



**ASSESSING THE
EFFECTIVENESS OF
FUEL-EFFICIENT
STOVE
PROGRAMMING

A DARFUR-WIDE
REVIEW**



This programmatic review of fuel efficient stove projects in Darfur was conducted by a team from ProAct Network, contracted by CHF International on behalf of the Darfur Fuel Efficient Stove Working Group. The ProAct Network is a not for profit international network of environmental professionals and partners that promotes environmental security and climate change solutions through sound environmental management. Report prepared by David Stone, Eugene Cole and Grant Wroe-Street.

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*Cover illustration: different models of fuel efficient stoves currently used in Darfur, photos by Eugene Cole.
Design and layout: Maoya Bassiouni.*

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	III
ACRONYMS AND ABBREVIATIONS	V
EXECUTIVE SUMMARY	1
1. INTRODUCTION	5
1.1. THE DARFUR SETTING	5
1.2. PURPOSE OF THIS REVIEW	6
1.3. OBJECTIVE OF THIS REVIEW	9
1.4. EXPECTED OUTPUTS	9
2. METHODOLOGY	10
2.1. BACKGROUND	10
2.2. DARFUR CO-ORDINATION STRUCTURE	10
2.3. PROCESS ADOPTED	11
2.3.1. Planning and Training Aspects	11
2.3.2. Scope of the Review	16
3. FUEL-EFFICIENT STOVES AND THEIR USE IN DARFUR	17
3.1. AGENCIES ENGAGED WITH FES ACTIVITIES	17
3.2. NUMBER OF BENEFICIARIES AND NUMBER OF STOVES PROVIDED	18
3.3. PERCENTAGE OF STOVES STILL IN USE	20
3.4. TARGETTING OF BENEFICIARIES	21
3.4.1. Overview	21
3.4.2. Gender Targeting	22
3.4.3. Selection of Target Group	23
4. RELEVANCE	24
4.1. WHY A FUEL-EFFICIENT STOVE PROGRAMME?	24
4.2. PRIMARY OBJECTIVES OF A FUEL-EFFICIENT STOVE PROGRAMME	25
4.2.1. Protection of women from gender-based violence	26
4.2.2. Livelihood	27
4.2.3. Environmental protection	27
4.2.4. Capacity building and technology transfer	28
4.3. COHERENCE OF THE FES PROJECT WITH AGENCIES' PROGRAMMES	29
4.4. AGENCY COLLABORATION WITH RELATED PROGRAMMES IN OTHER SECTORS	30
4.5. AGENCY MECHANISMS FOR MONITORING	31
5. EFFECTIVENESS	32
5.1. TO WHAT DEGREE HAVE FES PROJECTS ACHIEVED THEIR STATED OBJECTIVES?	32
5.1.1. Protection of women from gender-based violence	32
5.1.2. Livelihood	36
5.1.3. Environmental protection	38
5.1.4. Capacity building and technology transfer	40

5.2. HOW DO IMPLEMENTING AGENCIES DETERMINE IMPACT OF FES ACTIVITIES?	40
5.3. MEASURES TAKEN BY IMPLEMENTING AGENCIES TO ADJUST PROGRAMMING	42
5.4. CROSS-SECTORAL IMPACTS WITH FES ACTIVITIES	43
6. SUSTAINABILITY	44
6.1. UPTAKE AND FREQUENCY OF USE	44
6.2. LONG-TERM USE OF STOVES WITHIN THE HUMANITARIAN CONTEXT	45
6.3. FREQUENCY OF REPAIR OF STOVES BY BENEFICIARIES AND ABILITY/WILLINGNESS TO MAKE REPAIRS	45
6.4. ABILITY OF BENEFICIARIES TO MAKE OR OBTAIN ADDITIONAL STOVES AS NEEDED	46
6.5. COMPETENCE OF TRAINERS/EFFICIENCY OF STOVES MADE BY TRAINEES	46
7. REPLICABILITY	48
7.1. ABILITY TO PRODUCE STOVES FOLLOWING TRAINING	48
7.2. OUTREACH OF FES PROGRAMMES	49
7.3. TRAINING/DISTRIBUTION METHODS	49
7.4. LEVEL OF FOLLOW-UP AND MONITORING OF EFFICIENCY	51
7.5. ABILITY/WILLINGNESS OF TRAINEES TO CONDUCT FURTHER TRAINING	51
8. COMMUNITY PARTICIPATION AND CAPACITY-BUILDING	52
8.1. COMMUNITY PARTICIPATION	52
8.1.1. Prior experiences with fuel efficient stoves and energy conservation	52
8.1.2. Grassroot structures involved in FES	53
8.1.3. Level of community participation throughout the project cycle	53
8.2. COMMUNITY CAPACITY-BUILDING	54
9. CO-ORDINATION AND INTEGRATION	56
9.1. PROGRAMME INTEGRATION WITHIN AGENCIES	56
9.2. CO-ORDINATION BETWEEN AGENCIES AND SECTORS	58
10. SUMMARY AND RECOMMENDATIONS	60
ANNEX I, TRAINING PROGRAMME	65
ANNEX II, DATA COLLECTION TOOLS DEVELOPED FOR THE REVIEW	67
ANNEX III, BIBLIOGRAPHY AND RESOURCE	96

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The humanitarian situation in Darfur is made difficult by a series of complex realities. Programming in Darfur is therefore a constant and challenging task with insecurity being the major factor of concern. All humanitarian actors have been concerned with the security of the target beneficiaries and have made efforts to address it in various interventions.

The provision of food, water and medical services have figured as priority areas of concern in most aspects of humanitarian relief. The need for domestic energy, however, has also emerged as an essential aid component in the life of those communities affected by war. While the introduction of the fuel-efficient stoves (FES) is not new to Darfur, its current promotion has a specific importance. Sectors like, Livelihood, Protection and Gender-based Violence have constantly felt the need for FES programmes to address issues of safety and violence as experienced by displaced people in Darfur. As a result, a number of agencies have come forward to develop and deliver different models of stoves to affected communities.

This review emerged from a recognised need by RCSO/OCHA for better co-ordination in the implementation of the FES programming across the three Darfur states. This recognition led initially to the creation of a FES working group in each state, which tried to address various issues during the implementation of FES projects. It is in this context that the North Darfur FES Working Group – chaired by RCSO and CHF – commissioned this study with the aim of enhanced co-ordination of FES programming across Darfur.

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ACRONYMS AND ABBREVIATIONS

ACF	Action Contre la Faim
AED	Academy for Educational Development
ARC	American Refugee Committee
AU	African Union
CBO	Community-based organisation
CDA	Community Development Association
CHF	CHF International
CRS	Catholic Relief Services
DAI	Development Alternatives Inc.
DRC	Danish Refugee Council
FAO	Food and Agriculture Organisation (of the United Nations)
FAR	Fellowship for African Relief
FES	Fuel-efficient stove
FESWG	Fuel-efficient Stove Working Group (of Darfur)
FGD	Focus Group Discussion
FNC	Forest National Corporation
GAA	German Agro Action.
GBV	Gender based violence
HHS	Household Survey
IDP	Internally displaced person
IGA	Income-generating activity
ILF	International Lifeline Fund
IRC	International Recue Committee
JMCO	Jebel Mara Charity Organisation
KAEDS	Kutum Agriculture, Extension and Development Society
KII	key informant interview
LPG	Liquid petroleum gas
NGO	non-governmental organisation
RCSO/OCHA	Resident Coordinator's Office/ Office for the Co-ordination of Humanitarian Affairs
PA	Practical Action
RI	Relief International
SAG	Sustainable Action Group
SAVEUSA	Save the Children (USA)
SC	State Co-ordinator
SCUS	Save the children US
SDG	Sudanese Pound
SPCR	Sudanese Popular Committee for Relief and Rehabilitation
SPSS	Statistical Package for Social Scientists
SUDO	Sudan Social Development Organisation
UN	United Nations
UNFPA	UN Population Fund
WG	Working Group
WV	World Vision
WR	World Relief
ZOA	ZOA Refugee Care

EXECUTIVE SUMMARY

Fuel-efficient stove (FES) technology is finding increasing support in situations of human displacement. There are several reasons for this: first, from a protection point of view people who use fuel-efficient stoves may not need to leave the security of a camp as often as they might otherwise need to in order to gather fuelwood. There is also a strong environmental consideration, however, as considerable amounts of vegetation – both living and dead – are normally consumed by displaced people, primarily through cooking but in some instances as a source of light and/or heating. Fuel-efficient stoves can make a significant contribution in this context as they can be much more energy efficient than many conventional stove models. An added benefit is that they also can have positive health benefits for users as they produce less smoke and particle emissions, if used correctly.

The situation in Darfur is highly conducive to the promotion of fuel-efficient stoves, for all of the above reasons. Recognising the enormous need and potential benefits, a multi-agency programme was launched to introduce this technology to – primarily displaced people – some of whom have not had any prior experience of these utensils.

This review, undertaken by ProAct Network on behalf of the Darfur Fuel-efficient Stove Working Group (FESWG) administered by CHF International and co-funded by the UN Environment Programme (UNEP) Food and Agriculture Organisation (FAO) and the UN Population Fund (UNFPA) was a combination of an initial desk study and a subsequent field mission to North, South and West Darfur. A need for the review was prompted by the growing investment being made in fuel-efficient stove programmes by a large number of organisations in Darfur – donors, national and international non-governmental organisations (NGOs) as well as individual stove manufacturers. At the same time, however, it became apparent that no one was really aware as to whether these programmes were in fact meeting their objectives. As a result, the FESWG decided that there was a need and that this was the right time to determine whether or not the approaches currently being funded and promoted were, in fact, having the desired impact.

The focus of this review was only on the programmatic side of FES programmes. A separate, parallel study was undertaken by AED to examine aspects such as the choice and quality of stoves and their specific energy-saving attributes.

The findings presented below are consolidated from a wide range of sources using a number of different, but complementary, approaches. The review was structured to allow the maximum possible degree of consultation and engagement from all stakeholders, from members of displaced communities and host communities to implementing agencies and United Nations co-ordination agencies. Feedback has been provided throughout this review process allowing for additional engagement and refinement of findings, as appropriate.

In a nutshell, while the review found wholesale support for the FES programme at all levels of engagement, there are a worrying number of issues which need to be urgently addressed from the programmatic side. Many of these are “big picture” issues, such as inadequate planning, poor co-ordination, an almost total lack of monitoring and project evaluation and poor investment in longer term sustainability and uptake of fuel-efficient stoves. Such issues range from how the FES programmes are perceived from an institutional perspective in the first instance, to practical issues such as stove users not being given the opportunity to actually source the materials required to construct a stove, which seriously limits the uptake of this technology if the current programmes stop or falters and/or when people are finally able to return home. Some of the main issues are explored further below.

There is **widespread support for a fuel-efficient stove initiative and the recorded uptake of at least certain models of stoves is very positive and encouraging**. Geographical coverage and targeting of specific communities and/or audiences, however, has been sporadic.

Despite there being many other FES designs and models all over greater Darfur, the improved mud stove happens to be that with the highest uptake so far. Of the people targeted by the FES projects, 80-99 per cent of them use them frequently. In economic terms – in all three states – there is at least a 50 per cent cash saving made on fuelwood (charcoal or wood) purchase when a fuel-efficient stove is used. Most savings were recorded in the vicinity of Nyala, South Darfur.

Fuelwood collection was identified as the single and highest priority need that compels women to leave the camp setting, even in the face of danger. Fuelwood collection is sometimes combined with the collection of other materials such as shelter construction materials, grasses and wild fruits. In some cases, these latter materials become more important in a collection trip than fuelwood. These also cause more trips to be made per week.

Women – the primary gatherers of fuelwood across Darfur – generally report a **significant reduction in the frequency of collecting fuelwood per week with the use of some of the fuel-efficient stove**. This frequency was reduced by 50 per cent in North Darfur, 57 per cent in South Darfur and 40 per cent in Zalingie, West Darfur.

Current fuel-efficient programmes in Darfur were **not found to be stand-alone projects**. Most implementing agencies don't even consider FES as a project, but as an activity line within their normal projects. In the best situation, FES is considered as a sub-project within a main project like livelihood support. While this can be argued either way, in the present situation this perception has important negative ramifications which undermine the effectiveness and sustainability of this initiative.

In terms of stated programme objectives “**environmental protection**” and “**protection of women from gender-based violence**” was the most commonly found objective of the FES programme documents. In terms of the level of financial investment to FES projects, however, **there are no stand-alone budgets for FES implementation**. However, a few implementing agencies have well defined sub-budgets or budget lines to implement FES sub-projects or activities. Nonetheless, more apparent and determined programming and financing of this initiative is needed, but only if based on a much stronger and more integrated programmatic approach.

On the subject of **inter-agency** collaboration, there is room for improvement, or at least a streamlining of approaches and intentions. In some instances, one agency may have provided financial resources to others, to provide – in turn – technical personnel to train stove manufacturers on their behalf. Other agencies might purchase stoves directly from others and introduce them within their own programmes. Such co-operation, however, did not extend between national partners who, arguably, are the “most important” given that they should be more likely to remain in place once this conflict situation is concluded.

Monitoring and evaluating the impacts of FES-related activities is very poor, with virtually no element of community participation. No single means exists to measure or compare indicators between the different FES projects as objectives and implementation strategies vary widely and are stated in the context of the larger project frameworks. Any measurement of success is thus based on the indicators stated by the main project of the sector within which FES is embedded.

There is also a dismal record of **knowledge management** in relation to FES activities, and possibly broader programme elements. In more than 80 per cent of FES-related projects – even when there has been residual evidence that a similar project had been implemented in the same sampled location – implementing agencies merely start all over again, ignoring the lessons of the previous Implementers.

There is no deliberate **capacity building** strategy embedded in any of the FES projects. Women’s groups have been offering support in mobilising and monitoring participation at the camp and community levels. This role has necessitated the discovery of new leaders from among the women. Through ‘learning by doing’ a lot of the women are now able to train others to produce stoves and they can apply these skills in other disciplines.

In terms of **sustainability**, the fact that in some projects implementing agencies currently provide everything for the IDPs to produce stoves is not contributing to the persistence of the technology when they return home. For long-term persistence of the technology and transfer of the technology to the country-side, more emphasis should be put on training with a strong component of construction materials acquisition.

Many concerns were raised over the **quality of training** being provided, particularly the skills and competence of trainers. Most of the trainers being recycled within the FES projects were initially trained through a FAO initiative. High staff turnover in most of NGOs that participated in this training resulted in them eventually losing these trainers. Others have been promoted or may now be in a work position that does not allow them to engage in training. Implementing agencies do not utilise the services of trained personnel effectively. The few trainers who are consulted by NGOs are

over-stretched, trying to cover the entire region. This has resulted in the dissipation of efficiency.

In summary, fuel-efficient stove programmes potentially have much to offer the people in Darfur – and have indeed already done so in many instances – from a protection, environmental, livelihood and health perspective. Significant achievements have been made thus far but a major challenge remains if agencies promoting and backing this initiative wish to truly have a positive and lasting impact. Some hard decisions need to be taken if this initiative is to reach its full potential: some steps will even have to be retraced. Overall, there is a need for greatly improved programme planning, co-ordination, information sharing, capacity building and monitoring. An impressive and important first step has been taken, but advancing on this in a positive and lasting way will require even great commitment from all engaged stakeholders. **At the state level, the FES WG should set up an employed technical team tasked with a FES extension programme.** Such a team could work closely with FNC to enhance their technical capacities and maintain government's policy direction in this regard.

1. INTRODUCTION

1.1. THE DARFUR SETTING

Fuellwood comprises the main source of energy for the vast majority of people in Darfur, western Sudan. Its availability – and access to this natural resource – has become a highly contentious issue in relation to human and environmental security. The current practice of harvesting this resource in a wholly unsustainable manner is resulting in a precarious situation in many parts of Darfur, some of which is likely to lead to increased conflict over already scarce and increasingly limited natural resources. The effects of this over-exploitation have already begun to manifest themselves in many parts of this region, with longer term impacts now imminent.

Fuelwood is required at two distinct levels: at the household level, including its use in camps and settlements for internally displaced people (IDPs) as well as in other communities, and at the commercial level, where it finds use in kilns for brick making, bakeries, restaurants and other commercial sectors. The commercial use of fuelwood (and charcoal) also extends to markets, as an increasing amount of wood is now being collected, transported and sold on open markets, a trade that is increasingly controlled by powerful bodies with little interest in environmental sustainability or human welfare.

The 2003 escalation of insecurity in Darfur has greatly exacerbated the problem of fuelwood supply in this entire region, particularly to meet the needs of people in camps. Humanitarian assistance in Darfur has not included an energy supply option, but this is not atypical of such situations. Instead, considerable efforts have been made to introduce fuel-efficient stoves (FES) to camps and settlements in rural areas, as well as many urban settings since so many IDPs have found shelter in existing urban centres. This response has in part been to restrict the level of environmental degradation commonly associated with human displacement in such conditions. A major consideration though was also to try and address the high incidences of gender based violence (GBV) being experienced when women – who by tradition are those members of society who gather fuelwood and other resources, including water – go outside a camp or village perimeter in search of fuelwood.

Fuel-efficient stoves are not new to the Sudan and some parts of Darfur have benefited from this technology in the past. Introducing them en masse in an already stressful environment, through a series of what can best be described as poorly planned and co-ordinated programmes by a range of institutions, poses a particular challenge but this nonetheless is a challenge which needs to be met and overcome.

Earlier attempts to introduce certain types of fuel-efficient stoves seem to have met with varying degrees of interest and success. A much more concerted effort, however, has been ongoing for the past few years in an attempt to tackle the two main concerns identified above – human security and environmental management. This report examines a number of aspects of this ongoing effort through the lens of a programmatic rather than technical (i.e. effectiveness of a particular stove type) point of view.

1.2. PURPOSE OF THIS REVIEW

A number of sectoral working groups have been established in Darfur in an attempt to ensure regular information flows and co-ordination of activities and planning. As part of this intention, the Darfur FES, Energy and Livelihoods Working Groups recognised that there have been many interventions related to improving fuel-efficiency during and indeed prior to the current Darfur conflict, many with positive results. Tangible evidence of this claim, however, was hard to come by.

Fuel-efficient stove projects have been instituted around the globe by various agencies, for multiple reasons, including but not limited to::

- reducing GBV by using fuel-efficient stoves to reduce fuelwood consumption which should, in turn, reduce the frequency of wood collection;
- reducing environmental degradation, primarily by limiting deforestation and soil degradation that accompanies fuelwood harvesting;
- reducing fire and safety risks by containing cooking fires;
- decreasing indoor air pollution by increasing the efficiency of fuel combustion and heat transfer over that of a traditional open three-stone fire, and reducing smoke and particle emissions; and
- enabling the sale of stoves to generate income as a means of reducing reliance on firewood collection/sale as a primary income-generating activity (IGA).

Given the growing investment being made in fuel-efficient stove programmes by a large number of organisations in Darfur – donors, national and international NGOs and individual stove manufacturers – it was decided timely and necessary to determine whether or not the approaches that were currently being funded and promoted were, in fact, having any impact – positive or negative.

At the time when this review was undertaken, many agencies were already promoting FES in all three Darfur states, although few were present in all three at the same time. Co-ordination of FES efforts, however, was reported as being patchy, quality control of training and production had been inconsistent, and monitoring was weak. Overall, the impact of interventions on the programming level to date was therefore very unclear.

Poor inter-agency co-ordination and a lack of open information sharing were suspected as potential weaknesses in the current implementation scheme. In particular, it was thought that:

- many agencies have been forced to duplicate efforts in designing effective programmes, perhaps without a sound baseline assessment of needs;
- critical time was being lost on pilot projects rather than actual project implementation;
- agencies were unable to tap into available resources – financial and technical; and
- agencies were not consistently sharing best practices and lessons learned from previous interventions.

Given these varying objectives, it was deemed important that in addition to examining the production, use, technical efficiency, and monitoring and evaluation of certain FES models – a separate review of this topic was undertaken by USAID, in parallel to the present review – an overall assessment of FES programming should examine the degree to which the stated objectives of FES projects were being met. This was felt necessary to validate assumptions and claims that, for example, “FES reduce firewood consumption”, “FES reduce GBV”, “FES is a protection tool” or that “FES reduce deforestation”.

The conflict in Darfur has displaced millions of people, many of whom now reside in camps, such as Abu Shouk, in North Darfur. These large concentrations of people place great pressure on the natural resources such as water and fuelwood.



