



Safe Access to Fuel and Energy (SAFE) Project in Darfur

End of Project Evaluation

May 2016



World Food Programme



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Acronyms and Abbreviations

ABCs	Agri-Business Centre(s)
CBOs	Community Based Organization(s)
DAC	Development Assistance Committee
FES	Fuel Efficient Stove
FFA	Food for Assets
FFB	Fire Fuel Briquettes
FGD	Focus Group Discussion
FLA	Field Level Agreement
FNC	Forestry National Corporation
GHG	Green House Gas
HAP	Household Air Pollution
HHs	Households
IDPs	Internally Displaced Population
IGAs	Income Generating Activities
IPCC	Intergovernmental Panel on Climate Change
M&E	Monitoring and Evaluation
NAMA	Nationally Appropriate Mitigation Action
NRB	Non-Renewable Biomass
OECD	Organization for Economic Cooperation and Development
SAFE	Safe Access to Fuel and Energy
SDG	Sudanese Pound
SDGs	Sustainable Development Goals
Tonne	Tonne in this report refers to a metric ton=1,000 kg
tCO ₂	Tonne of carbon dioxide
tCO ₂ e	Tonne of carbon dioxide equivalent
TOR	Terms of Reference
USD	United States Dollars
WFP	United Nations World Food Programme

CURRENCY EQUIVALENTS

(Exchange Rate Effective April 15, 2016)

Currency Unit	=	Sudanese Pound (SDG)
USD1	=	SDG 6.4090

Evaluation Summary Sheet

Project Title:	Safe Access to Fuel and Energy (SAFE)
Project Objective:	The objective of the Project was to improve access to energy services for cooking; reduce the vulnerability and frequency of exposure to gender-based violence associated with firewood collection; and improve the livelihood, long-term food security and resilience of Internally Displaced Population (IDPs) and conflict-affected host communities in Darfur region, the Republic of the Sudan.
Project Components:	The Project had eight activities: (1) fuel-efficient stoves and fire-fuel briquettes; (2) tree nurseries and community forests; (3) promotion of livelihoods through farm-based IGAs; (4) training and sensitization programmes (non-farm IGAs, nutrition, health and hygiene, adult literacy and child care practices); (5) installation of biogas technologies for school feeding programmes; (6) project implementation and monitoring support; (7) support for research, development and learning; and (8) awareness raising in the Netherlands.
Project Beneficiaries:	The direct beneficiaries of the Project were 2.7 million IDPs and conflict-affected host communities across five Darfur states.
Project Costs and Financing:	Total Project Cost = USD 3.49 million Nationale Postcode Loterij Trust Fund = USD 3.49 million (100%)
Implementation Organization:	United Nations World Food Programme (WFP)
Project duration:	The Project was to be implemented over the course of two years, from beginning of April 1, 2014 to end of March 2016.
Evaluation Type	End of Project Evaluation
Evaluation Purpose	The purpose of the evaluation was to assess whether project's stated objectives were met, to reflect on management's project implementation performance, and to learn lessons for planning and management of future projects.
Primary Methodologies	The methodology adopted included document review, interviews, focus group discussions, household survey and firewood consumption measurement survey, site visits and observations and meetings with relevant WFP management and staff, implementing partners and other stakeholders.
Evaluation Period:	January – April 2016
Overall Evaluation:	5 "Satisfactory" (6 'Highly Satisfactory' – 1 'Highly Unsatisfactory')
Individual Evaluation:	<div>Relevance</div> <div>Effectiveness</div> <div>Efficiency</div> <div>Impact</div> <div>Sustainability</div> <div>5 Satisfactory</div> <div>4 Moderately Satisfactory</div> <div>5 Satisfactory</div> <div>6 Highly Satisfactory</div> <div>4 Moderately Satisfactory</div>

Executive Summary

This report presents the results of an independently conducted end-of-project evaluation of the Safe Access to Fuel and Energy (SAFE) Project implemented by the United Nations World Food Programme (WFP) in Sudan's Darfur region. The project was implemented over two years from April 2014 to March 2016. The evaluation's main findings, conclusions and recommendations are summarized below.

Brief description of project

The overall objective of SAFE was to improve access to energy services for cooking; reduce the vulnerability and frequency of exposure to gender-based violence associated with firewood collection; and improve livelihoods, long-term food security and resilience of Internally Displaced Population (IDPs) and conflict-affected host communities in Darfur.

The overall objective of the SAFE was to be achieved through (a) dissemination of fuel-efficient stoves and fire-fuel briquettes; (b) development of tree nurseries and community forests; (c) promotion of alternative livelihoods through various income-generating activities (IGAs); (d) training and sensitization activities in the areas of nutrition, health and hygiene, adult literacy and child care practices; and (e) installation of biogas digesters for WFP-assisted school feeding programmes.

Purpose of the evaluation

The purpose of the evaluation was to assess whether project objectives were met, to reflect on management's project implementation performance, and to learn lessons for planning and management of future projects in Sudan as well as for global WFP SAFE interventions. The evaluation was undertaken during January to April 2016. The evaluation considered the five OECD/DAC evaluation criteria: relevance, effectiveness, efficiency, impact and sustainability.

A six-point rating scale was applied for overall evaluation of the Project and for each evaluation criterion: Highly satisfactory (6), Satisfactory (5), Moderately Satisfactory (4), Moderately Unsatisfactory (3), Unsatisfactory (2), and Highly Unsatisfactory (1).

Information for the Evaluation was obtained through a review of pertinent documents; interviews and discussions with beneficiaries, project implementing partners; site visits and observations; household survey (908 households consisting of 474 beneficiary and 434 'comparison' households); 46 fuel weight measurement and price survey questionnaires; 194 firewood consumption measurement survey (52 fuel efficient stove user households and 142 three-stone fire user households); and 12 focus groups discussions.

Main Findings and Conclusions

Criteria	Summary of findings and conclusion	Rating
Problems and Needs (Relevance and Appropriateness)	<p>SAFE has responded to real problems (economic, social and environment) facing households and communities in Darfur and to national development needs. The Project's objectives are fully aligned with Sudan's energy, natural resource and environmental action plans which recognized community-based forest and rangeland management, lessening of pressure on local forest through the use of alternative energy sources and afforestation of denuded of trees for firewood as key climate change mitigation actions.</p> <p>SAFE objectives are fully aligned with WFP's Corporate Strategic Plan for 2014-2017 and WFP's strategy of building resilience in Sudan (2015-2017). SAFE complemented WFP's food-for-assets and food-for-training intervention which aim to create assets and human capital. In terms of alignment with global priorities, the Project had much to offer to the achievement of several of the UN Sustainable Development Goals (SDG): end poverty, zero hunger and food security, good health and well-being, education, gender equality and empowerment of women, access to affordable and clean energy, decent work and economic growth, climate action, and environmental sustainability, and international partnership for SDGs.</p> <p>The effectiveness of SAFE was affected by limitations in project design: the Project generally lacked a well-established results framework; and the project objectives were not SMART¹ and were not related to SMART indicators, baseline and target. The time frame for the project was somewhat ambitious, given the project's geographic coverage, multi-sector interventions and limitations in project implementation capacity.</p>	The rating given is 5, "Satisfactory" .
Achievement of Project Objectives (Effectiveness)	<p>The Project has been effective in addressing the immediate cooking needs of the target population, although the results were mixed. The fuel efficient stoves have been highly effective while the fire fuel briquette component was judged to be adequate only. The biogas digesters were implemented in late 2015 and</p>	The rating given is 4, "Moderately Satisfactory" .

¹ SMART - Specific, Measurable, Achievable; Realistic and Time-bound

	<p>have yet to be operational and therefore their proper functioning remains to be seen.</p> <p>The Project has been effective in mitigating protection risks associated with firewood collection. Similarly, the Project has been successful in slowing down forest depletion.</p> <p>The effectiveness of the Project in terms of strengthening and diversifying people's livelihoods, and improving health and nutritional levels was mixed. We found no statistically significant differences in dietary diversity and negative coping strategies between beneficiary households and comparison households. Understandably, it was too early to detect significant livelihood changes within the Project's time frame. Also such small projects may not on their own substantially change overall livelihoods except for a few number of individuals. Nevertheless, there are indications of the likely positive effects of the Project on livelihoods. The Project has helped women become active participants in mainstream economic activities. Not-insignificant number of IGA participants have started earning an income.</p> <p>The effectiveness of the Project on livelihoods has been challenged by limitation in market opportunity studies and post-training extension services.</p>	
<p>Sound Management and Value for Money (Efficiency)</p>	<p>SAFE was a collaborative and participatory project and was generally managed by qualified and committed staff. The management approach has fostered the acceptance of the Project by beneficiary communities and partners. The Project partners have demonstrated their commitment to the implementation of their respective activities.</p> <p>The management and implementing partners have executed several visibility actions including sign boards, banners, training materials and T-shirts with WFP and Nationale Postcode Loterij logos. The visibility, promotion and publicity of the Project activities also contributed to the effectiveness of the Project implementation.</p> <p>Notwithstanding the efforts, however, there has been limitations in project management:</p> <ul style="list-style-type: none"> • there has been delay in project start-up; 	<p>The rating given is 5, "Satisfactory".</p>

	<ul style="list-style-type: none"> • despite the general acknowledgement of the capacity limitations on the part of implementing partners to run and sustain sub-project activities, the management took little initiatives to address those gaps; • the management did not demonstrate some degree of flexibility to adjusting sub-project unit costs in response to Partners' repeated requests and market conditions; • SAFE generally lacked an appropriate M&E function. Baseline data were not established and although several monitoring visits took place during the course of the implementation of the project, monitoring data were partial and were not systematically recorded, managed, used, and reported; and • limited project documentation and information exchange and communication. <p>There was evidence of sound fund management. The Project had mechanisms in place to reduce possibilities of fiduciary risks. The management also followed WFP's established authorization and approval terms for funds disbursements. In purchasing of goods and services, WFP's procurement rules were followed and there were indications that the Project Management insisted on a Value for Money basis.</p> <p>Overall, despite the initial delays, the Project was completed within the original time frame and budget. The level of effort of the Project is seen as appropriate and of good value. The management had capitalized on the resources of a wide range of partners which resulted in lower management and administrative costs.</p>	
Achievement of Wider Effects (Impact)	<p>SAFE has generated positive impact in terms livelihoods, human and social capital and empowerment and conservation of forests and climate change mitigation.</p> <p>Not-insignificant number of households reported cash income from the IGAs. Beneficiary households reported reductions in expenditures on firewood purchases. These were spent on food, education, household durables, energy for cooking and lighting, clothing, social activities, water, re-invested in income-generating activities, and savings. The stoves promoted by the Project were associated with reduced Household Air pollution (HAP) and related ailments: eye irritation, respiratory illness, and incidence of fire burns in young children and</p>	The rating given is 6, " Highly Satisfactory ".

	<p>adult females.</p> <p>SAFE helped women become active participants in mainstream of economic activities and, apart from the training and sensitisation programmes, the Project empowered communities and transform their organizational capacities through community mobilisation, group formation, and sub-project implementation. SAFE supported the establishment and rehabilitation of community infrastructures including training centres, tree nurseries and community forests, Agri-business centres, seed and tool banks, and grain stores. The community-based organizations and local implementing partners have gained in skills and knowledge in project management through 'training-by-doing', i.e., through the implementation of sub-projects.</p> <p>The Project has delivered positive impact in terms of conservation of forests and climate change mitigation. The annual firewood saving associated with the use of the fuel-efficient stoves is estimated at 180,000 tonnes and the corresponding avoided deforestation approximately 15,000 ha of forest land per annum. Each fuel efficient stove saves on average 3.8 tCO_{2e} per year. This is translated into an aggregate GHG emission reduction of 345,000 tCO_{2e} per year.</p> <p>Overall, SAFE has contributed to improve livelihoods, human and social capital, empowerment and to reduce the on-going trend of forest depletion in Darfur. As such, SAFE can be regarded as a "quick-impact" Project.</p>	
<p>Likely Continuation of Project Results (Sustainability)</p>	<p>Most SAFE activities have the potential to generate income or reduce household expenditure and therefore are likely to be financially sustainable.</p> <p>The Project management has made efforts to ensure sustainability of the Project results in several ways. The Project management has been successful in embedding the project activities into local institutional structures: communities, community based organizations, and local government structures (state ministries of agriculture, natural resource and environment, social welfare, etc.). The beneficiaries are likely to sustain their IGAs with continued technical support from the local institutions. SAFE objectives have the full policy support and can</p>	<p>The rating given is 4, "Moderately Satisfactory".</p>

	<p>be sustained even with limited donor funds. The community centres established by the Project will continue to train communities when the project funding ends.</p> <p>On the other hand, concerns are raised with regards to the sustainability of IGAs due to inadequacies in post-training extension services, limited market demand and competition and lack of access to markets beyond the immediate localities. Some of the training participants and trainers felt that further training and support would needed in product design and development, production, and business management. Implementing partners also pointed out that for certain communities, further support and follow-up will be needed. Concerns are also raised on the sustainability of the FES and FFB training centres and Agri Business centres as some were constructed with non-durable materials.</p>	
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As overall conclusion, the rating given for the Project is 5, "**Satisfactory**".

Recommendations

Project design, monitoring, evaluation, reporting and learning

- a) The quality of the project designs should be improved by enhancing the intervention logic or theory of change, 'SMARTness' of the intervention objectives and related indicators, baselines, and targets. The M&E unit should be mandated to review and ensure that this requirement is met.
- b) Project design should contain a realistic start-up phase which includes the mobilization of resources, staffing of the project and development of implementation frameworks to proceed the implementation phase of a project.
- c) A workable M&E system must be in place early on so that findings from monitoring are identified on a continuous basis and incorporated into ongoing project implementation. It is also important that M&E frameworks measure and assess not only achievement of outputs and activities but also progress made towards achieving project objectives and outcomes.
- d) Documentation, learning and experience sharing. Future projects should publish project documents and organize workshops to share learning experiences. The M&E unit should also be mandated to receive and maintain relevant project documentations for future references.

Fuel-Efficient Stove, fuel briquettes and biogas technologies

- a) Future projects should consider hiring of technical experts in the areas of renewable energy in general and in cook stove, briquetting and biogas technologies in particular;
- b) A commercial approach should be pursued for wide-scale dissemination of the fuel-efficient stoves and fuel briquettes.
- c) In designing future projects, interventions should include support for micro-enterprise development and should address the range of challenges faced by Improved Cook stove businesses (lack marketing skills, access to finance, consumer awareness of improved cook stoves and their benefits, and bottle-necks in the value chain, and maintaining quality products).
- d) It is important for future projects to conduct detailed techno-economic assessment of biogas technologies including benefits from synergy between biogas production and bio-slurry.
- e) The FES, FFB and biogas technologies have significant potential for GHG emission reduction. Future Project should explore the feasibility of carbon finance options.

Income generating activities

- a) The design of IGAs must be based on detailed market opportunity and feasibility studies.
- b) Future IGA interventions, in addition to skill training, should incorporate post-training extension services.

Project Impact and Sustainability

Future project should first concentrate on consolidating and expanding the gains prior to replicating and scaling-up into new communities.

Lessons Learned

Key lessons learned from the SAFE experiences are:

- a) Project interventions of a multi-sector nature may their own merits. For example, the urgent need to respond to the multi-faceted challenges and that multiple interventions must be pursued simultaneously because one without the other is not sufficient and also they complement each other. However, in the interest of effectiveness, there is almost always the need to strike a balance between the range of project activities and geographic coverage given the constraints of resources (money, human resource, time, etc.);
- b) SAFE's strong synergies with FFA and FFT programmes is an institutional good practice which should be replicated for other projects where relevant;
- c) The engagement of communities and community-based organizations was a good practice that should continue to be replicated for other projects. To address capacity limitations on the part of communities, future projects should incorporate significant capacity development actions;
- d) Good relations, strong coordination and engagement of relevant government agencies have been key to the success of SAFE. This is a good practice that can be replicated for future projects; and
- e) It is unrealistic to expect significant short-term impacts from engagement in income-generating interventions, particularly in humanitarian settings. While there are initial signs of livelihood impacts, the project timeframe of 2 years was insufficient for solidifying those gains.

1. Introduction

1. After two years of implementation of the Safe Access to Fuel and Energy (SAFE) Project in Sudan's Darfur Region, the United Nations' World Food Programme (WFP) commissioned this independent end of project evaluation. The evaluation was undertaken between January and April 2016.

2. The report presents the findings of the evaluation, conclusions and recommendations and is structured into five sections as follows. This first section provides the purpose of the evaluation, evaluation criteria and methodology including data sources and methods and rating scale. Section 2 provides a description of the Project including the background context, objectives, activities, implementation arrangement and project costs and financing. Then follows the main part of the evaluation report in Section 3. It presents findings under each evaluation criterion (i.e., relevance, effectiveness, efficiency, impact and sustainability) as well as an overall assessment of the performance of the Project. Sections 4 and 5 present the conclusions and recommendations. Finally, lessons learned during the course of implementation of the Project are outlined in Section 6.

3. The Terms of Reference for the Evaluation is reproduced and presented in Annex 1. A detailed description of the evaluation methodology is provided in Annex 2. An overview of the Project's physical and financial performance data is provided in Annex 3 and question-by-question statistical tables are presented in Annex 4.

1.1. Purpose and Scope of Evaluation

4. The purpose of the evaluation was to assess whether project objectives were met, to reflect on management's project implementation performance, and to learn lessons for planning and management of future projects. Specifically, the evaluation focused on the following aspects (ToR):

- **Project history and context** - the evaluation will document the history of the project, particularly how it has evolved since inception and the critical features of the operating environment that have affected, positively or negatively, project implementation and the impact that has been achieved;
- **Achievement of project objectives** - the extent to which the overall Project objectives and outputs/results were achieved. The outputs produced under each activity will be quantified and analyzed to identify what the project has actually accomplished on the ground;
- **Project impacts** - measure the extent to which the expected outcomes and impacts were achieved. Both qualitative and quantitative information will be used to assess the impact of the project at the overall objective level;
- **Sustainability** - the evaluation will assess the sustainability of the impacts of the project. Key factors that will require attention in order to improve prospects for sustainability of project outcomes and the potential for replication of the approaches; and

- **Lessons learned, good practices and recommendation** - provide the main lessons and specific recommendations for scale-up and replication of the project in similar contexts.

1.2. Evaluation Methodology

5. **Evaluation Criteria.** The following standard evaluation criteria developed by the Organization for Economic Cooperation and Development-Development Assistance Committee (OECD-DAC)² were applied for the evaluation:

- Relevance and appropriateness:** the relevance of the project as designed and implemented suited the context and needs at the beneficiary, local and national level; and also the Project's coherence with WFP's policies and global priorities. Also, assess the appropriateness of the project design.
- Effectiveness:** to what extent was the project as implemented able to achieve its stated objectives? And, what were the factors influencing the achievement or non-achievement of the objectives?
- Efficiency:** to what extent was there a reasonable relationship between resources expended and project impacts?
- Impact:** what real difference has the Project made for the targeted beneficiaries?
- Sustainability:** to what extent are the results and impacts achieved by the Project durable over time after project termination and without external support?

6. **Rating Scale.** The following six-point rating scale was applied for overall evaluation of the Project and for each evaluation criterion:

6 Highly Satisfactory - There were no shortcomings in the Project's achievement of its objectives, in its effectiveness, efficiency, impact, sustainability or in its relevance.

5 Satisfactory - There were minor shortcomings in the Project's achievement of its objectives, in its effectiveness, efficiency, impact, sustainability or in its relevance.

4 Moderately Satisfactory - There were moderate shortcomings in the Project's achievement of its objectives, in its effectiveness, efficiency, impact, sustainability or in its relevance.

² Active Learning Network for Accountability and Performance in Humanitarian Action (ALNAP)/Organization for Economic Cooperation and Development-Development Assistance Committee (OECD-DAC) criteria Evaluating Humanitarian Action using OECD/DAC criteria: An ANLAP guide for humanitarian Agencies. London. March 2006.
www.alnap.org/pool/files/eha_2006.pdf

3 Moderately Unsatisfactory - There were significant shortcomings in the Project's achievement of its objectives, in its effectiveness, efficiency, impact, sustainability or in its relevance.

2 Unsatisfactory - There were major shortcomings in the Project's achievement of its objectives, in its effectiveness and efficiency or in its relevance.

1 Highly Unsatisfactory - There were severe shortcomings in the Project's achievement of its objectives, in its effectiveness, efficiency, impact, sustainability or in its relevance.

7. **Data sources and methods.** Information for the Evaluation was obtained through a review of pertinent documents (project design document, reports, field monitoring reports); interviews and focus group discussions with beneficiaries, project implementing partners; site visits and observations; household questionnaire; firewood and charcoal weight measurement and price questionnaire; and firewood consumption measurement questionnaire.

8. The household questionnaire contained several modules including household demographics; income, consumption and expenditure, dietary diversity and coping strategies, cooking fuels and devices, mode of firewood acquisition and fuel consumption; and household's coping strategies to lack of cooking fuels; relevance, timeliness, and adequacy of support provided by the Project.

9. The purpose of the firewood and charcoal weight measurement survey was to estimate the average weight of the different types of firewood loads (e.g., woman load, man load, child load, donkey load, etc.) and charcoal loads (large sack, small sack, plastic bag, etc.) in standard unit (kilograms). The firewood consumption measurement survey was conducted to estimate cooking energy consumption by households.

10. **Sample Size and Sampling Strategy.** A statistical power analysis was performed for sample size determination. A Significance level (α) = .05; and Statistical Power = 0.80, and a minimum detectable effect size of 20 percentage points were used. Considering non-response and cluster effect, a sample size of 920 households was taken. A stratified two-stage cluster sampling was chosen in order to economize on travel in the field and because detailed lists of households for the entire region does not exist. A total of 46 clusters (14 from North Darfur and 8 each from the other four states) were selected. From each sample cluster, 20 sample households are selected.

11. The survey covered 908 household questionnaires (474 beneficiary households or 'treatment group' and 434 non-beneficiary households or 'comparison group'; 46 fuel weight measurement and price survey questionnaires; 194 firewood consumption measurement survey (52 fuel efficient stove user households and 142 three-stone fire user households); and 12 focus groups discussions.

2. Project Description

2.1. The Project Context

12. Located in the western-most part of Sudan, the Darfur region occupies an area of 549 thousand square kilometres (roughly 20% of Sudan, and about equal to the size of France). Darfur borders three countries: Libya in the north-west, Chad in the west and Central Republic of Africa in the south-west. The region is divided into five states; North Darfur, South Darfur, Central Darfur, East Darfur and West Darfur.

13. Darfur has an estimated population of 6.2 million people the vast majority of which is either rural sedentary farmers or pastoralists³. Rain-fed agriculture and livestock are the two main pillars of the region's economic foundation.⁴ According to the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), livestock export formed the backbone of the Darfur economy. This sector, however, has been exposed to several shocks, including several years of drought, which severely impacted pastoral livelihoods. The drought caused enormous hardship as livestock losses amounted to 60-80 per cent of herds; destitution; creating rural-urban migration; and severe environmental degradation.

14. The security situation in Darfur is extremely volatile and continued to be dire in 2015, marked by fighting between government and rebel groups, intercommunal violence and widespread displacement⁵. According to UN reports, from September to November 2015, intercommunal conflict continued between nomadic and pastoral groups over access to land, cattle and water and approximately 100,000 people were displaced during the year. Overall, there are some 2.5 million internally displaced persons (IDPs) in Darfur.⁶ Overall population numbers may have changed due to the conflict, including migration outside the region. An enormous urbanisation rate has reversed the rural urban ratio from 80:20 before the crisis, to 20:80 at present.

15. A number of studies have found that the unprecedented concentrations of IDPs has greatly accelerated the processes of deforestation and environmental degradation. The UN Environment Programme (UNEP)'s Post Conflict Environmental Assessment of Sudan estimates that deforestation in Darfur is in excess of 1% per annum. The effects of these processes continue to undermine subsistence livelihoods and the availability of fuelwood, with significant scarcity across large parts of Darfur.⁷

16. Results of the analysis of woodshed and supply/demand balance (shown in Table 1) show that in North Darfur the non-renewable biomass (NRB) fraction

³ Darfur Development Advisory Group (DDAG), Darfur: Land, People, and Conflict, <http://www.darfurdevelopment.org/node/2>

⁴ Sudan: Darfur's Economy, http://www.africaecon.org/index.php/africa_business_reports/read/30

⁵ http://www.securitycouncilreport.org/monthly-forecast/2016-01/sudan_darfur_20.php

⁶ http://www.securitycouncilreport.org/monthly-forecast/2016-01/sudan_darfur_20.php

⁷ Brendan Bromwich, UNEP (2008), Environmental degradation and conflict in Darfur: implications for peace and recovery. <http://odihpn.org/magazine/environmental-degradation-and-conflict-in-darfur-implications-for-peace-and-recovery/> (Last visited February 12, 2016)

ranges between 95% at close distance (less than 12 kilometres) and 79% when the maximum distance is considered (24-36 kilometres). Relatively better appears the situation in West Darfur where NRB fraction is 70% at close distance but reduces to 0% for a horizon of 36 km. South Darfur presents an intermediate situation, with an NRB fraction of 78% at close distance, reducing to 41% for a harvesting horizon of 36 km.

17. The almost complete reliance on biomass energy for cooking; worsening access to fuelwood around the IDP camps are posing significant challenges. Women and girls spend many hours a day on fuel wood collection which exposes them to various forms of sexual and gender-based violence (SGBV). Worsening access to fuelwood is also associated with natural resource-related conflicts with host communities. Inadequate and worsening access to biomass fuels has resulted in excessive expenditure of time and energy for fuel collection. Many IDP households adopt negative coping strategies to cooking fuel scarcities including undercooking of meals, skipping meals, and exchanging of food ration to purchase cooking fuel. Such negative coping strategies adversely affect the nutritional intake and health of IDP population including children.

