dissemination of stoves has made little contribution towards achieving national objectives but the impact at the micro or household level has been significant

- Stoves should be introduced not necessarily as an energy intervention but more appropriately as an intervention facilitating an integrated development process at community or domestic level with benefits related to income generation, health, coping with energy shortages, saving women's time etc.

- Since women comprise almost 100 % of users (and a sizable proportion of producers, stove programmes should address women's concerns and therefore their participation is essential at all stages: planning, design, implementation, monitoring and evaluation. The absence of female officers in the project staff in production and evaluation activities have been identified as a shortcoming which has had a negative effect on the quality of the programme

- Political commitment and policy support (e.g. priority accorded by H.E. the President and establishment of the National Conservation Fuelwood Programme by the Ministry of Power & Energy) have played an important role in the success story

- Because of a rigid focus on a wide range of social benefits and an emphasis on commercialisation considered to be the ultimate success of stove programmes, gender related issues were effectively down played or ignored.

List of Acronyms

CEB	Ceylon Electricity Board
MPE	Ministry of Power & Energy
CISIR	Ceylon Institute of Scientific & Industrial Research
IDB	Industrial Development Board
PHSWT	Plantation Housing & Social Welfare Trust
JTF	Janasaviya Trust Fund
ARECOP	Asian Region Cookstove Programme
RWEDP	Regional Wood Energy Development Programme
ITDG	Intermediate Technology Development Group

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7.10. Annex

Women Producers and Users of Intermediate Technology;
The Tradeoffs Within ITDG (Sri Lanka's) Improved Stove Program

by Kiran Dhanapala

There are several constraints to operationalizing gender concerns in development projects despite the existence of gender issues for about two decades. Analysis of an ITDG (Sri Lanka) project promoting improved fuel efficient stoves seeks to throw light on the constraints that exist when gender related objectives are linked to multiple general project objectives and the internal conflicts and compromises this gives rise to.

"In practice, gender concerns in a project are often made subservient to other objectives which are often seen as more indicative of success - such as marketability, sustainability and productivity, and the sustainability of the project itself. As such, there often exists unacknowledged and inherent internal trade-offs between multiple objectives. This does not aid the integration of gender concerns fully into the overall project but instead, leads only to the partial fulfilment of its objectives."

Further, there is an important need for practical realism in formulating objectives that are achievable and complementary to each other in the project planning stage.

Projects seek to address a combination of interests, priorities and issues felt by different levels of actors; donors, governments and implementing agencies such as NGOs. This leads often to a multiplicity of objectives - as is the case with successive improved stove projects in Sri Lanka. In the past, projects such as the Sarvodaya Stove Program from 1979-83 and the Ceylon Electricity Board (CEB) instituted project under the National Fuelwood Conservation Plan (NFCP) from 1984-89, and ITDG's Urban Stoves Program (USP) during 1987-89, stressed macro national level objectives such as fuelwood conservation and environmental benefits from reduced deforestation. This was in addition to micro-household level objectives such as cleaner kitchen environments, reduced expenditure on fuel wood, etc. which were often added as projects progressed for sake of added legitimacy and the appearance of wider impact.

Further, the projects differed in both their approaches to implementation with the first and the second projects characterized by rural decentralized production in a welfare oriented approach while the third was urban, centralized mass production with a commercial dissemination strategy. Commonalities among these three projects include; (1) relatively little achievement in attaining respective macro objectives in contrast with micro impact. (2) achievement in micro objectives were primarily from the user end due to addressing quality of life factors, and (3) fulfilment of women users' practical needs within an existing gender based socio-economic framework (4) relative lack of prominence to gender concerns at the producer end. Fulfilling gender concerns at the producer end was relatively easier in decentralized production models than in highly centralized and commercial production models. (5) a lack of regard for women's strategic interests and concerns.

The Sri Lanka Stoves Marketing Project began in 1991 with a number of objectives (a mix of both macro and micro as in the past) within a commercial project framework. The project cycle emphasised, firstly, the potter producers, and later, the users. This involved a shift to welfare concerns for both in the later parts of each respective stage. Its commercial orientation in its objectives, the stress on sustainability and, its pursuit of a supply led "market take-off" strategy for the Anagi stove led to the project's inability to optimally address gender concerns at both producer and user ends. The project was unable to provide adequate access to and unable to address the constraints to greater inclusion of female potters in stove training at the producer end (female potter trainees were around 23% during different intervals despite comprising usually 50% of potters). This was due to the project's inability to deal with gender concerns (such as the practical needs of women potters) due to the constraints in having to achieve (conflicting) higher priorities/objectives during this period. Through the lack of optimal integration of female potters into learning about a new product and the consequent exclusion from production, thereby reinforcing gender based divisions and norms, a negative effect on strategic interests resulted. This is however, in an academic sense as in no way did such issues ever enter the project's already numerous objectives and was therefore beyond its scope. This gender related failure was however, within the success of its overall (commercial) objectives and to a lesser extent, the welfare objectives that followed.