Monitoring and evaluation of FES programmes, and sharing of results between agencies to enhance learning were thought to have been inadequate or absent. Evidence from a recent desk review of FES programming in IDP contexts found that “there is no consistent approach to monitoring and evaluation of FES programmes among relief agencies. In fact, there is little information available regarding monitoring and evaluation approaches used with IDP programmes”¹.

Inadequate monitoring of stove performance (using simple procedures and equipment that can be used where literacy rates and technical skills are low) and user behaviour, as well as inadequate programmatic evaluation of FES impact in meeting one or more of these different objectives, has consequently made it difficult for agencies to systematically assess or improve their current programming and/or to implement more effective programming.

Another significant challenge facing FES programmes in IDP settings is how to reach effectively the greatest number of people with the time and resource constraints that are typical of IDP programs. Approaches that have been tried include both mass training and mass production of improved cook stoves² which have in turn sometimes negatively affected the quality of the stoves and effectiveness of the training.

This review was therefore undertaken in an attempt to examine the impact on the ground of the fuel-efficient stove programme(s), from a programmatic point of view. Its purpose was not to look at the efficiency or appropriateness of any particular model of stove³ but rather to examine the manner in which this programme has been implemented and co-ordinated by the responsible agencies and stakeholders on the ground. At the same time, the review was not intended – and this report is not intended – to point fingers at any guilty party through its findings, or to promote the interests of any organisation that may be implementing some component of a FES project. Part of the mandate of this review was that it should be “undertaken in the full spirit of a transparent inter-agency initiative to benefit all, serving programmatic purposes as well as agency capacity-building and network-building”.

The review was conducted by a team from ProAct Network, contracted by CHF International on behalf of the FES Working Group. Please see Section 2 for further details of the methodology applied in this review.

1 Fuel-efficient Stove Programme in IDP Settings. A Desk Study: Prepared by the Academy for Educational Development. 11 January 2007. Funded by USAID. USAID has also been supporting the ICRC/WCRWC programme to promote a coordinated strategy for addressing fuel needs in conflict-affected settings - see <http://www.icva.ch/doc00002332.html> and <http://www.fuelnetwork.org>

2 Ibid

3 This topic was the subject of a parallel but separate review funded by USAID/OFDA. While it was hoped that the current review could link with the other study, this was not possible due to delays in the other study being launched. The original project document also mentioned that “is envisioned that, upon completion of this initial assessment of FES programming, a second assessment analysing and exploring alternative household energy programme options for meeting cooking and heating fuel needs will subsequently be conducted”.

1.3. OBJECTIVE OF THIS REVIEW

The main objective of the review was “to conduct a critical review of the effectiveness of Darfur FES programmes as measured by their stated objectives versus assessed outcomes, and make recommendations for the future”.

Key factors that were to be examined included relevance, effectiveness and fuel-efficiency impact, cost-effectiveness, adoptability, sustainability, replicability, geographic coverage and targeting, community participation and capacity-building, and co-ordination/integration. The following report is structured round many of these key topics, with the exception primarily of fuel-efficiency, as this was to be the subject of a separate review, and cost-effectiveness.

1.4. EXPECTED OUTPUTS

Expected outputs from this review were:

- an impact analysis of the multiple objectives of FES programming – such as protection, environment, livelihoods, training and capacity building – and programming recommendations;
- two reports: a summary report to be shared widely and a second, more detailed report to be made available to all FES-implementing agencies and supporting agencies/institutions, government organisations and NGOs;
- recommended best practice programming guidelines for current FES implementing agencies and those planning to intervene;
- a regional workshop to present the findings, enhance awareness and encourage further dialogue to inter alia promote networking amongst key stakeholders.

2. METHODOLOGY

2.1. BACKGROUND

The review process started with some initial desk work based on materials provided from various working groups and contacts in Darfur. This was followed immediately in practice when the Team Leader, fielded by ProAct Network, arrived in Sudan.

Preparatory meetings were held in Khartoum with FES implementing agencies represented in the city. The purpose of these meeting was mainly to formally introduce ProAct and the Team Leader to the stakeholders and to present the proposed methodology for use in the review. Particular emphasis was placed on the intended participatory nature of the review and the value and requirement of constant engagement on the part of implicated implementing agencies and other stakeholders throughout the process.

2.2. DARFUR CO-ORDINATION STRUCTURE

Overall co-ordination for this review was provided by the RCSO/OCHA in El Fasher, North Darfur.

Each state has a Working Group (WG) or co-ordination forum for FES agencies to co-ordinate their respective FES activities. Working group structures, however, differ from one state to another, but the Chairs and Co-Chairs of the respective WGs were generally expected to provide administrative and logistic support to this review.

The North Darfur FES WG was deeply engaged in overall co-ordination matters, while FAO in Geniena and CHF in Nyala provided administrative and logistic support for these states in West

and South Darfur, respectively. At least one state meeting was held by each WG during the time the review mission was on the ground, to address issues that could enhance co-operation and co-ordination within the review process.

A national State Co-ordinator (SC) was recruited by CHF in each state. S/he was responsible for state-level field co-ordination. The SCs formed the principal links with the WGs, especially in relation to logistic support.

Trained focus discussion group co-ordinators (FGDs) worked closely with the SCs. They were responsible for planning, delivering and ensuring the quality of the group discussions. The SCs and FGDs were supported by a total of 50 enumerators who assisted with data collection

The three SCs and three FGD Leaders were managed by the Team Leader fielded by ProAct. The Team Leader was responsible for the overall technical design, quality control and organisation of the review.

2.3. PROCESS ADOPTED

2.3.1. PLANNING AND TRAINING ASPECTS

The review process involved the following components:

Desk Study: A desk study was undertaken to conduct a rapid background review of project proposals, monitoring and/or evaluation reports as well as project closure reports and materials made available to the Team Leader in advance. Other tools such as training manuals, monitoring tools and research documents also formed part of the background review. Tools developed for use in the review are included in Annex II to this report.

Ground preparation by the State Co-ordinators: This aspect of the review was initially planned to take place before the arrival of the Team Leader. However, due to a delay in the start of the review, the SCs were not recruited and/or mobilised early enough.

The SCs began their ground preparation when the Team Leader was already in place to start methodology development. The SC engaged the FES WGs to secure needed logistics and information and identify enumerators from within the FES implementing agencies. The time lapse for the start of the review created a chasm in information promotion among FES implementing agencies and changes in on-ground circumstances under which support was promised. This gap created a lot of logistical shortfalls in the review process.

Methodology and tools development: The review process was intended to be mainly participatory and the design of the training and planning session reflected this aspiration. All of the tools in the review were developed in-country. The methodologies were also agreed on and practiced during the training and planning sessions.

Prior to the training and planning sessions, the review team held consultative meetings with the WGs in the three respective states to provide further inputs on review criteria and guidance on the selection of samples at the various levels. The review team, with guidance from RCSO/OCHA and CHF, then developed a work plan defining milestones and a timeframe for the entire process.

A training and planning session was held from 17-22 March in El Fasher to establish the following:

- team building, including the identification of technical capacities available within the team and these might be best managed;
- create an in-depth understanding of the Review process;
- agree on criteria that could realistically be reviewed by the team;
- understand the general methodology of the review;
- develop tools for data collection;
- harmonise proposed participatory methods for data collection;
- agree on communication arrangements and reporting lines; and
- determine needs and requirements in terms of general logistics.

A copy of the training programme is attached as Annex I.

The training was attended by the three SCs, the three FGD Leaders; a representative from FAO Geniena, a representative from RCSO/OCHA Nyala; three representative from RCSO/OCHA El Fasher; three enumerators from CHF El Fasher, and four enumerators from Practical Action, El Fasher.

The key principle on which the training sessions were based was action research. The planning, action, reflection and planning cycle were emphasised, taking note of the relevance of the target community in each part of that cycle. Development of the tools followed the action research process.

Three broad data collection methods were identified and agreed upon: Household Surveys (HHSs), Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs). Various representatives at the meeting, including the FGD leaders, provided some additional background information on these methods as well as their experiences in using them. Once a general understanding had been established on the nature and use of each method, trainees were divided into groups to deliberate on the types of tools to be used and how to design them. These groups then presented their work in plenary and received additional input from other participants.

Questions were initially developed based on the criteria for the review. These questions were then allocated to specific tools which the group thought would extract information that would be a true reflection of a specific issue. The questions within each tool were later re-organised to achieve a logical flow of questioning, taking time limitations also into consideration.



At the start of the field work for the review, the three State Coordinators, three Focus Group Discussion Leaders; a representative from FAO Geniena, a representative from RCSO/OCHA Nyala; three representative from RCSO/OCHA El Fasher; three enumerators from CHF El Fasher, and four enumerators from Practical Action, all undertook training in El Fasher, after which they developed the data gathering tools.

The outputs of the training and planning sessions included the development of the review tools outlined below:

- focus group discussion checklist;
- household survey questionnaire (in English and Arabic);
- interview checklist for FES Users;
- interview checklist to determine external influences, for use with non-FES users, charcoal burners, local stove traders and so forth;
- interview checklist specifically designed for members of the FNC;
- questionnaire for agencies implementing FES projects; and
- interview checklist to use with local leaders or monitors, including Sheikhs, Omdas and women leaders.

Having developed these tools, the team then practiced with each for them to see how the various members were able to perform with them. Through this exercise, the team realised that the HHS questionnaire must be translated into Arabic for effective use.

The above-mentioned tools were field tested in Alsalam and Abushouk camps on 24 and 25 March, respectively. With the exception of the HHS questionnaire – which was conducted in Arabic – all other tools were tested in English.

Minor changes were made to the questionnaires as a result of this exercise, these mainly being typographical errors and a repetition of some questions. One of the reasons the tools required so few

changes is on account of their being developed in-country, taking account of cultural and linguistic considerations, with direct input from practitioners who have active contacts with the populations targeted.

The tools were then presented to the North Darfur working group with highlights from the field testing. Suggested modifications were adopted and the tools were officially rolled out on 27 March.

During the tools refinement period, the team in West and South Darfur were carrying out training for enumerators simultaneously.

Field Data Collection: Field data collection was carried out between 30 March and 17 April 2008. Table 1 below shows the distribution of respondents over the three states and methods used to collect the information.

Table 1. Number of interviews and field surveys held

State	Camp or community visited in the review	No. of households surveyed	No. of Focus Group Discussions	No. of Key Informant Interviews (external)	No. of Key Informants: FAO, FNC, implementers
North	6	273	11	128	6
West	6	360	11	39	8
South	6	299	12	67	8
Total	18	932	34	234	22

Stakeholders involved in the surveys included national and international NGOs, the FNC, the Food and Agriculture Organisation (FAO), IDPs, refugees, residents of rural settlements associated with IDP camps, residents of urban areas associated with IDP camps and specialised groups of key informants.

Data collection took place simultaneously in all three states once the introductory workshops and training of State Coordinators, FGD facilitators and Enumerators was concluded. Throughout the data collection process, the Team Leader visited each team in each state to help ensure quality control of the fieldwork, to address any problems arising and to provide technical guidance. The CHF office in El Fasher organised travel arrangements throughout the data collection process, with back stopping from the CHF office in Nyala.

Focus Group Discussions were undertaken with users of different stoves as well as with control groups of non-users for comparison purposes. Group discussions were done with mixed age, occupation and social groups, but groups were divided by gender to allow more open expression of information and perspectives. FES implementing agencies were always contacted prior to a field visit to inform them of the purpose of the review and to allow them to prepare for subsequent meetings and interviews. Enumerators from the implementing agencies were usually involved in helping the team to target their samples and to facilitate camp entry formalities.

FGD groups normally comprised of 10–15 participants, selected through a range of channels to achieve representative views. By the end of the session, however, the number of participants was often around 25 people, as other participants would come to listen and to occasionally make contributions.

The FGD questionnaire was used purely as a checklist rather than a structured or semi-structured questionnaire. Questions were followed in a logical sequence and were asked if they were deemed to still be relevant as the process proceeds. The checklist provided the FGD Leaders with options to make the process flexible, yet thorough and full of information. The contracted FGD Leaders facilitated all these sessions and were supported by two enumerators that acted as note takers and observers.

Household surveys aimed at asking more specific questions on key issues or factors. The administration of the questionnaire was based on individual interviews with household members including women, men, and other members allows for direct, more honest responses not influenced by peer pressure. The average number of HHS questionnaires administered per camp was 50. Only the Arabic version was administered to ensure clear understanding, as the exercise was done by the enumerators, supervised by the SC. The HHS questionnaire was used as a semi-structured questionnaire, where questions were asked strictly from top to bottom to maintain a logical pattern.

The questionnaires were coded and each state team recorded their questionnaire information into a Statistical Package for Social Scientists spread sheet. These were later analysed with support from RCSO/OCHA.

Key informant interviews were used to gather specific contextual and complementary information to include trends and to answer questions relating to historical information, broader understandings of livelihoods patterns, environmental factors, security, health, camp, village or urban setting dynamics, and other programming initiatives. These included FES implementing agencies, the FNC, non-users, community leaders and other trade groups.

The questionnaire and checklist for implementing agencies and the FNC, respectively, were administered by the Team Leader, to ensure confidentiality. Implementing agency questionnaires were distributed at least two weeks in advance. Agencies were required to appoint a focal person with knowledge of the FES programme to co-ordinate information gathering. This focal person also facilitated discussion with the Team Leader to clarify specific issues as these arose. Unfortunately, most implementing agencies were unable to attend to the questionnaire until the Team Leader was physically present to organise meeting or to discuss issues in person with the focal person. In some cases, the person with the institutional knowledge had either left the organisation or was not available for consultation. The checklist was used by the FNC for their interviews, with additional questions being raised, as relevant.

Three other KII checklists were used to cover categories of FES users, the external influence on FES programme (FES traders, charcoal burners, wood cutters), and local monitors such as women leaders, Sheikhs and Omdas. These were administered by the SC. Questionnaires were used purely used as checklists, with additional questions being asked as they become relevant.

2.3.2. SCOPE OF THE REVIEW

The Who? What? Where? documents compiled by OCHA – outlining the presence of implementing agencies in Darfur – and provided to the Team Leader were very helpful in locating projects to be reviewed, as well as identifying implementing agencies in the respective states.

Time available at the field level was greatly curtailed by the prevailing security upheavals in the run up to a suddenly announced national census. The actual scope of field data collection was therefore reduced and the team focused on being as efficient as possible with the time and contacts available. Criteria set by the FES WG for the selecting of FES programs reviewed included the following:

- servicing an estimated 10 per cent of the camp population in terms of the number of women trained to use FES or make the stoves. This could be through direct stove provision to women, artisan training to produce stoves, training of trainers with women; and/or
- servicing an estimated percentage of area of rural population; and/or
- have produced 100 stoves;
- have been operating for a minimum of three months;
- include projects which have been complete for a minimum of six months;
- across as diverse a spread of localities as access allows;
- targeting a range of ethnic/culturally diverse groups due to different cultural norms, opinions or practices; and
- ensure a balance of urban versus rural, camp populations versus non-camp populations and IDPs versus host/resident communities.

The review tried as best as possible to address most of the pre-selected projects according to the above stated criteria.

At the end of the field mission, preliminary findings were presented at a workshop in El Fahser. A report of the preliminary findings of the Review was also given to implementing agencies and donors in Khartoum. Feedback from these sessions has been taken into account in this report.

3. FUEL-EFFICIENT STOVES AND THEIR USE IN DARFUR

3.1. AGENCIES ENGAGED WITH FES ACTIVITIES

Fuel-efficient stove projects have been restricted to camps in government-controlled areas, with extremely limited coverage of the rural and urban areas. A large number of international and NGOs and have been engaged to differing degrees with FES activities in Darfur. In some cases these have been in partnership with United Nations (UN) agencies such as the FAO and United Nations Population Fund (UNFPA), but there have also been other forms of partnerships within the International NGO community, both within and across states. Limited partnerships were observed within the national NGO community, and between national and international NGOs. For example the International LifeLine Fund (ILF) has undertaken a number of partner projects with Relief International, SUDO, SAVEUSA, ACF, UNFPA, and DAI. Some partnerships were, however, noted between national NGOs and certain UN agencies.



Different types of stoves are promoted by different agencies. Other models may also be available in markets. It is not surprising therefore that many IDP kitchens may feature more than one type of stove, an issue that may also reflect cooking preferences among some women.

The actual number of NGOs involved is therefore not indicative of the number of FES projects which have been implemented, or which might currently be being implemented. Table 2 shows the number of NGOs who have been participating in FES activities.

Table 2. Number of NGOs engaged in FES activities since January 2005

State	Total number of NGOs with closed or ongoing FES	Number of NGOs implementing FES	% NGOs implementing FES
North Darfur	12	5	42
West Darfur	9	9	100
South Darfur	14	3	21
Total	35	17	49

This shows that less than half of the NGOs that have implemented FES projects – as an individual institution or in partnership with others – are still actively engaged in this line of work.

3.2. NUMBER OF BENEFICIARIES AND NUMBER OF STOVES PROVIDED

Agencies responsible for FES implementation encountered during the review were as follows:

- West Darfur – CDA, Concern, HelpAge, CRS, WR, FAR, SCUS, FAO, FNC, CFCSE, DRC, Mercy Corps; (Solaridarite - Jabel Marah) and ILF;
- South Darfur – CHF, ACF, ZOA, WV, FAO, FNC and ARC; and
- North Darfur – RI, CHF, Oxfam-GB, PA, ACF, FAO, FNC, SAG, SUDO, IRC, AU and ILF.

For the purpose of fair comparison appliances like liquid petroleum gas (LPG), kerosene stoves and solar cookers have not been included in this table. This was also adjusted accordingly on the number of household targeted.

Table 3 represents the best estimate of numbers of beneficiaries and stoves provided. It should though be pointed out that there are a number of gaps in these data due to the FES dissemination strategy adopted in the implementation process.

Table 3. Number of project beneficiaries and stoves provided

State	Implementing Agency	Number of Beneficiaries (January 2006 to February 2008)	Number of FES Provided (January 2006 to February 2008)
North Darfur	CHF	12,450	44,360
	AHA	NA	NA
	SAG	2,000	2,000
	SUDO	73,000	1,020
	RI/Lifeline/SUDO	33,200	5,580
	RI/Lifeline	5,000	5,500
	GAA/KEADS/ FAO	17,526	NA
	URDP/ FAO	30	NA
	ACF/ILF	300	300
	Oxfam	2,000	655
	<i>State Total</i>	<i>145,506</i>	<i>58,460</i>
West Darfur	RI/SCUS/ILF/SAVE	18,081	3,000
	SCUS	96,639	NA
	HelpAge	170	NA
	CDA	619	NA
	CRS	442	NA
	WR/FAO	9,000	NA
	Concern/FAO	4,250	NA
	DRC	500	NA
	Mercy Corps	NA	NA
	CFCSF	1,050	NA
<i>State Total</i>	<i>130,751</i>	<i>3,000</i>	
South Darfur	UNFPA/JMCO	5,000	10,000
	FAO/JMCO/SPCR	20,700	41,400
	WV	7,000	16,000
	CHF/ IRC/ACF	NA	900
	CHF	NA	NA
	FAO/ZOA	8,000	1,900
	DAI/Remco	NA	NA
	IRC	NA	NA
	NCA/ Sudan Aid	NA	NA
	Oxfam	NA	NA
<i>State Total</i>	<i>40,700</i>	<i>70,200</i>	
Total All States		316,957	131,660

3.3. PERCENTAGE OF STOVES STILL IN USE

Various types of stoves were seen to be in use in all of the states, but mud stoves were in the clear majority across the three states (Table 4). It should be noted though, that the type of stove offered is largely the decision of the NGO, not the intended user.

Mud and metal stoves were the two main types of stove in use in West Darfur. Users in South Darfur again used mud stoves produced either by CHF or FAO, as well as traditional mud stoves provided to local communities in Jabel Mara and traditional metal stoves that used charcoal, as well as Tara stoves. In North Darfur, mud stoves (Improved – PA; Mubkhar - PA), rocket stoves (introduced by International Lifeline and also implemented by Wahid, ACF, RI) and a limited quantity of TARA stoves were seen. The Azar stove was also seen in El Fasher town, where it is distributed by FNC and FAO.

FES projects have been restricted to camps in government-controlled areas and, to date, there has been extremely limited coverage of rural and urban areas.