Table 1. Analyses of Supply/demand balance and non-renewable biomass (NRB) within pre-determined woodshed areas around IDP Camps

Distance from camps	Area (km ²)	Supply (oven dry tons)	Cumulative Supply (oven dry tons)	BAU [#] Consumption (oven dry tons)	Cumulative BAU [#] consumption (oven dry tons)	Cumulative BAU [#] balance (oven dry tons)	NRB fraction (%)
N. Darfur							
< 12 km	5,096	26,801	26,801	519,406	519,406	(492,605)	94.8
12 - 24 km	10,556	54,927	81,729	120,368	639,774	(558,045)	87.2
24 - 36 km	12,951	69,630	151,358	78,523	718,297	(566,939)	78.9
W. Darfur							
< 12 km	9,022	140,384	140,384	477,513	477,513	(337,129)	70.6
12 - 24 km	14,711	234,992	375,376	46,121	523,634	(148,258)	28.3
24 - 36 km	13,443	216,575	591,951	39,871	563,505	28,446	0
S. Darfur							
< 12 km	18,158	267,478	267,478	1,200,470	1,200,470	(932,992)	77.7
12 - 24 km	27,095	408,569	676,047	284,149	1,484,619	(808,572)	54.5
24 - 36 km	21,746	323,745	999,792	224,436	1,709,055	(709,263)	41.5

[#] BAU = Business-as-usual

Source: FAO-NRL-Darfur (OSRO/SUD/823/UEP) WISDOM Darfur. Land Cover mapping and WISDOM analysis for emergency and rehabilitation planning in Darfur. Updated 2011.

http://www.wisdomprojects.net/pdf/?file=WISDOM_Darfur_draft_report_update2011.pdf.

18. The conflict has had both direct and indirect effects on livelihoods. The conflict has been associated with destruction of household and community assets. Financial assets, mainly livestock, have been looted and natural resources and physical assets (farms, homes, and other household possessions) were lost. Human capital has been undermined by violent deaths, large-scale displacement and loss of social networks. IDPs compete for very few income earning opportunities.

19. The Safe Access to Fuel and Energy (SAFE) Project was WFP's direct response to those challenges.

2.2. The SAFE Project

20. **Project objectives.** The objectives of the Safe Access to Fuel and Energy (SAFE) Project were to improve access to energy services for cooking and mitigate protection risks associated with firewood collection; improve natural resource and environmental conditions; and strengthen and diversify livelihood opportunities for Internally Displaced Populations (IDPs) and conflict-affected host communities in Sudan's Darfur region.

21. The Project had five specific objectives:

- i) address the immediate cooking needs of the target population, increase the use of improved cooking technologies and fuels;
- ii) mitigate the protection risks confronted by women and children when cooking, reduce risks associated with firewood collection and raise awareness about, and address issues concerning, protection and gender-based violence;
- iii) alleviate deforestation and environmental degradation associated with cooking fuel, establishing community-based forests and woodlots;
- iv) strengthen and diversify people's livelihoods, reducing reliance on wood fuel-intensive livelihoods, restoring and developing assets and livelihood opportunities; and
- v) ensure adequate health and nutritional levels of the assisted population.

22. **Project Components and costs.** The Project had eight components:

- 1) **Fuel-efficient stoves and fire-fuel briquettes:** USD 506,156 (14.5%). Under this activity the Project aimed at training and supporting women to produce FES and FFB for own use or sale. The planned outputs were the establishment and rehabilitation of 50 training centres, production of 270,000 stoves, and production of 540,000 briquette units.
- 2) **Income generation and environmental activities through community nursery and forestry:** USD 136,799 (3.9%). This component was meant to assist poor households improve their livelihoods and diversify their diet through forestry-based income-generating activities including multi-purpose trees, fruit trees, gum Arabica and wild trees. The planned outputs under this component were: i) establishment of 20 community-managed tree nurseries; ii) production of 3 million tree seedlings; iii) establishment of 20 new community forests; (iv) transplanting on 500 acres of wasteland; v) production of nutritious fruits and wild trees benefiting 50 households; and vi) benefiting 500 households from income-generating trees.
- 3) **Income-generation activities.** The objective of this component was to support communities improve their livelihood through farm-based income-generating activities. The expected outputs were: i) establishment of 50 Agri-Business Centres (ABCs) benefiting 250,000 households; ii) developing 15 seeds and tools banks to support sustainable agricultural growth through farmer cooperatives benefiting

3,500 households; iii) constructing 15 seed banks; and iv) training of 8,500 persons on good agricultural practices, integrated pest management and replantation of sorghum through testing fields. This component had a cost of USD 923,393 (26.5%).

- 4) **Training and sensitization activities.** The component comprised of training on non-farm income generating activities and sensitization programmes to enhance food security, nutrition and recovery. It had the following planned outputs: i) 20,000 households benefiting from non-farm activities such as handicrafts and food processing; ii) 5,000 persons trained in nutrition, health and hygiene; iii) adult literacy for 4,000 women; and iv) training of 5,000 women in child care practices. The budget for the component was USD 136,799 (3.9%).
- 5) **Fuel for Education.** The component aimed to install 96 institutional stoves and 30 biogas digesters for school-feeding programmes benefiting 30,000 students. The component had a cost of USD 205,198 (5.9%).
- 6) **Implementation and Monitoring Support.** This component was meant to support project management and monitoring activities at WFP and implementing partners including the recruitment of necessary staff. The component had USD 595,075 (17.1%).
- 7) **Support to research, development and learning.** Through this component, the project aimed to supports the following activities: i) conducting assessments and programme re-design; ii) developing strategic technical partnerships to establish community of practitioners; iii) evaluating project and documenting practical experiences in the field; and iv) sharing best practice and facilitating internal and external capacity building. The budget was USD 253,078 (7.3%).
- 8) **Raising Awareness in the Netherlands.** The component aimed at raising awareness and engaging the people of the Netherlands around the issue of safe access to cooking fuel. Specifically, the aims was to i) inspire, make people happy, excited and part of a sustainable life-changing solution; ii) demonstrate that the Nationale Postcode Loterij and WFP are able to provide concrete and innovative sustainable solutions to complex world issues (positive tone of voice); iii) increase awareness about the SAFE project among the people of the Netherlands; iv) increase awareness of the dare situation in Darfur; and v) activate the Dutch audience to be a part of the solution. The component had a cost of USD 239,398 (6.9%).

3. Findings

23. This section presents the household socioeconomic characteristics and findings by each of the evaluation criterion (i.e., relevance, effectiveness, efficiency, impact and sustainability) as well as overall evaluation of the project.

3.1. Household Socioeconomic Characteristics

24. The respondents to the baseline survey were 908 IDP and host households. Sample distribution by state is as follows: North Darfur 31%, South Darfur 18%, and East Darfur, Central Darfur and West Darfur 17% each. Sample distribution by SAFE participant and non-participant or 'comparison households' was 52% and 48%, in their respective orders. In terms of resident status, 77% was IDPs, 20% residents and 2% returnee households.

25. The mean household size is 7.2 persons and ranges from 6.7 for North Darfur to 7.8 for central Darfur. The majority of households are male-headed (752%). The highest male headed household proportion is for North Darfur (870%) and the lowest is for Central Darfur (59%). The average age of heads of household is 44 years.

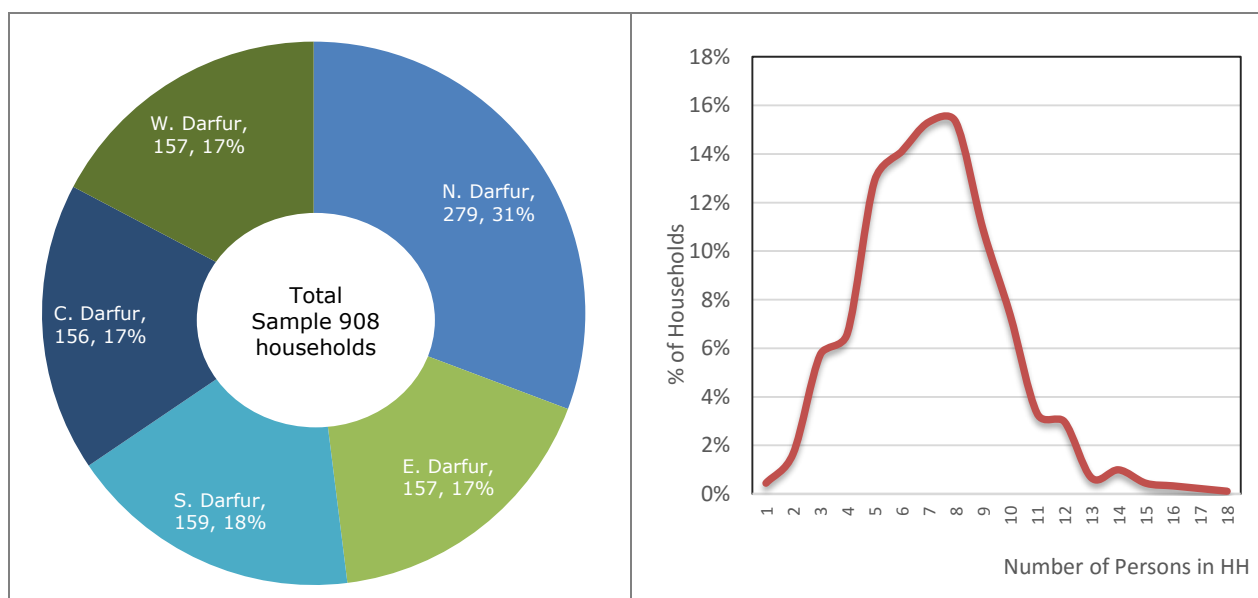


Figure 1. Distribution of Sample by State

Figure 2. Distribution of HH by Family Size

26. The survey results revealed that over 95% and 73% of the population survives on less than US\$ 2.00 and less than US\$ 1.00 day, respectively. The main sources of cash income are agricultural wage labour (27% of households), agriculture casual work (13%), non-timber forest products (12%), Non-food item sale/exchange (12%), and sale of crop production (11%).

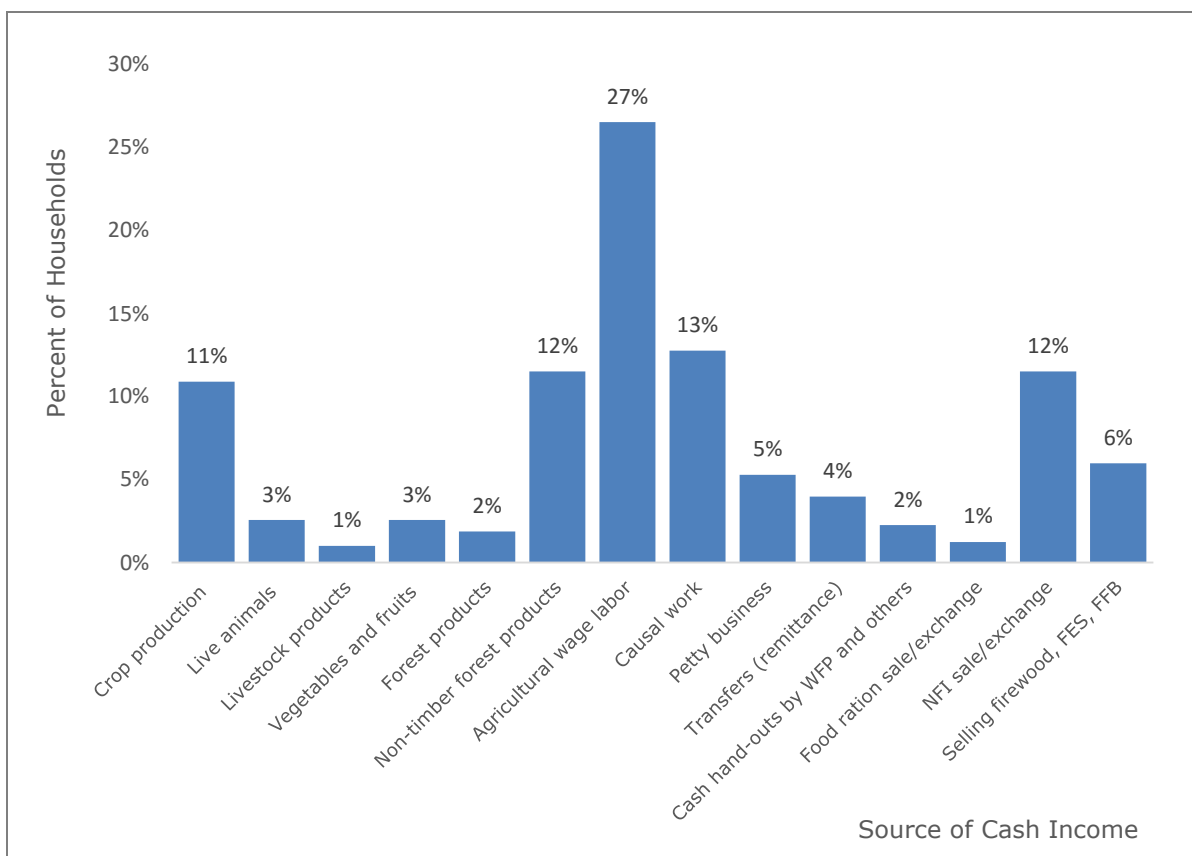


Figure 3. Sources of Cash Income

3.2. Problems and Needs (Relevance/Appropriateness)

To assess relevance and appropriateness of the Project in relation to needs and priorities of the target group; the Project's alignment with national strategic objectives and the Project's coherence with WFP policies and global priorities and initiatives.

3.2.1. Problems, Needs, priorities and Strategic Relevance

27. **Needs and priorities of beneficiary communities.** The SAFE Project has responded to real problems (economic, social and environment) facing households and communities in Darfur. Specifically, the Project has addressed key problems including poverty, livelihoods, energy access, renewable energy, energy efficiency, protection, forest depletion, environmental degradation, and climate change. Through the income-generating activities and the formation of women's and farmers' groups, the Project has been instrumental in creating the platform for improved women's and communities' voices and decision-making, resource management and economic participation.

28. The household survey confirmed that the Project was relevant to needs and priorities of the target beneficiaries. Based upon the combined percentage of "highly relevant" and "relevant" responses, 94% of the respondents expressed that the FES component was highly relevant or relevant and 82% said the FFB was highly relevant or relevant (see Figure 4). Similarly, 88% and 92% said the tree nursery and forestry, and IGAs were highly relevant or relevant, in their respective orders. About 93% said the training and sensitization programmes were highly relevant or relevant.

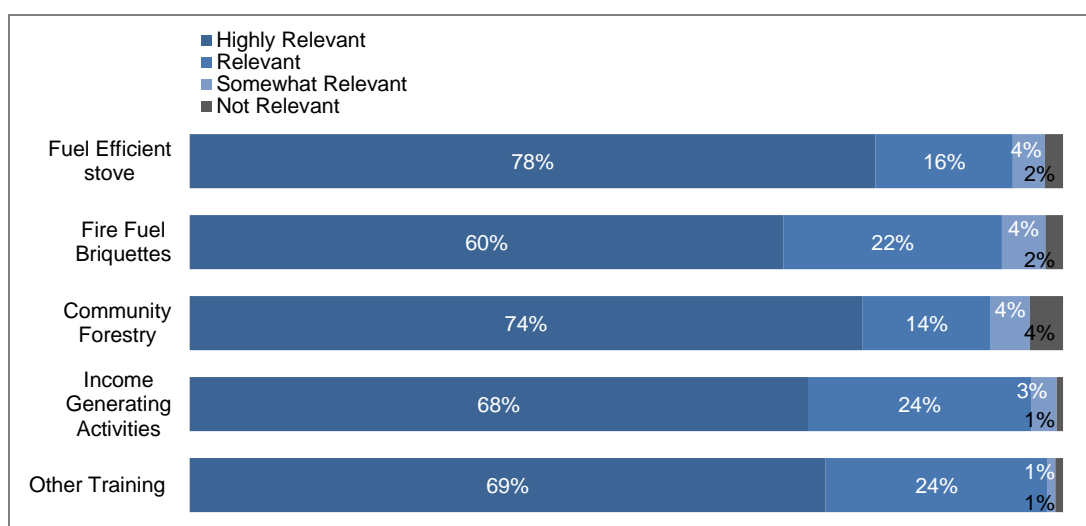


Figure 4. Relevance of SAFE Project Components

29. **National Policies and Strategies.** The Project has responded directly to a range of national development needs as identified in a number of policy and strategy documents including the Interim Poverty Reduction Strategy Paper (Interim PRSP 2012)⁸; agriculture, forestry, natural resource and environment

⁸ International Monetary Fund (IMF), Sudan Interim Poverty Reduction Strategy Paper, PAPER, IMF Country Report No. 13/318 (October 2013),
<https://www.imf.org/external/pubs/ft/scr/2013/cr13318.pdf>

policies and strategies⁹ and Darfur Recovery and Reconstruction Strategy (2013-2019).¹⁰

30. The SAFE objectives were consistent with the Interim PRSP's strategic focus on the urgent need to promoting private sector-driven growth, creating and expanding the poor's opportunities to earn a decent income, and developing interventions that promote rural development. At the sectoral level, SAFE's objectives were consistent with the Country's energy, natural resource and environmental action plans which recognized community-based forest and rangeland management; lessening of pressure on local forest through the use of alternative energy sources; and afforestation of denuded of trees for firewood as key climate change mitigation measures.¹¹

31. **Strategic Relevance to WFP.** The SAFE objectives are fully aligned with WFP's Corporate Strategic Plan for 2014-2017 in particular, Strategic Objective 2: supporting or restoring food security and nutrition and establishing or rebuilding livelihoods; Strategic Objective 3: reducing risk and enabling people, communities and countries to meet their own food and nutrition needs; and Strategic Objective 4: reducing undernutrition and breaking the intergenerational cycle of hunger.¹² The Project objectives directly address WFP's strategy of building resilience in Sudan (2015-2017) which included two key outcomes: i) increased ability of food-insecure and at risk households and communities to absorb, adapt and transform from shocks; and ii) enhanced capacity to address vulnerability and support development gains.¹³

32. The SAFE Project also directly responded to WFP Sudan's strategic priorities (2015-2017) of building resilience of local communities to withstand shocks and seasonal vulnerability, and addressing the underlying causes of food insecurity.¹⁴ Through provision of non-food-items (NFIs), SAFE complemented WFP's food-for-assets and food-for-training intervention in Darfur which aim to create and strengthen asset and human capital.

33. **Strategic Relevance to Global Priorities and Initiatives.** In terms of alignment with global priorities, the Project directly addressed the priorities set forth in the UN Sustainable Development Goals (2016– 2030)¹⁵. SAFE had much to offer to the achievement of several of the SDGs including end poverty (SDG 1), zero hunger and food security (SDG 2), good health and well-being (SDG 3), education (SDG4), gender equality and empowerment of women (SDG 5), access to affordable and clean energy (SDG 7), decent work and economic growth (SDG 8), climate action (SDG 13), and environmental sustainability (SDG 15), and international partnership for SDGs (SDG 17).¹⁶

⁹ National Five-Year Strategic Development Plan (2007-2011) and Twenty Five Year National Strategy (2007-2031), <http://webapps01.un.org/nvp/indpolicy.action?id=1561>

¹⁰ Darfur Recovery and Reconstruction Strategy (2013-2019)

¹¹ Sudan National Adaptation Programme of Action (NAPA) Official Document July 2007.

¹² WFP Strategic Plan (2014–2017), <http://documents.wfp.org/stellent/groups/public/documents/eb/wfpdoc062522.pdf>

¹³ WFP Sudan, WFP Building Resilience in Sudan Strategy 2015-2017, March 2015.

¹⁴ WFP Sudan, Brief, Reporting period: 01 October – 31 December 2014.

¹⁵ <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

¹⁶ <http://www.undp.org/content/undp/en/home/librarypage/corporate/sustainable-development-goals-booklet.html>

3.2.2. Appropriateness of Project Design

34. The SAFE Project evolved as a 'second phase' of the "Safe Access to Firewood and Alternative Energy Project" implemented by WFP in North Darfur during 2009-2013. In this regard, the SAFE Project enhanced its design by building on the successes and lessons learned of the first Project.

35. Against these generally positive lessons, however, the effectiveness of the SAFE Project was affected by shortcomings in the project design: i) lack of a well-established results framework, i.e., the logic that explains how results are to be achieved, including causal relationships and underlying assumptions; ii) the project objectives were not SMART and were not related to SMART indicators, baseline and target; iii) ambitious time-frame given the project's geographic coverage, multi-sectoral interventions and limitations in project implementation capacity; and iv) lack of cost analysis of intervention activities.

36. Some of the Project's objectives were not clear or were ambitious given the project time-frame. In particular, Specific Objective 4 – "strengthen and **diversify people's livelihoods**"; Specific objective 5 – "**ensure adequate health and nutritional levels** of assisted population' and, Specific objective 3 - alleviate deforestation and environment degradation associated with cooking fuel, establishing community-based forests and **woodlots**. Some relevant outcome indicators were not identified. For example, 'fuel saving' is the underlying objective of the FES component. The monitoring indicators should have focused on 'how much fuel is saved' rather than "number of FES produced". Similarly, not all the targets were realistic. The target set for the fire fuel briquettes was 540,000 units by about 270,000 households which is translated to two units per household. This amounts to less than a day's cooking fuel requirement. The targets for non-farm IGAs (25,000 persons) was considerably high and was not based on proper market opportunity and feasibility studies.

37. **Stakeholders' participation in Project design.** On the whole, SAFE brought all relevant stakeholders together: beneficiary communities, community-based organizations (CBOs), national and international NGOs, state ministries responsible for agriculture and natural resources, forestry and social welfare. However, there was little evidence of sufficient stakeholder consultation during the preparatory phase. Interviews with stakeholders suggested that the design may have benefited from further stakeholder consultations during the project preparation. A case in point was the overly supply-orientation of the IGA components with little attention paid to market assessments for products and services, post-training extension services and marketing support activities.

38. In conclusion, the relevance of the Project to the challenges and development objectives and priorities has increased during implementation. There was unanimous consensus among beneficiaries, implementing partners, government agencies and other stakeholders with regard to the past and continued relevance of the Project. The key stakeholders praised for project scale-up and replication in Darfur and beyond. The stakeholders could also testify that the project would have gained in effectiveness from rigour project design.

39. The rating for 'relevance' of the Project is 5, "**Satisfactory**".

3.3. Achievement of Purpose (Effectiveness)

To what extent the purpose of the Project has been achieved as a result of project activities. What were the major factors influencing the achievement or non-achievement of the objectives?

3.3.1. Planned and Actual Outputs of the Project

40. The expected outputs of most of the Project's components were achieved or exceeded (see Table 2). The expected outputs under the FES and FFB component achieved at 133%. The Project constructed 36 tree nurseries and 52 Agri-Business Centres (ABCs) against the targets of 20 each (achieved 180% and 260%, in their respective orders). Similarly, the Project's planned output of 500 acres of wasteland to be covered with trees achieved at 168%.

41. There were under performances in the achievement of expected outputs in the following sub-components:

- The Project's target of benefiting 250 households from forest-based income generation achieved 80% (i.e., 200 households);
- The Project planned to construct 15 seedbanks but achieved 10 (67%);
- The Project planned to train a total of 18,500 persons on Good Agricultural Practices (GAP), Integrated Pest Management (IPM) and replantation of sorghum through testing fields but trained 10,000 persons (i.e., 54%);
- The Project planned to train 25,000 persons in respect of non-farm IGAs (food processing and handicrafts) but trained 22,332 persons (89%); and
- The implementation of fuel for education component (installation of biogas digesters in WFP-assisted Scholl-feeding programmes) has been unsatisfactory.

Table 2. Summary of Planned and Actual Outputs

Activity	Targets	Achievements	% achieved
Activity 1: Fuel-efficient stoves and fire-fuel briquettes			
1.1. Training centres established/rehabilitated	50	52	104%
1.2. Fuel efficient stoves constructed	270,000	356,050	132%
1.3. Fire-fuel briquettes moulded	540,000	716,624	133%
1.4. Interactive educational & communication materials produced	500	900	180%
Activity 2: Income Generation and Environmental Activities			
2.1. Tree nurseries constructed	20	36	180%
2.2. Tree seedlings established	3,000,000	3,106,800	104%
2.3. New community forests established	20	19	95%
2.4. Acres of wasteland covered with trees	500	838	168%
2.5. Households producing nutritious fruit and wild trees	20	26	130%
2.6. Households benefitting from Income generating trees	250	200	80%
Activity 3: Income generation through agri-business centres			
3.1. Agri-business centres established	20	52	260%
3.2. Persons benefiting from agri-business centres	540,000	502,801	93%
3.3. Seeds and tools banks developed	3,500	3,306	94%
3.4. Seedbanks constructed	15	10	67%
3.5. Persons trained on GAPs ¹ , IPM ² , replantation of sorghum	18,500	10,007	54%
Activity 4: Other training and sensitisation activities			
4.1. Persons trained in handicraft, food processing	25,000	22,332	89%
4.2. Persons trained in nutrition, health and hygiene	5,000	5,579	112%
4.3. Women trained in adult literacy	3,000	3,055	102%
4.4. Women trained in child-care practices	2,000	2,524	126%
Activity 5: Fuel for Education			
5.1. Biogas digesters constructed	30	50	167%
5.2. Students benefiting from biogas for cooking	30,000	30,000	100%

Notes:¹ GAPs – Good Agricultural practices² IPM – Integrated Pest Management**3.3.2. Achievement of Project Objectives**

Project Objective 1- To address the immediate cooking needs of the target population, increase the use of and promote improved cooking technologies and fuels

42. This objective was to be achieved through both demand-side management (stove efficiency improvement) and supply-side intervention, i.e., substitution of firewood with fire fuel briquettes and displacing firewood with biogas for cooking in selected WFP-supported school-feeding programmes.

43. The Project has largely been effective in addressing the immediate cooking needs of the target population, although the results were mixed. Notably, the fuel efficient stove sub-component has been highly effective while the effectiveness of the fuel briquettes has been judged to be adequate only.

44. **Fuel Efficient Stoves.** The Project planned to target 270,000 households from the use of FES technologies and yet exceeded to reaching over 350,000. The household survey revealed that the promoted stoves were associated with reduced firewood consumption. The firewood consumption among FES user households was 0.57 kg per person per day against 0.92 kg per person per day among open-fire users, i.e., a saving by approximately 40% (see Figure 5). The firewood consumption measurement surveys confirmed similar results (see Figure 6).

