

Safe Access to Firewood and Alternative Energy in North Darfur: An Appraisal Report



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of the World Food Programme.*

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List of Acronyms

BSF	Blanket Supplementary Feeding
CHF	Cooperative Housing Foundation International
DPA	Darfur Peace Agreement
FAO	Food and Agriculture Organization
FGD	Focus Group Discussion
FES	Fuel-Efficient Stove
FESWG	Fuel-Efficient Stoves Working Group
FFE	Food for Education
FFR	Food for Recovery
FFT	Food for Training
FFW	Food for Work
FNC	Forestry National Corporation
FSMS	Food Security Monitoring System
GAA	German Agro Action
GBV	Gender-Based Violence
GOS	Government of Sudan
IAP	Indoor Air Pollution
IASC	Inter-Agency Standing Committee
ICC	International Criminal Court
IDP	Internally Displaced Person
INGO	International Non Governmental Organization
IOM	International Organization for Migration
IRC	International Rescue Committee
JEM	Justice and Equality Movement
KAEDS	Kutum Agriculture, Extension and Development Society
KSHC	Kebkabiya Smallholders Charity
LPG	Liquid Petroleum Gas
NGO	Non-Governmental Organizations
PDM	Post Distribution Monitoring
RCSO	Resident Coordinator Support Office
SAFE	Safe Access to Firewood and Alternative Energy
SDG	Sudanese Pound
SF	Supplementary Feeding
SLA-AW	Sudan Liberation Army-Abdul Wahid
SLA-MM	Sudan Liberation Army-Minnie Mannawi
SLM/A	Sudan Liberation Movement/Army
SRCS	Sudanese Red Crescent Society
SSB	Stabilized Soil Block
SUDO	Sudan Social Development Organization
TF	Therapeutic Feeding
UN	United Nations
UNAMID	United Nations and African Union Mission in Darfur
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFPA	United Nations Population Fund

UNHABITAT	United Nations Human Settlements Programme
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children Fund
UNIFEM	United Nations Development Fund for Women
WFP	World Food Programme
WHO	World Health Organization

Executive Summary

In 2007 WFP agreed to co-chair the Inter-Agency Standing Committee (IASC) Task Force on Safe Access to Firewood and Alternative Energy in Humanitarian Settings (SAFE) together with UNHCR and the Women's Refugee Commission. This triggered a global analysis of the protection challenges associated with the collection and use of fuel for cooking – activities closely related to WFP's core mandate. As a result, WFP strengthened its commitment to work in partnership with other relevant actors to promote safe access to fuel in humanitarian settings.

Following the launch of the SAFE guidance material in April 2009, WFP decided to undertake two feasibility studies in North Darfur and Uganda, where fuel scarcity is negatively affecting WFP beneficiaries. The purpose of these studies is to better understand how beneficiary are coping with fuel scarcity and the related consequences, to take stock of existing responses by both WFP and partners, and to propose a comprehensive approach that addresses human and environmental protection, livelihoods, food and nutrition.

Main Findings

Firewood and charcoal are the predominant sources of household energy in North Darfur. Firewood is most frequently used by households in rural areas, while charcoal seems to be more common in urban settings.

Prior to the conflict, households secured firewood through collection of dead wood or branches. However, massive displacement and concentration of the population in restricted areas have caused severe environmental degradation. Many households are now forced to purchase firewood in the market at a very high price.

Since the onset of the conflict, firewood collection has become dangerous: women, the main collectors, risk rape, while men if accompanying women risk being killed. Findings from the mission confirmed that these risks have worsened. As natural resources in areas around camps and towns have depleted, women are forced to travel longer distances to collect firewood, grass and fodder, increasing the risk of being raped. At the same time, where collection is no longer possible, there is evidence of some households resorting to negative measures such as skipping meals, undercooking, and selling food rations to cope with the high price of firewood. Women reported spending their full day salary, as domestic workers or brick makers, to buy firewood. In some schools lack of firewood is becoming an impediment to children's attendance.

The conflict has had a devastating impact on traditional livelihoods. Herding, farming, trade and labour migration have become progressively difficult with displacement and the loss of assets, including livestock. In the absence of other opportunities, people have become dependant on petty trade and daily labour, especially in urban areas.

At the time of the mission, the main sources of daily labour in El Fasher were brick making and domestic labour, mainly due to the high demand for housing

and related services by UNAMID personnel and other international organizations. Another major source of income is the collection and sale of natural resources such as grass, fodder and firewood.