Table 4. Preferred model of stove

State	Dominant Stove Type	% Using Dominant Stove Type	% Population Targeted by FES Projects Actively Using FES
North	Improved mud stove	77	80
West – Geneina	Improved mud stove	88	98
West – Zalingie	Improved mud stove	95	99
South	Improved mud stove	74	97

Figures shown in Table 4 show a relatively high – though not consistent – level of usage of fuel-efficient stoves for cooking across the three states.

Field surveys demonstrated a general shift by people surveyed to move away from using traditional three-stone fires to the use of one type of FES or another. This does not suggest that three-stone fireplaces have been completely substituted by FES, but the latter are progressively increasing in their preference rating among users.

Even in situations where projects have been closed, stoves that were left over and in good condition were still being used. Some of these are now coming to the end of their life span because new modifications may have been introduced and access to materials has been made easier in some settings by the presence of a new project. This makes it more logical for the users to abandon old stove models in favour of a new one.

Overall, more than 80 per cent of the people surveyed who have received a fuel-efficient stove are still using it. Most of those people not using FES within the camp, or in surrounding host

communities, have not yet been reached by a FES programme. They have, however, expressed keen interest in using these stoves. In the North, even some committee leaders who were tasked with the responsibility to distribute FES do not have a unit because they were afraid not to be seen as partial in their distribution to beneficiaries.

In North and South Darfur, if mud stoves are damaged, some women will remove the metal bars and construct a new one. Stoves in West Darfur do not have metal bars so the women simply fetch the local materials and produce a new stove. This makes the stoves – even from closed projects – available for even broader and longer term use by communities.

3.4. TARGETTING OF BENEFICIARIES

3.4.1. OVERVIEW

The distribution focus of fuel-efficient stoves has not been comprehensive or consistent across the three stages, as shown in Table 5.

Table 5. Beneficiaries of FES Programmes

State	% IDPs	% Refugees	% Urban Residents	% Rural Residents
North	82	1	15	2
West – Geneina	87	5	2	7
West – Zallingie	36	0	64	0
South	52	6	3	39

In North Darfur, for example, the FES intervention covered all groups and tribes living in camps and settlements such as Kabkabyia town. The main Darfur tribes living as IDPs are the Fur, Tunger, Zaghawa and Burti – all non-Arabic ethnic groups. There are very few Arab tribes living in areas where IDPs have gathered. Of the population covered by FES programmes in the North, the vast majority (82 per cent) are IDPs, while only 15 per cent of the urban population have benefitted from FES interventions.

In West Darfur, results showed that 87 per cent of the population sampled from Geneina were IDPs, with only a small representation of refugees, and urban and rural residents. In Zallingie, in contrast, almost 64 per cent of the target population is urban residents, the remainder being IDPs. There are few areas where people did not move from their original areas of residence. Most of the resident communities and nearly all nomads and returnees were not approached in most areas of the state. The ethnic groups targeted by FES programmes are for example, the Masaliet, Fur, Zaghawa, Tama, Dajo and Arabs.

In South Darfur, about 52 per cent of the population targeted with the FES programme are IDPs, 39 per cent are rural residents and the remainder either refugees or urban residents. Tribes covered were Fur, Zaghwa, Masaleet, Berget, Dago and some Arab tribes.

Populations not covered by FES projects are usually those in areas under the control of armed movements, with large population of IDPs.

As part of this review, 18 field sites were visited out of 80 known FES locations. There are an estimated 165 IDP gathering locations areas currently in Darfur. The geographical locations of FES projects are shown in Table 6.

Table 6. Geographical location of FES projects

North Darfur	No. of Camps/ Communities	West Darfur	No. of Camps/ Communities	South Darfur	No. of Camps/ Communities
El Fasher	3 (2)	Geneina	10 (5)	Nyala	8 (6)
Kebkabiya	2	Zalingie	8 (1)	Locations not visited	
Dar El Salam	2	Locations not visited:		Buram	1
Locations not visited:		Kerenek	11	Greida	1
Tawilla	2	Wadi Azoum	2	Kass	1
Kutum	4	Kulbus	2		
Mellit	2	Umtajok	6		
Umkedada	1	Sanidad	5		
		Wadi Sali	4		
		Mukjar	1		
		Umdukun	1		
		Jebel Marra	1		
		Morni	2		
16		53		11	

A total of 18 were sites visited out of 80 known FES locations from 165 gathering locations. Brackets, for example, show that 2 of 3 known FES locations in El Fasher were visited during the review.

3.4.2. GENDER TARGETING

Almost 100 per cent of the beneficiaries targeted by FES programmes are women. This is usually because the women fall within the criteria for vulnerability targeted by the implementing agencies. Even with programmes that are targeting specific vulnerable age groups – such as children and the elderly – women are generally included for support as care givers.

Furthermore, men are normally not targeted in FES projects as they rarely participate in household cooking. Even when they are involved in fuelwood collection it is mainly with the objective of sale or to use this in a bakery or kiln. Men also collect building materials, for shelter maintenance or for sale.

3.4.3. SELECTION OF TARGET GROUP

The selection of target groups for FES projects normally follow most or all of the steps outlined below.

- a) General sensitisation and awareness raising. In general, FES projects are introduced by an implementing agency only once it already established a programme that is more typical of its normal intervention. This could be a livelihood or women's welfare project, for example. Only when this has occurred, will the FES concept be introduced, within the context of awareness raising, alongside cross-cutting issues like HIV-AIDS or women protection.
- b) Interest and vulnerability. The next stage is usually characterised by the tentative registration of interested individuals. These people are usually drawn from existing vulnerable target groups, making it a small number of people, initially at least.

In this context, the main groups of people categorised as "vulnerable" include women, children, the aged and physically challenged and those who had suffered from GBV.

- c) Community leadership. All communities – including those now based temporarily in camps – are headed by some form of traditional leadership, which reflects what would normally exist in their area of origin.

Among some tribes, the hierarchy runs from the Shartai, Omda and Sheikhs – in Zalingie, for example. In other localities, the hierarchy runs from the Sultan, Fursher and Sheikhs. Among the Arab tribes the hierarchy runs from the Amier/Emir, Omda and Sheikhs. In situations where this review was conducted, the leadership with direct influence on the projects was simplified to the Omdas and Sheikhs.

Among the Sheikhs, there is a Head Sheikh called the Omda. Each Sheik represents a sub-sector of the respective community. The FES implementing agency would therefore approach the Omda in the first instance to select vulnerable individuals who might then participate in a specific project. The Omda would in turn consult with the Sheikhs who would then go to their constituencies and consult with relevant leaders, including women and youth leaders. The Sheikh would then be provided with the names of possible beneficiaries and would, in turn, again provide this information to the Omda. Only then will a formal decision be taken and, if positive, the names of people selected would be forwarded to the implementer.

- d) Outreach through animators to ensure that all households have fuel-efficient stoves. Through trained animators, the implementing agency will contact appointed beneficiaries. Registration for the project is then formalised and the project can be implemented.
- e) The process is monitored. Implementing agencies always try to participate in some part of the decision-making process. To monitor the entire process, however, is an impossible task as some leaders will deliberately create some red tape for the implementing agency in order to include their family members or loyal/favourite constituents, even if they were not initially recommended.

4. RELEVANCE

4.1. WHY A FUEL-EFFICIENT STOVE PROGRAMME?

The artificially high concentration of IDPs in spontaneous and organised camps and settlements has defined a new world of security for these people, outside of which there are feared or real dangers. Areas where IDPs have assembled are largely inadequate for their needs. Hastily provided facilities pay little consideration for long-term population needs and the displaced population is now largely if not wholly dependent on basic life-sustaining resources supplied by humanitarian agencies. There are, however, certain basic needs which such supply chains cannot or fail to meet – fuelwood, cooking supplements and building materials for structural maintenance, for example.

There is a general shortage of natural resources in Darfur, for several reasons. First, the geographical location of Darfur in the Sahelian zone inevitably makes it a region with very low rainfall. This automatically limits the abundance and variety of vegetation and associated biological diversity. An unpredictable pattern of rainfall and drought – some of which may be related to global climate change – adds additional pressure, limiting the options for planting vegetation for example and increasing competition for already limited natural resources. This stress has led to varying levels of conflict based on access to natural resources such as grazing and water, as communities strive to maintain their livelihoods.

Sudan has a natural resource based economy. When this is over-stretched, there is bound to be severe constraint on livelihoods.

In response to the current conflict, many IDP gathering areas were either set up within forest reserves or very close to them. While traditional management of these reserves may have formerly been in harmony with the needs of local communities, when the number of people settled in such areas increased significantly – and suddenly – there was immediate over-harvesting of forest products.

The presence of concentrated groups of IDPs provides various opportunities for commerce in a wide range of materials. The basic need for fuelwood and shelter construction materials cannot be overstated and, not surprisingly, there is indeed a vibrant trade in fuelwood in many IDP hosting areas. Many different groups of people have engaged in this business, including security forces, nomadic tribes and truck owners. They are normally armed, making it difficult for the FNC to monitor rates and the nature of extraction: live trees are commonly cut for fuelwood. IDPs are in many cases denied access outside to wood gathering areas in order to prevent free harvesting of these materials. The personal security of individuals or groups of IDPs who might venture outside of a camp to harvest forest products poses another challenge.

Other sources of loss of natural vegetation cover are clearance for agriculture and deliberate destruction of forests. Agricultural activities – formerly practised by sedentary tribes – are now taking place in camp situations, some of which are within or close to forests. Some of these forests are hence becoming degraded or destroyed.

Forests are also being set on fire deliberately, by many different actors. Rebel forces burn crops on farms to prevent them from being accessible to other armed groups, while some nomadic tribes may burn farms to punish their opponents. The military, in turn, burns vegetation for security reasons, such as enhancing visibility. All of these activities combine to remove or degrade already limited stocks of vegetation, and deepen the scarcity of fuelwood and construction materials. Knock-on effects to be expected in many instances include loss of soil fertility, increased erosion of water courses, drying of streams, and the loss of fodder and shelter for livestock.

The introduction of fuel-efficient stoves and best cooking practices was in direct response to these challenges, both from a human security and livelihood point of view as well as an environmental mitigation measure.

4.2. PRIMARY OBJECTIVES OF A FUEL-EFFICIENT STOVE PROGRAMME

Following a review of project documentation and discussions with implementing agencies this review found that the formal, stated objectives of the Darfur FES programmes are as follows:

1. protection of women from gender-based violence;
2. livelihood security;
3. environmental protection; and
4. capacity building and technology transfer.

These objectives were expected to have been addressed in conjunction with one another. Table 7 provides a matrix of the current understanding of these objectives, as encountered during this review.

Table 7. Matrix of FES programme objectives

	Protection of Women	Livelihood	Environmental Protection	Capacity building	Sub-total
Protection of Women	2	3	4	-	9
Livelihood	2	-	2	1	5
Environmental Protection	-	-	1	1	2
Capacity building	-	-	-	-	-
Sub-total	4	3	7	2	16

This shows that the combination of ‘protection of women from GBV’ and ‘environmental protection’ was seen as the single most important objective of the current FES programme in Darfur. This is closely followed by the combination of ‘protection of women from GBV’ and ‘Livelihoods’.

Overall, however, ‘protection of women from GBV’ was the most commonly stated objective of FES programmes reviews, occurring in 13 different combinations. This is followed by ‘environmental protection’ and ‘livelihoods’. ‘Capacity building’ was the least cited objective, recorded in only two projects. These issues are discussed further below.

4.2.1. PROTECTION OF WOMEN FROM GENDER-BASED VIOLENCE⁴

There is general insecurity in many if not all areas where IDPs have settled. In some circumstances, danger lies just outside the camp limits. Armed persons from the ethnic groups that were responsible for forcing people to leave their homes in the first instance were present in the vicinity of the camps the vicinity, creating fear and anxiety among the inhabitants of the camps. In spite of this danger, people are in desperate need of wood to cook their food. Women and girls – who are the traditional fuelwood gatherers – thus venture out of the camps and risk being attacked and abused by armed men.

Fuel-efficient stoves are widely known for their potential to reduce the consumption of wood (or charcoal), if used correctly and consistently. Introduction of these instruments to camp situations or urban settlements can therefore be expected to reduce the number of times a person needs to collect wood for household cooking, which, in turn, should directly reduce the probability of exposure to GBV attacks. Therefore, a fuel-efficient stove programme with a stated objective of ‘protection of women from GBV’ will not seek to measure the occurrences of GBV incidences but will focus on reducing the frequency of collection trips outside of a camp and thus the probability of exposure.

⁴ See also section 5.1.1 which addresses the effectiveness of meeting this objective

4.2.2. LIVELIHOOD ⁵

Most IDPs in Darfur have experienced a general loss of their basic livelihoods as a result of the ongoing conflict. Many people probably had to flee their homes with few of their possessions in the first instance, but some of assets may also have been taken over by armed men from rival ethnic groups.

Most IDPs are probably in a worse situation now than they were some five years ago. Also, the livelihood infrastructure in and around the camps is such that IDPs are expected to continue paying out money without having a defined source of replenishment.

The introduction of a fuel-efficient stove programme to target livelihood security had several different strategies, of which the following were experienced during the course of this review:

- a) cash saving – The use of a fuel-efficient stove can directly reduce the level of fuelwood consumption. In areas where the main – or perhaps only – means of acquiring fuelwood is to purchase this from the market, use of a fuel-efficient stove should mean that less money is required to buy wood. Money thus saved can then be used for other household needs.
- b) time saving – In areas where the main means of acquiring fuelwood is by collection from the field, a reduction in wood consumption directly reduces the frequency of collection for household use. Extra time saved can be used for other livelihood activities, including time with families. In this regard, a fuel-efficient stove indirectly facilitates livelihood activities.
- c) sale of stoves – Under this approach, women produce stoves and market these to others for personal gain. Stove sales can, however, be severely undermined by the provision of free stoves by other organisations.
- d) payments per stove produced – In some projects, women are initially trained in the production of fuel-efficient stoves, and are then contracted by implementing agencies to produce stoves for onward distribution. On this basis, women are paid per stove produced, the payment schedule being agreed on a periodic basis, ranging from daily to weekly production as needs demand.

4.2.3. ENVIRONMENTAL PROTECTION⁶

The physical environment in Darfur has been under extreme stress in recent years due to changing weather patterns, human exploitation and the damaging effects of the conflict. Additional human pressure may have come via an expansion of the area used for agriculture and/or livestock grazing. As a result, the environment now has a greatly diminished potential to provide sufficient and reliable services to meet the needs of the people that depend on it. Water, soil fertility and fuelwood are at the top of the list of household needs in Darfur, particularly in those areas hosting IDPs.

In response to this recognised need, the introduction of the FES programme was generally aimed at reducing the rate of environmental degradation based on excessive fuelwood extraction.

⁵ See also section 5.1.2

⁶ See also section 5.1.3

The reduction in fuelwood consumption due to the use of fuel-efficient stoves is directly related to a reduction in the rate of extraction. The measure of this contribution to reducing environmental degradation is a measure of the reduction in frequency of extraction and actual fuelwood consumption at the household level.

4.2.4. CAPACITY BUILDING AND TECHNOLOGY TRANSFER⁷

Most of the IDP community in Darfur originate from areas that had more extensive vegetation cover that is found in their current situations. Given the relative availability of fuelwood in their former homes, most people would not have been exposed to shortages of the nature they now experience, so there was never a need to even consider the need for fuel efficiency. Now that they are in an environment with extremely limited woody components, they are faced with the option of conserving fuelwood or going hungry.

A camp situation provides the possibility for mass technology transfer. In the present context – and if these stoves are found beneficial in one of several potential ways – one can expect IDPs to take this technology home with them when that opportunity arises, and to use the stoves in the same way as they are now practising in camps. At the camp level, this is a measure of the number of people who may have developed their skills to the level of technicians and how persistently the technology is used.

Gathering field level data, particularly in Darfur, requires a particular sensitivity to local conditions. At the onset of work in each of the camps, the FES review team first had introductory meetings with the Sheikhs and Omdas, as here in Ardamata IDP Camp in Geneina, West Darfur.



⁷ See also section 5.1.4

4.3. COHERENCE OF THE FES PROJECT WITH AGENCIES' PROGRAMMES

Humanitarian implementing agencies in Darfur have a range of differing visions and strategies. Their programmes generally incorporate issues such as capacity building, poverty or hunger alleviation and the emancipation of a specific age, gender or economic group.

Fuel-efficient programmes were not found to be a stand-alone project in any of the projects examined in this review. Most implementing agencies do not even consider FES as a project, but as an activity line within their normal projects. In the best situation, FES is considered as a sub-project within a main project such as livelihood support. At the other extreme, it is considered as an awareness message within some cross-sectoral issue such as HIV-AIDS.

Table 8 gives a summary of the main sectors within which FES sub-projects/ activities are embedded in Darfur programmes. The frequencies are not indicative of the number of projects examined, but the number of sectors that have a FES component. Some implementing agencies embed FES activities in more than one sector, depending on the agency that is providing the funds.

Table 8. Projects and sectors that relate to fuel-efficient stove programmes

Main Project With FES Embedded	Frequency	% Ranking of Sector
Women's Centre/Women's Development Project	5	24
Protection and well-being (women and children)	5	24
Livelihood	5	24
Agriculture and food security/Nutrition	3	14
HIV and AIDS awareness programme	1	5
Alternative energy programme	2	10
Total	21	100

These data illustrate that interventions relating to the support of women's activities, protection and livelihood consistently integrate FES into their plans. Fewer than 10 per cent of the implementing agencies, however, ever mention FES project/activities in their annual programme planning. Their main focus is on the wider sectors: FES is left to be discussed at the sector level or at the stage of implementing projects within the sector.

In terms of the level of human resource investment on FES projects, this is highly dependent on the status of the personnel supervising the sector under which FES is embedded. In 15 per cent of the projects reviewed, sector supervisors are management staff of the implementing organisation. Overall, fewer than 10 per cent of implementing organisations have recruited staff directly for a particular FES project or activity. Sector staff assigned to carry out FES projects or activities generally commit an average of 15 per cent of their time to FES activities. The average number of staff assigned to FES projects or activities from the main-sector per implementing agency is three people. These are mostly supported by IDP volunteers that normally make up the production line.

In terms of the level of financial investment to FES projects, there are no stand-alone budgets for implementing FES. However, a few implementing agencies have well defined sub-budgets or budget lines to implement FES sub-projects or activities. In the case of those without a defined budget line, even financial record keeping on FES was found to be extremely challenging.

In general, FES activities are limited to the sector within which they are embedded. In some instances, the beneficiaries of FES projects are referred to other sectors within the organisation as the need arises. For example, if the project was embedded in a protection sector but also has a livelihood component, participants may be referred to the Livelihood sector. In any case, the review found out that the benefits of using FES are generally recognised by sectors that are not directly implementing FES within the individual implementing organisations. Because FES fits into a household basic need for energy use, it easily fits into the varying established visions and strategies of operations of the implementers no matter how different they might be.

4.4. AGENCY COLLABORATION WITH RELATED PROGRAMMES IN OTHER SECTORS

Implementation of a fuel-efficient stove programme has certain specialised components, some of which may be modified with time as objectives may change. Certain components such as training in stove production or technology transfer may be beyond the expertise of some implementing agencies, which might lead to gaps or shortfalls or underperformance.

Observations from this review, however, found that there were many different forms of collaboration between agencies. In some instances, one agency might provide financial resources to others, or provide technical personnel to train stove manufacturers on their behalf. Other agencies might purchase stoves directly from others and introduce them within their own programmes. In North Darfur, some implementing agencies brought their technical staff together for a central training by an established and technically inclined trainer. In West Darfur, the FNC is involved in training of trainers and in monitoring their work.

Such encouraging partnerships were not, however, identified by the review between local NGOs. Collaboration between local FES implementing agencies and national partners was also quite limited. Local partners were, however, receiving some degree of support from FAO, and FAO has been encouraging implementing agencies to incorporate FES in their programmes through NGO sensitisation, provision of initial funds, and training of technical staff and monitoring.

4.5. AGENCY MECHANISMS FOR MONITORING

Taken overall, the FES projects reviewed were not stand alone projects. This fact is reflected in every aspect of the project cycle of the FES programme in the three states. The projects were mainly subsumed in the design of a bigger sectoral project, with little or no consideration for the unique characteristics a FES project can have in its design.

While this is good in a certain context, it does make it difficult to identify monitoring indicators tailor-made for the FES projects based on their objectives. Measurement of success is therefore based on the indicators stated by the main project of the sector within which FES is embedded.