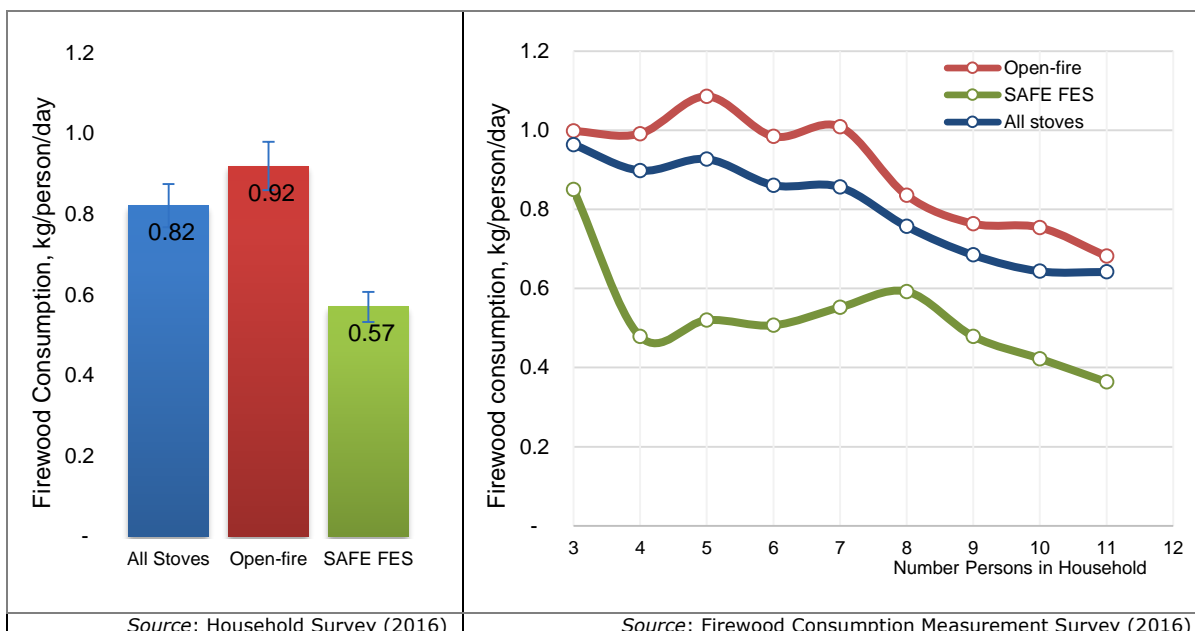


Figure 5. Firewood consumption by StoveType

Figure 6. Firewood consumption by stove type and number of persons in Household

45. Nonetheless, the performance of the FES in terms of fuel savings has not been uniform. As can be observed from Figure 7, there were significant variations in the per person firewood consumption among the FES user households. This could be attributed to varying designs of the stoves (see Figure 8) but also due to insufficient training of users in cooking techniques and fuel handling practices.

46. To ensure efficient use of firewood, users should be provided with practical training on cooking techniques and fuel handling practices. Interviews with implementing partners and the focus group discussions with beneficiaries revealed that they did not receive adequate training on proper use of the FES and on fuel handling practices thus diminishing the stoves' fuel saving abilities. Practices that promote efficient use of fuel wood for cooking include drying wood, splitting the wood into small and short pieces, and using as little fuel wood as necessary for the specific cooking task.



Figure 8. Different Designs of FES

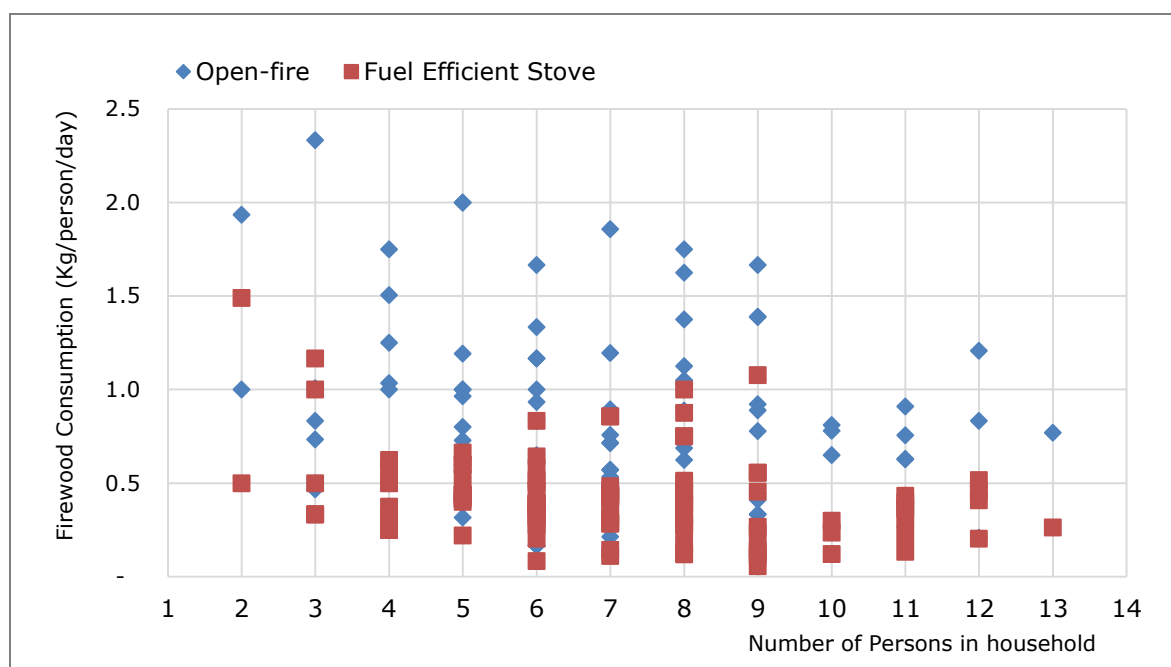


Figure 7. Variation in Firewood Consumption of FES and Open-fire

47. **Fire Fuel Briquettes.** Among the persons trained in briquettes production, an estimated 23% reported using briquettes in substitution of firewood. The effectiveness of this sub-component was affected by (a) lack of briquetting press machines for use by communities following completion of the training; and (b) unavailability of sufficient raw material inputs; (c) late delivery of the briquetting machines to the training centres; and (d) some of the machines supplied were of poor quality and thus not properly functioning. The focus group discussion participants expressed the challenges they faced as follows:

"The fuel briquettes are good but the machines are not enough for all the beneficiaries. We need more machines and advanced ones that can producing the briquettes fast".

FGD Participants in Kabkabya (February 14, 2016)

48. **Biogas Digesters.** With regard to the biogas units for schools, there were significant delays in the implementation of the Project. The Project was challenged by a lack of service providers. Despite repeated calls for submission of offers for the construction of the digesters, there was lack of competitors in sufficient numbers.

49. The procurement modality that followed also contributed to the delay. Under the contract agreement entered between the WFP and the service provider, the former was required to procure and deliver all material inputs at the project sites. This caused delays on the part of the WFP partly because some of the required items were not available in the local market. It was also learned that some of the materials procured were not appropriate (for example, gravel and sand procured were the type used for road construction). A technical assessment during the project design - of materials required and available service providers - could have potentially reduced these delays.

50. The time of writing this report, the construction of 12 digesters was completed but yet operational due to the retention time required (to produce gas). The proper functioning of the biogas digesters thus remains to be seen.

Objective 2 - To mitigate the protection risks confronted by women and children when cooking, to reduce risks associated with firewood collection and to raise awareness about protection and gender-based violence.

51. Because of difficulties in measuring protection impacts, frequency of firewood collection trips was taken as a proxy indicator. The reduction in firewood consumption associated with fuel efficient stoves and the substitution of firewood with fuel briquettes will lead to reductions in the frequency of fuel wood collection trips by women and girls, which in turn, leads to reductions in the probability of incidences of Sexual and Gender-Based Violence (SGBV).

52. In this respect, the SAFE Project has been effective in addressing in mitigating protection risks. The household survey and FGD confirmed that the FES promoted by the Project were associated with reductions in firewood consumption and frequencies of firewood collection trips. As discussed in earlier, the FES has achieved 40% reduction in per person firewood consumption. The probability of SGBV risks associated with firewood collection trips is therefore expected to have been reduced by the same percentage.

Objective 3- to alleviate deforestation and environment degradation associated with cooking fuel, establishing community-based forests and woodlots.

53. The Project has been largely effective in achieving this objective. The FES promoted by the Project has been instrumental in protecting forest resources. SAFE was driven by the need to address forest resource depletion and environmental degradation through both demand management (efficiency) and supply interventions (tree nursery and community forestry).

54. The FES, FFB and biogas digesters were to reduce firewood consumption and therefore are directly related to a reduction in fuel wood extraction and environmental degradation. The FES component, through tangible reductions in firewood consumption, has been highly effective in slowing down forest depletion and the FFB could be judged to be adequate. On the other hand, there has been no systematic monitoring of the community forestry and the woodlot plantations.

Objectives 4 and 5 - to strengthen and diversify people's livelihoods, reducing reliance on wood fuel-intensive livelihoods, restoring and developing assets and livelihoods opportunities; and to ensure adequate health and nutritional levels of the assisted population.

55. The SAFE project included a number of activities for promoting livelihoods and restoring and developing assets. These were forest-based IGAs (250 households); construction of seed and tool banks and training on good agricultural practices (22,000 HHs); training on non-farm income generating activities including handicrafts and food processing (25,000 HHs); and production of fuel efficient stoves and briquettes (270,000 HHs).

56. The effectiveness of the Project in terms of achieving this objective was mixed. From the household survey we found no statistically significant differences in dietary diversity between beneficiary and comparison households (see Figures 9 and 10). The sources of dietary diversity among both groups were fairly comparable. Similarly, the proportions of beneficiary and comparison households experiencing negative coping strategies to insufficient livelihoods (i.e., consuming less preferred foods, reduce quantity of food and skipping meals) were found to be very close.

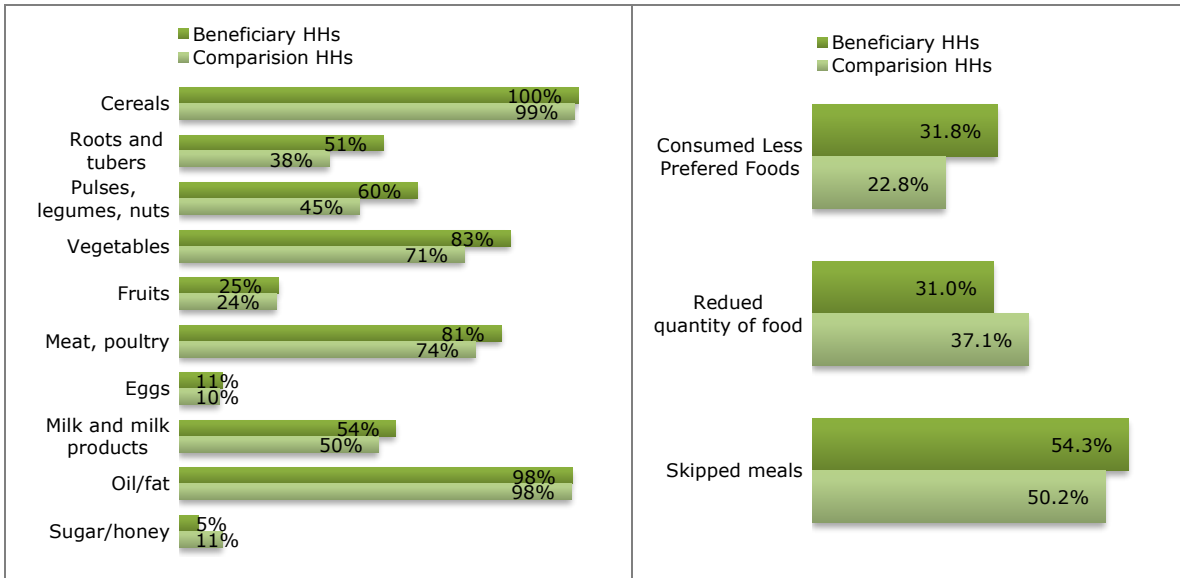


Figure 9. Dietary Diversity among Beneficiary and Comparison Households

Figure 10. Negative Coping strategies to Livelihood

57. The household survey also revealed that reductions in household firewood consumption associated with the use of the FES were not accompanied with corresponding reduction in firewood collection trips. Many households continued to be depend on firewood collection as a livelihood. This was in part because the Project didn't specifically target those households as IGA participants. Also, apart from intermittent sales, the commercialization of the stove was not developed to bring about substantial impacts on livelihoods. The FGD participants expressed the challenge for commercial-scale production of the FES as follows:

"...For making the fuel efficient stoves for sale, the main problem we are facing is unavailability of raw materials. The mud in our locality is of poor quality. The good quality mud can be found in a far distant area and is difficult to get it. It is not only expensive but also difficult to transport it here. In addition, the mesh is expensive and not available in the local market. We have to buy the mesh from El Fasher town"

FGD Participants in Shagra Locality, North Darfur (February 14, 2016)

58. Understandably, it is too early to detect significant livelihood changes within the Project's timeframe. Also, most income-generating activities were under-implementation at the time of the evaluation. It can also be argued that such small projects may not on their own substantially change overall livelihood security except for a few number of individuals. Nevertheless, there are clear

indications of the likely positive effects of the Project on livelihoods. Specifically, there is evidence that the Project has helped women become active participants in mainstream of economic activities.

59. From the household survey we found that not-insignificant number of IGA participants have started earning an income (see Table 3). These were participants in improved agricultural practices 11% (2 persons), tree seedlings 38% (8 persons), horticulture 50% (1 person), food processing 64% (9 persons), fuel efficient stoves 64% (81 persons), fire fuel briquettes 39% (14 persons), and handcrafts 80% (8 persons).

Table 3. Number of Persons Trained, Engaged in IGAs and Reported Cash Income

Income-generating Activity	Trained in IGA	Engaged in IGAs		Reported Income Last 30 days		Mean Income last 30 days (SDG)
	N=	N=	%	N=	%	
1. Improved agricultural practices	32	19	59%	2	11%	40
2. Seedlings for income generation	54	21	39%	8	38%	88
3. Horticulture (cabbage, tomatoes, fruits)	12	2	17%	1	50%	1,000
4. Food processing (juice, bread, biscuits)	42	14	33%	9	64%	287
5. Fuel Efficient Stoves	233	126	54%	81	64%	159
6. Fire Fuel Briquettes	121	36	30%	14	39%	26
7. Handicrafts	53	10	19%	8	80%	119

Source: Household Survey (March 2016)

60. On the other hand, the effectiveness of the Project on livelihoods has been challenged by the following shortcomings:

- a) **Market opportunity studies to identify economic viability of new or existing livelihoods.** A fundamental characteristic of income-generating activities is that the product or service is marketable. The identification of income-generating activities must therefore be based on rigorous market opportunity studies (labour, products, and services markets). In other words, IGA programmes must be tailored to meet the market demand. Market analysis also helps to identify appropriate interventions along the supply chain, determine training needs, set targets in terms of number of participants, and develop appropriate targeting mechanisms.
- b) **Effective targeting strategy.** The kinds of skills should be matched to the needs of the trainees, which means careful attention to the identification and selection of individuals for training. Important considerations for screening of participants include experience in or familiarity with commercial or business activities or already having entrepreneurial skills and aspirations and plans after the training. The WFP's generic criteria for selection of beneficiaries¹⁷ were applied for the selection of training participants.

¹⁷ The following criteria were used in the selection of IGAs participants: (a) poor households not currently receiving the monthly WFP general food rations; (b) poor households with a malnourished child or children; (c) poor households with pregnant or lactating women; (d) poor female-headed households/ widows; (e) Poor households caring for a disabled, elderly, or orphan(s); and (f) poor households that are newly-displaced IDPs, returnees and refugees.

- c) **Post-training extension services.** Successful skills and entrepreneurship programmes would incorporate post-training extension services. These may include access to finance and other functional technical support services such as product design, product quality control, marketing assistance, micro-enterprises/co-operatives formation, feasibility study, business plan preparation and continuous follow-up technical assistance support.

The most important constraint cited by the respondents (shown in Figure 11) was financial problems (39%). This is understandable as the training participants are too poor to be able to finance from their own sources and because they lack access to finance. The second most important challenge was production and technical problems including seasonality, availability, quality of raw materials, lack of tools and equipment (26%) followed by lack of premises and infrastructure such as transport, water and power (18%). A significant proportion (10%) cited marketing (competition, lack of market information and seasonality of sales) as an important challenge they face mainly because of the fact that they produce similar commodities (and end up supplying the same product at the same time), lack of or inadequate marketing skills to promote their goods/services; and lack of viable market linkages.

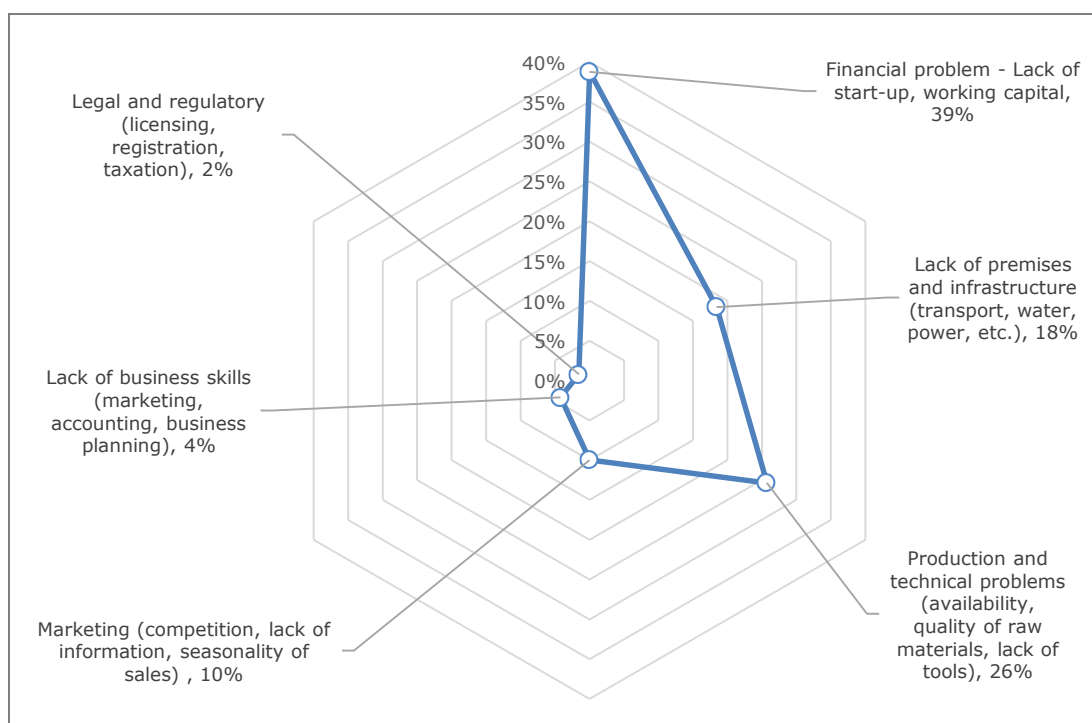


Figure 11. Constraints for Business Start-up

61. Overall, SAFE has achieved some of its stated objectives and its effectiveness is rated 4, "**Moderately Satisfactory**".

3.4. Sound Management and Value for Money (Efficiency)

To assess how well the project activities transformed the available resources into the intended results or outputs, in terms of quantity, quality and timeliness and whether a different approach would have achieved the same results with less inputs/cost.

3.4.1. Project Implementation Strategy

62. The institutional arrangement for the implementation of the project provided a partnership approach involving beneficiary communities, community-based organizations, national and international NGOs and relevant government agencies, each with clearly specified roles. WFP was responsible for overall project management and coordination including appraisal of sub-project proposals submitted by implementing partners; contracting and contract administration; procurement of goods and services; provision of technical support and training on food management and food transportation to project sites in respect of the FFA and FFT components; and field monitoring of projects.

63. Beneficiary communities were responsible for beneficiary selection and supervision and coordination of sub-project activities. The cooperating partners were responsible for community mobilization, sub-project implementation, and monitoring and reporting. Similarly, the National Forest Corporation was responsible for providing technical trainings on FES, briquettes, tree planting and environmental conservation. The State Ministry of Agriculture was responsible to provide technical support in agricultural extension trainings and modern technology adaptation for better land uses and crops protection against infestation or pests. Similarly, the State Ministry of Social Welfare delivered trainings on non-farm income generating activities such as handicrafts and food processing.

3.4.2. Project Implementation Performance

64. Generally, the Project was managed by qualified and committed staff. The staffing for the Project was comprised of one International consultant based in Khartoum, two local experts in North Darfur and one senior expert in El Geneina and Nyala Area Offices each. The experts received at all times management and technical support from senior management and experts at the Country and Area Offices. Project fund management, procurement, administrative and logistics functions were managed by the respective WFP' departments.

65. The management approach had fostered the acceptance of the Project by beneficiary communities and partners and contributed to the success in project implementation. The stakeholders consulted during the Evaluation perceived the Project staff's commitment as positive.

66. The management and implementing partners have executed several visibility actions include sign boards with logos of WFP, Nationale Postcode Loterij and of implementing partner erected in project sites; banners with logos of WFP, Nationale Postcode Loterij and implementing partner erected at training session; and T-shirts with WFP and Nationale Postcode Loterij logos. The visibility, promotion and publicity of Project activities also contributed to the effectiveness of the Project implementation.

67. Notwithstanding the efforts of the management, however, the evaluation findings indicate that there have been limitations in a number of project management areas.

- a. **Preparation and readiness.** There has been undue delay in project start-up. This was due to the fact that WFP was not being fully fit for immediate project start-up. During the initial phase, in the Area Offices the Project was under implementation by the Food for Assets (FFA) units. SAFE Project coordinators in the Area Offices were recruited only later. Also, the management did not develop a project implementation plan (e.g., annual work plan and budget) to guide project implementation.
- b. **Delays in Project Implementation.** Although the pace of project implementation picked up considerably following the recruitment of a new project coordinator at the Country Office and senior experts in El Geneina and Nyala Area Offices, there have been delays in several of the Project components notably the biogas, briquettes, tree nursery and forestry, and IGAs. Based on the combined “somewhat timely” and “not timely” responses, 18% of the respondents said the briquettes sub-component experienced some delay; 15% and 11% said nursery and forestry, and the IGA activities encountered excessive delays (Figure 12).

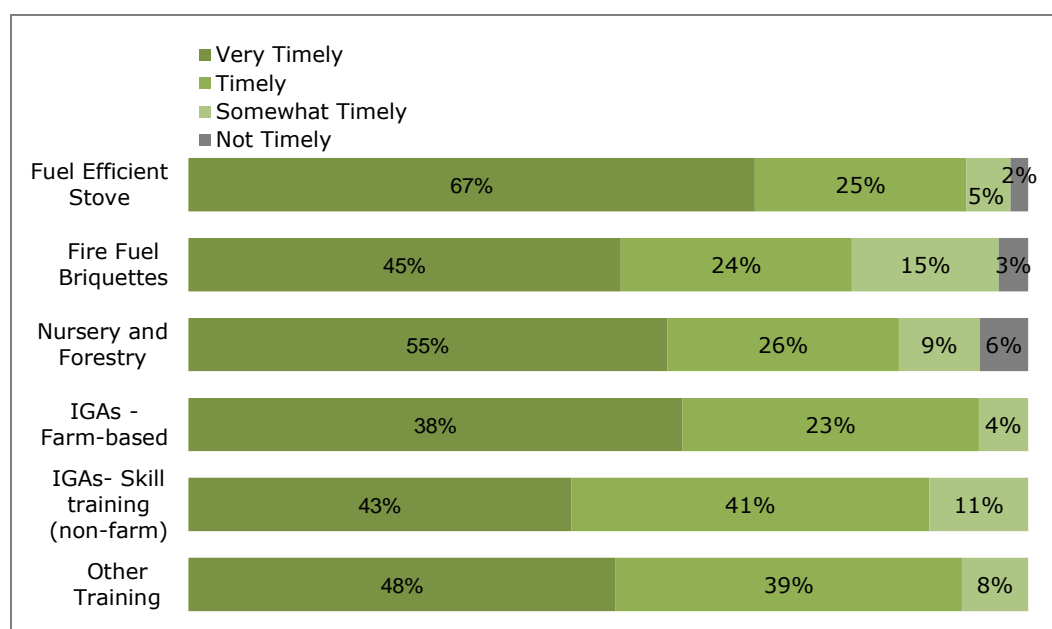


Figure 12. Timelines of SAFE Project Activities

Interviews with implementing partners also indicated that there have been delays in the signing of Field Level Agreements (FLAs), fund disbursement, food distribution to trainees and also in delivery of inputs for time-sensitive activities (in particular tree nurseries and forestry plantations). It was also observed that there was a rush to complete the training targets within the project time-frame. For instance, in one of the Project sites in North Darfur, the training duration programmes was

reduced from the planned 11 days to 4 days and in one of East Darfur's project site, trainees were confronted with lack of training materials and training space as the construction of the training centre was not completed in time (Monitoring Mission Report, January 27, 2016).

- c. **Capacity building of Partners.** There was a general acknowledgement of the technical and managerial capacity gaps on the part of implementing partners to run and sustain the sub-projects. The Project management could testify that the effectiveness of project implementation had been hampered by the partner's capacity limitations. Nevertheless, management took little initiative to address those gaps. Such actions could have been financed under Project Component 7 – "Support to research, development and learning."
- d. **Unit cost adjustment.** The high inflation rate in Sudan has been accompanied with significant price increases of project inputs including fuel and lubricant, stationery, training materials, and agricultural inputs. As a result, many Cooperating Partners often made appeals to WFP for revision of unit cost on active FLAs. The Project Management did not demonstrate some degree of flexibility to adjusting subproject costs in response to market conditions. Consequently, the Partners were reportedly financing the sub-project costs from other sources.
- e. **Lack of sound and functional Monitoring and Evaluation (M&E) System.** The SAFE Project generally lacked an appropriate M&E function. Baseline data were not established and the indicators of achievement were partial. Although several monitoring visits took place during the course of the implementation of the project, monitoring data were not systematically recorded, managed and reported. Mission reports provided partial information regarding the achievements. In additions, at the time of this Evaluation, a project completion report was not prepared. The lack of appropriate M&E function meant that the project management had little guidance as to the performance of the Project.
- f. **Limited documentation and information exchange and communication.** Project documentation were not systematically kept. Exchange of information on progress in project implementation was found to be inadequate. There was a general impression among all stakeholders that the Project Management has not taken adequate initiative in organizing meetings for project performance review.