On the user end, the successful achievement of initial supply concerns and product take-off enabled a shift in attention to the user and user benefits. Although the project gave priority to impact at the household level, the emphasis in stove promotion was chiefly on quantitative benefits (such as fuel savings) instead of qualitative benefits (such as cooking time savings and convenience). Later research on users by the project suggested that women users' qualitative concerns like time savings and ease of cooking (41.3% as compared to 25%, excluding other qualitative benefits, Bolawalana User Survey 1992) [illegible] misperception and/or misrepresentation of women's practical needs and interests. With respect to the project's user related welfare objectives, the impact on poorer users was achieved in a relatively comprehensive coverage of low income groups (Omnibus Survey data 1992). Users' strategic needs and interests again were largely ignored by the project which adopted gender norms (such as women as cooks) in its promotional material due to cultural and practical considerations. On balance, strategic interests were neglected more with respect to female potters than users. Indeed, the project could have played a direct role in affecting some important changes within this group.

The project serves to provide lessons and insights into the tradeoff that is likely to appear when gender concerns are incorporated into overall project objectives. Firstly, due to the market driven nature of launching a "social good" project, implementation was responsive and supply led forcing it to compromise one set of objectives for others. This was perhaps greater in the case of producer related objectives. Secondly, the multiplicity of objectives were too extensive and ambitious. In seeking to address issues such as project and product sustainability, poverty alleviation, household level needs serious internal incompatibility, seen in consequent shifts in emphasis throughout the project cycle, resulted. Lastly, despite stress on potters involvement in stove production and women's participation, the failure to address gender concerns at the producer end and within the project was due to the failure to analyze the implications of such objectives and consider the mechanisms by which they may be reached.

It can be concluded that careful analysis of project objectives in an overall project context is required to ensure defined and focused goals which are mutually supportive. More generally, a comprehensive approach addressing all aspects of beneficiary needs is required; in the case of stoves this would imply a greater focus on women user's overall requirements (including their strategic interests) and their roles so as to result in greater benefits. In the Stoves Marketing project this would require a stress on contextual concerns; the "soft skills" of stove use and management techniques rather than the stove itself. This home economics dimension would include stoves and women's energy requirements and, women's coping strategies in fulfilling both their roles and the energy constraints they function under.

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8. GENDER ANALYSIS TOOLS

Govind Kelkar

8.1. Gender Analysis Tools

Introduction: The Need for Gender Analysis

Increasingly woodfuel and other biomass sources have become inaccessible to women due to large-scale degradation of the environment and the inability to sustain rural energy sources. (See Box 1) There are two major features of such an energy crisis: women in poor, rural households are affected more than others, leading to an increase in the labour used to collect woodfuel from longer distances; and there is a diversion (and eventual scarcity) of organic materials like cowdung, dry leaves, and crop residues, from other uses, such as fertilizing fields, with possible adverse consequences on agricultural fertility.

Over the past few decades, a number of innovative measures have been introduced to solve the woodfuel problem. These have been mainly of three types:

- Improved stoves to economize on the consumption of wood for fuel
- Community, social and farm forestry projects to increase the supply of wood for fuel
- Equipment using alternative sources of fuel for cooking and other domestic purposes, like the community or household gas plants using organic wastes

Reportedly, these measures have had poor results, largely because, as for instance in the case of improved stoves, the specific needs of users (women) have not been taken into account in formulating such solutions; and the improved stoves were not just another piece of equipment but introduced new ways of cooking. In the more successful cases, however, it was noted that there was a high involvement of users or women in the design and construction of energy-saving equipment (Bina Agarwal, 1986). More importantly, where there is a higher opportunity cost of women's labour, there is a demand for improved stoves to reduce cooking and fuel collection times.

Thus, whether a community or household does or does not seek greater efficiency in fuel use depends on decisions by woodfuel users, i.e. poor rural women. They will decide on the basis of factors like: How and to what extent will their labour be saved? And, what are the alternative uses of that labour in non-domestic, income-earning activities and the consequent impact on household welfare and their own social position?

The praxis of such a policy demands the application of gender analysis to the woodfuel case.