There are limited mechanisms put in place by a few implementers to measure FES distribution and uptake. These include registers, payment schedules, distribution lists and uptake reports. Registers are used to record the names of beneficiaries participating in the FES project/activities. Normally, these registers remain the same throughout the project cycle and variations of interests and factors for those variations are generally not taken into account. In cases where livelihood related to a FES project is measured by the number of stoves produced by the individual, a register works alongside a payment schedule. Such payment schedule is negotiated with the FES producer for payment to be done daily, weekly or bi-weekly. In the case of protection, individual counselling, FGDs, clinical reports and civil police reports are the mechanisms for measuring change of indicators. For projects with environment as their objectives, household surveys, home visits and formal assessments are among the mechanisms used to measure change in indicators.

Overall, no single means exists to measure or compare indicators between the projects as objectives and implementation strategies vary very widely in FES projects.

Local bodies are appointed by the IDP leadership – in conjunction with the implementing agency – to monitor and implement FES-related activities such as production and distribution at the camp level. At times, the transparency of such camp-based bodies is brought to question by the beneficiaries. A question of trust arises most often from the selection of those beneficiaries to participate in a specific activity or in the distribution of stoves. Disputes over such matters have resulted in rioting in certain camps. If one is permitted to use such unwelcome actions as an incidental indicator, it shows that FES is so important to IDP households that it is worth fighting for. In recent times, methods like balloting are being used by the IDP leadership to remove or minimise bias when undertaking such activities.

Overall, despite there being some instances of inter- and intra- agency collaboration in some aspects of FES programming, this is not captured in the design of projects. The value of such collaboration is therefore missed out in any analysis following implementation of FES projects.

5. EFFECTIVENESS

5.1. TO WHAT DEGREE HAVE FES PROJECTS ACHIEVED THEIR STATED OBJECTIVES?

The fact that the FES projects are not stand-alone initiatives and that they do not have independent monitoring indicators makes it difficult to gauge their effectiveness. Through the planning process for the review some proxy indicators were identified, which formed the bases of estimations made during the fieldwork. It is worth noting that all of the benefits attached to the use of fuel-efficient stoves are based on efficient combustion, which is directly related to reduced fuelwood consumption and reduced emission of harmful gases and particles, noting that the latter has additional positive health implications (see, for example, section 5.1.3).

5.1.1. PROTECTION OF WOMEN FROM GENDER-BASED VIOLENCE

Fuelwood collection has been identified throughout Darfur as the single most important need-based activity exposing women to harassment, including various forms of GBV. The FES programme was introduced with the assumption that reducing fuelwood consumption would directly reduce the frequency of wood collection and, thus, the reduction of related harassments.

This review process considered the frequency of exposure as a probability factor, rather than a measure of the actual occurrence of harassment itself. Therefore, a change of the frequency of collection is directly related to the probability of being exposed to harassment or not.

Table 9 shows the methods and frequency of acquiring fuelwood. From the review, it emerged that the probability of exposure of a woman to harassment is firstly determined by the dominant method of fuelwood acquisition. Throughout the three Darfur states, most IDP households buy their firewood. In South Darfur, almost 95 per cent of households buy all of their wood needs for cooking, while in North Darfur, 67 per cent of households meet their energy needs through purchase. The situation is

less clear in West Darfur: in the Geneina axis, just over half of the households buy their fuelwood requirements, while in the Zalingie axis the figure rises to around 66 per cent of households.

Three main factors interact to determine the general mode of fuelwood acquisition:

- 1) the location of a camp – the mode of acquisition will likely differ from a rural to urban setting. IDPs in urban setting such as Nyala are likely to buy all or most of their fuelwood;
- 2) the severity of insecurity outside the confines of a camp boundary can discourage any form of fuelwood collection. This will promote purchase over collection; and
- 3) the scarcity of vegetation in proximity of the IDP settlement due to severe land degradation processes and other environmental stresses.

The latter two factors are especially pertinent in North Darfur, including Kutum and Kebkabiya.

In spite of the above – and other factors that restrict the purchase of fuelwood such as lack of money or reductions of rations – a significant number of people still leave camps and settlements to collect wood. From the FGDs conducted during this review, it emerged that these groups of people are a mix of the not-so-well-off, the poor and the very poor. In instances such as the camps in the Nyala area, even financially challenged groups have to purchase wood as none of them can depend on 100 per cent fuelwood collection. In instances where households are compelled to collect fuelwood, women are the highest percentage of collectors in all three states.

Table 9. Method and frequency of acquiring fuelwood

Household survey	North	West		South
		Geneina	Zalingie	
Mode of fuel acquisition				
All bought (%)	67.2	56.0	65.6	94.9
Mostly bought (%)	16.8	7.0	2.5	2.9
All gathered (%)	13.1	25.0	16.9	0.0
Mostly gathered (%)	2.6	8.5	12.5	2.2
% women among firewood gatherers	64.2	94.5	90.6	72
Decrease in collection days per week with use of FES	2 – 1 = 50%	1 – 1 = 0%	2.5 – 1.5 = 40%	7 – 3 = 57%

These groups of women, representing the households that still collect firewood as opposed to purchasing, thus form the group most vulnerable to harassment. In terms of the amount of wood needed for cooking, they generally report a significant reduction in the frequency of collecting fuelwood per week with the use of a fuel-efficient stove. This frequency reduced by 50 per cent in North Darfur, 57 per cent in South Darfur and 40 per cent in Zalingie, West Darfur. There was no observed change in frequency in Geneina.

Household surveys in Geneina indicated that women here were amongst the poorest of any community surveyed. Over 40 per cent of the households in Geneina are involved in some degree of fuelwood collection, 95 per cent of which is carried out by women. There has been no observed change in the frequency of collection. This indicates that women in the Geneina axis have the highest probability of being exposed to harassment due to fuelwood collection.

Comparing data from Zalingie with North Darfur, although the percentage of people involved in some form of fuelwood collection are similar – 34 per cent and 33 per cent, respectively – 90 per cent of the group in Zalingie is comprised of women as against 64 per cent in North Darfur. The percentage change in the frequency of collection due to the use of fuel-efficient stoves in Zalingie is 10 per cent less than that in North Darfur. These data indicate that women collectors are more vulnerable to harassment in Zalingie than in North Darfur.

In South Darfur, just 5 per cent of the households are involved in some form of fuelwood collection. About 72 per cent of that number is women and they record the highest percentage change in frequency of collection. These values indicate that women collectors in South Darfur are the least vulnerable or exposed to harassment in relation to fuelwood collection.

Findings from the household surveys, when corroborated with those from the FGDs, KIIs, and other interviews, some interesting indications emerged. The review found, for example, that fuelwood is not only collected for cooking, but also for sale by the women, in order to help meet other livelihood needs. The sale of wood was largely responsible for the frequency of firewood collection in West Darfur. Even in states where the frequency of collection seems to have gone down, the collection of fuelwood for sale still continues.

Even in the face of obvious risks outside the camps, some women still go out in groups to gather fuelwood to meet some of their socio-cultural needs. Information gathered during this review indicated that women will keep track of location where one or another may have been harassed and then venture out in that direction the following day. The rationale behind this approach was that “If an attack happened yesterday, it is not likely that the perpetrators will be there the next day, nor will they be bold enough to repeat the act”.

Fuelwood collection has been identified as the main reason why women might leave a camp setting, even in the face of danger. This review also noted, however, that fuelwood collection is also combined with the gathering of other materials such as shelter construction materials, grasses and wild fruits. In other words, if the fuelwood issue is resolved, the need for people to collect other natural materials apart from fuelwood will still necessitate women leaving the camps.

Household surveys and focus group discussions highlighted the following forms of harassment faced by IDPs as they collect fuelwood.

- sexual assault;
- injury or death;
- illegal taxation outside of the camp from armed men and at check points (5-7SDG/donkey or cart load);

- beating, punishment and intimidation at collection areas, especially by pastoralists;
- walking longer distances each time;
- impounding donkeys and carts, puncturing of tyres or shooting and killing of the donkey; and
- seizure of axes and ropes, especially after collection.

In areas like Gerida, women cannot go out with donkey carts to fetch wood as the animals are often seized by bandits. Women therefore prefer to carry wood on their heads. However, as the distances covered for fuelwood collection are huge, they cannot carry much at a time, which makes it difficult to reduce the frequency of collection trips.

Women stated that their men would sometimes offer to go out to collect fuelwood, but said that they themselves would rather go because their husbands may be attacked and killed. In such instances, women were prioritising the safety of their husbands and donkeys over their own risk to GBV.

In summary, when the stated objective for which a FES project is introduced is related to the protection of women from GBV, the proxy indicator is the reduction of the probability for exposure to GBV attacks. From the discussion above, however, one can conclude that even an effective FES project does not provide a total solution to protection issues. A range of social and livelihood issues are still going to influence the behaviour of people, especially given their considerably altered situation, space and pressure which they face in camp-like situations. While FES programmes will offer some reduction of the probability of exposure to GBV, some women, at least, are still likely to leave the camps for other, perhaps non-related matters.



Observations recorded in this review are largely based on a series of consultations held with different stakeholder groups across the three states.

5.1.2. LIVELIHOOD

Four strategies will be discussed:

- a) cash saving;
- b) time saving;
- c) sale of stoves; and
- d) payments per stove produced.

Cash savings

For most of the projects that use cash savings as a livelihood indicator, this review used the proxy indicator of cash surplus per week from the purchase of fuelwood after the household has adopted a fuel-efficient stove.

The cost of fuelwood is generally influenced by the dominant method of acquisition, which in turn is influenced by factors such as security outside the camp, availability of fuelwood in the vicinity and the location – urban or rural. Added to these, and factors already discussed under protection of women, there is also the market/economic-induced insecurity deliberately created by armed groups. These groups will terrorise IDPs so that fuelwood collection will be restricted and the population will then be forced to buy from them. This market monopoly allows these groups to freely move the price of the goods, which happens to varying degrees in all states but is more pronounced in North Darfur, especially in Kekabiya.

Table 10. Savings recorded through the use of fuel-efficient stoves

	North	West		South
		Geneina	Zalingie	
Amount spent on fuelwood before starting to use FES (SDGs)	14	8.8	12.5	14
Amount spent on fuelwood after adopting FES (SDGs)	7	4.2	5.5	4.5
% saving per week	50%	52%	56%	68%

From the proxy indicator stated above, one can see that in all three states there is at least a 50 per cent cash saving made on fuelwood (charcoal or wood) purchase when a stove that is truly fuel-efficient is used. Most savings were recorded in Nyala vicinity, South Darfur. Although the amount spent on the purchase of fuelwood in South and North Darfur is the same, the firewood bundles or

charcoal packets in the South is of greater volume than those in the North. Because of the richer vegetation cover in the South, the IDP population tends to use more fuelwood. However, with the use of FES, the quantities used per state tend to equilibrate, resulting in higher percentage savings made in the South.

IDPs frequently stated during this review that the money saved through the use of FES was now being used for other household needs. In some cases, IDPs reported having had to sell up to half of their food rations to purchase fuelwood though with the use of fuel-efficient stoves this situation has been reduced.

Time savings

In areas where the main means of acquiring fuelwood is by collection from the field, the reduction in consumption due to use of FES directly reduces the frequency of collection. The extra time saved can be used for other livelihood activities. Therefore, in this regard the FES indirectly facilitates livelihood activities.

This has been achieved in all states through the use of FES. However, in West Darfur, especially in the Geneina axis, the time saved from collecting wood for cooking is now used to collect fuelwood for sale. This cancels out the benefits of saved time within the household setting, apart for the extra income.

Sale of stoves

The proxy indicator used in this instance by the review was the number of stoves produced versus the number of stoves sold. This proved to be a challenge to measure, particularly because record keeping had not been emphasised in the initial training linked with this programme.

In North Darfur IDPs are gaining some livelihood benefit from the sale of stoves produced. Outside the camp, however, these stoves could not compete with other models available in the market. In addition, the clay quality in the El Fasher area is not of high quality, which subsequently reflects on locally produced stoves.

In the Kabkabiya area, the strategy employed is to train interested individuals in the production of their own stoves. These form the core of people driving the FES market in those areas. The clay quality is also good in this region.

In West Darfur and the rural areas of the South, stove sale is not lucrative as the FES projects were designed for mass training and distribution. These were not taken into account when the objective was stated.

Payments per stove produced

Women are trained in the production of FES and then contracted by the implementers to produce stoves for onward distribution. In this regard, the livelihood indicator selected by the review is the mean amount a woman earns per week within the scheme.

The women are generally paid for their workmanship, which varies from 2SDG in Nyala in South Darfur to 3SDG in El Fasher in North Darfur. Women can produce between two and three stoves per day, which means that a woman might earn as much as 45SDG a week, which can make a considerable contribution to household needs.

Stove-making materials are provided by different NGOs within the IDP camps. This precludes women having to leave the camps and find the materials themselves. It also means that the women do not have the added hardship of then selling the stoves.

Current prices recorded for stoves depended on the location: 8SDG at centre price, 10SDG at a camp and a minimum of 12SDG in urban areas.

In the case where the livelihood is measured by how much a woman is paid for producing a stove, the impact has been positive.

5.1.3. ENVIRONMENTAL PROTECTION

With the introduction of fuel-efficient stoves, it was expected that the rate of consumption of fuelwood would decrease. Therefore, the two indicators used by the study were the frequency of extraction by household collecting – irrespective of the volume extracted – and a social estimate of the change in the proportion of fuelwood used at the household level following the adoption of a fuel-efficient stove.

Table 11. Fuelwood usage, percentage reduction in household consumption and frequency of collection

Household Survey	North	West		South
		Geneina	Zalingie	
% of target population using fuelwood	54.8	80	23.8	44.9
% of target population using charcoal	43.0	5.5	75	53.9
% reduction in fuelwood consumption per day with use of FES (units are state-standard small bundles of packets)	$2 - 1 = 50\%$	$2 - 1 = 50\%$	$2 - 1 = 50\%$	$3 - 1 = 66.7\%$
Decrease in collection days per week with use of FES	$2 - 1 = 50\%$	$1 - 1 = 0\%$	$2.5 - 1.5 = 40\%$	$7 - 3 = 57\%$

Data show that the use of charcoal is generally very high in IDP hosting areas, the highest being at Zalingie with 75 per cent household usage. The highest level of fuelwood consumption was recorded in Geneina – 80 per cent household use. It is of interest that the peak differences both occur within the same state.

With the extremely vulnerable environment in greater Darfur the high level of use of charcoal indicates a high potential for further environmental degradation. Data from the FGDs and KIIs indicate that armed personnel are actively engaged in both fuelwood and charcoal trade. In North Darfur, it was also reported that some of the non-conventional forces produce charcoal in the middle of roads, within urban areas and very close to the camps, this being a source of nuisance and pollution as smoke spreads into the camps and homes.

In terms of household level consumption, the social estimates from the household surveys show at least a 50 per cent reduction in the consumption of fuelwood. The social estimates from the KIIs and FGDs give a range of 30-70 per cent savings. Such reductions are a positive encouragement.



The review found high levels of charcoal use in all three states and data from the focus group discussions and key informant interviews indicate that armed personnel are actively engaged in both fuelwood and charcoal trade. In North Darfur, it was also reported that some of the non-conventional forces produce charcoal in the middle of roads, within urban areas and very close to the camps, this being a source of nuisance and pollution as smoke spreads into the camps and homes.

Fuel savings in South Darfur happen to be the highest as the initial consumption in this state before the use of FES was very high, due to the relative abundance of vegetation.

Households that relied on fuelwood collection as a means of acquisition experienced a reduction in the frequency of collection. As was discussed earlier, the unchanging frequency in Geneina was due to further collection for sale.

Other indicators considered by the review under the topic of environment all showed a positive change with the use of FES. There were reports of wild fires in camps due to open flames from cooking on the traditional three-stone fireplace. With the use of FES, this has been reduced to zero. Over 60 per cent of the people interviewed stated that there has been a reduction in kitchen smoke-related coughing after they started using fuel-efficient stoves. Finally, there is recognition that a fuel-efficient stove produces less ash. This results in cleaner kitchens and the creation of the good working environment for women.

In summary, at the household level this objective is being achieved as there is significant decrease in the level of wood consumed, as well as reduced levels of smoke and other personal hazards. Current FES (environmental) approaches only concentrate on the consumption and not the supply side of fuelwood. Only two implementing agencies have started a tree planting component to their project implementation.

Outside of the camps, however, other factors interact to increase environmental degradation, giving little opportunities for regeneration or recovery of the landscape. An indicator of such stress is that fuelwood has become so scarce in places that women have to dig up the roots of felled trees. As one individual phrased it “The Lion (conventional armed personnel) logs the tree for timber, the Hyenas (other armed personnel) take the trunk for commercial fuelwood while the Vultures (IDPs) take the roots for fuel for cooking”.

5.1.4. CAPACITY BUILDING AND TECHNOLOGY TRANSFER

The indicator used in this review to assess the level of achievement of this objective was the persistence of use of the FES technology. One of the implementing agencies in West Darfur also stated this as one of their objectives although it was not possible to measure the effectiveness of this work as the programme was still in its early stages.

A project supported by Practical Action in North Darfur has implemented a capacity building FES project, which is ongoing. Beneficiaries are still using the stoves that they produced and constructing new ones. When the review team contacted the El Fasher market, a lot of mud stove traders interviewed were those trained by Practical Action 2-4 years prior to the review.

The camp situation provides the possibility for mass technology transfer. This is expected to equip the IDPs in such ways that they could be able to take back the technology and popularize it in their places of origin. At the camp level, this is a measure of the number of people who may have developed their skills to the level of technicians and how persistently the technology is used.

In summary, the objective of that project was achieved.

5.2. HOW DO IMPLEMENTING AGENCIES DETERMINE IMPACT OF FES ACTIVITIES?

Due the fact that the FES projects/activities are not stand alone, implementing agencies have not established tailor-made monitoring mechanisms to determine the overall impacts of these projects/activities. In most cases, the FES programme has to be assessed within the framework of the specific sector within which it is embedded.

“Coverage” seems to be leading indicator for almost all the projects reviewed. This makes it very difficult for the projects to seriously look at environment management and capacity building (technology transfer) objectives for what they can really offer the population.

Over 70 per cent of the implementing agencies in Darfur did not realise that FES projects/activities needed separate sets of indicators to measure the impacts of the project. In most of those cases, FES was considered as an ad hoc activity, which “keeps the women busy, while they derive some incidental benefits from the stove”.

Table 13. People, groups and institutions involved in monitoring

Category Participating in the Monitoring of a FES Projects	Frequency in the 17 Projects Reviewed	% Participation of a category in the 17 projects Reviewed
Community/ Women Committee Leader	4	24%
Project Staff	9	53%
FNC	1	6%
Donor	1	6%
FAO	4	24%
UNFPA	1	6%
OCHA	1	6%
External Evaluator	1	6%

Seventeen projects/activities were reviewed in this context as part of the overall review process. More than half (53 per cent) of the responsible implementing agencies indicated some degree of knowledge that their office should be responsible for monitoring and evaluation of the FES projects. Only 12 per cent of the projects, however, are monitored by a dedicated Monitoring and Evaluation Officer. Even in the latter cases, the areas of investment are activity related indicators.

In terms of who is involved in monitoring FES projects, it is apparent that the community participation in this component is very low.

Findings from this review highlight the:

- complete absence of defined indicators to be measured;
- lack of a defined or assigned role for monitoring FES projects;
- lack of any mechanism to capture experiences and lessons learned;
- high staff turnover coupled with poor project documentation increases the difficulties of undertaking monitoring and evaluation; and
- lack of provision to bring new insights to the implementation of the project.

At the same time, however, it should be noted that that some organisations have now started to borrow experience from their main projects to monitor the FES projects. The lack of identification of good quality and contextual indicators at the beginning of the process, however, will continue to make it difficult to accurately measure impacts.

Possible constraints which need to be addresses include the timeframe of the projects/Activities, which is generally between three and six months. This is very short for rigorous measurements of change to be meaningfully measured. Apart from a few agencies, there is a general lack of appreciation and application with regards project design, to monitor and evaluate FES programmes. At the same time, however, one needs to acknowledge the emergency nature of general programme implementation which does not offer an incentive to have a rigorous monitoring mechanism.