3.4.3. Project Fund Management and Value for Money

68. At the close of the Project, a total of USD 3.44 million was disbursed or committed against the budget of USD 3.44 million; that is, the overall budget utilization was 100%. Details of budget utilization per budget line are provided in Annex 2.

69. There were overspendings in four components:

- a) Income generation through nursery and forestry component: budget USD 136,799; expenditure USD 357,576; utilized at 261%;
- b) Fuel for Education (biogas digesters): budget USD 205,198; expenditure USD 377,432; utilized at 184%. This was due to an increase in the number of biogas digesters from the original plan of 30 to 50 digesters or 67%;
- c) Non-farm IGAs training and sensitization activities: budget USD 136,799; expenditure USD 173,114; utilized at 127%; and
- d) Fuel-efficient stoves and fire-fuel briquettes: budget USD 506,156; expenditure USD 555,098; utilized at 110%.

70. The over-expenditures in the above components were financed through re-allocations from under-spending in the following:

- a) Income generation through agri-business: budget USD 923,393; expenditure USD 631,029; utilized at the level of 68%;
- b) Project Implementation and Monitoring Support: budget USD 595,075; expenditure USD 516,699; utilized at the level of 87%; and
- c) Support to research, development and learning: budget USD 253,078; expenditure USD 145,341; utilized at the level of 57%.

71. **Fund Management.** There was evidence of sound project fund management. Based on the financial reports, the evaluation noted that the Project had in place mechanisms to reduce possibilities of fiduciary risks. The Project management followed WFP's well-established authorization and approvals terms for any funds disbursements.

72. **Value for Money (VfM).** In purchasing of goods and services, WFP's procurement rules were followed and there were indications that the Project insisted on a value for money basis. The financial reports were also indicative of a good value for money in view of the project management and administrative cost area. The Project management, administrative and logistical related costs were 15% (against the budgeted 17%) which were reasonable considering the management and coordination requirements of such a project and given the project context. In the interest of efficient utilization of Project funds, the management also took several measures:

- Sub-projects activities were implemented by communities and community-based organizations, national and international NGOs, and local government agencies. About 23 partners were engaged in implementing sub-project activities. By so doing, the SAFE Project had capitalized on the resources of a wide range of partners;

- The Project management insisted that implementing partners' administration costs should be kept at no more than 7% of total sub-project costs;
- The Project management also required communities and implementing partners to make contribution towards sub-project costs;
- Extensive use of local staff; and
- Local procurement of goods and services.

73. Overall, despite the initial delays, SAFE was completed within the original time-frame and within budget. The level of effort of the Project is seen as appropriate and of good value. The engagement of a wide range of stakeholders in the project implementation also resulted in lowered project management and administrative costs.

74. The rating given for 'efficiency' of the Project is 5, "**Satisfactory**".

3.5. Achievement of Wider Effects (Impact)

To explain what difference the project made in practice as measured by how far the intended beneficiaries really benefited from the project/products made available and explain how far the views of communities, children, donor, management, government authorities, and other concerned parties were taken in to account.

“SAFE Saves our Lives”

Women Beneficiaries in North Darfur

75. The beneficiary communities expressed that the SAFE Project has had a positive impact on their lives. According to the household survey, the impact of the Project can be observed in a number of areas: offered additional and new livelihood opportunities; improved hygiene and health; saved the environment; increased crop production and productivity; brought women together and allowed them to be more active in their community; allowed women participate in household decision-making; protected women and girls from SGBV risks and offered women more time for household and social activities (Figure 13).

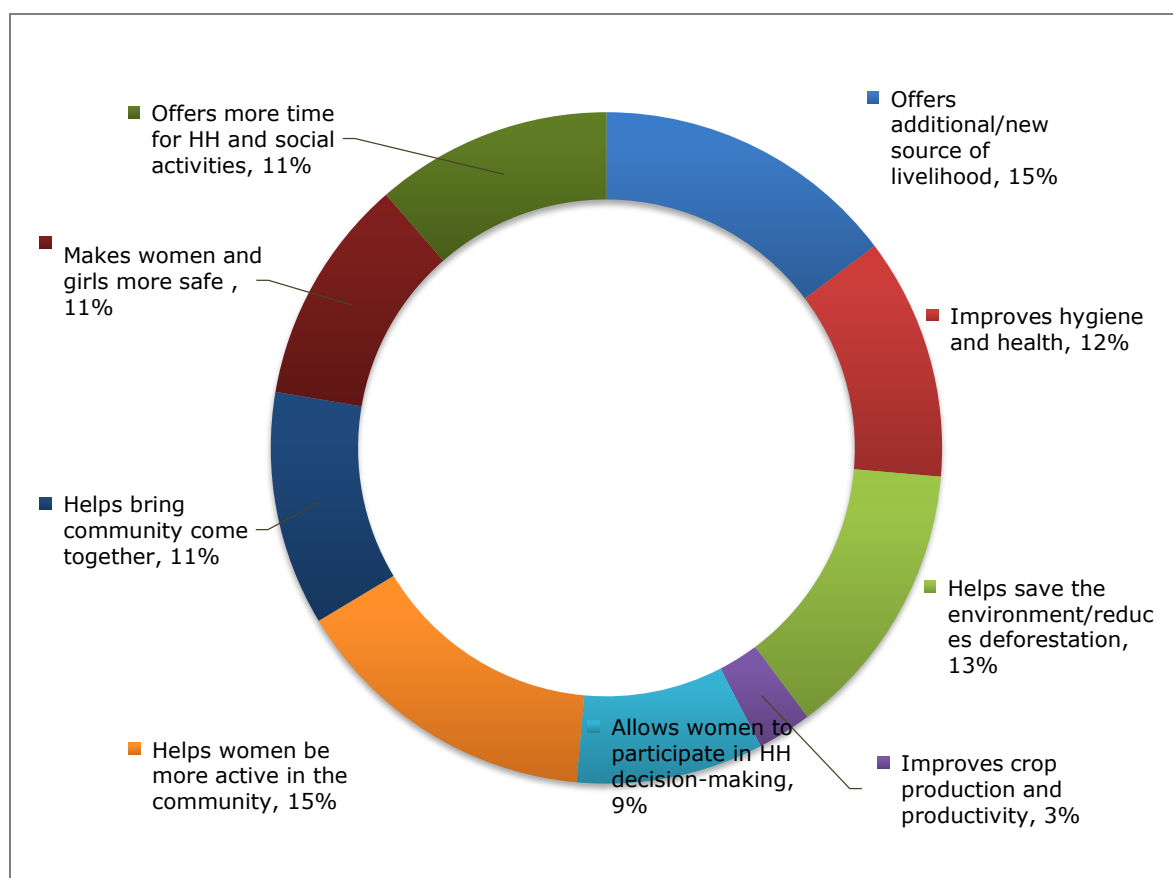


Figure 13. Benefits of SAFE Project

76. Further, the impact of the project can be observed in three areas: (1) livelihoods, (2) human and social capital and empowerment; and (3) reduced forest depletion and climate change mitigation.

Livelihood Impact

77. The household survey indicated that not-insignificant number of households reported cash income from the various IGAs supported by the Project (Figure 14). The FES and the FFB components were also associated with reductions in household expenditure on firewood for cooking. The respondents to the household survey reported that income from IGAs and saving from expenditure on firewood were spent on food purchase (27%), education (11%), purchase of household durables (11%); energy for cooking and lighting (8%); and clothing and footwear (5%), social activities (5%), water (4%), investment in income-generating activities (3%), and savings (3%).

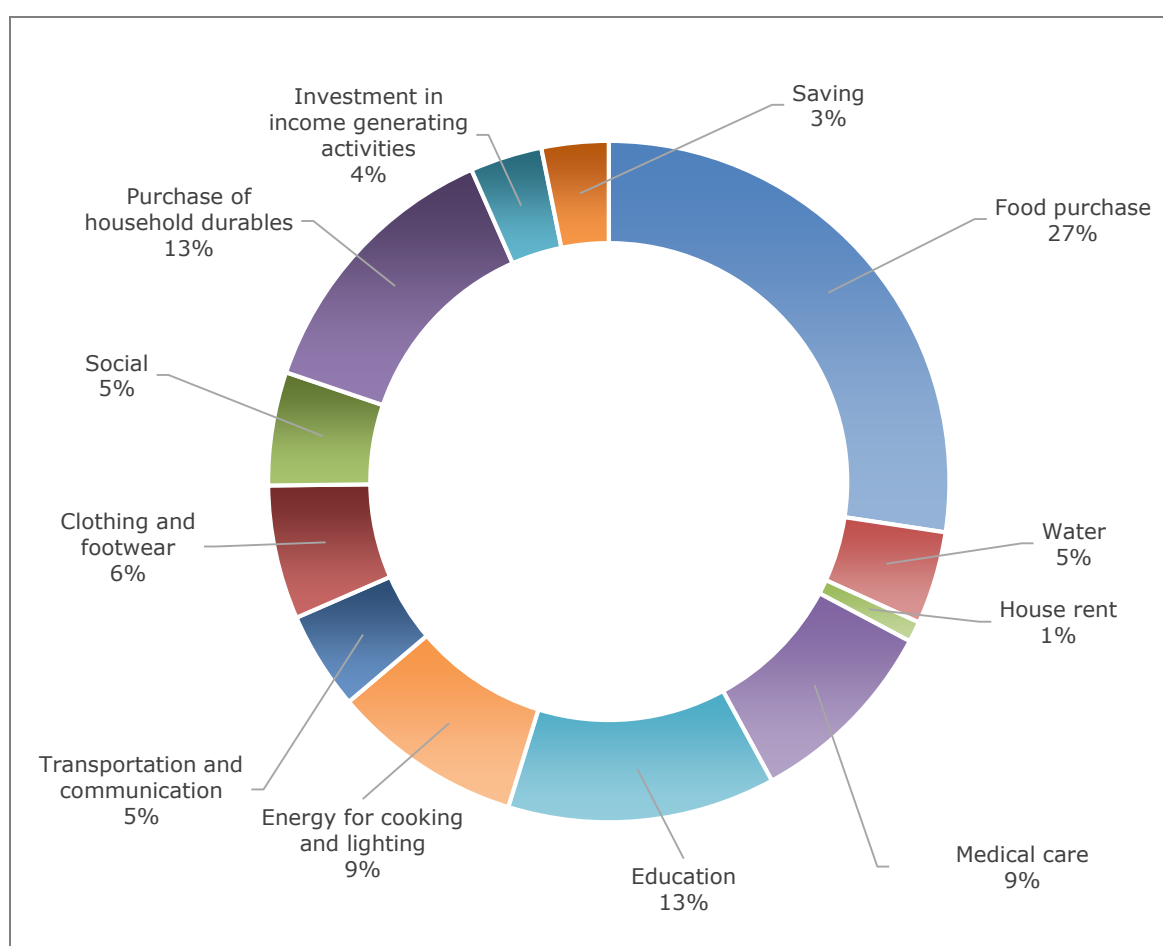


Figure 14. Purpose for Which Income from IGA was used

78. **Health impacts.** The stoves promoted by the Project were associated with reduced Household Air pollution (HAP) and related ailments. The FGD participants reported that smoke levels were lower with the use of the new stoves. The reductions in indoor air pollution were connected with reductions in eye irritation, respiratory illness, and incidence of fire burns with young children and adult females.

Human and Social Capital and Empowerment

79. According to the FDG's with beneficiary communities, SAFE was of significant value in human and social capital and empowerment. The Project helped women become active participants in mainstream of economic activities. The Project has successfully strengthened the entrepreneurial capacities of these groups through training.

80. Apart from the training and sensitisation programmes, SAFE ensured community empowerment, ownership, participation and capacity building of local communities. SAFE empowered communities and transformed their organizational capacities through community mobilisation, group formation, and Sub-project implementation. The SAFE facilitated the formation of Women Interest Groups (WIG) and Farmers Interest Groups (FIG). In addition, it supported the establishment or rehabilitation of permanent community infrastructures including FES and FFB training centres, tree nurseries and community forestry, Agri-business centres, seeds and tools banks, and grain stores.

81. Discussions with community-based organizations and implementing partners also revealed that they have gained skills and knowledge in project management through 'training-by-doing', i.e., through the implementation of Sub-projects supported the by SAFE.

Avoided Deforestation and Climate Change Mitigation

82. The design of SAFE was driven by the need to address forest resource depletion and environmental degradation through both demand management (efficiency) and supply interventions (tree nurseries and community forestry). It was expected that the project would have a sizeable impact on slowing down forest depletion. There has been no systematic monitoring of the community forestry and woodlot plantations. So, the impact of the FES component only is analysed in terms of avoided deforestation and climate change mitigation.

83. SAFE has delivered substantial impacts in terms conservation of forests and climate change mitigation (Table 4):

- Over 350,000 fuel-efficient stoves were produced and disseminated benefiting over 2 million people;
- The total firewood consumptions savings associated with the use of the fuel-efficient stoves (displacing the open-fire) s estimated at about 180,000 tonnes and the corresponding avoided deforestation of approximately 15,000 ha of forest land per annum;
- Each fuel-efficient stove saves about 3.8 tCO₂e per year and the aggregate avoided 345,000 tCO₂e per year

Table 4. Estimates of GHG Emission Reduction of FES

Total number of households using Fuel Efficient Stove ¹	356,050
Estimates of Firewood Consumption	
Mean firewood Consumption - kg/HH/day ²	5.3
Total Fuel wood consumed - Tonnes per year	693,026
Firewood from non-renewable source ³ - Tonnes per year	589,072
Firewood saving of FES, % ⁴	25.7%
Firewood Saving of FES, Tonnes per year	176,252
Avoided deforestation, ha/year⁵	14,688
GHG Emission from fuel wood consumption - tCO ₂ e	1,341,235
GHG Emission from fuel wood consumption - tCO ₂ e/HH/Year	3.8
GHG Emission reduction, tCO ₂ e	344,467

Notes, data and Parameters:

¹ Based on Above-ground biomass stock 2 tonnes/dry matter/ha		
Net calorific value of wood combustion ¹⁸	0.0156	GJ/kg
Proportion of biomass from non-renewable sources ¹⁹	85%	
EF _{bio,wood,CO₂} (CO ₂ emissions factor for biomass fuel combustion) ²⁰	0.112	tCO ₂ /GJ
EF _{bio,wood,CH₄} (CH ₄ emissions factor for wood fuel combustion) ²¹	0.001224	tCH ₄ /GJ
EF _{bio,wood,N₂O} (N ₂ O emissions factor for wood fuel combustion) ²²	0.00001125	tN ₂ O/GJ
GWP _{CH₄} (Global Warming Potential for CH ₄) ²³	25	tCO ₂ e/tCH ₄
GWP _{N₂O} (Global Warming Potential for N ₂ O) ²⁴	298	tCO ₂ e/tN ₂ O

84. Overall, in a span of two years, the Project has contributed to improved livelihoods and human and social capital and empowerment as well as to reversing the on-going trend of forest degradation in Darfur. As such SAFE can be considered as “quick-impact Project”.

85. The rating given for this criteria is therefore 6, “**Highly Satisfactory**”.

¹⁸ IPCC 2006 default value

¹⁹ Default values of fNRB for: UNFCCC webpage: <https://cdm.unfccc.int/DNA/fNRB/index.html>

²⁰ IPCC 2006 default value - Table 1.4. -Vol2 Ch1 – Introduction. Default IPCC values for wood/wood waste

²¹ Lower and Higher bound average: IPCC 2006 default values for wood/wood waste - Table 2.9. IPCC Vol2 Ch2.

²² Lower and Higher bound average: IPCC 2006 default values for wood/wood waste - Table 2.9. IPCC Vol2 Ch2.

²³ 2007 IPCC AR4 p212

²⁴ 2007 IPCC AR4 p212

3.6. Likely Continuation of Project Results (Sustainability)

To examine whether communities are properly prepared to take over, technically, financially and managerially after project termination and without external support. To what extent are the Project results durable?

86. SAFE has made efforts to ensure sustainability of the results achieved in several ways:

- Most SAFE activities (fuel efficient stoves, briquettes, tree nurseries and community forests, income-generating activities, and agri-business centres) have the potential to generate income or reduce household expenditure and therefore are likely to be financially sustainable.
- SAFE has also been successful in embedding the project activities into local institutional structures: communities, community based organizations (CBOs), and local government structures (state ministries of agriculture, natural resource and environment, social welfare, etc.). The beneficiaries are likely to sustain their IGAs with continued technical support from the local institutions. In particular, SAFE objectives have the full policy support and remain the mandates government agencies mandate and can be sustained even with limited donor funds. The management of the CBOs interviewed during the Evaluation also confirmed that SAFE will be sustained, replicated and integrated into their strategic plans.
- SAFE rightly emphasized on community involvement and community capacity has been enhanced through the Project interventions. There is strong sense of ownership of the Project by beneficiary communities and local administrations, thus contributing to the sustainability of the project benefits.
- The community centres established by SAFE will continue to train the local communities when the project funding ends. Experiences gained under this project will have to be used to develop further a model for capacity building.

87. The prospects for sustainability of the SAFE interventions are mixed. The prospect for sustainability of the fuel-efficient stoves is judged to be strong while that of the income-generating activities are weaker. This is due to limitations in post-training extension services, limited market demand and competition, lack of access to markets beyond the immediate localities, lack of product diversification, among others.

88. Some of the IGA participants as well as the trainers felt that further training and support is needed in product design and development, product diversification and business management. Staff of implementing partners interviewed also pointed out that for some communities, further support and follow-up will be needed. For future interventions greater attention is needed on improving access to markets, access to finance, access to commodity markets, and helping groups to be more organised.

89. Concerns are also raised with the sustainability of the FES and FFB training and Agri Business centres as some were constructed with non-durable materials.

90. On the whole, the rating given for 'sustainability' is 4, "**Moderately Satisfactory**".

3.7. Overall Assessment

To make an overall independent assessment about the past performance of the project, paying particularly attention to the impact of the project actions against its objectives.

91. The overall assessment of the Project with ratings of each of the evaluation parameter with a brief justification is given in the table below. An overall rating for the project's performance is also given.

Table 5. Overall Assessment and Ratings

Criteria	Achievement	Rating					
		Highly Satisfactory (6)	Satisfactory (5)	Moderately Satisfactory (4)	Moderately Unsatisfactory (3)	Unsatisfactory (2)	Highly Unsatisfactory (1)
1. Relevance and appropriateness							
(a) Needs and priorities of target beneficiaries	The SAFE Project has responded to real problems (economic, social and environment) facing households and communities in Darfur.	X					
(b) Government policies and strategies	The Project has responded directly national development needs as identified in the Interim PRSP, agriculture, forestry, natural resource and environment policies and strategies, and Darfur Recovery and Reconstruction Strategy	X					
(c) Strategic alignment with WFP and Global priorities and initiatives	The SAFE objectives are fully aligned with WFP's Strategic Plan (2014-2017); WFP's strategy of building resilience in Sudan (2015-2017). There is strong overlap between the SAFE Project objectives and the UN SDG.	X					
(d) Project Design	There have been limitations in the design of the Project: lack of rigor in project formulation, lack of well-established results framework; objectives were not SMART and were not related to SMART indicators, baseline and target; somewhat ambitious time-frame; lack of cost analysis of interventions		X				
(e) Stakeholder participation in project design	There was little evidence of sufficient stakeholder consultation during project preparation. The project design may have benefited from further stakeholder consultations during the preparation phase of the project.		X				
	The rating given for this criterion is 5, ' Satisfactory '.		X				

2. Effectiveness							
(a) Objective 1 - address the immediate cooking needs of the target population	The Project has been effective in addressing the immediate cooking needs of the target population, although the results were mixed: the FES has been highly effective; the FFB has been judged to be adequate only; the biogas digesters constructed were not operational at the time of writing this report and their proper functioning remains to be seen.		X				
(b) Objective 2 - mitigate the protection risks	The SAFE Project has been effective in mitigating protection risks. The FES were associated with reductions in firewood consumption by approximately 40%. The frequencies of firewood collection trips and therefore the probability of SGBV risks associated with firewood collection trips are expected to have been reduced by the same percentage.		X				
(c) Objective 3 - alleviate deforestation and environment degradation	The FES component has been highly effective in slowing down forest depletion while the FFB could be judged to be adequate. There has been no systematic monitoring of the community forestry and the woodlot plantations.		X				
(d) Objectives 4 and 5 - strengthen and diversify people's livelihoods, restore and develop assets and livelihoods; and ensure adequate health and nutritional levels of assisted population.	1. There were no statistically significant differences in dietary diversity and negative coping strategies between beneficiary and comparison households. However, there are indications of the likely positive effects of the Project on livelihoods. The Project has helped women become active participants in economic activities. Not-insignificant number of IGA participants have started earning income. 2. The effectiveness of the Project on livelihoods has been challenged by the limitations in market opportunity studies and post-training extension services.			X			
	The rating given for this criterion is 4, 'Moderately satisfactory' .			X			
3. Efficiency							
(a) Project Implementation Approach	1. The institutional arrangement for the implementation of the project provided a partnership approach involving beneficiary communities, community-based organizations, national and international NGOs and	X					

	<p>relevant government agencies, each with clearly specified roles.</p> <p>2. The Project partners have demonstrated their commitment to the implementation of their respective activities.</p>						
(b) Project Implementation Performance	<p>1. Generally, the Project was managed by qualified and committed staff. The management approach had fostered the acceptance of the Project by beneficiary communities and partners and contributed to the success in project implementation.</p> <p>2. The management and implementing partners have executed several visibility actions include sign boards, banners, training materials and T-shirts with WFP and Nationale Postcode Loterij logos. The visibility, promotion and publicity of Project activities also contributed to the effectiveness of the Project implementation.</p> <p>3. There was evidence of sound project fund management. The Project management followed WFP's well-established authorization and approvals terms for any Project funds disbursements.</p> <p>4. There have been delays in project start-up and implementation. Despite the initial delays, however, the Project was completed within the original time-frame and within budget.</p> <p>5. Although there was a general acknowledgement of the limitations of the Implementing partners' capacity to run and sustain the Sub-projects, management took no initiative to address those gaps.</p> <p>6. The Project Management did not demonstrate some degree of flexibility to adjusting sub-project costs in response to market conditions. Consequently, the Partners were reportedly financing the sub-project costs from other source.</p>		X				
(c) Value for Money	<p>1. There was evidence of sound project fund management. The management followed WFP's well-established authorization and approvals terms for any funds disbursements.</p> <p>2. In purchasing of goods and services, WFP's procurement rules were</p>		X				

	<p>followed and there were indications that the Project insisted on a Value for Money basis.</p> <p>3. The management had capitalized on the resources of a wide range of partners which resulted in lower management and administrative costs.</p>						
(d) Monitoring and Evaluation, Reporting and Information Exchange	<p>1. The Project generally lacked a well-established M&E function. Baseline data were not established and although several monitoring visits took place during the course of the implementation of the project, monitoring data were partial and not systematically recorded, managed, used, and reported.</p> <p>2. Project documentation were not systematically kept. Project annual and completion reports were not prepared.</p> <p>3. Exchange of information on progress in project implementation was inadequate. The Project Management has not taken adequate initiative in organizing meetings for project performance review.</p>			X			
	The rating given for this criterion is 5, 'Satisfactory'.		X				
4. Achievement of Wider Effects (Impact)							
(a) Livelihood impact	<p>1. Not-insignificant number of households reported cash income from the IGAs. Households also reported reductions in household expenditure on firewood. These were spent on food purchase, education, purchase of household durables; energy for cooking and lighting; clothing, social activities, water, investment in income-generating activities and savings.</p> <p>2. The FES were associated with reduced Household Air pollution (HAP) and related ailments: eye irritation, respiratory illness, and incidence of fire burns in young children and adult females.</p>		X				
(b) Human and social capital and empowerment	<p>1. The Project was of significant value in human and social capital and empowerment. The Project helped women become active participants in the mainstream economic activities.</p>	X					

	<p>2. The Project empowered communities and transformed their organizational capacities through community mobilisation, group formation, and Sub-project implementation.</p> <p>3. The Project established/rehabilitated community infrastructures including FES and FFB training centres, tree nurseries and community forestry, Agri-business centres, seeds and tools banks, and grain stores.</p> <p>4. The community-based organizations and local NGOs have gained in skills and knowledge in project management through 'training-by-doing', i.e., through the implementation of Sub-projects supported the by SAFE,</p>						
(c) Reducing Forest Depletion and Climate change Mitigation	<p>1. The firewood consumption savings associated with the use of the fuel-efficient stoves (displacing the open-fire) is estimated at about 180,000 tonnes and the corresponding avoided deforestation of approximately 15,000 ha of forest land per annum.</p> <p>2. Each fuel-efficient stove saves about 3.8 tCO₂e per year and the aggregate GHG emission reduction was 345,000 tCO₂e per year.</p>	X					
	The rating given for this criteria is 6 " Highly Satisfactory ".	X					
5. Sustainability							
(a) Institutional sustainability	<p>1. SAFE has also been successful in embedding the project activities into local institutional structures: communities, community based organizations, and local government structure (state ministries of agriculture, natural resource and environment, social welfare, etc.).</p> <p>2. The beneficiaries are likely to sustain their IGAs with continued technical support from the local institutions. The SAFE objectives have the full policy support and can be sustained even with limited donor funds.</p>		X				
(b) Financial sustainability	<p>1. Most SAFE activities have the potential to generate income or reduce household expenditure and therefore are likely to be financially sustainable.</p> <p>2. Strong concerns are raised with regard the financial sustainability of IGAs due to limitations in post-training extension services, limited</p>			X			

	market demand and competition, lack of access to markets beyond the immediate localities, lack of product diversification, among others. Some of the training participants as well as the trainers felt that further training and support is needed in product design and development, product diversification and business management.						
(c) Technical sustainability	<ol style="list-style-type: none"> 1. The community centres established by this Project will continue to train the local communities when the project funding ends. Experiences gained under this project will have to be used to develop further a model for capacity building. 2. Staff of implementing partners interviewed pointed out that for some communities, further support and follow-up will be needed. 3. Concerns are also raised with the sustainability of the FES and FFB training and Agri Business centres as some were constructed with non-durable materials. 			X			
(d) Environmental sustainability	The Project interventions advance environmental sustainability objectives. This is demonstrated through the utilization of renewable energy sources and environmentally sustainable inputs (agriculture, energy efficiency, IGAs, etc.)	X					
	The rating given for this criteria is 4 "Moderately Unsatisfactory".			X			
6. Overall Rating	The overall rating of the Project is 'Satisfactory'.		X				

4. Conclusions

92. The main conclusions of the evaluation are:

- **Relevance.** The SAFE Project has responded to real problems of households and communities and national development needs. The Project objectives are fully aligned with WFP's Strategic Plan for 2014-2017 and WFP's strategy of building resilience in Sudan (2015-2017). There are close overlaps between the SAFE objectives and several of the UN Sustainable Development Goals (SDG).
- **Effectiveness.** The SAFE has largely been successful in addressing the immediate cooking needs of the target population. Fuel efficient stoves deliver numerous benefits: fuel savings, financial savings from expenditure on firewood, fuel collection time savings, mitigating protection risks, reductions in HAP and related ailments; slowing down forest depletion and climate change mitigation.
- It is too early to detect significant livelihood impacts in terms of strengthening and diversifying people's livelihoods, and improving health and nutritional levels within the Project's timeframe but there are initial signs that the Project has helped women become active participants in the mainstream economic activities and have started earning income. The effectiveness of the Project on livelihoods has been challenged by the limitations in market opportunity studies to identify economic viability of new or existing livelihoods; effective targeting strategy; and post-training extension services.
- **Efficiency.** SAFE's collaborative and participative project management approach had fostered the acceptance of the Project by beneficiary communities and partners. Overall, despite the initial delays, the Project was completed within the original time-frame and budget. The level of effort of the Project is seen as appropriate and of good value. The management had capitalized on the resources and technical expertise of a wide range of partners.
- **Impact.** Income from the IGAs and reductions in expenditure on firewood were spent on food, education, household durables; energy for cooking and lighting; clothing, social activities, water, re-invested in income-generating activities and savings. The Project empowered communities and transform their organizational capacities through community mobilisation, group formation, and Sub-project implementation. SAFE has reduced firewood consumption of an estimated 180,000 tonnes and 15,000 ha of forest land per annum. The project's GHG emission reduction was 345,000 tCO₂e per year.
- **Sustainability.** Most SAFE activities have the potential to generate income or reduce household expenditure. SAFE has also been successful in embedding the project activities into local institutional structures: communities, community based organizations, and local government structure. Strong concerns are raised with regard the sustainability of IGAs

due to limitations in post-training extension services, limited market demand and competition, and lack of access to markets beyond the immediate localities, among others.