5.3. MEASURES TAKEN BY IMPLEMENTING AGENCIES TO ADJUST PROGRAMMING

As this aspect follows in the line of overall project quality control, it has been compromised from the lack of or poorly defined monitoring systems. Virtually no mechanisms have been developed or set in place to capture the results of monitoring and evaluation, which could consequently be used to manage the project and adapt it to unexpected circumstances.

This has been responsible for the seeming need to pilot each project. Decisions to move from one stage of the project – in terms of its design – to another is not normally informed by project performance, but mainly by experiences external to the project. As a result, most of the projects have lost their uniqueness and – as a reaction to the resulting crisis – normally end up with multiple objectives.

Some changes did, however, occur during the implementation of a few projects, for example, when customising the sizes of the improved mud stoves to fit the cooking pots of individual households. Initially, implementing agencies were producing standard models and sizes of stoves but when they encountered the problem that the stove was not suited to the pots people had available, they started to ask the women to bring their own pots to the training to tailor make their stoves. Another example was with the initial use of Tara stoves, which were deemed to have dangerous attachments. These are now being adjusted. In large, however, any changes or adjustments observed were related to improving the design of the appliances to meet efficiency demand and comfort, rather than being at a programmatic level.

Measures to adjust projects must, however, go beyond modifying the stove itself for technical efficiency and comfort. Valuable opportunities are being missed. Every contact with a household or group of trainees should be seen as a moment in which to share and transfer knowledge to an individual or community with a view to improving their well being and overall environmental situation.

Limited attempts, however, have been made thus far. Some NGOs have made some definite adjustments to their sector-based projects to respond to an energy-related need. Truck deliveries of fuelwood and charcoal in South Darfur and Kutum were direct responses to try and urge women to stay in the camps and to alleviate firewood scarcity, respectively.

While these projects have been ongoing, IDPs have also exercised their own coping strategies in many places in an attempt to bolster or meet their immediate livelihood needs. Activities observed include brick making, sale of water by children, domestic labour in urban areas and gravel collection for building construction. In cases where access to fuel is a real challenge, IDPs may purchase it from

A Question of Co-ordination

A number of new types of fuel-efficient stove have recently emerged in the three states, based on cheaper productions and costs. Fears are, however, that the unco-ordinated manner of introducing these models may hinder the introduction of actual innovations in the future. Also, in some of these cases, while the project proposal might clearly define the types of stoves to be used, deviations to the design start to occur once implementation commences. Distribution of at least three unauthorised models of the mud/clay stoves, about three metal stove models and various forms of solar cookers have been stopped by FAO.

commercial sources and then sell in on to others. Some may also organise groups of people to go out and collect wood, while it was also reported that aged women be sent out for the same purpose.

There has been cause to modify project design due to emerging circumstances. FAO observed that IDP women in South and West Darfur were still leaving camps to collect fuelwood with the same frequency, even after acquiring a fuel-efficient stove. This was traced to the livelihood aspect – sale – bound with fuelwood collection. To address this situation, FAO collaborated with UNFPA to form Women’s Co-operatives which were given in-kind loans through the delivery of truck loads of fuelwood for sale to specific camps with subsequent pay back of the capital, which then became a revolving loan. Unfortunately this strategy failed because other women intensified their rate of individual fuelwood collection and sold their goods at a cheaper price.

5.4. CROSS-SECTORAL IMPACTS WITH FES ACTIVITIES

As mentioned above, the FES programme is not seen as a stand alone activity. Current findings support its role as a direct contributor to food security as it can help reduce the need or tendency to sell food stuffs and increases the possibility for food rations being cooked.

The strongest “sectoral” links found through this review have been with agriculture and livelihood security.

Beyond this, there is virtually no cross-sectoral or inter-agency consultation during the design and/ or implementation of the FES projects. The medium of exchange among partners had normally been through FAO and camp co-ordinators such as OCHA. Even when two agencies might operate in the same camp, they will hear of the activity of the other only when they come to co-ordination meetings. NGOs could be working in the same camp without consulting on any issue. Current data suggests that FES had not been a priority subject of discussion.

In more than 80 per cent of FES-related projects – even when there has been residual evidence that a similar project had been implemented in the same location – implementing agencies merely start all over again, ignoring the lessons of the previous Implementers.

There is a general willingness by the implementing agencies to incorporate FES-related objectives into ongoing and planned projects, as is evident from the range of stated objectives in the current projects. The ability for agencies to get these projects to deliver on those objectives, however, has been the challenge. This is largely due to the almost total lack of detail to co-ordination with other projects and agencies’ activities, poor awareness raising, and an absence of realistic and appropriate monitoring, evaluation and learning programmes.

As FES projects need to be well conceived and properly integrated into other programmes and since this type of activity commonly faces the immediate challenge of it being funded, or not, it is essential that this initiative becomes firmly and meaningfully integrated with other related sectors and activities. Stronger links via livelihood-related programmes would seem like an appropriate step in the right direction, though this category itself often faces funding and implementation difficulties.

6. SUSTAINABILITY

6.1. UPTAKE AND FREQUENCY OF USE

There has been – and remains – a big demand for improved stoves in all three Darfur States. Despite there being many other FES designs and models all over greater Darfur, the improved mud stove happens to be that with the highest uptake so far (Table 14). Of the people targeted by the FES projects, as many as 95 per cent of the households use them frequently. Many households still have other appliances in their kitchens – including the three-stone fire – yet the mud stove remains the most prized appliance.

Table 14. Uptake of improved mud stoves in Darfur

State	Dominant stove Type	% using dominant stove type
North	Improved mud stove	77
West – Geneina	Improved mud stove	88
West – Zalingie	Improved mud stove	95
South	Improved mud stove	74

Further evidence of the active uptake of fuel-efficient stoves is that private markets of such devices are thriving in both South and North Darfur, which are unrelated to the IDP camps. In West Darfur mass training is given directly to the beneficiaries so the sale of stoves is not as lucrative.

One limitation highlighted by some of the women interviewed during this review is the weight of the mud stove. They stated that because it is easily destroyed by water, it cannot be left out in the rain so people have to carry it inside during the rainy season. It is very heavy to carry, especially for pregnant women.

There is currently a high demand from IDPs for implementing agencies to conduct training in the production of fuel-efficient stoves. Some the FES producers are currently experimenting with

the mixture of the mud paste used in the production of mud stoves. Experiments are underway, for example, in Nyala to replace donkey dung as a binding component with saw dust.

6.2. LONG-TERM USE OF STOVES WITHIN THE HUMANITARIAN CONTEXT

From the household survey, FGDs, KIIs and other information sources the life span of the improved mud stove is estimated to range from 6 to 36 months, depending on the level of care taken by the individual. Different types of FES are now also being accepted by the IDPs. This makes it well suited to the humanitarian context, especially as provisions are not made for fuelwood within the items supplied as rations to IDPs.

However, as a sustainability issue, the fact that implementing agencies currently provide everything for the IDPs to produce these stoves, is not contributing to the persistence of the technology when they return home after the emergency. For long-term persistence of the technology and transfer of the technology to the country-side, more emphasis should be put on training, with a strong component of construction materials acquisition, where this is possible without exposing women to increased risks of harassment or GBV.

The emphasis on training as a strong sustainability factor could be seen from the FES traders in El Fasher market. These people had received training from Practical Action some 2-4 years before this review took place and are now gainfully self-employed. Some of the remnants from that training also formed the core of trainers for some of the FES implementing agencies in North Darfur.

6.3. FREQUENCY OF REPAIR OF STOVES BY BENEFICIARIES AND ABILITY/WILLINGNESS TO MAKE REPAIRS

Data gathered during this review show that 81 per cent of the households in North Darfur, 84 per cent in Geneina, 86 per cent in Zalingie and 77 per cent of those in South Darfur would rather produce a new mud stove instead of repairing one. This was backed up by over 90 per cent of the implementing agencies and other interviewed sources.

The reason stated by the IDPs for this preference is that the materials are made available by the NGOs so it is easy to just go to the production centre and produce a new stove. This gives the confidence that the new stove will probably have very few, if any, defects. In West Darfur, the mud stove is easy to build as there is no need to build a ridge for the metal grid to rest upon. In North and South Darfur, the CHF model has iron bars within. Producers of the CHF mud stove model simply recycle those iron bars. With the rocket stove, the bricks need to be baked before the stove itself is built.

Field surveys showed that the lack of repair to a stove is more of a lack of willingness to do the work as opposed to a lack of ability to do so. However, it was generally noticed that the aspect of repair is very weak or absent in the training process of producers. Therefore, over time, this skill is being lost. Implementing agencies might therefore wish to consider investing in training in early warning of FES damage for preventative maintenance.

6.4. ABILITY OF BENEFICIARIES TO MAKE OR OBTAIN ADDITIONAL STOVES AS NEEDED

Currently, in the IDP camps that the FES training, production and distribution are ongoing, there are still gaps in coverage. A great number of the remaining populations are keenly looking forward to being included in the FES project. This makes obtaining additional stoves a problem. In some cases, especially in North Darfur, some of the leaders responsible for FES distribution have taken up to four stoves for their households, loyalists or their close relatives.

In cases where the beneficiaries were trained to produce FES, obtaining additional FES will only cost them to go to the production centre and make one. This need for continual possession or acquiring an additional FES makes the need for training of beneficiaries even more pronounced. It increases the probability of the FES being used and continues to be available at the village of return.

At the moment, it is difficult to say with certainty whether beneficiaries will be able to identify good quality materials for stove production given that the implementing agency currently provides all materials. Beneficiaries thus also need to be trained to identify which materials are best and how to make them even better.

6.5. COMPETENCE OF TRAINERS/EFFICIENCY OF STOVES MADE BY TRAINEES

Many concerns were raised over the quality of training being provided, particularly the skills and competence of trainers. Most of the trainers being recycled within the FES projects were initially trained through a FAO initiative. High staff turnover in most of NGOs that participated in this training resulted in their eventually losing these trainers. Others have been promoted or may now be in a work position that does not allow them to engage in training. Implementing agencies do not utilise the services of trained personnel effectively. The few trainers who are consulted by the NGOs are over-stretched, trying to cover the entire region. This has resulted in the dissipation of efficiency.

Inadequate training of the beneficiaries results in poor stove quality. From the reviewed projects, it emerged that the quality of FES produced by the trainees are of high quality, but this quality diminishes as the generation of producers increase without further technical intervention.

In North Darfur, the FES Working Group has facilitated the establishment of a Demonstration Centre. While this is an important initiative, the fact that most of the explanations are done in English decreases the potential and extent of the service to IDPs and others.



Data was also gathered through Key Informant Interviews with non-FES users, such as charcoal burners, local stove traders or, as here, local wood sellers.

7. REPLICABILITY

7.1. ABILITY TO PRODUCE STOVES FOLLOWING TRAINING

The mud stove technology is not a complex one but requires a lot of ‘learning by doing’ from the part of the producers to perfect the art. The efficiency of combustion is determined by the level to which air is allowed into the combustion chamber. Heat retention is determined by the area of the cylinder, the thickness of the walls, the size of the outlets and how snugly a pot can sit on the top of the stove. All of these dimensions have been packaged into simple routine actions and observations to be made by the producers.

Trainees in Darfur have been able to produce additional stoves after receiving some training. Those who were ambitious to learn the art beyond producing the stove for their own household needs have gradually mastered the art. Therefore, the FES they are producing now have the tendency to be more effective than their first stoves. What has been a point of contention, however, is their ability to then train others.

Findings from review show that as the training passes through several generations of trainees training others, the quality of stove manufacturing deteriorates. In South Darfur, some implementing agencies keep prototypes at the production centre allowing trainees/ producers to better standardise their products.

Beyond replication of the prototype mud stoves, communities have shown high levels of individual innovations, ranging from increase in height, shape, and composition of the production mixture. Kisra and aseeda are challenging to prepare on a fuel-efficient stove, regardless of what model is used. In response, households now place the FES in a depression or hole in the ground to increase its stability while cooking aseeda, and to collect the ash more easily. In West Darfur, the circular shape of the mud stove has been modified to a square shape so as to be able to prepare kisra. In Zalingie, gravel is now added to the clay mixture during production as this is thought to increase the longevity of the stove. Metal re-inforcements and additional windows are now also occasionally added to the stoves.

Unfortunately, none of these community innovations seem to have been taken up by implementing agencies. Thus positive adaptations are not endorsed and the beneficiaries are not dissuaded from negative adaptations.

7.2. OUTREACH OF FES PROGRAMMES

The movement of the stove model outside the camp largely depends on the dissemination model chosen by the implementing agency. In cases where stoves are distributed freely, the stove does not persist outside the intervention areas. In cases where training has been the main emphasis, some of the producers – now technicians in their own right – may produce stoves for their neighbours or sell them to others outside the communities. In Kabkabiya, for example, fuel-efficient stoves are found widely among communities although the FES intervention was only done in the camp and to a relatively small target population. People trained to produce FES are now selling stoves to the communities. The producers were so active in the business that they were causing some environmental problems through soil excavation within the camp area.

Some of the current stove traders were previously trained within a FES project, but now run viable stove markets. Even though the respondents say that the TARA stove is not easily replicable, the review encountered it in Geneina, West Darfur, even though the projects using the model are based in South and North Darfur.

7.3. TRAINING/DISTRIBUTION METHODS

Some level of training is always included as part of a FES programme. Due to the differing life span or design of a project, such training can be intensive or just passive and differs not only between different stove models but also between implementing agencies.

Training is normally conducted as a ‘learning by doing’ model, usually conducted over a period of five days. This involves a trainee first observing a trainer produce a stove, asking questions during the process. On the second day, trainees will be guided to actually produce a stove. On the third day, they will produce a stove whilst the trainers observe and make corrections – this stove will be kept. On the fourth day the trainees will independently produce a stove, which will be graded. On the final day, the woman will bring her most-used household pot to produce her tailor-made stove, which she eventually takes home. Some implementing agencies end this sequence at day three so the depth of knowledge in making stoves varies widely among trainees in different projects. As noted above, the actual stove model being developed can also dictate the length of time needed for training: the Rocket stove, for example, is normally supported with two days of training. On the first day beneficiaries learn about the benefits of the stove and make the basic construction of their stoves and mix clay with ash or dung, while on the second day they plaster their stoves.

Although FES projects assist in reducing environmental degradations by reducing the amount of wood used to cook a meal, other uses of wood are contributing to deforestation in Darfur. Wood is also used on a commercial scale for charcoal production, building materials, fuel for bakeries, or brick kilns, as at Abu Shouk IDP camp in North Darfur



After the training sequence outlined above, the trainee will take home one of the three stoves produced. The two remaining stoves are then distributed to vulnerable groups through the Sheikhs. Such groups will include the aged, pregnant women and physically challenged.

Another factor that affects the intensity of training is the number of people in the group being trained. In most cases, the tendency to record high numbers of people trained compromises the quality of training. One would normally expect a group of 10 people to acquire more skills than a group of 50.

In some instances, no training was provided to communities, the implementing agency merely purchases the stoves and distributes them through the Sheikh. An implementing agency may also decide to contract a number of women to produce the stoves, which will then be distributed to the beneficiaries.

Free distribution, however, does not allow for the technology to be transferred: the investment therefore goes no further than the camp. IDPs that benefit from the distribution process view the stoves only as a component of their relief package.

Many questions also arise with regards the stove distribution methods as the Sheikhs are sometimes accused of being biased in the distribution process, especially in their choice of groups that benefit from such distributions. Women also complain that while they produce the stoves in the first instance, they then hand them over to the implementing agencies and the distribution is done by men. They believe that they, too, should have a say as to how the distribution is done.

At the moment, it seems that there are gaps in the training approaches and support provided, as most – or all – of the production materials are brought in by the implementing agencies. The training module should preferably include choice of materials, including identification and testing of quality of materials.

7.4. LEVEL OF FOLLOW-UP AND MONITORING OF EFFICIENCY

While the overall monitoring framework of FES projects is weak, agencies such as ACF, CHF and ILF (which monitored stove usage in 1,550 household in As Salam camp and also undertook monitoring for projects in Kebkebiyah, Shengal Tobayi and Tawilla) have been monitoring the efficiency of the stoves. In response to the efficiency and increasing the range of use of the mud stove CHF have now modified the mud stove. The resulting product is now called the “CHF mud stove”.

There is also pressure from donors to see their preferred models replicated. This is good for quality control but has the tendency to discourage adaptations. A possible option in this regard could be the introduction and emphasis of possible adaptations within the training modules.

This review found no evidence that monitoring of efficiency is happening outside of camps.

7.5. ABILITY/WILLINGNESS OF TRAINEES TO CONDUCT FURTHER TRAINING

For trainees to be able to train others, they must have attained some level of technical competence themselves and have the ability to train others. This review found that the training of trainers conducted by the implementing agencies at best results in training of stove technicians. The emphasis is placed on enhancing their skills to produce replicas more easily. Little or no attention is paid to their abilities to train others.

Some agencies upon recognising this shortfall targeted school teachers and women leaders in the communities as trainers. In the latter case, at least, this resulted in women missing out on the technical ability and trainers who are not readily available for the training exercises. Implementing agencies should find a better way of combining adult learning and technical skills in their training packages.

This review also encountered some trainees who were assisting their neighbours with the production of fuel-efficient stoves. Others, however, are unwilling to do this, largely seemingly on account of cultural backgrounds. Some tribes are culturally not inclined to trade and produce stoves or be identified with it but this may be slowly changing with the camp situation as all tribes participate in the training and use of fuel-efficient stoves.

8. COMMUNITY PARTICIPATION AND CAPACITY-BUILDING

8.1. COMMUNITY PARTICIPATION

8.1.1. PRIOR EXPERIENCES WITH FUEL EFFICIENT STOVES AND ENERGY CONSERVATION

Since the early 1980s, the FNC has been educating the public on ways of reducing fuelwood consumption as the demand was getting higher than the supply. Part of that awareness and action package was to supply cooking gas units to communities within their Alternative Energy Programme. This was a subsidised programme and beneficiaries paid in small instalments. The project, however, was not sustainable and failed. Some of the beneficiaries even threatened to sue the FNC because a lot of the cylinders leaked gas and refunds could not be secured.

Fuel-efficient stoves were first introduced to Darfur in 1990 by FAO. The FNC conducted training – through training of trainers – for communities in the manufacture and use of these stoves, focusing on identifying good quality stove construction materials and encouraging households to use FES as an intermediate technology. Stove types introduced included the Rocket (three bricks within the chamber mimicking the traditional three stone stove), a mud stove that used wood and the Azar stove which uses charcoal.

The commercial production of these stoves was flourishing up to the year 2000 but has since decreased, for unknown reasons. The mud stove was easily adopted because of its accessibility, affordability and ability to use even low grade fuel such as charcoal particles.

In North Darfur, some people at least were aware of fuel-efficient stoves through one or two brands, such as a metal stove made by blacksmiths and a clay model known as mubkarr. In West Darfur, people seemingly had no prior experience of fuel-efficient stoves prior to the establishment of IDPs under the current situation.

8.1.2. GRASSROOT STRUCTURES INVOLVED IN FES

There was very little indication from this review that grassroots structures have been used in the implementation of FES projects. Women's committees were normally engaged to supervise participants on the day-to-day affairs of projects while some youth organisations were also indirectly involved in project implementation.

Some community-based organisations (CBOs) were involved in the FES implementation process, such as the Kutum Agriculture, Extension and Development Society (KAEDS), engaged by German Agro Action.

8.1.3. LEVEL OF COMMUNITY PARTICIPATION THROUGHOUT THE PROJECT CYCLE

Project cycles in the FES projects are generally not well defined. Project identification was found to be an exclusive process for the implementing agencies, with no participation from communities. Implementing agencies generally claimed that the need for FES was either identified during their assessment for their traditional programmes or that they were encouraged by FAO to get into FES production.

Within the project preparation stage, the only element that seems to be recognised and practiced by about 15 per cent of the implementing agencies is sensitisation and awareness. When this is practiced, it is carried out by the agencies themselves – the communities are only recipients at this stage.

During implementation, there are a few elements where the community actually participates, often in a visible way. This includes training, stove production and dissemination, mobilisation and monitoring of beneficiaries. In the training aspect, the community participates as trainees in the first instance, with those who become proficient moving on to become trainers. In the production of FES, the training generally incorporates FES production for the individual's own use and 67 per cent for distribution. Some of the community members are incorporated by the project as production consultants who are then compensated for number of stoves they produce.

In the dissemination of FES, the community plays the major role. Even in cases where an implementing agency may purchase stoves for distribution or collects those accrued from training for distribution or where those produced by community consultants are to be distributed, the distribution is done by community leaders, particularly the Sheikhs. Women and youth leaders normally carry out the bulk of mobilisation of the beneficiaries for the FES projects, in conjunction with a representative from the implementing agency. The Sheikhs and Omdas sanction the list of beneficiaries for all the FES projects and participate in some level of community participation monitoring. Women and Youth leaders also help to monitor the participation of their constituent members.

Community participation, however, stops at the implementation and supervision stage. Projects do not have established monitoring mechanisms in their design so communities have no systematic way of evaluating the projects or participating in such an exercise.

In terms of participation and coverage of FES programmes, rural and urban communities outside of where IDPs are concentrated are worried that they are not included in the FES projects, as they would like to participate. In South Darfur, the non-camp communities that have fuel-efficient stoves users bought their units either from the markets or from the camps. A few of these non-camp community members have actually sneaked into the training sessions and can now make their own FES! In Nyala, for example, the FES training offered by CHF normally includes at least 60 participants from the city every six months.

In North Darfur, penetration of the FES projects into the non-camp areas is very poor. Most of the community members using FES bought them from IDPs trained by the projects. The community leaders opined that they would like to participate in the FES projects from the initiation of the project cycle.

8.2. COMMUNITY CAPACITY-BUILDING

It is evident from the above that community participation has been limited to the implementation and supervision stages of these projects, not necessarily by design but mainly through the lack of it. This means that efforts to build local capacity have been extremely limited thus far. Apart from the hard skills development in FES production, this review found little evidence that soft skills development to empower the communities to manage FES projects had been considered or enabled. The ad hoc and short-lived nature of these projects at present are such that they do not facilitate sustainable capacity building.

There is little evidence that communities – national NGOs or CBOs – have participated in project design and development. In North Darfur, about 20 per cent of the FES implementing agencies are national NGOs, while in South Darfur, none of the national NGOs are direct implementers, but partners. About 18 per cent of the FES projects identified in South Darfur by this review were partnered by national NGOs. In West Darfur, about 15 per cent of the



The review found that fuel efficient stoves have spread beyond the original project areas. Here two different models of stoves are on sale in the El Fasher market.

FES implementing agencies are national NGOs. There is also limited involvement of CBOs in project implementation. The review documentation shows that only one CBO was formally involved in the FES implementation in North Darfur, but none in South or West Darfur.

There is no deliberate capacity building strategy embedded in any of the FES projects. Women's groups have been offering support in mobilising and monitoring participation at the camp and community levels. This role has necessitated the discovery of new leaders from among the women. Through 'learning by doing' a lot of the women are now able to train others to produce stoves. They can also apply these skills in other disciplines.

This situation begs the question "What happens to FES initiatives when international NGOs leave?" Capacity transfer does not seem to be happening in any systematic way on the FES programme. Some of the hindering factors highlighted by many implementing agencies include the fact that some of the NGOs and CBOs are politically tainted through their associations or their practices. This makes it difficult for community acceptance, especially in the context of the conflict. Political tainting also does not inspire confidence in the FES implementing agencies in the area of accountability. There were also reports of poor competence on the part of national organisations in terms of project design, management and reporting.

In summary, FES projects have not offered adequate capacity building opportunities through their design. This makes it difficult for national organizations – even at the camp level – to be able to perform effectively. The medium- to long-term implication of not strengthening local capacities is that the multiple objectives of FES programming will not be achieved.

9. CO-ORDINATION AND INTEGRATION

9.1. PROGRAMME INTEGRATION WITHIN AGENCIES

No FES implementing agency contacted through this review has domestic energy conservation or a FES strategy as part of their main programme. They are mainly focused on food security, livelihoods or providing specialised care for defined age groups or gender.

All of the FES projects reviewed in this study were integrated into bigger projects, which fall within the visions and strategies of the implementing agencies. The types of integration vary from re-inforcement of general awareness, to a sensitisation package for improving the well-being of the IDPs, to sub-projects that are focused on improving IDP livelihoods in diverse ways. The level of interest generated by the FES projects makes them fashionable to the IDPs and the activities are thus easily implemented by the NGOs. In this way, the FES projects have been implementation-friendly for the implementing agencies, regardless of their stated visions and strategies. The shortcoming in this respect is that the implementing agencies generally try to confine the FES advantage message to their areas of interest. This tends to curb the beneficiaries' interest on FES once the message loses its relevance, outside the scope of the FES agencies' interest. For example, FES is not just a protection tool, but also an environmental protection, livelihood enhancement and health promoting tool. Unfortunately, the FES message is generally restricted to the interests of the implementing partners.

In terms of the level of investments made by FES implementing agencies, programme planning is mainly relegated to the local planning of the sector within which FES is embedded in the organisation. The projects are not stand-alone, therefore staff associated with FES are normally employed by the project within which the FES is embedded. These are mostly supported by IDP volunteers or local consultants that normally make up the FES production line. Also, the beneficiaries related to FES are normally those already being served by the sector within which the FES project/activity is embedded. The level of financial investment to FES projects can be assessed by the fact that there are no stand-alone budgets for implementing FES. Some of the sectors within which the FES projects are embedded usually have well defined sub-budgets or budget lines to implement FES sub-projects or activities.

This review noted that the benefits of using FES are generally recognised by sectors that are not directly implementing FES within the individual implementing organisations. Fuel-efficient stove programmes fit into a household's basic need for energy utilisation and thus fit easily into the varying established visions and strategies of operations of the implementing agencies, no matter how different they might be.

Over time, some of these agencies have developed a specific interest in alternative energy technologies, including the use of solar cookers, liquid petroleum gas (LPG) and kerosene stoves. National NGOs have been very keen to introduce such technologies but problems have been experienced with regards the adoptability of such technologies among local communities and IDPs.

In North Darfur, the Sustainable Action Group (SAG) is implementing an alternative energy programme which includes mud stoves, LPG cookers and kerosene cookers. This NGO has shifted attention from the promotion of mud stoves to LPG cookers. Both the NGO and the representatives from the target population in Abushouk in El Fasher, however, reported that the uptake of the kerosene stoves was not encouraging. This was mainly due to the cost of kerosene which could not be sustained by the users, as well as the fumes from the burners.

The net cost of using LPG was reported to be lower than that of using the three stone fire place or kerosene stoves. IDPs spend approximately 90SDG per month on fuelwood, while a refill for a 12.5kg LPG cylinder costs 35SDG and lasts 45 days for the same family size. In Khartoum, the cost of LPG is approximately 1SDG per kilogramme. Transportation of gas cylinders for refilling in Khartoum is very expensive and is a major constraint for people to use these cookers. At the time of this review, however, only the Omdas and Sheikhs were targeted with LPG cookers as a pilot, as they are responsible for providing hospitality within the camps.

In South Darfur, the Jebel Mara Charity Organisation (JMCO) and the Sudanese Popular Committee for Relief and Rehabilitation (SPCR) are both implementing alternative energy programmes, which include mud stoves. The JMCO programme has now shifted to look at solar cooking. In the latter case, however, beneficiaries are not adopting these cookers as they think it is not practical to their situation because it is time consuming. During the rainy season also, solar cookers cannot be relied upon. There is also a myth among the beneficiaries that food cooked from sunlight has the likelihood to cause cancers.

The SPCR is now also promoting LPG cookers and argues that even now LPG use is cheaper than fuelwood as a source of domestic energy. From their analysis, an average household use at least 1SDG to purchase fuelwood per day giving an average expenditure of 30SDG per month. A 12.5kg LPG cylinder also costs 30SDG in Nyala. Given the advantages of LPG, this makes it cheaper than fuelwood use. The initial acquisition cost of LPG units – approximately 60SDG per three burner cooker in Nyala – however limits its potential uptake for many families.

These examples show that after some of the national NGOs among the FES implementing agencies integrated FES into their programmes, it exposed a gap that existed in the domestic energy sector. Several NGOs have now moved into this gap, though project cycle management still stands out as a concern in those programmes.

9.2. CO-ORDINATION BETWEEN AGENCIES AND SECTORS

Fuel-efficient stoves have generated a great deal of interest among humanitarian agencies and other organisations in Darfur. To this end, the objectives of the original FES initiative started by FAO and FNC has been slightly modified from the purely environmental outlook it had before the conflict began. The current FES initiative was re-introduced by FAO in recognition of the enhanced fuelwood scarcity and the protection issues surrounding the collection of firewood. This move was coupled with training for the potential FES implementers who were traditional relief agencies and refresher training for personnel from the FNC. Humanitarian organisations then integrated FES into their programmes, with different levels of capacities. Other agencies that did not have trainees at the earlier FAO sessions tried to incorporate trainees from other organisations and the FNC, at consultant levels.

The results of this new interest were varying levels of FES expertise, lack of project design, a lot of pilot projects, isolated implementation and the lack of tailor-made FES monitoring mechanisms. This called for co-ordination of efforts and resources. Through the efforts of RCSO/OCHA, FAO, CHF International and other FES practitioners, FES Working Groups were established in North, West and South Darfur. These were mainly drawn from the Food Security and Livelihood Working Groups. The Working Group in North Darfur has emerged as the most active group and holds the overall co-ordination role for FES in greater Darfur.

This review noted that the WGs are still to gain a proper footing in West and South Darfur. Apart from information co-ordination between and among the FES implementing agencies facilitated by the UN Agencies, information exchange is generally very weak. Even humanitarian agencies that implement projects with similar humanitarian issues rarely exchange information on FES issues.

In West Darfur, co-ordination of FES issues is extremely challenged. The FES WG rarely meets and information exchange is very poor between and among FES implementing agencies. The persistence of FAO in monitoring the various FES projects has helped keep the information flow at a manageable limit. Beyond FAO, however, there is a wide information chasm between FES implementing agencies. There are also limited contacts between these agencies and the FNC, which is mandated by the government to co-ordinate such domestic energy conservation related initiatives. A few NGOs have



FES projects may assist in limiting the risk of exposure to gender based violence by reducing the number of visits that women have to make outside of the camps to collect fuelwood. Apart from firewood collection however, there may be other reasons that women leave the safety of the camps – such as the collection of grasses and other building materials.

made some moves to get the FNC more involved with training. In Zallingie, for example, Mercy Corps and NCA used the expertise of FNC in a FES training programme.

In South Darfur, the Environmental Working Group is placed within the Food Security and Livelihood Forum. This creates the opportunity for co-ordination at the forum level, which is chaired by the FNC. Beyond this forum, however, there is hardly any communication between or among FES implementing agencies. There is, however, some evidence of collaborative work between ACF, CHF and the ICRC.

In North Darfur, the Food Security and Livelihood Working Group and the FES WG hold alternating fortnightly meetings. This is the most consistent group in terms of scheduled meetings, though attendance of its constituent organisations can be challenging. The RCSO/OCHA and CHF International have been very active in keeping co-ordination of this group alive.

Due to the manner in which the FES projects evolved through the Darfur conflict, the FES projects have been patchy. Technical and management capacities in the FES projects have varied widely among implementing agencies. This review noted that two or more such agencies are usually working in the same IDP gathering areas, possibly using the same women's centre, without knowledge of the strategies the other is implementing. Even when a humanitarian organisation goes into a new area where FES has already been implemented, there is very scant evidence that they will request information from the previous implementing agency. A lot of resources are therefore invested in piloting projects and strategies.

In terms of programme coverage, the lack of co-ordination of the FES strategies can be counter-productive. In cases where the primary objective is to gain coverage of the target group with FES, the strategy is usually that of distribution to the households. When this strategy is juxtaposed with a FES project with a livelihood objective that depends on production for sale, then the livelihood project suffers. There has not been close co-ordination of geographical targeting by the FES projects. Projects were mostly initiated spontaneously, with no consideration to proximity of other FES projects. In some cases, two and more projects were located in the same camp, sometimes covering the same beneficiaries.

Vulnerability selection has been quite diverse across the FES projects. This targeting has been largely dictated by the main project within which the FES project is embedded. In the overwhelming majority of the FES projects, women who were exposed to conditions that demand protection and livelihood enhancement were targeted. In West Darfur, children and the elderly were also specifically targeted. Even in those cases, the women who were the ultimate care givers formed the indirect beneficiaries. Due to the lack of coordination in some cases, two or more projects will target the same set of beneficiaries, duplicating efforts. Participation of women in specific aspects of the project was also determined by special vulnerability conditions such as pregnant and aged women being targeted for FES distribution, whilst women head of households were mainly targeted for training in stoves production.

Ironically, the FES projects have generated so much interest among the beneficiaries and the general public to an extent that people want to be part of it, yet there has been very little technical, financial and management investment into it.

10. SUMMARY AND RECOMMENDATIONS

FES PROGRAMME COVERAGE

Fuel-efficient stoves should be introduced through training to communities outside the camps and stove models could be targeted by community characteristics and food types. This could mean, encouraging a household to possess more than one FES model for specific uses, where possible.

Due to the current state of insecurity in Darfur, it will be impractical for FES implementing agencies to consider project implementation outside of government controlled areas. Coverage could be secured through indirect means such as extending FES production training to the communities in the immediate vicinities of the IDP gathering areas. **The design of such a project should consider the characteristics of the communities to be targeted.** For example, the communities could be urban, rural, sedentary, nomadic and others in transitions between or among these categories.

Currently, the predominant stove type in the greater Darfur is the mud stove. However, **as wider coverage is being considered, specific models should target specific groups with unique characteristics.** For example, nomadic tribes would prefer to have lighter FES models.

At the state level, the FES WG should set up an employed technical team tasked with a FES extension programme. Such a team could work closely with FNC to enhance their technical capacities and maintain the government's policy direction in this regard.

RELEVANCE AND EFFECTIVENESS

Few would question the relevance of fuel-efficient stoves in this context and situation. **All evidence suggests that the effectiveness of the FES programme is seriously compromised by the fact that FES initiatives are not stand-alone projects.** There are several factors that will continue to keep FES at that status, chiefly the availability of funds from donors to fund self-standing FES

projects. For example, FES can be approached from a ‘provision of domestic energy’ point of view, at the level that WATSAN projects are carried out in humanitarian operations. It is estimated that the wide range of objectives now stated by the FES projects could be met more effectively using this approach.

After examining all the stated objectives of the FES projects, **‘Livelihood’ and ‘Capacity Building’ emerged as the most achievable objectives at this stage.** Of the two, livelihood currently seems to be capturing more attention from the humanitarian community. **Implementing agencies are therefore advised to approach FES from a livelihood point of view, while a strong case is still made for it to become a ‘stand-alone’ domestic energy programme.**

In addition, recent studies from WHO have indicated that up to 1.6 million people die per year from diseases associated with indoor air pollution, more than from malaria⁸. On a global level, FES projects have played a key role in reducing the health threats from indoor pollution. FES project implementing agencies in Darfur have, however, not specifically identified health gains as objectives in their project documents, yet the benefits of cleaner and safer kitchens were identified by respondents to the household and key informant surveys.

Recommendations with respect to project design that emerged during the review are grouped under the following headings:

Problem Identification: **Implementing agencies need to develop clear steps toward problem identification.** Many agencies claimed that they conducted baseline assessments prior to project commencement, but supporting documentation in this regard was not readily available. Implementing agencies are therefore advised to make use of this tool for understanding problems and establishing the possibility for measuring change in the future. Such an assessment should be designed to create an understanding of the cause and effect linkages of the problems so that the project will be designed to address the causes as it mitigates the effects.

Making Goal and Objective statements: **The choice of goals and objectives should be informed by the pre-assessment conducted by the NGO and not arbitrarily stated.** The FES projects, like any other project, should aim at SMART (Specific, Measurable, Achievable, Relevant and Time-bound) objectives, which should be focused on the solution strategy designed to address the aspects of the problems identified.

Choice of indicators: **FES projects should have defined indicators from the design of the projects.** These are generally brief but precise statements that provide a description of the project system and give an understanding of how one can track changes within the system. These ‘measurement statements’ should be able to describe the project management processes, project activities, change in the effects of the problems and then the causes of the problems the project sets out to address.

Care must be taken that at the field level, indicators selected must be understood by the beneficiaries and they should have the possibility of being able to measure it themselves. This will encourage the participation of the communities in future monitoring and enhance ownership of project results. At the project implementation level, documentation should be improved to record changes in indicators.

⁸ WHO, Indoor Air Pollution, Household Energy and the Millenium Development Goals: Indoor Air Thematic Briefing 1, 2004. Downloaded from <http://www.who.int/indoorair/info/iabriefing1rev.pdf>

However good the elaboration process of indicators had been, if data is not collected based on its description, analysed and incorporated the impact of the project will never be assessed.

Implementation: **The design of the FES projects should have a participatory approach from the beginning.** The target communities should be involved in all possible areas of the project cycle to enhance ownership. To ensure that the impacts of the initiative go beyond the camps and that the technology persists in all contacted areas, institutions like the FNC, CBOs and national NGOs must be factored into all project design. This calls for clear description of roles and time sequence when these roles will become important.

During the implementation of the projects, data should be constantly collected on the indicators selected. Also, having in mind that the indicators will only give indications of expected change, the implementers are encouraged to look beyond to identify the unexpected changes, even if they are not desirable outcomes.

Further, **the design of the projects should have a ‘beyond emergency’ outlook.** For example, FES dissemination should not be primarily driven by distribution. More emphasis should be given to training and development of FES entrepreneurs through training in small- and medium-scale enterprises.

Though the integration of FES into current humanitarian programmes is justified by its potential ability to reduce fuelwood consumption and emissions, little attention is paid to the supply side of fuelwood. In this regard, the **FES project designs should incorporate the establishment of tree nurseries, woodlots and forest rehabilitation** as a lot of the IDP gathering areas were established in forest reserves. This will imply that training should be conducted for all these activities and negotiations for planting areas must start very early. The FNC will be very important in advising implementers in the design of this component of the project.

Complementary domestic energy conservation practices could be embedded in the FES project design, most of which could be implemented as an awareness campaign. Firewood could be dried before use and the fire should be shielded from the full force of the wind. Beneficiaries can be encouraged to use tightly fitting pot lids and pots that can fit well into the FES, which will help to utilize most of the heat energy. Pre-cooking treatments should also be encouraged, which include cutting food in small pieces, grinding grain to increase the surface areas, soaking grains, using tenderisers, and/or using hay baskets or boxes – insulated devices used to retain heat to cook food further.

Lesson Learning: **Lesson learning at the various stages is very important as it influences capacity enhancement, which will facilitate more intense and informed creativity.** Good documentation of such lessons could facilitate publications and inform donor agencies on their direction of investments. These lessons could form the basis for subsequent project implementation within similar context or create the basis for resource saving adaptations.

SUSTAINABILITY AND REPLICABILITY

This review considered sustainability as the persistence of technology even after the life span of a FES programme. In this regard, **sustainability is enhanced by a higher emphasis of the project on training rather than distribution of FES. For high quality training in the context where capacity building is through ‘learning by doing’, then longer implementation timeframes are necessary.**

Ownership of the technology sometimes outweighs proficiency in technical competence in a community-based project. Therefore, **FES projects should aim to increase overall awareness raising and promote higher levels of self sufficiency.** At present, all of the materials for producing stoves are provided by the implementing agency. Beneficiaries are then left with little or no knowledge of how they might continue to harvest the materials needed for further FES production.

Funding agencies are encouraged to make necessary provisions for ‘Action Research’ style implementation. This could include the possibility of adjustments to the project at some stage through its implementation. As FES production materials vary from place to place – even within states – and the heat energy demand of the food types mainly cooked by the beneficiaries vary, the communities might need to make some adaptations. **The funding agencies can make provision for monitoring these modifications, in order to adopt those with increased advantage and discouraging those with diminished efficiencies.**

COMMUNITY PARTICIPATION AND CAPACITY BUILDING

The involvement of CBOs and national NGOs, especially women’s associations, should be increased in the whole project cycle, from assessment to design, implementation and evaluation.

Training and awareness building should receive more time in project design and implementation to ensure that beneficiaries can obtain maximum benefit from the FES. Additional emphasis should be placed on capacity building and technology transfer. **Timeframes for project implementation should be longer to allow for greater capacity building.**

CO-ORDINATION AND INTEGRATION

The FES working groups should be used to improve co-ordination and the transfer of lessons learned.

Co-ordination between agencies and sectors should be improved, for example the livelihood and GBV protection groups need to collaborate more closely on FES.