5. Recommendations

93. The recommendations are made with the aim of improving the quality of project design and thereby to enhance the efficiency, effectiveness and to improve the prospects for impact and sustainability in Sudan and to support development of successful and efficient programmes within WFP interventions at a global level:

Project design; monitoring, evaluation, reporting, and learning

- a) The quality of the project design should be improved by enhancing the intervention logic or theory of change, 'SMARTness' of the intervention objectives and related indicators, baseline and targets. The M&E unit should be mandated to review and ensure this requirement is met;
- b) In order to address timelines related to the start and implementation of future projects, the project design should contain a realistic start-up phase which includes the mobilization of resources, staffing of the project and development of implementation frameworks to proceed the implementation phase of a project.
- c) It is important for future projects to develop and put in place a workable M&E system early on so that findings from monitoring are identified on a continuous basis and incorporated into ongoing project implementation. It is also important that M&E frameworks measure and assess not only achievement of outputs and activities but also progress made towards achieving project objectives and outcomes.
- d) To enhance documentation, learning and experience sharing, future project should publish project documents and organize workshops to share learning experiences. The M&E unit should also be mandated to receive and maintain relevant project documentations for future references.

Fuel-Efficient Stove, fuel briquettes and biogas technologies

- a) In order to ensure the quality of training programmes and continuous improvement in technical stoves design, fuel briquettes production, and biogas digesters, future projects should consider hiring of technical experts in relevant areas;
- b) Future fuel briquette projects must be based on thorough feasibility studies including detailed assessment of availability, quality and cost of alternative raw material inputs and cost-benefit analysis of alternative cooking fuels, prices and preferences;
- c) A commercial approach should be pursued for wide-scale dissemination of the fuel-efficient stoves and fuel briquettes;
- d) In designing future projects, interventions should include support for micro-enterprise development and should address the range of challenges faced by Improved Cook stove businesses, i.e., lack appropriate marketing skills to promote the ICS technologies, access to finance for business

start-up and working capital, consumer awareness of improved cook stoves and their benefits through sensitization programmes and practical demonstrations; and bottle-necks in the value chain, and maintaining quality products.

- e) It is important for future projects to conduct detailed techno-economic assessment of biogas technologies including benefits from possible synergy between biogas production and bio-slurry.
- f) The FES, FFB and biogas technologies have significant potential for GHG emission reduction. In order to secure sustainable funding, future Project should explore feasibility of carbon finance opportunities

Income generating activities

- a) The design of income-generating activities must be based on detailed market and feasibility studies. This will help set realistic target number of beneficiaries, refine beneficiary targeting strategy, training needs and business development support
- b) Future IGA interventions, in addition to skill training, should incorporate post-training extension services: facilitate micro-enterprise development, access to finance, suitable premises for production, access to equipment and tools, marketing support, formalizing (awareness on legal and regulatory requirements), support to formation of groups, and follow-up and monitoring

Project Impact and Sustainability

- a) It is recommended that future project should concentrate on consolidating and expanding the gains made so far before replicating/scaling-up into new communities.

6. Lessons Learned

94. Key lessons learned from the SAFE experiences are:

- a) Project Intervention areas, geographic coverage and project time frame. SAFE was a multi-sector intervention. This may have its own merits such as the urgent need to respond to the multi-faceted challenges in the project context and that multiple interventions must be pursued simultaneously because one without the other is not sufficient and also they complement each other. However, in the interest of effectiveness, there is almost always the need to strike a balance between the range of interventions and geographic coverage given the constraints of resources (money, human resource, time, etc.).
- b) SAFE's strong synergies with FFA and FFT programmes is an institutional good practice which should be replicated for other projects where relevant.
- c) The engagement of communities and community-based organizations was a good practice that should continue to be replicated but future projects should incorporate significant capacity development actions.
- d) Good relations and strong coordination as well as engagement of relevant government agencies have been key to the success of SAFE Project and was a good practice that can be replicated for future projects.
- e) It is unrealistic to expect significant short-term impact from engagement in income-generating interventions, particularly in humanitarian settings. While there are initial signs of livelihood impacts, the project timeframe of 2 years was insufficient for solidifying those gains.

ANNEX 1

TERMS OF REFERENCE



**World Food Programme
Safe Access to Fuel and Energy (SAFE)
Nationale Postcode Loterij Trust Fund
TERMS OF REFERENCE
End of Project Evaluation**

Background

Ten years of conflict and displacement in Darfur, Sudan, have created a complex humanitarian crisis. Combined with a series of droughts, the situation has led to the rapid depletion of natural resources and desertification. This has meant not only lost livelihoods for the most vulnerable, but greater difficulty in finding fuel to cook with. As a result of the environmental damages and on-going conflict, women have had to venture far from their homes to collect firewood for cooking and selling. Such trips expose them to grave risks including physical and sexual violence.

To respond to the multiple challenges that people face in accessing to cooking fuel, WFP is carrying out the Safe Access to Fuel and Energy (SAFE) project in Darfur. SAFE addresses the serious challenges linked with access to cooking fuel by helping communities help themselves and empowering women to lead their families out of hunger.

SAFE is a catalyst that changes the community's attitude about the environment. Firewood consumption is a major contributor to rapid deforestation in Darfur, an arid region that is vulnerable to climatic change and suffers from environmental degradation. Stripping the land of trees jeopardizes the resumption of agriculture and livestock practices that were common prior to the conflict. SAFE sensitizes vulnerable people living in fragile environments to the importance of protecting the environment. Fuel-efficient stoves, fire-fuel briquettes and environmentally-friendly livelihoods help reduce deforestation and make communities more resilient to climate shocks in the future. Another important environmental mitigating activity is to provide institutional fuel-efficient stoves to WFP-assisted schools. Cooking school meals for children consumes large amounts of firewood and has a severe impact on natural resources like firewood. SAFE not only protects the environment, but also reduces the cost of cooking school meals. This allows the most vulnerable children in Darfur to have a nutritious meal every day and access to education.

WFP's vision with SAFE

Provide food assistance to conflict-affected and vulnerable populations in Darfur by giving them the right tools and knowledge to address the challenges linked to the lack of access to safe cooking fuel.

Objectives

- i. To address the immediate cooking needs of the target population, increase the use of and promote improved cooking technologies and fuels;
- ii. To mitigate the protection risks confronted by women and children when cooking WFP food, reduce risks associated with firewood collection and raise awareness about protection and gender-based violence;
- iii. To alleviate deforestation and environment degradation associated with cooking fuel, establishing community-based forests and woodlots;

- iv. To strengthen and diversify people's livelihoods, reducing reliance on wood fuel-intensive livelihoods, restoring and developing assets and livelihoods opportunities;
- v. To ensure adequate health and nutritional levels of assisted population.

Evaluation Purpose

The Final Evaluation of the SAFE Project is a summative evaluation intended to assess the impact that the project has achieved toward the overall objective and the five objectives listed above, in line with the requirements of the donor of the Nationale Postcode Loterij. The evaluation will describe the outputs that have been produced, explain the impact that has been achieved as a result, and will identify best practices and lessons learned relevant for future programming.

Overview of the Evaluation Process

Both a quantitative and qualitative approach will be employed during this evaluation process. Information from qualitative interviews will be used to (a) interpret household survey findings, (b) obtain information on project performance against targets and (c) obtain information to identify best practices and lessons learned related to project delivery.

The consultant will identify and design necessary tools for this exercise with input from WFP staff.

Information to be collected in the Evaluation

The consultant will further develop the existing project log-frame and monitoring plan. The consultant will also design the survey tools, train monitoring staff, supervise data collection and analyse the results.

The evaluation will investigate the following features of the SAFE project:

Project History & Context. The evaluation will document the history of the project, particularly how it has evolved since inception and the critical features of the operating environment that have affected, positively or negatively, project implementation and the impact that has been achieved.

Project Outputs. The outputs produced under each activity will be quantified and analysed to identify what the project has actually accomplished on the ground. Lessons learned will be extracted on what has worked well and what may not have worked well in producing project outputs. Those activities and outputs that have been identified as producing significant impact will be highlighted as best practices.

Project Impact. Both qualitative and quantitative information will be used to assess the impact of the project at the overall objective level. The evaluation will assess the sustainability of the impact that has been observed.

Specific Tasks

- i. Revise the log-frame
- ii. Data collection tools development
- iii. Data collection supervision
- iv. Verification of Preliminary Findings: The purpose of this meeting is to share the preliminary findings from the evaluation with the project to verify that they are accurate and stated in appropriate ways before they are finalized in the evaluation report.
- v. Draft Report Finalization

Deliverables

Following are the specific deliverables expected from the Consultant

1. Survey tools with guidance
2. Sampling framework
3. Verification workshop presenting preliminary findings
4. Draft report
5. Final report

Tentative plan

Period	Activity	Number of Days
November 23 – Dec 5	Consultative phase Review of the log-frame Project context & history review Review of project outputs	10
Dec 6 -17	Development of survey tools & sampling framework	10
Jan 3 - 21	Data collection and entry	15
Jan 24 – Feb 4	Data Analysis (combined with video)	10
Feb 7 - 9	Verification Meetings	3
Feb 18	Draft report Due	1
February 28	Final report Due	1

ANNEX 2
PHYSICAL PERFORMANCE OF PROJECT (AS
SUBMITTED BY PROJECT COORDINATOR)



Activities	Budget	Achievements							Balance	% achieved
		Targets	South Darfur	East Darfur	North Darfur	West Darfur	Central Darfur	Total		
Activity 1: Fuel-efficient stoves and fire-fuel briquettes training centres for women and communities	\$506,156									
Train and build capacity of community-based organizations								-	-	
Establish training centres and provide material for construction of fuel-efficient stoves and production of fire-fuel briquettes										
<i># training centres established/rehabilitated</i>		50	4	3	44		1	52	(2)	104%
<i># of fuel efficient stoves constructed</i>		270,000	130,000	25,600	187,810	10,600	2,040	356,050	(86,050)	132%
<i># of fire-fuel briquettes moulded</i>		540,000	416,110	18,000	261,154	19,600	1,760	716,624	(176,624)	133%
Provide interactive and educational communication materials to support training women in fuel efficient stove and briquette production		500	200	200	100	200	200	900	(400)	180%
Activity 2: Income generation and environmental activities through community nursery and forestry	\$136,799									
Deliver seeds and tools to establish community tree nurseries and plant trees										
<i># of nurseries constructed</i>		20	5	4	21	5	1	36	(16)	180%
<i># of tree seedlings established</i>		3,000,000	195,300	151,000	2,355,500	380,000	25,000	3,106,800	(106,800)	104%
Provide tree nursery and forestry management training								-	-	
Promote multipurpose trees including firewood, fruits, and income generating trees (hectares)										
<i># of new community forests established</i>		20	5	4	5	2	3	19	1	95%
<i># of acres of wasteland covered (acres)</i>		500	370	20	380	28	40	838	(338)	168%
Stimulate production of nutritious fruit and wild trees including <i>Moringa</i> – which helps improve diet diversity		20	16	6	4			26	(6)	130%
Support the production of income generating trees such as <i>gum Arabic</i> and <i>jatropha</i> to provide additional income at community level		250	200					200	50	80%
Activity 3: Income generation through agri-business centres	\$923,393									
Establish agri-business centres		20	4	3	44		1	52	(32)	260%
<i># of ben benefiting from the agri-business centres (ABC)</i>		540,000	105,225	48,290	302,102	49,425	19,890	524,932	15,068	97%

[illegible]

ANNEX 3

DESCRIPTION OF EVALUATION METHODOLOGY



1. Data Sources and Methods

1. Both secondary and primary data sources were utilized for the evaluation. The quantitative survey was designed to answer the evaluation questions and to measure the outputs, outcomes and impacts of the project. The survey included a household questionnaire; firewood and charcoal weight measurement and price questionnaire; and firewood consumption measurement questionnaire. The contents of some of the instruments are outlined below.

2. **Household Survey.** The objective was to obtain quantitative data on variables related to the evaluation. The survey questionnaire contained several modules:

- Household demographics;
- Income and consumption expenditure
- Dietary diversity and coping strategies
- Cooking fuels and devices, mode of firewood acquisition; household members engaged in fuelwood collection, frequency of firewood collection, distance travelled and time spent, and fuel consumption; and household's coping strategies to lack of cooking fuels;
- Relevance, timeliness, and adequacy of the services provided by the Project
- Benefits from your participation in the SAFE Project
- Cash income from IGAs supported by the Project?
- Purpose for which cash income from SAFE supported business used
- Challenges/constraints faced by beneficiary households from IGAs

3. **Firewood and Charcoal Weight Conversion Measurement and price surveys.** The purpose was to estimate the average weight of the different types of loads in standard unit (kg). The weights of samples of bundles of firewood were measured using a spring balance. The average weight for each load was established. A similar procedure was followed for weight measurement of different loads of charcoal (large, medium, small sack, tin, and plastic bags).

4. **Firewood Consumption Measurement.** Fuel consumption measurement survey was conducted to estimate cooking energy consumption of households. The sample size was determined considering the need have reasonable representativeness, make the survey valid and to meet the tight time schedule. The sample size was determined at 460 households. The sample households were selected randomly in the same way as the household energy survey.

Procedures Followed for Firewood consumption measurement

We followed the steps:

Day 1	The household was requested to set aside enough firewood for the NEXT DAY'S (24 hour) cooking from the stock of firewood available. The enumerator weighs and records the set aside firewood. The household is instructed to use only from the weighed firewood and to put aside separately any remaining stock.
Day 2	The household cooks from the weighted firewood and, after completion of the day's last cooking session, set aside the remaining firewood.
Day 3	The Household is revisited and enumerators weigh and record the remaining firewood.

5. In order to determine specific fuel consumption in terms of kg/person/day, household size and the number of people fed during the day were recorded. The fuel wood consumed per person per day was estimated by dividing the total daily consumption rate and number of people within the household. Households were instructed to use only one type of stove for the entire cooking sessions during that day. The objective of the survey was to estimate the impact (in terms of firewood savings) of the fuel efficient stove promoted by the SAFE Project against the open-fire.

6. The firewood consumption per household per day is then computed using the following equation:

$$\begin{array}{lcl} \text{HH firewood} & & \\ \text{consumed per day} & = & \text{Pre-weighed} \\ \text{(kg)} & & \text{Firewood (kg)} - \text{Remaining} \\ & & \text{Firewood (kg)} \end{array}$$

7. In addition to the quantitative survey, qualitative data were collected through Focus group discussions (FGD) and key informant interviews (KIIs).

8. Data obtained from several sources were triangulated/cross-validated in order to ensure that the evaluation avoided making a one-sided, possibly biased judgment.

2. Attribution

9. One of the most challenging methodological issues in any impact assessment exercise is the difficulty 'proving causality', i.e., the problem of assigning observed effects to the interventions - whether we can be sure that a certain change in the welfare of households can be attributed to (i.e., is clearly caused by) the SAFE Project. Other events and changes occur while the SAFE Project is taking place, and this may make it difficult to separate out the impact of the intervention.

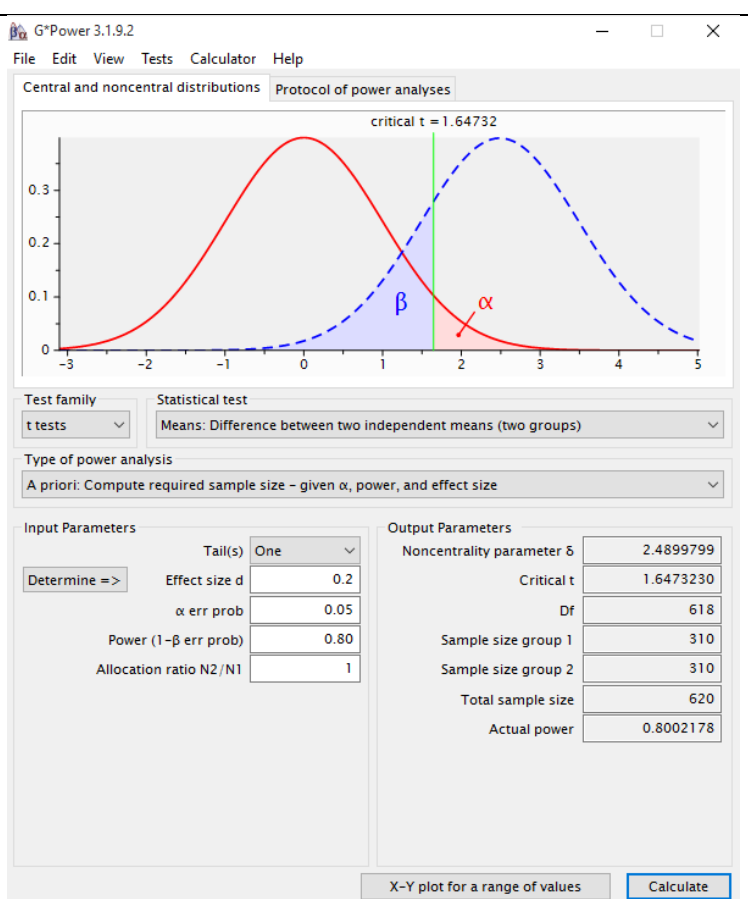
10. The most common and most scientifically-reliable methodological approach to overcome this difficulty is to use 'comparison group'. Households using the fuel saving stoves promoted by the SAFE Project will be treated as "treatment group" and while those using the open-fire as a "comparison group". The impact evaluation will therefore consider both individuals with direct access and those with indirect access.

3. Sample Size and Power Analysis

11. The calculation of an adequate sample size is crucial to any credible impact evaluation. Generally, the sample size depends on the acceptable level of significance, Power of the study and expected effect size.

12. A statistical power analysis was performed for sample size determination. With a Significance level (α) = .05; and Statistical Power = 0.80, and a minimum detectable effect size of 20 percentage points, the projected sample size needed is approximately N= 620 households (see Figure below, G*Power 3.1). Overall, considering non-response and cluster effect, a sample size of 920 households was established.

Figure 1. Statistical Power analysis and Optimal Sample Size



4. Sampling Strategy

13. In consultation with the WFP Sudan M&E Unit, a stratified two-stage cluster sampling was selected in order to economize on travel in the field and because detailed lists of households for the entire region does not exist.

14. A stratified sample design was applied in order to facilitate reporting survey results separately for the different geographic regions (i.e., the five SAFE intervention States in Darfur region). A proportionate stratified sample design ensures that each stratum (here, state) were represented in the sample in proportion to its size in the population. However, the distribution of the total number beneficiaries by state varied considerably resulting in lower than expected sample from smaller strata. If proportionate to size sampling was to be used, only 20 households from Central Darfur and 60 households from East Darfur would have been covered in the survey. Having larger samples in those strata would allow to calculate results for those strata with more precision. In order to obtain reasonably good estimates for the small strata, more than a proportionate share of the sample was allocated to these strata, thus using a “disproportionate stratified sample” design.

15. A total of 46 clusters (14 from North Darfur and 8 each from the other four states) were selected. From each sample cluster, 20 sample households are selected. These are equally split into beneficiary (treatment) group and non-beneficiary (comparison) group.

Table 2. Sample Size by State and Cluster

State	Locality	IDP Camp name or village name	CP Name	No of beneficiary HHs	No of Clusters	Sample Households		
						All HHs	Beneficiaries	Non-beneficiaries
North Darfur	Um Kadada	Um Kadada	UKRDP	31410	2	40	20	20
	Kutum	Kutum town	KAEDS	18199	1	20	10	10
	Kutum	Kassab	KAEDS	22749	1	20	10	10
	Tawilla	Rownda camp	SAEKER	34803	2	40	20	20
	Tawilla	Argo camp	SAEKER	4620	1	20	10	10
	Kabkabyia	Kabkabyia	KSCS	37920	2	40	20	20
	Elfasher	Elfasher rural	WDAN	35907	2	40	20	20
	Elfasher	Kuma resident	WDAN	20945	1	20	10	10
	Daralsalm	Shangil Tobya	DDA	7480	1	20	10	10
	Elfasher town	Abu Shouk	SAEKER	8040	1	20	10	10
	Total				14	280	140	140
South Darfur	Gereida	Gereida camp	ALGHUFRAN	39270	3	60	40	20
	Nitega	Hamada villqge	NIDO	3000	1	20	10	10
	Katila	Sanabo village	NIDO	2000	1	20	10	10
	Nyala	Otash	JMCO	6790	1	20	10	10
	Nyala	Deraij camp	JMCO	7770	1	20	10	10
	Kass	Elfanya	DPI	4220	1	20	10	10
	Total				8	160	80	80
East Darfur	EdDaein	El Neem IDPs	SWSO	13335	3	60	40	20
	Yassin	Yassin Village	AlShroog	8535	2	40	20	20
	sharia	Sheria	NIDO	5650	1	20	10	10
	Yassin	Selia	NIDO	4500	1	20	10	10
	Yassin	Kassib	NIDO	2500	1	20	10	10
	Total				8	160	80	80
West Darfur	Geneina	Durti	SORC	3875	1	20	10	10
	Habila	Habila	ALMANARA	8445	2	40	20	20
	Frobranga	Frobranga	ALMANARA	5550	1	20	10	10
	Geneina	Ardamata	ROAD	2050	1	20	10	10
	Geneina	Abuzer	ROAD	1050	1	20	10	10
	Sirba	Abu Sorooj	SCO	10475	2	40	20	20
	Sub-total				8	160	80	80
Central Darfur	Zalingei	Hamidia	SCS	3145	1	20	10	10
	Zalingei	Hasihisa	SCS	2400	2	40	20	20
	Zalingei	Tayba	SCS	2330	1	20	10	10
	Zalingei	Elsalam	SCS	2250	1	20	10	10
	Zalingei	Khamisa	SCS	2105	1	20	10	10
	Mukjar	Mukjar	TDO	2904	1	20	10	10
	Mukjar	Artala	TDO	500	1	20	10	10
	Sub-total				8	160	80	80
	Total				46	920	46	460

5. Survey Organization

16. The field survey covered 920 household questionnaires, 46 fuel weight measurement and price survey questionnaires, 460 firewood consumption measurement survey and 12 focus groups discussions. A summary of the surveys disaggregated by type of questionnaire and state is presented in Table 3.

17. The survey team included a consultant (coordinator), ten supervisors, eight enumerators per state, and ten drivers with vehicle. The supervisors each guided a group of four enumerators.

Table 3. Summary of Sample Sizes per questionnaire type and State

Questionnaire Type	Sample size			
1. Household Questionnaire	920 households (460 beneficiary and 460 non-beneficiary)			
		All	Beneficiary	Non-beneficiary
	Total	920	460	460
	North Darfur	280	140	140
	South Darfur	160	80	80
	East Darfur	160	80	80
	West Darfur	160	80	80
	Central Darfur	160	80	80
2. Firewood and charcoal weight and price survey	Total	46	One per cluster	
	North Darfur	14		
	South Darfur	8		
	East Darfur	8		
	West Darfur	8		
	Central Darfur	8		
3. Firewood consumption measurement survey	460 households (i.e., 10 per cluster)			
		All	FES	Open-fire
	Total	460	230	230
	North Darfur	140	70	70
	South Darfur	80	40	40
	East Darfur	80	40	40
	West Darfur	80	40	40
	Central Darfur	80	40	40
4. Focus Group Discussions (FGDs)	Total	12		
	North Darfur	4		
	South Darfur	2		
	East Darfur	2		
	West Darfur	2		
	Central Darfur	2		

ANNEX 4

STATISTICAL TABLES



Household Survey Statistical Tables

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Table 1. Sample Distribution by Respondent Category							
	N=	Statistic	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur
SAFE Project Participant	474	474	143	85	81	90	75
SAFE Project Non-Participant	434	434	136	72	78	66	82
Total	908	908	279	157	159	156	157
SAFE Project Participant	474	52%	51%	54%	51%	58%	48%
SAFE Project Non-Participant	434	48%	49%	46%	49%	42%	52%
Total	908	100%	100%	100%	100%	100%	100%

Table 2. Sample Distribution by Residence status							
	N=	Statistic	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur
IDP	699	77%	80%	47%	75%	94%	86%
Refugee	4	0%	0%	2%	1%	0%	0%
Resident	184	20%	20%	51%	12%	5%	14%
Returnees	21	2%	0%	0%	13%	1%	0%
Total	908	100%	100%	100%	100%	100%	100%

Table 3. Household Demographic Characteristics								
	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur
Distribution of Sample Households	908			279	157	159	156	157
Sample household %				31%	17%	18%	17%	17%
Household size								
Male	3,270	50.3%	1.7%	930	605	576	576	583
Female	3,230	49.7%	1.7%	953	516	550	633	578
Total	6,500	100.0%		1,883	1,121	1,126	1,209	1,161
Average HH size		7.2	0.47	6.7	7.1	7.1	7.8	7.4
Household Size by Age								
Under 5 years	1,689	26.1%	1.2%	19.6%	47.6%	20.1%	24.9%	22.8%
5-18	2,477	38.3%	1.5%	40.3%	24.0%	44.3%	36.7%	44.9%
19-59	2,003	31.0%	1.5%	37.5%	24.8%	33.1%	29.4%	25.9%
60 and above	331	5.1%	0.2%	2.5%	3.6%	5.6%	8.9%	6.4%
Male								
Under 5 years	879	13.6%	0.9%	9.9%	27.0%	11.0%	11.3%	11.5%
5-18	1,290	20.0%	1.1%	19.9%	12.9%	23.7%	19.3%	24.0%
19-59	940	14.5%	0.9%	18.4%	12.3%	15.3%	13.2%	11.1%
60 and above	161	2.5%	0.4%	1.2%	1.7%	2.7%	3.9%	3.6%
FEMALE								
Under 5 years	810	12.5%	0.9%	9.7%	20.6%	9.2%	13.6%	11.4%
5-18	1,187	18.4%	1.0%	20.4%	11.1%	20.6%	17.5%	20.8%
19-59	1,063	16.4%	1.0%	19.1%	12.5%	17.8%	16.3%	14.8%
60 and above	170	2.6%	0.4%	1.3%	1.9%	2.8%	5.0%	2.8%
	3,230	50.0%		50.6%	46.0%	50.4%	52.4%	49.8%

Table 4. Distribution of sample by Number of persons in Household

Family Size	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur
1	4	0.4%	0.03%	0.0%	0.6%	0.6%	0.6%	0.6%
2	15	1.7%	0.11%	2.9%	2.5%	0.6%	0.0%	1.3%
3	52	5.7%	0.37%	7.2%	5.1%	4.5%	5.1%	5.7%
4	60	6.6%	0.43%	6.8%	7.6%	6.5%	5.8%	6.4%
5	117	12.9%	0.84%	15.4%	13.4%	8.4%	12.2%	13.4%
6	128	14.1%	0.92%	14.3%	11.5%	19.5%	12.8%	12.7%
7	139	15.3%	1.00%	15.1%	20.4%	14.3%	15.4%	12.1%
8	139	15.3%	1.00%	15.4%	9.6%	19.5%	16.0%	16.6%
9	99	10.9%	0.71%	11.1%	9.6%	16.2%	7.1%	10.8%
10	67	7.4%	0.48%	6.8%	9.6%	4.5%	7.7%	8.9%
11	30	3.3%	0.21%	2.5%	2.5%	1.9%	5.1%	5.1%
12	27	3.0%	0.19%	1.1%	3.8%	2.6%	7.7%	1.3%
13	6	0.7%	0.04%	0.4%	1.9%	0.6%	0.0%	0.6%
14	9	1.0%	0.06%	0.7%	1.3%	0.0%	0.6%	2.5%
15	4	0.4%	0.03%	0.4%	0.6%	0.0%	1.3%	0.0%
16	3	0.3%	0.02%	0.0%	0.0%	0.0%	0.6%	1.3%
17	2	0.2%	0.01%	0.0%	0.0%	0.0%	0.6%	0.6%
18	1	0.1%	0.01%	0.0%	0.0%	0.0%	0.6%	0.0%
19	1	0.1%	0.01%	0.0%	0.0%	0.0%	0.6%	0.0%

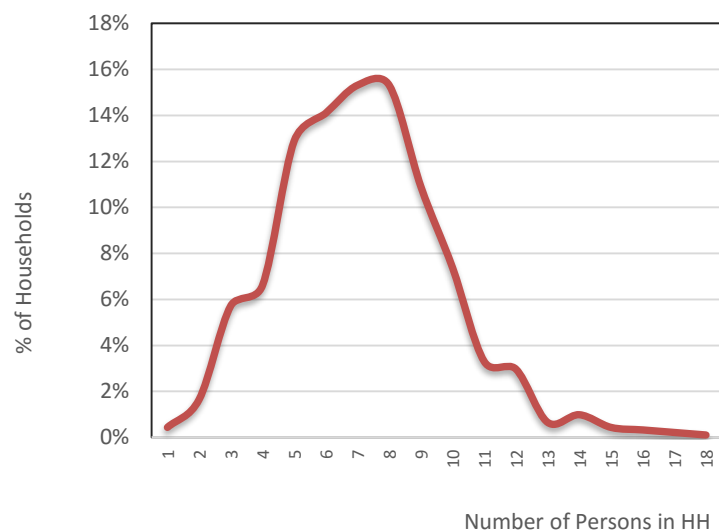


Table 5. Characteristics of head of Household								
	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur
Sex of Head of HH								
Male (%)	679	76.1	0.2%	87%	85%	67%	59%	66%
Female (%)	213	23.9	0.1%	12%	10%	31%	40%	32%
Mean Age of head of HH		44	2.9	46	39	45	40	45
Education								
Education of head of HH								
Illiterate (can't read and write)	265	29.4%	1.9%	24.0%	22.6%	34.4%	33.8%	36.3%
Informal education	311	34.5%	2.3%	35.8%	21.3%	36.9%	39.0%	38.2%
Primary	233	25.8%	1.7%	30.1%	34.8%	20.4%	21.4%	19.1%
Secondary	86	9.5%	0.6%	9.0%	20.6%	8.3%	5.2%	5.1%
Above Secondary	7	0.8%	0.1%	1.1%	0.6%	0.0%	0.6%	1.3%
Marital Status								
Marital Status of head of HH								
Single	19	2%	0.1%	0.7%	3.4%	2.6%	3.2%	2.0%
Married	719	81%	5.3%	89.5%	89.8%	73.1%	71.6%	75.5%
Divorced	50	6%	0.4%	3.6%	2.0%	7.1%	7.1%	9.9%
Widowed	85	10%	0.6%	5.1%	4.8%	10.9%	18.1%	12.6%
Separated	13	1%	0.1%	1.1%	0.0%	6.4%	0.0%	0.0%

Table 6. Dwelling Characteristics								
	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur
Mean Number rooms	856	2.5	0.17	2.7	2.3	2.2	2.7	2.5
Construction material of main dwelling unit								
Mud/Mud brick	294	33.6%	2.2%	61%	0%	8%	59%	25%
Stone/concrete/brick	22	2.5%	0.2%	5%	1%	0%	3%	1%
Thatch	500	57.2%	3.8%	34%	99%	60%	35%	73%
Plastic shelter	36	4.1%	0.3%	0%	1%	20%	2%	1%
Other	22	2.5%	0.2%	0%	0%	13%	1%	1%
Construction material of roof of main dwelling unit								
Corrugated iron sheets	92	10.5%	0.7%	22%	2%	2%	2%	14%
Thatch (grass)	558	63.5%	4.2%	50%	93%	39%	66%	82%
Plastic	211	24.0%	1.6%	28%	4%	50%	31%	4%
Other	18	2.0%	0.1%	0%	1%	9%	1%	0%

Table 7. Distribution of sample by main Cooking Place

	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur
Separate kitchen	608	68.9%	4.5%	80%	76%	63%	32%	84%
Inside living room	105	11.9%	0.8%	9%	18%	21%	6%	6%
Open air	157	17.8%	1.2%	11%	5%	13%	57%	10%
Other	13	1.5%	0.1%	0%	0%	3%	6%	0%

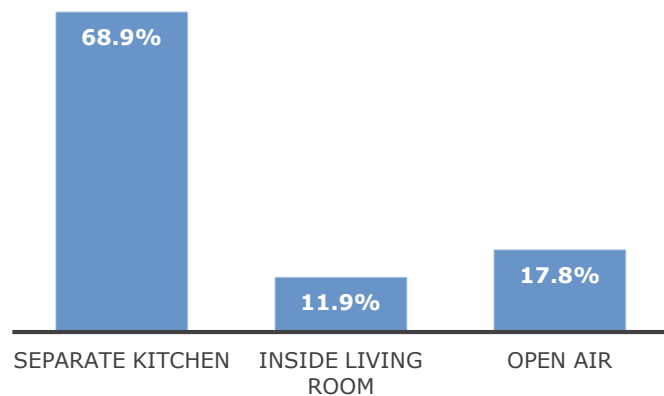


Table 8. Distribution of Households by Income source

	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur	Beneficiary HHs	Comparison HHs
Source of Cash Income LAST 30 Days										
Sample size (N=)	908			279	157	159	156	157	474	434
Sale of crop production	140	15.5%	1.0%	19.0%	15.3%	23.3%	16.0%	0.6%	15.2%	16.6%
Sale of live animals	33	3.6%	0.2%	0.7%	0.0%	16.4%	3.2%	0.0%	5.5%	6.0%
Sale of livestock products (milk, butter, egg, honey,)	13	1.4%	0.1%	1.1%	3.2%	2.5%	0.6%	0.0%	1.5%	1.6%
Sale of vegetables and fruits	33	3.6%	0.2%	4.7%	6.4%	4.4%	1.9%	0.0%	5.3%	5.8%
Sale of forest products	24	2.6%	0.2%	5.7%	1.3%	2.5%	1.3%	0.0%	3.2%	3.5%
Sale of non-timber forest products	148	16.3%	1.1%	26.2%	17.8%	17.6%	12.2%	0.0%	17.7%	19.4%
Agricultural wage labor	341	37.7%	2.5%	45.5%	56.1%	49.7%	30.1%	0.0%	38.0%	41.5%
Causal work	164	18.1%	1.2%	30.1%	12.1%	30.2%	8.3%	0.0%	16.9%	18.4%
Business (petty trade, donkey cart, water, tea, handicraft)	68	7.5%	0.5%	8.6%	7.6%	12.6%	7.7%	0.0%	6.8%	7.4%
Transfers (remittance, gift, donation)	51	5.6%	0.4%	3.6%	18.5%	3.8%	3.8%	0.0%	5.7%	6.2%
Cash hand-outs by WFP and other organizations	29	3.2%	0.2%	2.5%	3.8%	6.3%	3.8%	0.0%	3.2%	3.5%
Food ration sale/exchange	16	1.8%	0.1%	2.5%	0.6%	2.5%	2.6%	0.0%	1.1%	1.2%
Non-food items sale/exchange	148	16.4%	1.1%	19.7%	12.1%	35.2%	11.5%	0.0%	15.6%	17.1%
Selling firewood, FES, FFB	77	8.5%	0.0%	11.1%	21.7%	3.1%	4.5%	0.0%	7.8%	8.5%
HH CASH Income LAST 30 Days by Source (SDG)										
Sale of crop production	140	312	20	321	245	341	321	200	359	263
Sale of live animals	33	545	35	341	...	609	298	...	605	324
Sale of livestock products (milk, butter, egg, honey,)	13	311	20	217	380	352	90	...	380	231
Sale of vegetables and fruits	33	266	1	235	334	155	433	...	284	210
Sale of forest products	24	187	12	180	155	164	325	...	194	177
Sale of non-timber forest products	148	283	4	275	364	290	183	...	308	250
Agricultural wage labor	341	383	25	418	381	385	285	...	409	353
Causal work	164	382	25	411	381	379	200	...	408	356
Business (petty trade, donkey cart, water, tea, handicraft)	68	233	15	335	174	155	220	...	299	175
Transfers (remittance, gift, donation)	51	87	6	135	70	128	48	...	95	78
Cash hand-outs by WFP and other organizations	29	101	7	241	52	46	80	...	155	44
Food ration sale/exchange	16	168	11	209	10	238	68	...	142	180
Non-food items sale/exchange	148	225	15	211	174	261	211	...	242	208
Selling firewood, FES, FFB	77	604	39	873	472	295	281	...	670	543
Average	820	801	52	913	725	909	597	721	876	717
Source of Cash Income LAST 12 Months										
Sale of crop production	173	19.2%	1.2%	25.8%	19.7%	25.2%	17.3%	1.9%	18.8%	20.5%
Sale of live animals	38	4.2%	0.3%	1.4%	1.9%	16.4%	3.2%	0.0%	6.3%	6.9%
Sale of livestock products (milk, butter, egg, honey,)	17	1.9%	0.1%	2.2%	3.2%	3.1%	0.6%	0.0%	2.1%	2.3%
Sale of vegetables and fruits	34	3.7%	0.2%	4.7%	6.4%	4.4%	2.6%	0.0%	5.5%	6.0%
Sale of forest products	30	3.3%	0.2%	6.8%	1.3%	3.1%	2.6%	0.0%	3.6%	3.9%
Sale of non-timber forest products	174	19.2%	1.2%	29.7%	21.7%	22.0%	14.1%	0.0%	19.8%	21.7%
Agricultural wage labour	349	38.6%	2.5%	46.6%	58.0%	50.3%	30.8%	0.0%	38.8%	42.4%
Causal work	169	18.6%	1.2%	30.8%	12.1%	30.8%	9.6%	0.0%	17.5%	19.1%
Business (petty trade, donkey cart, water, tea, handicraft)	89	9.8%	0.6%	12.5%	11.5%	13.2%	8.3%	1.3%	8.9%	9.7%

Transfers (remittance, gift, donation)	61	6.7%	0.4%	6.1%	19.7%	3.8%	3.8%	0.6%	6.3%	6.9%
Cash hand-outs by WFP and other organizations	32	3.5%	0.2%	2.9%	4.5%	6.3%	3.8%	0.6%	3.4%	3.7%
Food ration sale/exchange	16	1.8%	0.1%	2.5%	0.6%	2.5%	2.6%	0.0%	1.1%	1.2%
Non-food items sale/exchange	153	16.9%	1.1%	20.8%	12.1%	35.2%	12.8%	0.0%	16.5%	18.0%
Selling firewood, FES, FFB	78	8.6%	0.6%	11.1%	22.3%	3.1%	4.5%	0.0%	7.8%	8.5%
Other	647	72.1%	4.7%	75.6%	75.2%	73.0%	73.7%	55.4%	73.4%	80.2%
CASH Income during LAST 12 Months (SDG)										
Sale of crop production	19.1%	2,397	156	2,767	2,093	2,038	2,387	1,515	2,683	2,093
Sale of live animals	4.2%	1,708	111	2,700	583	1,956	298	...	1,849	1,180
Sale of livestock products (milk, butter, egg, honey,)	1.9%	3,577	233	3,556	4,320	3,396	900	...	3,226	4,079
Sale of vegetables and fruits	3.7%	2,061	134	1,310	3,762	1,512	1,213	...	2,197	1,620
Sale of forest products	3.3%	1,314	85	1,292	1,800	1,666	735	...	1,332	1,290
Sale of non-timber forest products	19.2%	1,924	125	2,151	2,088	1,593	1,342	...	2,121	1,694
Agricultural wage labour	38.4%	2,894	189	2,619	3,486	3,338	1,776	...	3,241	2,507
Causal work	18.6%	3,252	212	3,473	4,057	2,982	1,849	...	3,167	3,334
Business (petty trade, donkey cart, water, tea, handicraft)	9.8%	1,556	101	2,145	950	1,422	1,231	200	1,876	1,269
Transfers (remittance, gift, donation)	6.7%	972	63	1,434	767	1,308	519	150	1,216	735
Cash hand-outs by WFP and other organizations	3.5%	554	36	848	553	312	627	190	800	308
Food ration sale/exchange	1.8%	1,424	93	1,418	120	2,715	468	...	1,128	1,558
Non-food items sale/exchange	16.9%	1,867	122	1,441	1,959	2,365	1,622	...	2,102	1,624
Selling firewood, FES, FFB	8.6%	5,145	335	6,942	4,279	2,900	3,120	...	6,010	4,364
Other	71.3%	3,590	235	2,896	3,022	2,200	4,186	7,113	3,636	3,537
Average	72.1%	7,021	457	7,641	7,585	6,905	5,326	7,092	7,438	6,552
Distribution of HH by Income per person per day										
Population on < USD 1 per day	908	72.8%	4.7%	64.2%	76.4%	59.1%	83.3%	87.9%	68.1%	77.9%
Population on < USD 2 per day	908	95.6%	6.2%	93.9%	98.7%	91.2%	97.4%	98.1%	94.5%	96.8%

Table 9. Distribution of Sample by Household Expenditure

	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur	Beneficiary HHs	Comparison HHs
Expenditure LAST Month, Households										
Food	840	92.5%	6.0%	99.6%	91.7%	78.0%	91.0%	96.8%	92.2%	92.9%
Water	513	56.5%	3.7%	75.6%	72.0%	56.0%	24.4%	39.5%	57.8%	55.1%
House rent	44	4.8%	0.3%	9.3%	6.4%	0.0%	1.3%	3.8%	5.3%	4.4%
Medical care	481	53.0%	3.4%	58.1%	42.0%	45.3%	57.7%	58.0%	53.4%	52.5%
Education	524	57.7%	3.8%	58.4%	39.5%	57.2%	68.6%	64.3%	62.2%	52.8%
Fuel for cooking and lighting	704	77.5%	5.0%	94.6%	60.5%	57.9%	84.0%	77.7%	79.5%	75.3%
Milling	817	90.0%	5.9%	95.7%	75.2%	88.7%	91.7%	94.3%	91.6%	88.2%
Transportation and communication	438	48.2%	3.1%	63.4%	51.0%	28.3%	21.8%	65.0%	46.2%	50.5%
Clothing and footwear	334	36.8%	2.4%	39.8%	37.6%	30.8%	34.0%	39.5%	40.7%	32.5%
Social	534	58.8%	3.8%	67.0%	47.8%	45.9%	66.7%	60.5%	59.7%	57.8%
Other	47	5.2%	0.3%	0.7%	8.3%	0.0%	2.6%	17.8%	4.2%	6.3%
CASH Expenditure LAST 30 days (SDG)										
Food	92.5%	375	24	330	251	262	371	670	396	352
Water	56.5%	52	3	54	37	44	44	88	57	47
House rent	4.8%	68	4	69	54	...	38	97	68	67
Medical care	53.0%	120	8	124	123	101	162	86	126	114
Education	57.7%	123	8	110	164	117	123	122	130	113
Fuel for cooking and lighting	77.5%	83	5	104	98	71	34	85	74	93
Milling	90.0%	37	2	28	41	39	35	51	35	39
Transportation and communication	48.2%	50	3	62	32	33	39	55	51	49
Clothing and footwear	36.8%	211	14	86	138	93	503	346	214	205
Social	58.8%	49	3	52	62	24	60	42	45	54
Other	5.2%	41	3	14	32	...	14	51	36	44
Average cash expenditure, Last 30 days	99.0%	770	50	747	599	469	831	1,222	801	737
Cash Expenditure the LAST 12 Months, % HH										
Food	879	96.8%	6.3%	100.0%	95.5%	93.1%	93.6%	99.4%	96.8%	96.8%
Water	521	57.4%	3.7%	76.7%	73.2%	57.9%	23.1%	40.8%	59.3%	55.3%
House rent	37	4.1%	0.3%	7.9%	4.5%	0.0%	1.3%	3.8%	4.6%	3.5%
Medical care	605	66.6%	4.3%	74.6%	43.9%	57.2%	60.9%	90.4%	67.5%	65.7%
Education	622	68.5%	4.5%	68.5%	50.3%	76.7%	71.8%	75.2%	71.3%	65.4%
Fuel for cooking and lighting	714	78.6%	5.1%	94.6%	62.4%	59.1%	84.6%	80.3%	79.5%	77.6%
Milling	842	92.7%	6.0%	97.1%	80.3%	93.1%	93.6%	96.2%	93.7%	91.7%
Transportation and communication	496	54.6%	3.6%	70.6%	51.0%	40.3%	25.6%	73.2%	51.3%	58.3%
Clothing and footwear	601	66.2%	4.3%	71.7%	42.7%	53.5%	75.0%	84.1%	68.8%	63.4%
Social	634	69.8%	4.5%	71.7%	42.7%	53.5%	75.0%	84.1%	70.9%	68.7%
Other	48	5.3%	0.3%	0.7%	7.0%	0.0%	2.6%	19.7%	4.6%	6.0%
CASH Expenditure LAST 12 Months (SDG)										
Total cash Expenditure LAST 12 Months (SDG)										
Food	96.8%	3,655	238	2,917	3,313	2,138	3,864	6,547	3,873	3,417
Water	57.4%	515	34	436	518	442	501	888	546	479
House rent	4.1%	667	43	615	470	...	450	1,160	714	599
Medical care	66.6%	490	32	563	354	290	782	382	475	507
Education	68.5%	608	40	642	572	379	574	849	608	609
Fuel for cooking and lighting	78.6%	772	50	1,013	648	635	343	915	681	874
Milling	92.7%	371	24	272	384	342	390	550	342	404
Transportation and communication	54.6%	357	23	350	319	190	438	460	325	388

Clothing and footwear	66.2%	530	34	440	418	295	642	775	526	534
Social	69.8%	302	20	287	260	107	501	304	282	324
Other	5.3%	391	25	115	284	...	147	478	298	469
Total cash Expenditure LAST 12 Months (SDG)	69.8%	6,366	414	6,188	5,295	3,726	6,360	10,412	6,515	6,203

Table 10. Household Dietary Diversity										
	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur	Beneficiary HHs	Comparison HHs
Food type consumed last 7 days, % of Households										
Cereals	900	99.1%	6.4%	98.9%	98.1%	100.0%	99.4%	99.4%	99%	99%
Roots and tubers	355	39.1%	2.5%	44.4%	21.7%	22.6%	53.8%	49.0%	41%	37%
Pulses, legumes, nuts	445	49.0%	3.2%	62.0%	36.3%	47.2%	32.1%	57.3%	53%	45%
Vegetables	668	73.6%	4.8%	84.2%	54.8%	59.1%	65.4%	96.2%	76%	71%
Fruits	243	26.8%	1.7%	15.1%	26.1%	6.3%	35.3%	60.5%	29%	24%
Meat, poultry	666	73.3%	4.8%	77.8%	60.5%	50.9%	86.5%	87.9%	73%	74%
Eggs	103	11.3%	0.7%	12.5%	26.1%	3.1%	4.5%	9.6%	13%	10%
Milk and milk products	477	52.5%	3.4%	57.0%	84.1%	34.0%	33.3%	51.0%	55%	49%
Oil/fat	883	97.2%	6.3%	99.3%	94.9%	95.0%	96.2%	99.4%	97%	97%
Sugar/honey	82	9.0%	0.6%	16.8%	4.5%	2.5%	12.2%	3.2%	9%	9%

Table 11. Livelihood Coping Strategies										
	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur	Beneficiary HHs	Comparison HHs
Household copying strategy to insufficient income for livelihoods?										
Borrow money from others	424	54.4%	3.8%	36.2%	51.0%	53.2%	43.6%	59.2%	48.0%	45.8%
Causal labour	254	32.6%	2.3%	26.9%	26.8%	35.1%	36.5%	16.6%	23.7%	33.0%
Sell of household assets	30	3.8%	0.3%	1.8%	8.3%	1.3%	1.9%	4.5%	3.4%	3.3%
Others	38	4.9%	0.3%	1.8%	3.8%	8.4%	5.8%	3.2%	4.9%	3.5%
In the last seven days, has your HH consumed less preferred foods?										
Never	235	27.9%	1.9%	41.6%	22.3%	25.3%	14.7%	14.0%	28.8%	23.0%
Rarely (once)	221	26.3%	1.8%	23.3%	31.8%	23.4%	27.6%	17.2%	24.7%	24.2%
From time to time (2 or 3 times)	322	38.3%	2.6%	29.7%	26.8%	35.7%	42.3%	48.4%	33.8%	37.7%
Often (5 or more times)	62	7.4%	0.5%	3.6%	1.3%	9.1%	14.1%	8.9%	5.9%	7.9%
In the last seven days, has your HH reduced the quantity of food served?										
Never	340	38.7%	2.5%	57.3%	34.4%	34.4%	17.9%	28.7%	37.8%	37.4%
Rarely (once)	212	24.1%	1.5%	18.6%	21.7%	36.4%	28.2%	16.6%	25.4%	21.4%
From time to time (2 or 3 times)	276	31.4%	2.0%	20.8%	29.9%	23.4%	38.5%	47.8%	28.5%	32.8%
Often (5 or more times)	50	5.7%	0.4%	3.2%	2.5%	5.2%	14.1%	4.5%	5.1%	6.0%
In the last seven days, have members of this household skipped meals?										
Never	465	56.4%	3.8%	76.0%	50.3%	33.1%	41.7%	36.9%	52.4%	50.5%
Rarely (once)	140	17.0%	1.2%	12.2%	10.8%	26.6%	17.3%	13.4%	15.6%	15.3%
From time to time (2 or 3 times)	196	23.8%	1.6%	10.8%	8.3%	28.6%	29.5%	40.1%	18.0%	25.8%
Often (5 or more times)	24	2.9%	0.2%	0.7%	0.6%	0.6%	10.3%	2.5%	2.5%	2.8%