Implementing agencies would like to see the FES Working Groups carrying out the following activities:

- develop a clear mandate for their work; including roles and responsibilities of their respective members;

- Commitment to simple things like meetings and information sharing should be prioritized by Implementers
- facilitate information sharing and co-ordination among FES implementing agencies;
- design and carry out FES assessments to inform agencies on geographical coverage and what stove model to use in a particular project;
- support each other through capacity exchange once capacity gaps are identified;
- develop a standard monitoring and evaluation processes to ensure that the quality of projects achieve minimum standards. Individual NGOs can still have their internal monitoring and evaluation processes;
- facilitate FES training, including refresher training for staff of implementing agencies;
- promote exchange visits among the different FES projects to share information, experiences and lesson learned; and
- facilitate the establishment of FES networks among IDP and host communities.

In addition to the above, several requests were made for the Information Centre to be upgraded so that it might also serve as a meeting venue.

The role of the FNC should be made more prominent in the FES Working Groups.

In South Darfur, implementing agencies requested that general supervision of the FES Working Group be done by a UN agency, but that the leadership of the group is selected from among the implementing agencies on a rotational basis.

The three FES WGs may also wish to consider establishing an advisory position dealing with domestic energy. This person would not necessarily be directly responsible for implementing FES projects, but would be available as a resource person to those agencies implementing FES projects, particularly where these projects are not stand alone projects but are components of livelihood/protection/GBV projects. The post could be jointly funded by those agencies implementing FES projects as components of other work, or alternatively could be funded by one of the United Nations agencies such as OCHA or UNEP.

The importance of having technical advice available to FES implementers is increased first by the fact that – to date – FES projects have been incorporated into other programme areas and are thus not generally managed by practitioners familiar with domestic energy issues. Second, across Darfur as a whole the review of FES implementation has focused on two aspects – a need to improve project programming (the underlying motivation for commissioning the current study), and a need to improve stove design, performance, use and testing (the underlying motivation for the technical study undertaken by USAID). As important as these two areas are, they are not by themselves sufficient to maximise the benefits of FES implementation in Darfur. Implementing agencies would be well advised to take a holistic view of the domestic energy sector and obtain advice and expertise on complimentary domestic energy conservation practices, in addition to improved project and stove design.

ANNEX I

TRAINING PROGRAMME

PLANNING EXERCISE HELD AT THE PRACTICAL ACTION,
EL FASHER DARFUR, 17 – 22 MARCH 2008

TIME	ACTIVITY	FACILITATOR
Day 1: 17 th March		
09:00	Introduction	CHF/ RCSO/OCHA
09:30	Getting to know each other	Team Leader, SCs, FGD Leaders; support staff from NGOs
10:00	Overview of humanitarian/ FES situation/ context	SCs, FGDs, NGO reps
10:30	Overview of the FES Review	Team Leader
11:00	BREAKFAST	
12:00	Overview of the FES Review – Continued	Team Leader
12:45	Overview of the FES Review – Continued	Team Leader
13:15	TEA BREAK	
14:30	Overview of the FES Review – Continued	Team Leader
15:15	Some general principles to our approach: Action Research	Team Leader
16:00	Planning for Day 2	Team Leader
16:30	Close of day	
Day 2: 18 th March		
09:00	Summary of Day 1	SC/FGD
09:30	Develop a checklist of all relevant data to be collected	Team Leader
11:00	BREAKFAST	
12:00	Develop checklist of relevant data to be collected	
13:00	Methods of data collection, analysis and reporting	Mey Ahmed
14:00	TEA BREAK	
14:20	Developing tools for each method selected	Adam Bushara and Team Leader
15:20	Developing tools for each method selected	
16:20	Planning for Day 3	Team Leader
16:30	Close of day	SC

TIME	ACTIVITY	FACILITATOR
Day 3: 19 th March		
09:00	Summary of Day 2	SC/FGD
09:30	Developing tools for each method selected	
11:00	BREAKFAST	
12:00-1400	Developing tools for each method selected	
14:00	TEA BREAK	
14:20	Harmonising tools for reporting sequence	Hashim and Team Leader
16:20	Planning for Day 4	Team Leader
16:30	Close of day	SC
Day 4: 20 th March		
09:00	Summary of Day 3	SC/FGD
09:30	Participatory Approaches; Basic Principles 1	
11:00	TEA BREAK	
12:00	Participatory Approaches; Basic Principles 2	
12:45	Selecting the samples using the WWW	
13:30	Other admin	
14:00	Wrap up	Team Leader
Day 5: 22 nd March		
09:00	Summary of Day 3	SC/FGD
09:30	In-house Testing of Tools	
11:00	TEA BREAK	
12:00	In-house Testing of Tools	
12:45	Communication/ Logistics Notification Calendar	
13:30	Other admin	
14:00	Wrap up	Team Leader

ANNEX II

DATA COLLECTION TOOLS DEVELOPED FOR THE REVIEW

At the start of the field level data collection a training event was organised in El Fasher that was attended by the three State Co-ordinators, the three Focus Group Discussion Leaders; a representative from FAO Geniena, a representative from RCSO/OCHA Nyala; three representatives from RCSO/OCHA El Fasher; three enumerators from CHF El Fasher, and four enumerators from Practical Action, El Fasher.

Three broad data collection methods were identified and agreed upon: Household Surveys (HHSs), Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs). The data collection team then designed the following tools:

- Focus group discussion checklist;
- Household survey questionnaire (in English and Arabic);
- Interview checklist for FES Users;
- Interview checklist to determine external influences, for use with non-FES users, charcoal burners, local stove traders and so forth;
- Interview checklist specifically designed for members of the FNC;
- Questionnaire for Implementers of FES projects
- Interview checklist to use with local leaders or monitors, including Sheikhs, Omdas and women leaders;

Prior to being applied across the three Darfur states the tools were field tested in Alsalam and Abushouk camps. Minor changes were made to the questionnaires as a result of this exercise, these mainly being typographical errors and a repetition of some questions. One of the reasons the tools required so few changes is on account of their being developed in-country, taking account of cultural and linguistic considerations, with direct input from practitioners who had active contacts with the populations targeted.

Assessing the Effectiveness of Fuel-Efficient Stove Programming: A Darfur-Wide Review

Focus Group Discussion Checklist

Introduction: The Darfur FES/Energy/Livelihoods Working Groups is conducting this Review to investigate the overall effectiveness of fuel-efficient stove (FES) programming throughout the three states of Darfur

Date:

Background Information	
	COMPOSITION OF FOCUS GROUP:
1	<p>HOW DID YOU COME TO KNOW ABOUT FES?</p> <ul style="list-style-type: none"> - Before camp; - in camp; - before coming to this community; - within this community; etc
2	<p>WHY IS FES BEING PROMOTED ALL OVER THE REGION?</p> <p>- Steer discussions around the four objectives</p> <ul style="list-style-type: none"> ○ Conserving Environmental services (Energy) ○ Humanitarian Protection ○ Livelihood enhancement ○ Health and safety
3	DO YOU USUALLY USE FES FOR COOKING?
4	<p>AT THIS POINT, ADDRESS THE YES;</p> <p>WHAT TYPE (S) OF FES DO YOU USE IN YOUR HOUSEHOLDS?</p> <ul style="list-style-type: none"> ○ Improved mud stove ○ Rocket stove ○ IV3 ○ Kerosene stove ○ Metal (Tara) stove ○ LPG stove
5	<p>WHICH ONE IS THE MOST POPULAR IN THE CAMP/COMMUNITY?</p> <p>WHY?</p>
6	<p>AT THIS POINT, ADDRESS THE NO;</p> <p>WHY DO YOU NOT USUALLY USE FES?</p> <p>- Attract at least three reasons</p>
7	WHAT IS THE MOST COMMON WAY TO ACQUIRE THE FES?

	<ul style="list-style-type: none"> - Buying - Training and producing - Supply
8	<p>EXAMINE THE ISSUES SURROUNDING THE SOURCES OF FES;</p> <p>IF IT WAS BOUGHT;</p> <ul style="list-style-type: none"> - Where was it bought? - What was the cost? - Was it affordable? <p>IF IT WAS THROUGH TRAINING AND PRODUCTION</p> <ul style="list-style-type: none"> - How was the training carried out? - How many people were trained at a time? - Was there sufficient time for individuals to learn how to make durable FES? - How were the FES made by trainees performing? - What were the reasons for the level of performance of the FES? - Have there been innovations in the FES designs after the training? - How does the trained FES producer acquire materials to construct new FES? <p>IF THROUGH SUPPLY</p> <p>What were the criteria for eligibility to receive FES? What was the pattern of distribution? What would have been the preferred way of distribution?</p>
9	<p>LIMIT DISCUSSIONS TO STOVE MODELS THEY ARE USING</p> <p>HOW LONG DOES THIS STOVE LAST? (MONTHS)</p> <ul style="list-style-type: none"> - Can FES be repaired if damaged? - What are responsible for FES damage? - Is it cheaper to repair a damaged FES than to make a new one?
10	<p>WHAT TYPES OF FUEL DO YOU MAINLY USE FOR COOKING?</p> <ul style="list-style-type: none"> - Electricity - Liquid Propane Gas (LPG) - Natural gas - Kerosene - Charcoal - Wood - Grass - Animal dung - Agricultural crop residue
11	<p>HOW DO YOU ACQUIRE THIS FUEL?</p> <ul style="list-style-type: none"> - Amount spent on fuel bought per week before FES was used and after/

	during? - Frequency of gathering per week before FES and after? - How are these differences useful for the environment and the gatherers?
12	How easy it is to use FES compared to what you were using before? - Suitability to cook a range of food types - Cooking large quantities of food during weddings and social events
13	WHAT CAN YOU SAY ABOUT THE DIFFERENCE IN FUEL USE BEFORE THE USE OF FES AND NOW WHEN YOU ARE USING IT? - Use community friendly methods to estimate what it used to be - Estimate what it is now - give an estimate of fuel savings or surplus
14	BEFORE USING FES, WHAT PROBLEMS WERE YOU HAVING IN THE KITCHEN? BUILD A LIST - Burns from flame Fire on the clothing - Flame in oil - Fire in the kitchen - Smoke burning the eyes - Smoke causing coughing - Blackening of the walls and roof
15	SINCE YOU STARTED USING FES, WHAT PROBLEMS ARE YOU HAVING IN THE KITCHEN? Build a new list
	Suggestions
16	How can the FES work better for you?
17	What can you advice the NGOs doing this FES Programme?
18	What role can you as a people play in the dissemination of FES?
19	How can the FES Training be made better?

**Assessing the Effectiveness of Fuel-Efficient Stove Programming:
A Darfur-Wide Review**

House Hold Survey Questionnaire

Introduction: The Darfur FES/Energy/Livelihoods Working Groups is conducting this Review to investigate the overall effectiveness of fuel-efficient stove (FES) programming throughout the three states of Darfur

Date: **Location:**

.....

		FIELD
	Background Information	
0	STATE: North Darfur (); West Darfur (); South Darfur	
1	HOUSEHOLD NUMBER:	
2	SEX: Male (); Female ()	
3	AGE: 15 – 20 (); 21 – 25 (); 26 – 30 (); 31 – 35 (); 36 – 40 (); 41 – 45 () 46 – 50 (); 51 – 55 (); 56 – 60 (); 60 – And Above ()	
4	MARITAL STATUS: Single () Married () Widowed () Divorced () Separated ()	
5	WHAT HAVE YOU BEEN DOING FOR THE PAST 12 MONTHS? Working for pay (); Working for Self only (); Working for pay and Self (); Working as a volunteer () Working for food (); Not working (); In school (); Retired (); housewife () Other (specify):	
6	WHICH OF THE FOLLOWING CATEGORIES BEST DESCRIBES YOUR HOUSEHOLD? Internally Displaced () Refugee () Resident/URBAN () Resident/ Rural Area ()	
	Appliances, Fuels and Fuel Sources	
7	DOES YOUR HOUSEHOLD USUALLY USE FES FOR COOKING? Yes () No ()	
8	IF YES, WHAT TYPE (S) OF FES DOES YOUR HOUSEHOLD USE?	

		FIELD
	Improved mud stove () Rocket stove () IV3 () Kerosene stove () Metal (Tara) stove LPG stove () Others () specify	
9	HOW DID YOU ACQUIRE THE FES YOU ARE USING? Supply (); Bought (); Produced by a trainee	
10	IF THE FES WAS ACQUIRED THROUGH SUPPLY, HOW DID YOU MAKE THE CONTACT TO GET IT?	
11	IF THE FES WAS BOUGHT; a. Where was it bought? b. What was the cost?	
12	WAS ANY OF THE MEMBERS OF THIS HOUSEHOLD TRAINED IN THE PRODUCTION OF FES? Yes () No ()	
13	IF YES, FROM WHERE DOES S/HE ALWAYS GET THE REQUIRED MATERIALS USED FOR PRODUCTION? All from the NGO (); Some from the NGO and some from the market (); Some from the NGO some from the market, some from the environment (); All bought in the market (); Some bought in the market and some from the environment (); All gathered from the environment ()	
14	HOW LONG DOES THIS STOVE LAST? (MONTHS)	
15	HOW MANY TIMES HAVE YOU REPAIRED THIS STOVE? Never (); Once (); 2 times (); 3 Times (); More than 3 times ()	
16	WHAT TYPE OF FUEL DOES YOUR HOUSEHOLD MAINLY USE FOR COOKING? Electricity (); Liquid Propane Gas (LPG) (); Natural gas () Kerosene (); Charcoal (); Wood (); Grass () Animal dung (); Agricultural crop residue () Other () specify.....	
17	IS YOUR MAIN FUEL BOUGHT OR GATHERED? All bought (); Mostly bought (); Mostly gathered (); All gathered ()	

		FIELD
18	<p>IF ALL OR MOST OF THE FUEL YOU USE IS BOUGHT, HOW MUCH DID YOU SPEND PER WEEK;</p> <p>I. Before you started using FES?</p> <p>II. After you started using FES?</p>	
19	<p>IF ALL OR MOST OF THE FUEL YOU USE IS GATHERED, WHO USUALLY GOES TO GATHER THE FUEL FOR YOUR HOUSEHOLD?</p> <p>Adult woman (); Adult man (); Female child, under 15 ()</p> <p>Male child, under 15 (); Other (), specify</p>	
20	<p>BEFORE USING THE FES, HOW OFTEN DID YOU GO TO GATHER YOUR FUEL?</p> <p>Once per week (); two times per week ();</p> <p>Three times Per week (); Four times per week (); Everyday ()</p>	
21	<p>NOW THAT YOU ARE USING THE FES, HOW OFTEN DO YOU GO TO GATHER YOUR FUEL?</p> <p>Once per week (); two times per week ();</p> <p>Three times Per week (); Four times per week (); Everyday ()</p>	
22	<p>IF YOU GATHER FUEL, DO YOU EXPERIENCE PROBLEMS IN THE PROCESS?</p> <p>Yes (); No ()</p>	
23	<p>WHAT KINDS OF PROBLEMS?</p>	
FES Operations and Performance		
24	<p>Is it easier to use your FES compared to what you were using before?</p> <p>Yes () No ()</p>	
25	<p>Please explain:</p>	
26	<p>Is the FES effective in cooking the range of food types you prepare in the home?</p> <p>Yes (); No ()</p>	

		FIELD
27	Please Explain Your response:	
28	Can the FES be used for cooking large quantities of food during weddings and other social events? Yes (); No ()	
29	Please explain your answer:	
30	CAN YOU SHOW ME THE NORMAL QUANTITY OF FUEL YOU USED EVERYDAY BEFORE YOU STARTED USING THE FES? <i>The Enumerator will kindly request for demonstration of this by the respondent. If there is a portion of the fuel (e.g. a bundle of wood), then that will be ideal. If not, you can use 10 stones to represent this scenario.</i>	
31	CAN YOU SHOW ME THE NORMAL QUANTITY OF FUEL YOU USE EVERYDAY, NOW THAT YOU ARE USING FES? <i>The Enumerator will kindly request the respondent to add more portions to the quantity above, to show increase in fuel use; or reduce from the portion above to show decrease in fuel use. The Enumerator can then estimate and record %increase or %decrease (you can also record fractions)</i>	
32	BEFORE USING FES, WHAT PROBLEMS WERE YOU HAVING IN THE KITCHEN? Burns from flame (); Fire on the clothing (); Flame in oil (); Fire in the kitchen (); Smoke burning the eyes (); Smoke causing coughing (); Blackening of the walls and roof ()	
33	SINCE YOU STARTED USING FES, WHAT PROBLEMS ARE YOU HAVING IN THE KITCHEN? Burns from flame (); Fire on the clothing (); Flame in oil (); Fire in the kitchen (); Smoke burning the eyes (); Smoke causing coughing (); Blackening of the walls and roof ()	
34	WHERE IS THE COOKING USUALLY DONE IN THE HOUSE? Separate room/tukul (); Open area /outdoors () Other (specify).....	

		FIELD
	Suggestions	
35	How can the FES work better for you?	
36	What can you advice the NGOs doing this FES Programme?	

Enumerator's Comments

تقييم فعالية المواقف المحسنة في دارفور الكبرى

استبيان الاسرة

مقدمة

ان مجموعة عمل المواقف المحسنة والطاقة وسبل كسب العيش في دارفور بصدد دراسة فعالية برامج المواقف المحسنة في ولايات دارفور الثلاث.

الموقع.....

التاريخ:.....

البيانات الاساسية	
0	الولاية : شمال دارفور () غرب دارفور () جنوب دارفور ()
1	رقم الاسرة ()
2	التوع ذكور () انثى ()
3	العمر 20-15 () : 20-21 () : 26-30 () : 31-35 () : 36-40 () : 46-50 () : 51-55 () : 56-60 () : واعلي ()
4	الحالة الاجتماعية عزيب/ة () مطلق/ة () ارملة/ة () متزوج/ة () منفصل/ة ()
5	ماذا كنت تعمل خلال الـ 12 شهر الماضي يعمل بالاجر () يعمل لنفسه () يعمل بالاجر ولنفسه () يعمل متطوع () اعمل لاجل الغذاء () لا اعمل () طالب () اعمال حره () معاش () ربة منزل () أخرى حدد ()
6	أي من المجموعات التالية تصف حالة اسرتك نازح/ة () لاجئ/ة () مواطن/ة في المدينة () مواطن/ة قروي/ة ()
الأدوات , الوقود ومصادر الوقود	
7	هل تستخدم اسرتك الموقد المستخدم للطبخ ؟ نعم () لا ()
8	لو كانت اجابتك بنعم , ماهو نوع الموقد الذي تستخدمه اسرتك للطبخ ؟ بابور جاز () كاتون حديد () موقد غاز () () IV3 كاتون روكت () كاتون طين محسن () كاتون أخرى حدد ()
9	كيف تحصلت على الموقد الذي تستخدمه ؟ هبة () شراء () انتج بواسطة متدرب ()
10	إذا كان الاجابة ان الموقد قد انتج لك فكيف تم الاتصال بك وما هي الجهة الماتحة

11	في حالة شراء الموقد أ/ اين تم شرائه ؟ ب/ كم كان ثمنه ؟
12	هل تم تدريب أي فرد من اسرتك في انتاج الموقد المحسنة ؟ نعم () لا ()
13	ان كانت الاجابة بنعم فمن اين تحصلت على المواد الخام لصناعة الموقد ؟ من المنظمات () بعضها من المنظمات وبعضها من السوق () بعضها من السوق وبعضها من المنظمات وبعضها الاخر بالجمع من الطبيعة () كلها من السوق () كلها جمعت من الطبيعة ()
14	كم من الزمن يعيشه هذا الكاتون بالاشهر ؟
15	كم مرة قمت بصيانة الكاتون ؟ ابدا () مرة () مرتان () ثلاث مرات () اكثر من ثلاثة مرات ()
16	ما هو نوع الوقود الذي تستخدمه اسرتك في الطبخ ؟ كهرباء () غاز بترول () غاز طبيعي () جاز () فحم () حطب () حشايش () روث حيوانات () بقايا محاصيل زراعية () اخرى () حدد.....
17	كيف تحصل على الوقود؟ كله من السوق () معظمه من السوق () اجمع معظمه () اجمعه كله ()
18	اذا كنت تشتري الوقود ماهي تكلفة الوقود في الاسبوع؟ 1 قبل استخدام الكاتون المحسن 2 بعد استخدام الكاتون المحسن.....
19	اذا كان كل أو معظم وقودك تتحصل عليه بالجمع فمن الذي يقوم بعملية الجمع ؟ امرأة بالغة () رجل بالغ () بنت دون 15 سنة () ولد اقل من 15 سنة () اخرى () حدد.....
20	قبل استخدام الكاتون كم من المرات تذهب لجمع الوقود ؟ مرة في الاسبوع () مرتان في الاسبوع () ثلاثة مرات في الاسبوع () اربعة مرات في الاسبوع () يوميا ()
21	الآن وانت تستخدم الكاتون المحسن، فكم مرة تذهب لجمع الوقود ؟ مرة في الاسبوع () مرتان في الاسبوع () ثلاثة مرات في الاسبوع () اربعة مرات في الاسبوع () يوميا ()
22	اذا كنت تجمع الوقود، هل هل واجهتك أي مشاكل أثناء جمع الوقود ؟ لا () نعم ()
23	ماهي المشاكل التي واجهتك ؟
عمل وكفاءة الكاتون	
24	هل استخدام الكاتون المحسن أسهل من الكاتون الذي كنت تستخدمه سابقاً ؟ نعم () لا ()

من فضلك وضح إجابتك ؟	25
هل الكاتون المحسن فعال في طبخ أنواع الطعام الذي تقوم بتجهيزها في المنزل ؟ نعم () لا ()	26
من فضلك وضح إجابتك ؟	27
هل الموقد المحسن يمكن استخدامه لطبخ كميات كبيرة من الطعام أثناء المناسبات الاجتماعية (كالزواج مثلا) ؟ نعم () لا ()	28
من فضلك وضح إجابتك ؟	29
هل يمكنك تقدير كمية الوقود الذي تستخدمه/ها يوميا قبل استخدامك للموقد المحسن؟ (العداد يطلب من المبحوث توضيح كمية الوقود باستخدام كوم من الحجارة او ربطة من الحطب)	30
هل يمكنك تقدير كمية الوقود الذي تستخدمه/ها يوميا بعد استخدامك للموقد المحسن؟ (العداد يطلب من المبحوث توضيح نسبة الزيادة او النقصان في كمية الوقود باستخدام كوم من الحجارة او ربطة من الحطب)	31
قبل استخدام الموقد المحسن ، ماهي المشاكل التي كنت تعاني منها في المطبخ ؟ التهب في الزيت () حرق الملابس () حرق اللهب () حرق العيون من الدخان () النار في المطبخ () سواد الحيط والسقف () الكحة والعطس من الدخان ()	32
منذ أن بدأت تستخدم الموقد المحسن ، ماهي المشاكل التي واجهتك في المطبخ ؟ اشتعال النار من الزيت () اشتعال النار في الملابس () حرق بواسطة اللهب () اندلاع الحريق في المطبخ () سواد الحيط والسقف () الكحة والعطس من الدخان ()	33
أين تطبخ/يطبخ عادة ؟ في الغناء () في التكل مكان منفصل () في البيت () حدد أخرى ()	34
كيف يمكن للموقد المحسن أن يعمل بصورة أفضل ؟	35
ماذا يمكن للمنظمات أن تعمله لتحسين برنامج الموقد المحسن ؟	36

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تعليق العداد

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Assessing the Effectiveness of Fuel-Efficient Stove Programming: A Darfur-Wide Review

Key Informant Interview – An interview checklist for FES Users

Introduction: The Darfur FES/Energy/Livelihoods Working Groups is conducting this Review to investigate the overall effectiveness of fuel-efficient stove (FES) programming throughout the three states of Darfur

Date:

Background Information	
1	NAME:
2	SEX: Male (); Female ()
3	WHAT IS YOUR LIVING STATUS IN THIS CAMP/ COMMUNITY? Internally Displaced () Refugee () Resident/URBAN () Resident/ Rural Area ()
Appliances, Fuels and Fuel Sources	
4	HOW DID YOU COME TO KNOW ABOUT FES? - Before camp; - in camp; - before coming to this community; - within this community; etc
5	WHY IS FES BEING PROMOTED ALL OVER THE REGION? - Steer discussions around the four objectives <ul style="list-style-type: none"> ○ Conserving Environmental services (Energy) ○ Humanitarian Protection ○ Livelihood enhancement ○ Health and safety
6	WHAT WAS YOUR PARTICULAR INTEREST IN TAKING UP FES USE?
7	WHAT TYPE (S) OF FES DO YOU NORMALLY USE? Improved mud stove () Rocket stove () IV3 () Kerosene stove () Metal (Tara) stove LPG stove ()) Others () specify
8	HOW DID YOU ACQUIRE THE FES YOU ARE USING?
9	EXAMINE THE ISSUES SURROUNDING THE SOURCES OF FES; IF IT WAS BOUGHT;

	<ul style="list-style-type: none"> - Where was it bought? - What was the cost? - Was it affordable? <p>IF IT WAS THROUGH TRAINING AND PRODUCTION</p> <ul style="list-style-type: none"> - How was the training carried out? - How many people were trained at the time you were trained? - Were you able to understand the whole process of making FES by the end of the training, without making mistakes in the design? - Can you show me some of the FES you produced by yourself? - What can you say about the skills other trainees acquired through this training? - Have you created new designs of the FES after the training? - How do you acquire materials to construct new FES? <p>IF THROUGH SUPPLY</p> <p>What was it that qualified you to receive FES? What was the pattern of distribution? How will you have preferred the distribution to be like?</p>
10	<p>HOW LONG DOES THIS STOVE LAST? (MONTHS)</p> <ul style="list-style-type: none"> - Can you repair FES if gets damaged? - What are responsible for FES damage? - Is it cheaper to repair a damaged FES than to make a new one?
11	<p>WHAT TYPES OF FUEL DO YOU MAINLY USE FOR COOKING?</p> <ul style="list-style-type: none"> - Electricity - Liquid Propane Gas (LPG) - Natural gas - Kerosene - Charcoal - Wood - Grass - Animal dung - Agricultural crop residue
12	<p>HOW DO YOU ACQUIRE THIS FUEL?</p> <ul style="list-style-type: none"> - Amount spent on fuel bought per week before FES was used and after/ during? - Frequency of gathering per week before FES and after? - How are these differences useful for the environment and the gatherers?
13	<p>How easy it is to use FES compared to what you were using before?</p> <ul style="list-style-type: none"> - Suitability to cook a range of food types

	- Cooking large quantities of food during weddings and social events
14	WHAT CAN YOU SAY ABOUT THE DIFFERENCE IN FUEL USE BEFORE THE USE OF FES AND NOW WHEN YOU ARE USING IT? - Use community friendly methods to estimate what it used to be - Estimate what it is now - give an estimate of fuel savings or surplus
15	BEFORE USING FES, WHAT PROBLEMS WERE YOU HAVING IN THE KITCHEN? BUILD A LIST - Burns from flame Fire on the clothing - Flame in oil - Fire in the kitchen - Smoke burning the eyes - Smoke causing coughing - Blackening of the walls and roof
16	SINCE YOU STARTED USING FES, WHAT PROBLEMS ARE YOU HAVING IN THE KITCHEN? Build a new list Suggestions
17	How can the FES work better for you?
18	What can you advice the NGOs doing this FES Programme?
19	What role can you as an individual play in the dissemination of FES?
20	How can the FES Training be made better?

Interviewers Comments

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Assessing the Effectiveness of Fuel-Efficient Stove Programming A Darfur-Wide Review

Key Informant Interview – an interview checklist to determine external influences, for use with non-FES users, charcoal burners, local stove traders etc

Introduction: The Darfur FES/Energy/Livelihoods Working Groups is conducting this Review to investigate the overall effectiveness of fuel-efficient stove (FES) programming throughout the three states of Darfur

Date:

SPECIFIC INTERVIEW:	
Background Information	
1	NAME:
2	SEX: Male (); Female ()
3	WHAT IS YOUR LIVING STATUS IN THIS CAMP/ COMMUNITY? Internally Displaced () Refugee () Resident/URBAN () Resident/ Rural Area ()
Knowledge of FES	
4	HOW DID YOU COME TO KNOW ABOUT FES? - Before camp; - in camp; - before coming to this community; - within this community; etc
5	WHY IS FES BEING PROMOTED ALL OVER THE REGION? - Steer discussions around the four objectives <ul style="list-style-type: none"> ○ Conserving Environmental services (Energy) ○ Humanitarian Protection ○ Livelihood enhancement ○ Health and safety
6	WHAT TYPE (S) OF FES IS NORMALLY USED IN YOUR COMMUNITY?
7	WHAT TYPE OF APPLIANCE DOES YOUR HOUSEHOLD USE FOR COOKING AND HEATING?
8	WHAT ADVANTAGES DOES THIS APPLIANCE HAVE OVER OTHERS?
9	WHAT FUEL DO YOU USE FOR COOKING?
10	IS THERE A NEED TO CUT DOWN ON YOUR CURRENT FUEL CONSUMPTION? PLEASE EXPLAIN YOUR ANSWER.
11	HAVE YOU EVER BEEN ENCOURAGED TO USE FES?

	- If no, do you want to know more about FES? - If yes, what was your response?
LIVELIHOOD ISSUES	
12	WHAT DO YOU DO TO EARN YOUR LIVING?
13	WHAT IS THE GUARANTEE THAT YOUR SOURCE OF LIVELIHOOD WILL CONTINUE TO PROVIDE FOR YOU?
14	HOW HAS THE INTRODUCTION OF THE FES AFFECTED YOUR MEANS TO EARN A LIVING?
15	WHAT COMPLAINTS DO PEOPLE HAVE ABOUT THE FES?
Suggestions	
18	How do you think you can benefit from the FES programme?
19	Can you suggest a way to reduce the consumption of the firewood and other fuels?

Interviewers Comments

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**Assessing the Effectiveness of Fuel-Efficient Stove Programming
A Darfur-Wide Review**

Interview Checklist – Forest National Cooperation (FNC)

Introduction: The Darfur FES/Energy/Livelihoods Working Groups is conducting this Review to investigate the overall effectiveness of fuel-efficient stove (FES) programming throughout the three states of Darfur

Date:

Functional Title of Focal Person:

.....

Background Information

Contact Details	
1	Mailing address:
	Telephone:
	Fax :
	E-mail :
	Website:
	Visiting address (if different from mailing address):

Domestic Energy Strategy and Collaboration

2	What are the current challenges to Forest Management in the areas under your management?
3	What are the domestic energy strategies of FNC? - Production of biomass - Supply of biomass - Conservation of biomass - Extension services - Collaborating with partners...etc
4	What are the constraints in implementing these strategies?
5	What do you perceive to be the role of NGOs in implementing these domestic energy strategies?

6	To what extent have the NGOs been able to contribute to these domestic energy strategies?
7	How can the contributions of the NGOs become more supportive of your domestic energy strategies?

COMMENTS

**Assessing the Effectiveness of Fuel-Efficient Stove Programming
A Darfur-Wide Review**

A Questionnaire for Implementers of FES projects

Introduction: The Darfur FES/Energy/Livelihoods Working Groups is conducting this Review to investigate the overall effectiveness of fuel-efficient stove (FES) programming throughout the three states of Darfur

Date:

Functional Title of Focal Person:

.....

Background Information

1	Name of organisation:
Contact Details	
2	Mailing address:
	Telephone:
	Fax :
	E-mail :
	Website:
	Visiting address (if different from mailing address):
3	Mission and goals of your organisation (<i>Summary</i>)

Basic Project Information

4	Project title (add others if there are more than one):
	a.
	b.
5	What types of stoves are targeted in the Intervention
	a.

	b.		
	c.		
6	Closed Projects	Planned Project duration (months)	Actual Project duration (months)
7	Ongoing Projects	Start Date (dd/mm/yy)	Expected End Date (dd/mm/yy)
8	Direct Cost Incurred by the Project (to date)		
	<i>Description</i>	<i>Amount</i>	
	a) Project Design and Mobilisation		
	b) Administrative (including staff costs)		
	c) Training		
	d) Research		
	e) Monitoring and Evaluation		
	f) Labour (skilled and unskilled)		
	g) Materials		
	h) Stoves bought		
	i) Distribution of FES		
	Project Locations;		
9	State:		
10	Locality:		
	a.		
	b.		
	c.		
11	Specific Camps/ Communities:	No: HH Targeted	Total no of HH
	a.		
	b.		
	c.		
	d.		
	e.		
	f.		
	g.		

The Project	
	Identification
12	What were the problems or threats in the project area?
13	What were the causes of these threats?
14	How were the causes related?
15	How did these threats come to the notice of the institution?
16	Which of these threats/causes did the FES project set out to address?
17	Which specific groups were targeted by the project?
18	How were these groups selected?
19	What was the Goal of the Project?
20	What was/were the objective(s) of the project?
21	Who decided on the FES to be used in the project? Community (<input type="checkbox"/>); FNC (<input type="checkbox"/>); INGO (<input type="checkbox"/>)
	Impacts
22	In what ways have the problems or threats targeted by the project changed?
23	Are the causes of the threat still present? Yes (<input type="checkbox"/>); No (<input type="checkbox"/>). What are the reasons?
24	Has the goal been achieved? Yes (<input type="checkbox"/>); No (<input type="checkbox"/>). Please, describe the status.
25	Have the objectives been/ being achieved? Yes (<input type="checkbox"/>); No (<input type="checkbox"/>).
26	What are/were the results? a) b) c) d) e) f)
27	In what ways have FES contributed to these results?
28	If you are implementing different models, which one of them contributed most to the result? Descending...
	Relevance

29	How effective is the FES for cooking the range of food types available to the target population?
30	How suited is the FES for meeting the cooking demand of the household sizes?
31	Can the FES be used for cooking large quantities of food during weddings and other social events?
32	Are the pot models used by the target population suited to the FES models?

Integration and Coordination

Integration	
33	Is the FES project a separate (stand-alone) project?
34	How prominent is the FES project in the annual plan of the institution?
35	How many staff personnel are assigned to the FES project?
36	How many of these personnel are in senior management positions?
37	Does FES Have a separate budget?
38	How is the FES project relating to other sectors within the programme of the NGO?
39	How is the NGO coping with the FES programme given your established vision and strategy of operations?
Coordination	
40	Which organisation(s) was operating a FES programme in the locations you implemented the FES project?
41	What level of information exchange happened between your organisation and the others?
42	How will you collaborate, or exchange or share information with other institutions, and how do you intend to build on their results?
43	Are decisions on collaborative efforts followed up at the field level?

Monitoring and Evaluation

43	Who was/ has been responsible for Monitoring and Evaluation?
44	What was the frequency of the monitoring and evaluation?
45	Who were participating in the Monitoring and Evaluation throughout the project (Project Staff, FES community, FNC, etc)

46	How were the results of the M&E used to manage the project and adapt it to unexpected circumstances?
47	Were there independent external evaluations on the FES project?
48	What kinds of learning models have been adopted by your organization?
49	Does the models allow for institution to fit in?
50	Is there any feedback mechanism within the learning cycle to stakeholders?

Sustainability

	What no. of FES projects are running now, completed or stopped and why?
51	What are the challenges facing FES projects in the area?
52	What is the degree of willingness of the community to repair FES?
53	How can you describe the availability and accessibility of FES to the community?
54	Can the communities produce exact copies of the FES implemented in the project? Yes (); No ()
55	What can you say about their quality?
56	How do they get their materials for constructing the FES?
57	What support mechanisms have you put in place to ensure that the FES production cycle supports itself?

Learning Experiences

	How can we increase participation of the communities in the planning, implementation and monitoring of FES projects?
58	How could the positive impacts of the FES project be enhanced?
59	How could the negative impacts be reduced?
60	Which FES dissemination model can you advice NGOs to adopt, so as to produce the most positive impact? TOT (); Training of entrepreneurs (); stove distribution (); stove sale to community (); Please explain your choice

61	How can the FES network become more innovative in supporting human wellbeing through the conservation of biomass and use of safe appliances?
	GENERAL
62	What are the key obstacles in the implementation process?
63	How did you solve them?

COMMENTS

Assessing the Effectiveness of Fuel-Efficient Stove Programming A Darfur-Wide Review

Key Informant Interview – checklist to use with local leaders or monitors,
including Sheikhs, Omdas and women leaders

Introduction: The Darfur FES/Energy/Livelihoods Working Groups is conducting this Review to investigate the overall effectiveness of fuel-efficient stove (FES) programming throughout the three states of Darfur

Date:

SPECIFIC INTERVIEW:	
Background Information	
1	NAME:
2	SEX: Male (); Female ()
3	WHAT IS YOUR LIVING STATUS IN THIS CAMP/ COMMUNITY? Internally Displaced () Refugee () Resident/URBAN () Resident/ Rural Area ()
Appliances, Fuels and Fuel Sources	
4	WHAT TYPE (S) OF FES IS NORMALLY USED IN YOUR COMMUNITY?
5	HOW DID YOU COME TO KNOW ABOUT FES? - Before camp; - in camp; - before coming to this community; - within this community; etc
6	WHY IS FES BEING PROMOTED ALL OVER THE REGION? - Steer discussions around the four objectives <ul style="list-style-type: none"> ○ Conserving Environmental services (Energy) ○ Humanitarian Protection ○ Livelihood enhancement ○ Health and safety
7	HOW WILL YOU DESCRIBE YOUR EFFORTS TO PROMOTE FES USE IN YOUR COMMUNITY/ CAMP?
8	WHAT TYPE (S) OF FES DO YOU USE IN YOUR HOUSEHOLD?
9	HOW DID YOU ACQUIRE THE FES YOU ARE USING?
10	What is the normal way for your people to acquire FES? - What do you think about that method?

	- How can it be improved?
11	HOW CAN THE FES BE MADE TO LAST LONGER?
12	WHAT TYPES OF FUEL ARE MAINLY USED ON THE FES FOR COOKING? - Electricity - Liquid Propane Gas (LPG) - Natural gas - Kerosene - Charcoal - Wood - Grass - Animal dung - Agricultural crop residue
13	HOW DO THE PEOPLE ACQUIRE THIS FUEL? - Amount spent on fuel bought per week before FES was used and after/ during? - Frequency of gathering per week before FES and after? - How are these differences useful for the environment and the gatherers?
14	How easy it is to use FES compared to the traditional methods being used? - Suitability to cook a range of food types - Cooking large quantities of food during weddings and social events
15	WHAT CAN YOU SAY ABOUT THE DIFFERENCE IN FUEL USE BEFORE THE USE OF FES AND NOW WHEN YOU ARE USING IT? - Use community friendly methods to estimate what it used to be - Estimate what it is now - give an estimate of fuel savings or surplus
16	BEFORE USING FES, WHAT PROBLEMS, RELATING TO THE KITCHEN WERE BEING REPORTED? BUILD A LIST - Burns from flame Fire on the clothing - Flame in oil - Fire in the kitchen - Smoke burning the eyes - Smoke causing coughing - Blackening of the walls and roof
17	SINCE THE PEOPLE STARTED USING FES, WHAT PROBLEMS RELATED TO THE KITCHEN ENVIRONMENT, ARE THEY REPORTING? Build a new list Suggestions
18	How can the FES work better for the community?
19	What can you advice the NGOs doing this FES Programme?

20	What role can you as an individual play in the dissemination of FES?
21	How can the FES Training be made better?

Interviewers Comments

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ANNEX III

BIBLIOGRAPHY AND RESOURCES

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RESOURCES

University of Liverpool – Faculty of Medicine, Division of Public Health – is currently preparing a series “Evaluation Tools and Guidelines for Monitoring the Health and Socio-economic Impacts of Household Energy Development Programmes in Developing Countries”. Sections of the tools and guidelines already complete can be downloaded from: <http://www.liv.ac.uk/heevaluation/root/household%20energy,%20health%20and%20sustainable%20development/resources/index.htm>

The Indoor Air Pollution Programme of the World Health Organisation is currently finalising a catalogue of methods used to evaluate interventions aimed at reducing indoor air pollution and associated health effects at the household level. The catalogue is expected to be completed by October 2008. The title of the publication is “Evaluating Household Energy and Health Interventions: a Catalogue of Methods” and will be available to be downloaded from <http://www.who.int/indoorair/en/>

The WHO Indoor Air Pollution programme also provides a useful page of relevant links for international organisations and partnerships as well as research institutions and other organisations working on indoor air pollution air pollution and household energy. <http://www.who.int/indoorair/links/en/index.html>

Practitioners are also referred to the Monitoring and Evaluation pages on the Household and Domestic Energy Network, HEDON at <http://www.hedon.info/MonitoringAndEvaluation#1IssueInBrief>



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