Table 12. Main Meals, Cooking Fuels and Devices

	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur	Beneficiary HHs	Comparison HHs
Meals cooked most of the time										
Asida	892	98.8%	6.4%	100.0%	98.7%	95.6%	100.0%	95.5%	98.7%	97.7%
Kisra	472	52.3%	3.4%	61.3%	84.7%	32.7%	14.7%	59.2%	55.5%	48.2%
Foul	118	13.1%	0.8%	24.0%	17.2%	3.8%	0.6%	10.8%	15.4%	10.4%
Other (Lentils)	137	15.2%	1.0%	40.9%	5.1%	1.3%	7.7%	0.6%	17.3%	12.7%
Main Fuels used for cooking, % user HHs										
Firewood	889	97.9%	6.4%	98.6%	97.5%	93.1%	100.0%	100.0%	97.5%	98.4%
Charcoal	380	41.9%	2.7%	52.0%	43.9%	51.6%	8.3%	45.2%	50.4%	32.5%
Briquettes	135	14.9%	1.0%	31.9%	1.3%	6.9%	3.2%	17.8%	26.6%	2.1%
Kerosene	1	0.1%	0.01%	0.4%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%
LPG	5	0.6%	0.04%	1.8%	0.0%	0.0%	0.0%	0.0%	1.1%	0.0%
Other	-	0.0%	.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cooking devices used - % user HHs										
Open-fire (three -stone)	598	65.9%	4.3%	47.3%	79.0%	49.7%	92.3%	75.8%	56.3%	76.3%
Traditional Mud stove	155	17.1%	1.1%	7.5%	23.6%	35.8%	11.5%	14.0%	21.5%	12.2%
SAFE Project Supported FES	326	35.9%	2.3%	41.6%	23.6%	50.3%	16.7%	42.7%	50.4%	20.0%
Berkeley Darfur Stove	33	3.6%	0.2%	9.7%	2.5%	0.0%	0.0%	1.3%	3.6%	3.7%
Charcoal Metal Stove	69	7.6%	0.5%	3.6%	8.9%	6.3%	1.9%	20.4%	6.8%	8.5%
Charcoal Clay stove	175	19.3%	1.3%	41.2%	5.1%	20.8%	5.1%	7.0%	27.2%	10.6%
Kerosene stove	24	2.6%	0.2%	5.0%	6.4%	0.0%	0.0%	0.0%	3.2%	2.1%
Other	12	1.3%	0.1%	3.2%	1.3%	0.6%	0.0%	0.0%	1.3%	1.4%

Table 13. Households' Negative Coping Strategies to Firewood Shortages										
	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur	Beneficiary HHs	Comparison HHs
HH SKIPPED meals due to lack of fuel in last 30 days, %										
Yes	254	28.1%	1.8%	15.8%	33.8%	18.2%	55.8%	26.1%	26.8%	29.5%
No	649	71.9%	4.7%	84.2%	66.2%	78.6%	44.2%	73.9%	73.2%	70.5%
If SKIPPED, how many times during the last 30 days?		2.8	0.18	2.6	2.4	2.5	3.2	2.6	3.0	2.6
HH undercooked meals due to lack of fuel in last 30 days, %										
Yes	226	25.0%	1.6%	16.8%	28.7%	20.8%	39.1%	25.5%	22.4%	27.9%
No	677	75.0%	4.9%	83.2%	71.3%	76.1%	60.9%	74.5%	77.6%	72.1%
If undercooked meals, how many times during the last 30 days?		3.1	0.20	2.50	2.31	2.61	3.68	3.8	3.0	3.2
HH Sold/Exchanged food ration to buy fuel in last 30 days, %										
Yes	136	15.1%	1.0%	8.2%	13.4%	15.1%	32.1%	11.5%	15.0%	15.1%
No	767	84.9%	5.5%	91.8%	86.6%	81.8%	67.9%	88.5%	85.0%	84.9%
If sold/exchanged food ration, what % of the monthly food ration?	136	14.9	0.97	17.5	7.1	5.0	20.7	12.6	15.1	14.7

Table 14. Distribution of Households by Energy for Lighting

Energy sources for lighting, % of HHs										
Firewood	90	10.0%	0.7%	7.2%	19.1%	5.0%	17.3%	3.2%	10.8%	9.0%
Candles	8	0.9%	0.1%	0.4%	0.0%	3.8%	0.0%	0.6%	1.3%	0.5%
Kerosene/diesel	8	0.9%	0.1%	1.8%	0.0%	1.3%	0.6%	0.0%	0.4%	1.4%
Dry cell batteries	770	85.3%	5.6%	86.7%	89.8%	78.0%	77.6%	90.4%	86.7%	82.7%
Rechargeable lantern	81	9.0%	0.6%	11.8%	6.4%	9.4%	7.1%	7.6%	8.2%	9.7%
Car battery	3	0.3%	0.02%	0.0%	1.3%	0.0%	0.0%	0.6%	0.0%	0.7%
Solar PV	1	0.1%	0.01%	0.0%	0.6%	0.0%	0.0%	0.0%	0.2%	0.0%
Electricity- Private supplier	45	5.0%	0.3%	14.7%	0.0%	0.6%	0.6%	1.3%	5.5%	4.4%
Other - charcoal	1	0.1%	0.01%	0.0%	0.0%	0.0%	0.6%	0.0%	0.0%	0.2%
Expenditure on Lighting, SDG/month										
Candles	8	7.0	0.1	10.0	...	4.0	...	...	10.0	4.0
Kerosene/diesel	8	10.5	0.1	6.0	...	8.5	28.0	...	12.0	9.8
Dry cell batteries	770	17.6	1.1	18.0	11.9	11.1	33.1	14.8	17.1	18.1
Rechargeable lantern	81	17.0	1.1	19.6	16.8	18.9	13.2	11.5	19.2	14.7
Car battery	3	22.0	1.1	20.0	17.7	...	25.0	14.3	...	22.0
Electricity- Private supplier	45	58.4	3.8	59.5	...	30.0	50.0	55.0	52.6	66.1

Table 15. Firewood Use for Cooking and Sources

	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur	Beneficiary HHs	Comparison HHs
Firewood for Cooking and Baking										
Does your household use firewood for cooking?										
Sample size (N=)	908	100%		279	157	159	156	157	100%	100%
Yes	885	98.0%	6.4%	97.1%	100.0%	93.1%	100.0%	97.5%	97.3%	98.8%
No	18	2.0%	0.1%	2.9%	0.0%	3.8%	0.0%	2.5%	2.7%	1.2%
Firewood source - % of user households										
Collect	413	47%	3.0%	49%	36%	45%	58%	44%	41%	53%
Buy	270	31%	2.0%	28%	37%	34%	24%	31%	34%	27%
Collect and buy	202	23%	1.5%	24%	27%	21%	18%	24%	25%	20%

Table 16. Household members engaged in firewood collection , Number of Trips, Time Spend and Distance Travelled

	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur	Beneficiary HHs	Comparison HHs
Who in the HH collects Firewood? % of HHs who collect firewood										
Women	497	80.8%	5.3%	84.2%	61.6%	90.7%	89.8%	73.3%	79.3%	82.3%
Men	119	19.3%	1.3%	32.3%	41.2%	11.0%	9.5%	...	21.3%	17.4%
Girls	49	8.0%	0.5%	21.2%	8.2%	5.1%	10.5%	...	8.2%	7.7%
Boys	26	4.2%	0.3%	4.6%	7.1%	4.1%	2.5%	2.9%	4.9%	3.5%
Average Number of Trips per Month										
Women	496	5.4	0.48	5.3	4.7	6.8	5.0	5.2	5.1	5.3
Men	119	3.2	0.21	3.2	3.4	4.2	3.4	2.2	3.0	3.4
Girls	49	5.1	0.33	5.0	5.9	5.2	4.2	7.0	6.1	4.3
Boys	26	4.0	0.26	3.4	2.6	5.8	5.7	5.3	2.8	4.3
Average time spent in fire wood collection- Hours/Trip										
Women	496	6.7	0.58	8.3	6.2	3.6	8.0	5.0	7.1	7.0
Men	119	12.9	0.84	16.4	12.3	5.2	8.2	15.2	16.0	13.6
Girls	49	6.6	0.43	8.1	7.8	3.8	5.3	3.7	5.6	7.5
Boys	26	8.1	0.53	8.7	8.4	4.5	5.3	13.3	8.2	9.0
Average distance travelled to fuel collection area –km/round trip										
Women	496	19.7	1.29	31.8	12.2	6.7	21.0	12.8	12.0	19.6
Men	119	28.6	1.87	70.9	16.1	7.8	14.9	10.2	15.0	31.9
Girls	49	25.8	1.69	34.1	30.6	7.7	15.4	30.0	30.3	25.7
Boys	26	16.9	1.29	26.3	17.1	10.5	6.7	7.0	...	12.4

Table 17. Firewood Consumption in households that use the fuel

	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur	Beneficiary HHs	Comparison HHs
Firewood Consumption per HH and per person - for households that use the fuel										
Firewood consumption per HH - kg/day	871	5.33	0.35	5.73	4.95	4.82	6.50	4.35	3.75	5.34
Firewood consumption per person - kg/day	871	0.82	0.05	0.93	0.77	0.72	0.94	0.65	0.57	0.85
Firewood and Charcoal consumption- Firewood Equivalent kg/HH/day										
Firewood and Charcoal consumption - Firewood Equivalent kg/person/day	903	6.38	0.42	7.09	6.17	6.25	6.70	5.15	5.19	6.13
Firewood and Charcoal consumption - Firewood Equivalent kg/person/day	903	0.99	0.06	1.15	0.98	0.92	0.97	0.78	0.80	0.98

Table 18. Energy consumption by number of persons in household

Fuelwood Equivalent kg/HH/day	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur	Beneficiary HHs	Comparison HHs
Family Size										
1	4	1.72	0.11	...	0.86	1.21	2.33	2.50		
2	15	3.71	0.25	3.71	2.19	1.38	...	1.29		
3	50	4.33	0.29	4.16	3.63	2.41	5.60	2.52		
4	58	5.33	0.35	4.92	4.77	3.51	5.04	3.75		
5	114	5.92	0.39	5.25	4.18	3.30	6.80	3.70		
6	123	6.40	0.42	5.50	3.89	6.63	6.30	4.73		
7	134	6.01	0.40	5.62	6.23	5.21	3.42	3.68		
8	135	6.74	0.45	6.17	5.40	4.16	7.46	4.99		
9	92	6.96	0.46	7.42	3.96	4.13	8.44	4.81		
10	66	7.29	0.48	7.05	6.19	7.35	3.46	4.85		
11	30	8.63	0.57	7.07	7.61	2.62	10.44	6.91		
12	26	8.66	0.57	6.67	4.27	10.25	11.16	0.86		
13	6	9.48	0.63	7.50	5.36	2.59	...	15.00		
14	8	3.59	0.24	2.07	2.70	...	5.00	2.45		
15	4	7.79	0.52	4.14	10.34	...	7.94	...		
16	2	3.25	0.22	...	...	...	3.67	1.65		
17	2	6.78	0.45	...	...	...	7.50	5.00		
18	1	2.73	0.18	...	...	...	2.45	...		
Fuelwood Equivalent kg/person/day										
Family Size										
1	4	1.72	0.11	...	0.86	1.21	2.33	2.50		
2	15	1.85	0.12	2.14	2.00	0.69	...	1.00		
3	50	1.44	0.10	1.54	1.47	1.06	1.91	1.08		
4	58	1.33	0.09	1.45	1.61	1.04	1.42	0.99		
5	114	1.18	0.08	1.28	1.35	0.76	1.36	0.92		
6	123	1.07	0.07	1.16	0.74	1.25	1.07	0.90		
7	134	0.86	0.06	0.96	1.01	1.02	0.48	0.67		
8	135	0.84	0.06	0.95	0.80	0.70	0.98	0.73		
9	92	0.77	0.05	0.97	0.59	0.70	0.96	0.57		
10	66	0.73	0.05	0.99	0.76	0.83	0.40	0.57		
11	30	0.78	0.05	0.72	0.71	0.49	1.01	0.76		
12	26	0.72	0.05	0.63	0.41	0.93	0.94	0.09		
13	6	0.73	0.05	0.91	0.65	0.36	...	1.15		
14	8	0.26	0.02	0.33	0.19	...	0.36	0.23		
15	4	0.52	0.03	0.28	0.74	...	0.53	...		
16	2	0.20	0.01	...	...	...	0.23	0.19		
17	2	0.40	0.03	...	...	...	0.50	0.29		
18	1	0.15	0.01	...	...	...	0.15	...		

Table 19. Firewood consumption by Stove type, kg/person/day

	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur	Beneficiary HHs	Comparison HHs
When HHs using combination of stoves										
All Stoves	885	0.82	0.05	0.94	0.77	0.72	0.94	0.65		
Open-fire	598	0.86	0.06	1.00	0.80	0.79	0.95	0.69		
SAFE FES	326	0.64	0.04	0.74	0.68	0.61	0.56	0.50		
Saving of FES, kg/person/day		0.22		0.26	0.12	0.19	0.40	0.19		
		25.7%		26%	15%	23%	42%	27%		
When HH uses specific stove only										
Firewood consumption by Stove type, kg/person/day										
All Stoves	885	0.82	0.05	0.94	0.77	0.72	0.94	0.65		
Open-fire	501	0.92	0.06	1.03	0.82	0.86	1.02	0.79		
SAFE FES	39	0.57	0.04	0.40	0.78	0.42	0.69	0.68		
Saving of FES, kg/person/day		0.35		0.63	0.04	0.44	0.33	0.11		
		38.2%		61%	4%	51%	33%	14%		
Expenditure on Firewood										
Households using firewood (n=)	885	472		139	100	82	66	85		
Households buying firewood - %	270	30.5%	2.0%	28%	37%	34%	24%	31%		
Expenditure - SDG/month		100	6.5	89	66	54	109	90		

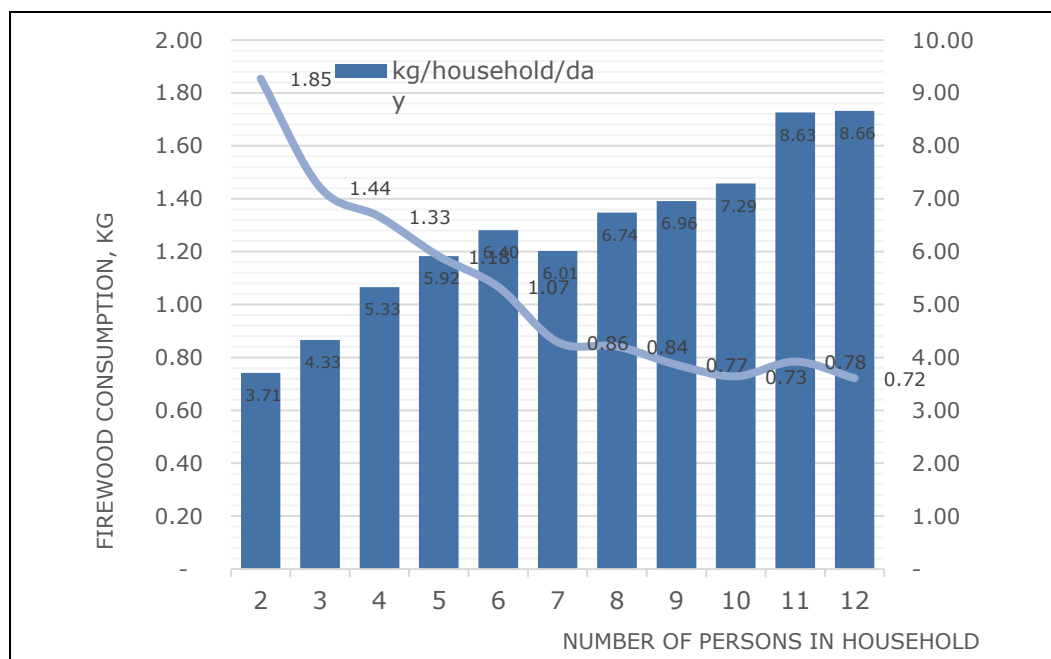


Figure 3. Firewood Consumption by Household Size

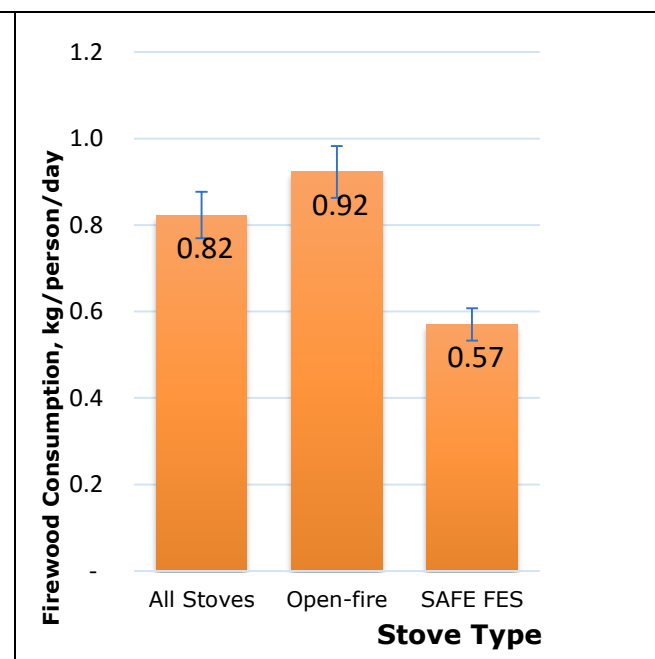


Figure 1. Firewood consumption by Stove Type

Table 20. Charcoal Use, Consumption and Expenditure

	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur	Beneficiary HHs	Comparison HHs
CHARCOAL for Cooking										
Do you use charcoal for cooking?										
Sample size (N=)	908	100.0%		279	157	159	156	157	100.0%	100.0%
Yes	429	47.5%	3.1%	54.1%	52.2%	55.3%	16.7%	52.2%	55.6%	38.6%
No	474	52.5%	3.4%	45.9%	47.8%	41.5%	83.3%	47.8%	44.4%	61.4%
Type of charcoal stove used, % of HH										
Metal stove	69	16.1%	1.0%	6.6%	17.1%	11.4%	11.5%	39.0%	12.2%	22.3%
Traditional mud stove	175	40.8%	2.7%	76.2%	9.8%	37.5%	30.8%	13.4%	49.0%	27.7%
Improved clay stove	174	40.6%	2.6%	33.1%	36.6%	60.2%	38.5%	37.8%	53.6%	19.9%
Other	14	3.3%	0.2%	0.0%	0.0%	1.1%	19.2%	9.8%	1.1%	6.6%
Charcoal use households, %		47.2%	3.1%	54.1%	52.2%	55.3%	16.7%	52.2%	14.5%	9.1%
Charcoal consumption- kg/household/month	429	29.1	1.90	27	39	36	15	20	27.8	31.2
Charcoal consumption- kg/person/month	429	1.0	0.06	0.9	1.3	1.2	0.5	0.7	0.9	1.0
Charcoal consumption- kg/household/day	429	1.0	0.09	0.9	1.3	1.2	0.5	0.7	0.9	1.0
Charcoal consumption- kg/person/day	429	0.2	0.014	0.1	0.2	0.2	0.1	0.1	0.1	0.2
Charcoal consumption- kg/household/month - FW Equivalent	429	56	5.33	52	76	69	30	39	54	60
Charcoal consumption- kg/person/month - FW Equivalent	429	4.5	0.430	4	7	5	2	3	4.2	5.1
Charcoal consumption- kg/household/day - FW Equivalent	429	1.9	0.18	1.7	2.5	2.3	1.0	1.3	1.8	2.0
Charcoal consumption- kg/person/day - FW Equivalent	429	0.3	0.028	0.3	0.4	0.3	0.1	0.2	0.3	0.3
Average Spending on charcoal										
Expenditure on charcoal - SDG/household/month	428	60.8	5.76	62.4	72.3	69.9	41.8	43.0	58.6	64.4
Expenditure on charcoal - SDG/HH/day	428	2.0	0.19	2.1	2.4	2.3	1.4	1.4	2.0	2.1

Table 21. Fire Fuel Briquettes for Cooking										
	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur	Beneficiary HHs	Comparison HHs
Households using briquettes for cooking										
Do you use briquettes for cooking?										
Sample size (N=)	473			143	85	80	90	75	473	405
Yes	110	23.3%	4.3%	39%	4%	28%	9%	28%	23%	6%
No	363	76.7%	7.9%	61%	96%	73%	91%	72%	77%	94%
Mean briquette consumed, Units/HH/month	135	27.8	1.8	37.7	38.3	18.8	19.0	12.4	29.2	
Briquettes purchased, units/HH/month	41	4.8	0.31	-	33.3	3.0	13.9	12.6	5.1	

Table 22. SAFE Participants Types of Activities									
	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur	
Sample Size (N=)									
SAFE project activities participated in?	474			143	85	81	90	75	
Fuel Efficient Stoves	383			143	67	74	42	57	
Fire Fuel Briquettes	227			119	36	38	14	20	
Community forestry (nursery and planting)	163			58	25	14	49	17	
Income generating trees	53			37	10	3	3	-	
Income Generating Activities	143			86	12	33	-	12	
Adult literacy, sensitization, hygiene, child care, health and nutrition	120			86	5	14	12	3	

Table 23. Relevance of SAFE project activities

	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur
To What extent are SAFE project relevant to your needs and Priorities?								
Highly Relevant								
Fuel Efficient Stoves	300	78.3%	6.3%	80%	73%	86%	86%	65%
Fire Fuel Briquettes	136	59.9%	3.7%	56%	53%	68%	86%	60%
Community forestry (nursery and planting)	121	74.2%	3.9%	83%	44%	64%	88%	59%
Income generating trees	25	47.2%	1.4%	38%	80%	67%	33%	#DIV/0!
Income Generating Activities	97	67.8%	3.4%	65%	100%	67%	#DIV/0!	58%
Adult literacy, sensitization, hygiene, child care, health and nutrition	83	69.2%	3.1%	66%	40%	93%	67%	100%
Relevant								
Fuel Efficient Stoves	60	15.7%	1.3%	17%	12%	11%	7%	28%
Fire Fuel Briquettes	50	22.0%	1.4%	33%	6%	11%	7%	20%
Community forestry (nursery and planting)	23	14.1%	0.7%	16%	12%	7%	8%	35%
Income generating trees	9	17.0%	0.5%	24%	0%	0%	0%	#DIV/0!
Income Generating Activities	35	24.5%	1.2%	30%	0%	12%	#DIV/0!	42%
Adult literacy, sensitization, hygiene, child care, health and nutrition	29	24.2%	1.1%	34%	0%	0%	0%	0%
Somewhat Relevant								
Fuel Efficient Stoves	14	3.7%	0.3%	3%	4%	3%	5%	5%
Fire Fuel Briquettes	10	4.4%	0.3%	3%	6%	5%	7%	5%
Community forestry (nursery and planting)	7	4.3%	0.2%	0%	12%	7%	4%	6%
Income generating trees	-	0.0%	#NUM!	0%	0%	0%	0%	#DIV/0!
Income Generating Activities	4	2.8%	0.1%	2%	0%	6%	#DIV/0!	0%
Adult literacy, sensitization, hygiene, child care, health and nutrition	1	0.8%	0.0%	1%	0%	0%	0%	0%
Not Relevant								
Fuel Efficient Stoves	8	2.1%	0.2%	0%	9%	0%	2%	2%
Fire Fuel Briquettes	4	1.8%	0.1%	0%	6%	0%	0%	10%
Community forestry (nursery and planting)	6	3.7%	0.2%	0%	24%	0%	0%	0%
Income generating trees	-	0.0%	#NUM!	0%	0%	0%	0%	#DIV/0!
Income Generating Activities	1	0.7%	0.0%	1%	0%	0%	#DIV/0!	0%
Adult literacy, sensitization, hygiene, child care, health and nutrition	1	0.8%	0.0%	0%	20%	0%	0%	0%

Table 24. Timeliness of SAFE project activities

	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur
To what extent were SAFE project activities timely?								
Very Timely								
Fuel Efficient Stoves	257	67.1%	6.7%	66%	69%	74%	74%	54%
Fire Fuel Briquettes	103	45.4%	5.9%	35%	53%	58%	57%	60%
Community forestry (nursery and planting)	89	54.6%	8.4%	38%	40%	50%	86%	47%
Income generating trees	20	37.7%	10.2%	27%	70%	67%	33%	#DIV/0!
Income Generating Activities	62	43.4%	7.1%	30%	100%	61%	#DIV/0!	33%
Adult literacy, sensitization, hygiene, child care, health and nutrition	58	48.3%	8.6%	42%	20%	93%	67%	0%
Timely								
Fuel Efficient Stoves	96	25.1%	2.5%	28%	18%	19%	19%	39%
Fire Fuel Briquettes	55	24.2%	3.2%	33%	8%	21%	21%	10%
Community forestry (nursery and planting)	43	26.4%	4.0%	43%	20%	7%	8%	47%
Income generating trees	12	22.6%	6.1%	30%	10%	0%	0%	#DIV/0!
Income Generating Activities	58	40.6%	6.6%	56%	0%	12%	#DIV/0!	50%
Adult literacy, sensitization, hygiene, child care, health and nutrition	47	39.2%	7.0%	50%	40%	0%	0%	67%
Somewhat Timely								
Fuel Efficient Stoves	20	5.2%	0.5%	6%	3%	4%	7%	7%
Fire Fuel Briquettes	35	15.4%	2.0%	23%	3%	5%	21%	10%
Community forestry (nursery and planting)	15	9.2%	1.4%	17%	4%	7%	4%	6%
Income generating trees	2	3.8%	1.0%	5%	0%	0%	0%	#DIV/0!
Income Generating Activities	16	11.2%	1.8%	13%	0%	9%	#DIV/0!	17%
Adult literacy, sensitization, hygiene, child care, health and nutrition	9	7.5%	1.3%	9%	20%	0%	0%	0%
Not Timely								
Fuel Efficient Stoves	8	2.1%	0.2%	1%	7%	3%	0%	0%
Fire Fuel Briquettes	7	3.1%	0.4%	2%	6%	0%	0%	15%
Community forestry (nursery and planting)	9	5.5%	0.8%	0%	28%	7%	2%	0%
Income generating trees	-	0.0%	#NUM!	0%	0%	0%	0%	#DIV/0!
Income Generating Activities	-	0.0%	#NUM!	0%	0%	0%	#DIV/0!	0%
Adult literacy, sensitization, hygiene, child care, health and nutrition	-	0.0%	#NUM!	0%	0%	0%	0%	0%

Table 25. Adequacy of SAFE Project activities

	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur
To what extent were the support by Project activities adequate?								
Very Adequate								
Fuel Efficient Stoves	173	45.2%	4.5%	36%	66%	65%	55%	12%
Fire Fuel Briquettes	74	32.6%	4.2%	24%	53%	50%	43%	10%
Community forestry (nursery and planting)	66	40.5%	6.2%	36%	40%	50%	53%	12%
Income generating trees	23	43.4%	11.7%	35%	70%	67%	33%	#DIV/0!
Income Generating Activities	40	28.0%	4.6%	12%	100%	52%	#DIV/0!	8%
Adult literacy, sensitization, hygiene, child care, health and nutrition	37	30.8%	5.5%	28%	20%	79%	0%	33%
Adequate								
Fuel Efficient Stoves	78	20.4%	2.0%	29%	10%	12%	21%	21%
Fire Fuel Briquettes	35	15.4%	2.0%	21%	3%	13%	29%	0%
Community forestry (nursery and planting)	35	21.5%	3.3%	38%	0%	7%	16%	24%
Income generating trees	5	9.4%	2.5%	14%	0%	0%	0%	#DIV/0!
Income Generating Activities	47	32.9%	5.4%	49%	0%	9%	#DIV/0!	17%
Adult literacy, sensitization, hygiene, child care, health and nutrition	29	24.2%	4.3%	31%	0%	14%	0%	0%
Somewhat Adequate								
Fuel Efficient Stoves	37	9.7%	0.8%	16%	1%	4%	5%	14%
Fire Fuel Briquettes	49	21.6%	2.8%	34%	3%	3%	14%	20%
Community forestry (nursery and planting)	18	11.0%	1.7%	12%	4%	7%	10%	24%
Income generating trees	4	7.5%	2.0%	11%	0%	0%	0%	#DIV/0!
Income Generating Activities	21	14.7%	2.4%	22%	0%	3%	#DIV/0!	8%
Adult literacy, sensitization, hygiene, child care, health and nutrition	24	20.0%	3.6%	28%	0%	0%	0%	0%
Not Adequate								
Fuel Efficient Stoves	91	24%	2.4%	17%	21%	19%	19%	53%
Fire Fuel Briquettes	38	17%	2.2%	10%	11%	18%	14%	65%
Community forestry (nursery and planting)	33	20%	3.1%	7%	48%	7%	18%	41%
Income generating trees	1	2%	0.5%	0%	10%	0%	0%	#DIV/0!
Income Generating Activities	26	18%	3.0%	14%	0%	18%	#DIV/0!	67%
Adult literacy, sensitization, hygiene, child care, health and nutrition	23	19%	3.4%	12%	60%	0%	67%	67%

Table 26. Benefits of the SAFE Project

	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur
What have been the benefits of the SAFE Project?								
Offers additional/new source of livelihood	124	26.2%	2.4%	39.2%	0.0%	67.9%	14.4%	0.0%
Improves hygiene and health	98	20.7%	1.9%	25.9%	0.0%	51.9%	21.1%	0.0%
Helps save the environment/reduces deforestation	113	23.8%	2.1%	38.5%	0.0%	49.4%	20.0%	0.0%
Improves crop production and productivity	22	4.6%	0.4%	5.6%	0.0%	8.6%	7.8%	0.0%
Allows women to participate in HH decision-making	76	16.0%	1.4%	26.6%	0.0%	25.9%	18.9%	0.0%
Helps women be more active in the community	126	26.6%	2.4%	48.3%	0.0%	43.2%	24.4%	0.0%
Helps bring community come together	95	20.0%	1.8%	38.5%	0.0%	34.6%	13.3%	0.0%
Makes women and girls more safe	92	19.4%	1.7%	30.8%	0.0%	32.1%	24.4%	0.0%
Offers more time for HH and social activities	96	20.3%	1.8%	30.8%	0.0%	38.3%	23.3%	0.0%
Other	9	1.9%	0.2%	3.5%	0.0%	4.9%	0.0%	0.0%

Table 27. Persons Trained and Engaged in IGAs

	N=		Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur
Persons Trained in and Engaged in IGAs, %									
Improved Agri practices	19	59%		5.3%	0%	50%	...	86%	55%
Seedlings for sale	21	39%		3.5%	13%	67%	0%	77%	60%
Horticulture (cabbage, tomatoes, fruits)	2	17%		1.5%	9%	100%	...	...	...
Forest products (gum Arabica)	3	15%		1.4%	0%	100%	100%	...	100%
Food processing (juice, bread, biscuits)	14	33%		3.0%	18%	100%	47%	...	50%
Fuel Efficient Stoves	126	54%		4.9%	26%	64%	72%	86%	74%
Fire Fuel Briquettes	36	30%		2.7%	4%	78%	41%	88%	80%
Handicraft	9	17%		1.6%	9%	...	100%	...	50%
Black smith, welding, carpentry	1	50%		4.5%	...	...	50%	...	...
Tailoring/kitting	7	88%		7.9%	...	...	88%	...	...
Barber/beauty shop	-	...		...	...	...	...	...	...
Other	3	75%		6.8%	0%	...	...	100%	...

Table 28. INCOME from IGAs

	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur
IGA participants reported CASH INCOME from IGAs Last Month								
Improved Agri practices	2	10.5%	5.3%	-	-	-	2	-
Seedlings for sale	8	38.1%	3.5%	1	-	-	5	2
Horticulture (cabbage, tomatoes, fruits)	1	50.0%	1.5%	1	-	-	-	-
Forest products (gum Arabica)	-	0.0%	1.4%	-	-	-	-	-
Food processing (juice, bread, biscuits)	9	64.3%	3.0%	3	1	5	-	-
Fuel Efficient Stoves	81	64.3%	4.9%	24	4	28	8	17
Fire Fuel Briquettes	14	38.9%	2.7%	1	1	2	1	9
Handicraft	7	77.8%	1.6%	3	-	4	-	-
Black smith, welding, carpentry	1	100.0%	4.5%	-	-	1	-	-
Tailoring/kitting	1	14.3%	7.9%	-	-	1	-	-
Barber/beauty shop	-	...	...	-	-	-	-	-
Other	-	0.0%	6.8%	-	-	-	-	-
CASH Earned from IGAs Last month, % of Respondents								
Improved Agri practices	2	10.5%	0.9%	...	0%	...	17%	0%
Seedlings for sale	8	38.1%	3.4%	33%	0%	...	50%	33%
Horticulture (cabbage, tomatoes, fruits)	1	50.0%	4.5%	100%	0%	...	...	...
Forest products (gum Arabica)	-	...	...	...	...	...	...	...
Food processing (juice, bread, biscuits)	9	100.0%	9.0%	100%	100%	100%	...	...
Fuel Efficient Stoves	81	100.0%	9.0%	100%	100%	100%	100%	100%
Fire Fuel Briquettes	14	100.0%	9.0%	100%	100%	100%	100%	100%
Handicraft	7	100.0%	9.0%	100%	...	100%	...	...
Black smith, welding, carpentry	1	100.0%	9.0%	...	...	100%	...	...
Tailoring/kitting	1	100.0%	9.0%	...	...	100%	...	...
Barber/beauty shop	-	...	...	...	...	...	...	...
Other	-	...	...	...	...	...	...	...
CASH Earned from IGAs Last month, SDG								
Improved Agri practices	2	40	0.9%	...	...	...	40	...
Seedlings for sale	8	88	3.4%	100	...	...	109	30
Horticulture (cabbage, tomatoes, fruits)	1	1,000	4.5%	1,000	...	...	...	...
Forest products (gum Arabica)	-	...	...	...	...	...	...	...
Food processing (juice, bread, biscuits)	9	287	9.0%	67	40	468	...	...
Fuel Efficient Stoves	81	159	9.0%	107	58	300	81	59
Fire Fuel Briquettes	14	26	9.0%	70	30	51	40	14
Handicraft	7	123	9.0%	123	...	123	...	...
Black smith, welding, carpentry	1	1,000	9.0%	...	...	1,000	...	...
Tailoring/kitting	1	56	9.0%	...	...	56	...	...
Barber/beauty shop	-	...	...	...	...	...	...	...
Other	-	...	...	...	...	...	...	...
CASH Earned from IGAs Last 12 months, % of Respondents								
Improved Agri practices	5	26.3%	2.4%	-	-	-	3	2
Seedlings for sale	11	52.4%	4.7%	1	-	-	6	4
Horticulture (cabbage, tomatoes, fruits)	1	50.0%	4.5%	1	-	-	-	-

Forest products (gum Arabica)	-	0.0%	..	-	-	-	-	-
Food processing (juice, bread, biscuits)	9	64.3%	5.8%	3	1	5	-	-
Fuel Efficient Stoves	86	68.3%	6.1%	26	5	28	8	19
Fire Fuel Briquettes	14	38.9%	3.5%	1	1	2	1	9
Handicraft	7	77.8%	7.0%	3	-	4	-	-
Black smith, welding, carpentry	3	300.0%	27.0%	-	-	1	1	1
Tailoring/kitting	1	14.3%	1.3%	-	-	1	-	-
Barber/beauty shop	2	...	...	-	-	-	2	-
Other	1	33.3%	3.0%	-	-	-	1	-
CASH Earned from IGAs, Mean SDG 12 months								
Improved Agri practices	5	258	23	...	...	...	380	75
Seedlings for sale	11	1,226	110	200	...	...	2,065	225
Horticulture (cabbage, tomatoes, fruits)	1	4,000	360	4,000	...	...	...	...
Forest products (gum Arabica)	-	...	...	...	...	...	...	...
Food processing (juice, bread, biscuits)	9	757	68	163	980	1,068	...	...
Fuel Efficient Stoves	86	920	83	539	556	1,846	777	234
Fire Fuel Briquettes	14	187	17	600	90	86	480	141
Handicraft	7	686	62	177	...	1,068	...	...
Black smith, welding, carpentry	3	1,001	90	...	...	3,000	2	2
Tailoring/kitting	1	50	5	...	...	50	...	...
Barber/beauty shop	2	2	0	...	...	...	2	...
Other	1	70	6	...	...	...	70	...

Table 29. Purpose for which Cash income from IGAs was used for

	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur
Food purchase	24%	0.0	...	62.3%	74.4%	65.1%	57.4%	61.1%
Water	4%	14.6	...	10.0%	25.0%	11.3%	9.5%	20.0%
House rent	1%	20.5	...	20.0%	50.0%	...	2.0%	10.0%
Medical care	8%	18.9	...	25.8%	20.0%	23.1%	15.4%	11.3%
Education	11%	25.3	...	27.3%	16.5%	42.1%	15.2%	11.4%
Energy for cooking and lighting	8%	13.6	...	24.4%	65.0%	10.0%	3.9%	7.9%
Transportation and communication	4%	5.9	...	...	...	11.3%	1.3%	5.3%
Clothing and footwear	5%	24.3	...	27.5%	50.0%	28.8%	23.0%	16.9%
Social	5%	16.0	...	41.0%	100.0%	6.0%	9.8%	9.3%
Purchase of household durables	11%	43.4	...	56.6%	10.0%	57.5%	38.0%	32.5%
Investment in income generating activities	3%	23.2	...	25.0%	...	10.0%	10.0%	36.7%
Saving	3%	15.2	...	...	...	17.5%	3.1%	67.5%

Table 30. Major constraints for business start-up, % of Respondents

	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur
Financial problem - Lack of start-up, working capital	202	39%	...	1%	0%	0%	9%	13%
Lack of premises and infrastructure (transport, water, power, etc.)	96	18%	...	1%	1%	0%	4%	9%
Production and technical problems (availability, quality of raw materials, lack of tools)	134	26%	...	1%	0%	0%	2%	7%
Marketing (competition, lack of information, seasonality of sales)	52	10%	...	0%	0%	0%	2%	0%
Lack of business skills (marketing, accounting, business planning)	22	4%	...	0%	0%	0%	1%	1%
Legal and regulatory (licensing, registration, taxation)	8	2%	...	0%	1%	0%	0%	0%
Other	7	1%	...	0%	0%	0%	0%	0%

Table 31. Beneficiary Satisfaction

	N=	Statistic	MOE (95% CL)	N. Darfur	E. Darfur	S. Darfur	C. Darfur	W. Darfur
Overall, to what extent satisfied are you with SAFE Project activities?								
Highly Satisfied								
Fuel Efficient Stoves	246	76.2%	6.9%	83.2%	72.7%	84.5%	82.1%	49.0%
Fire Fuel Briquettes	93	53.1%	4.8%	34.2%	70.6%	73.3%	54.5%	66.7%
Community forestry (nursery and planting)	86	63.2%	4.8%	72.5%	29.4%	70.0%	75.6%	35.3%
Income generating trees (gum Arabica)	11	44.0%	4.0%	35.0%	...	75.0%	...	100.0%
Income Generating Activities	20	62.5%	5.6%	62.5%	33.3%	66.7%	100.0%	100.0%
Agri business centres (ABCs)	49	54.4%	4.9%	48.1%	100.0%	76.9%	100.0%	12.5%
Adult literacy	7	46.7%	4.2%	44.4%	33.3%	50.0%	...	100.0%
Hygiene practice	52	55.3%	5.0%	50.8%	25.0%	92.3%	60.0%	0.0%
Satisfied								
Fuel Efficient Stoves	50	15.5%	1.4%	16.8%	10.9%	8.5%	10.3%	31.4%
Fire Fuel Briquettes	52	29.7%	2.7%	48.1%	11.8%	16.7%	9.1%	19.0%
Community forestry (nursery and planting)	39	28.7%	2.6%	27.5%	47.1%	10.0%	24.4%	35.3%
Income generating trees (gum Arabica)	11	44.0%	4.0%	55.0%	...	0.0%	...	0.0%
Income Generating Activities	9	28.1%	2.5%	33.3%	33.3%	0.0%	0.0%	0.0%
Agri business centres (ABCs)	30	33.3%	3.0%	44.4%	0.0%	3.8%	0.0%	62.5%
Adult literacy	5	33.3%	3.0%	44.4%	33.3%	0.0%	...	0.0%
Hygiene practice	34	36.2%	3.3%	43.1%	25.0%	0.0%	40.0%	50.0%
Somewhat Satisfied								
Fuel Efficient Stoves	17	5.3%	0.5%	0.0%	9.1%	0.0%	7.7%	17.6%
Fire Fuel Briquettes	18	10.3%	0.9%	16.5%	5.9%	0.0%	18.2%	4.8%
Community forestry (nursery and planting)	7	5.1%	0.5%	0.0%	5.9%	10.0%	0.0%	29.4%
Income generating trees (gum Arabica)	2	8.0%	0.7%	10.0%	...	0.0%	...	0.0%
Income Generating Activities	2	6.3%	0.6%	4.2%	33.3%	0.0%	0.0%	0.0%
Agri business centres (ABCs)	8	8.9%	0.8%	7.4%	0.0%	7.7%	0.0%	25.0%
Adult literacy	1	6.7%	0.6%	11.1%	0.0%	0.0%	...	0.0%
Hygiene practice	5	5.3%	0.5%	6.2%	0.0%	0.0%	0.0%	50.0%
Not Satisfied								
Fuel Efficient Stoves	9	2.8%	0.3%	0.0%	7.3%	5.6%	0.0%	2.0%
Fire Fuel Briquettes	11	6.3%	0.6%	1.3%	11.8%	6.7%	18.2%	9.5%
Community forestry (nursery and planting)	3	2.2%	0.2%	0.0%	17.6%	0.0%	0.0%	0.0%
Income generating trees (gum Arabica)	-	0.0%	..	0.0%	...	0.0%	...	0.0%
Income Generating Activities	-	0.0%	..	0.0%	0.0%	0.0%	0.0%	0.0%
Agri business centres (ABCs)	2	2.2%	0.2%	0.0%	0.0%	7.7%	0.0%	0.0%
Adult literacy	1	6.7%	0.6%	0.0%	33.3%	0.0%	...	0.0%
Hygiene practice	2	2.1%	0.2%	0.0%	50.0%	0.0%	0.0%	0.0%

Results from Firewood Consumption Measurement Survey

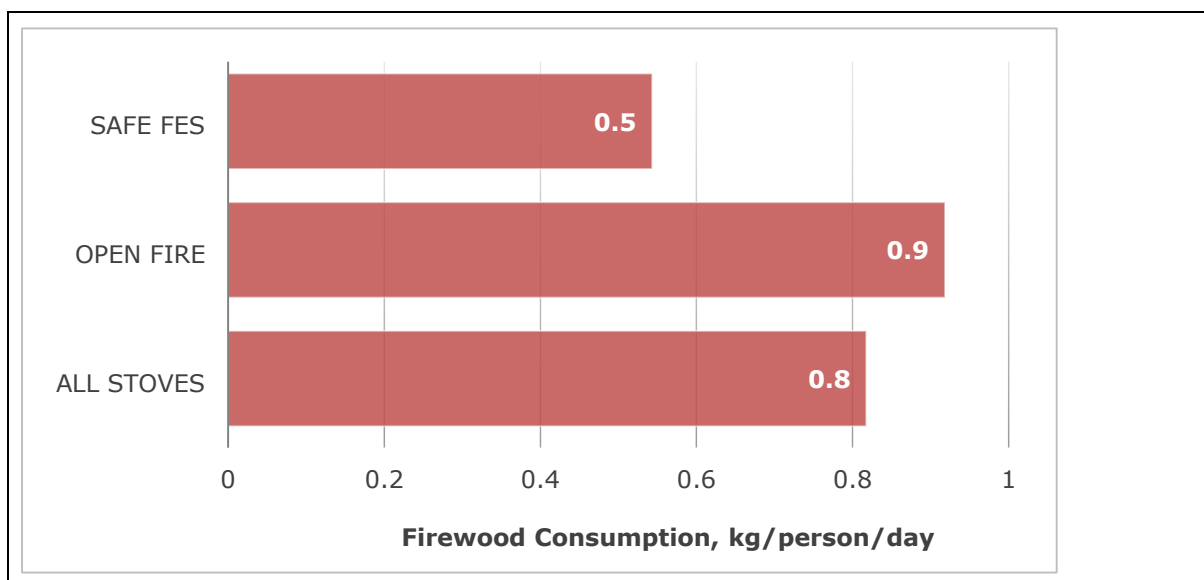


Figure 1. Fuelwood Consumption by Stove Type

Sample distribution by state and Stove type					
	N=	All	N. Darfur	E. Darfur	S. Darfur
Sample distribution by state and Stove type					
Open fire	142	73%	57	59	26
SAFE Promoted FES	52	27%	29	-	23
Total	194	100%	86	59	49
Firewood consumption by Stove type, kg/household/day					
Open-fire and SAFE FES		5.6	5.5	5.9	5.2
Open fire		6.2	6.4	5.9	6.2
SAFE FES		3.9	3.6	-	4.1
Fuel saving of FES over the open-fire		38%	43%	-	34%
Firewood consumption by Stove type, kg/person/day					
Open-fire and SAFE FES		0.8	0.7	0.9	0.8
Open fire		0.9	0.9	0.9	0.9
SAFE FES		0.5	0.5	-	0.6
		41%	48%	-	30%
Cooking time (hours) by Stove type, kg/person/day					
Open-fire and SAFE FES		2.62	3.2	2.0	2.4
Open fire		2.74	3.6	2.0	2.5
SAFE FES		2.28	2.3	-	2.2
		17%	36%	-	12%

Table 1. Firewood consumption by Number of Persons in Household and Stove Type

Number of Persons in HH	Stove Type		
	Open-fire	SAFE FES	Open-fire and FES
1	-	-	-
2	1.5	-	1.5
3	1.0	0.9	1.0
4	1.0	0.5	0.9
5	1.1	0.5	0.9
6	1.0	0.5	0.9
7	1.0	0.6	0.9
8	0.8	0.6	0.8
9	0.8	0.5	0.7
10	0.8	0.4	0.6
11	0.7	0.4	0.6
12	0.5	-	0.5
13	0.4	-	0.4
14	-	-	-
15	0.4	-	0.4

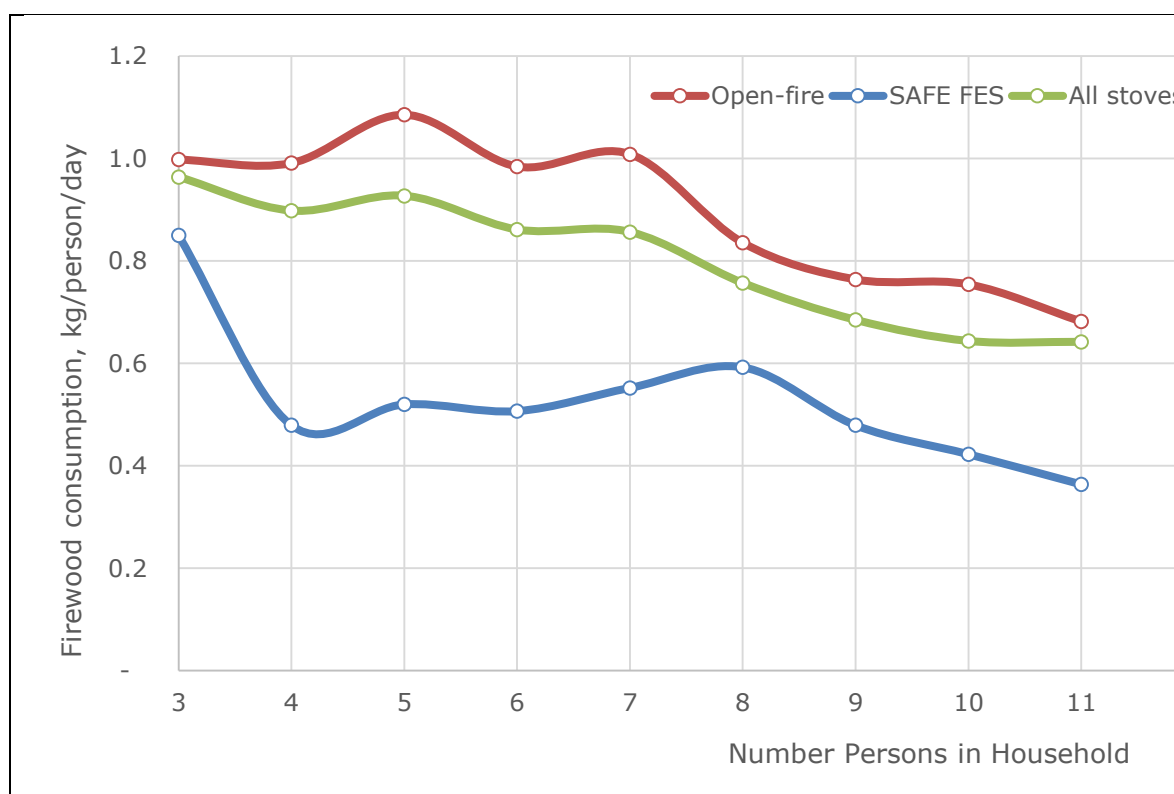


Figure 2. Firewood Consumption by Number of Persons in household and Stove Type

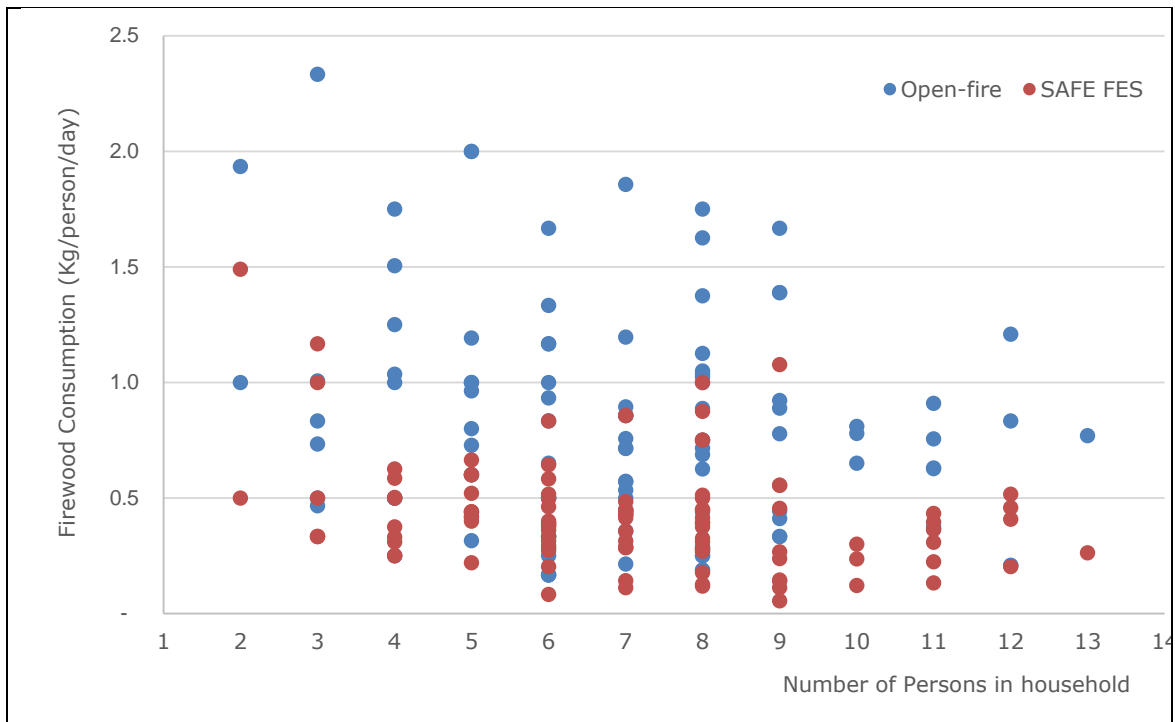


Figure 3. Variability of Firewood Consumption and Stove Type