In this context, relief food has become, and continues to be, a critical source of income transfer, especially for IDPs and poor households in rural areas. Food aid also protects people from resorting to risky livelihoods strategies, including a reduction in firewood collection in unsafe locations¹. Yet, growing pressures on the international community for the development of viable return and recovery strategies coupled with cuts in food aid by donors, have made the need for practical alternatives to food aid more urgent.

Past years have seen a proliferation of attempts to address one or another of these issues. However, results have been inadequate for several reasons. Humanitarian access and capacity have been limited by insecurity and further curtailed by the Government's expulsion of NGOs in March 2009. Firewood patrols are still not enough to cover the actual needs of the population, with mixed performance by UNAMID. While several organizations have disseminated fuel-efficient stoves (FES), the projects have suffered from poor design and weak monitoring and evaluation². While there is evidence of reduced firewood consumption when a fuel-efficient stove is used, little attention has been paid to the collection of firewood as an income source and the need to create alternative livelihood options for women. Furthermore, most FES programmes have been focused on mitigating the impact of firewood consumption on the environment, neglecting investment in afforestation.

Recently practitioners and researchers have recognized that an integrated approach is required for an effective humanitarian response. An integrated approach means addressing all aspects of the issue of cooking fuel – livelihood, protection and environment – in a comprehensive manner.

Proposed approach

At present, WFP is the agency with the greatest access and presence, either directly or through its partners, and with the biggest ongoing operations in terms of coverage and beneficiary caseload in North Darfur. Its demonstrated performance in addressing lifesaving food distribution and in restoring the livelihoods (to date small scale) of conflict-affected and vulnerable populations provides a window of opportunity for increased investment. Building on these strengths, WFP proposes a four-pronged approach to addressing cooking fuel in North Darfur aimed at:

- 1) **Reducing the vulnerability of women** to rape and other forms of violence while searching for firewood through the scaling up and dissemination of fuel-efficient stoves;
- 2) **Creating alternatives to firewood collection and sale as the main form of livelihood activity** through an increased investment in FFT and FFW activities specifically targeted to women;

¹ Buchanan-Smith, M. and Jaspars, S. (2007), "Conflict, camps and coercion: the ongoing livelihoods crisis in Darfur", *Disasters* 31(S1): S57-S76, London: ODI.

² ProAct Network (2008), *Assessing the Effectiveness of Fuel-Efficient Stove Programming – A Darfur-wide Review*, p. 41.

- 3) **Reducing dependency on firewood in schools** through the introduction of fuel-efficient technologies, including LPG.
- 4) **Exploring and piloting innovative fuel-related technologies.**

The uniqueness of the WFP approach lies in the comprehensive set of objectives it intends to achieve in view of the multi-faceted implications of addressing the collection, supply and use of household fuel in North Darfur, and the investment in a stand-alone project with set of specific indicators and dedicated human and financial resources. Missing in previous attempts, this approach to address cooking fuel concerns in the region will allow WFP to monitor its implementation and to assess its impact on the targeted population.

1 Introduction

1.1 Background

The IASC Task Force on Safe Access to Firewood and Alternative Energy in Humanitarian Settings (SAFE) was created in March 2007. Its purpose was “to reduce exposure to violence, contribute to the protection of and ease the burden on those populations collecting wood in humanitarian settings worldwide, through solutions which will promote safe access to appropriate energy and reduce environmental impacts while ensuring accountability.” The Task Force was co-chaired by UNHCR, WFP and the Women’s Refugee Commission (working under the authority of Interaction). In addition, fourteen other IASC member and non-member agencies participated and contributed to the development of guidance material on how to ensure a coordinated, multi-sectoral fuel-strategy in humanitarian settings.

During its time as co-chair of the Task Force, WFP conducted a survey of more than 20 countries across Africa, Asia and the Americas to map out how firewood and cooking fuel have an impact on food and nutrition. The survey revealed that beneficiaries often resort to negative coping mechanisms to cook WFP food. These include women needing to collect firewood in dangerous environments, exposing them to the risk of rape and other forms of gender based violence; under-cooking food to save on fuel; skipping meals or selling part of their food rations to buy firewood or pay for milling costs.

In addition to exposing people to violence – especially women and young girls – these coping mechanisms are in many cases limiting the intake and nutritional absorption of WFP rations, reducing the impact our food assistance on relieving hunger and fighting under-nutrition.

Harvesting firewood for cooking fuel can also contribute to deforestation and the loss of important natural resources. In addition to the increased distance women and children have to travel to find available firewood and the increased exposure to risk of attack, environmental degradation also limits long-term livelihood opportunities in agriculture and forestry. As the linkages between climate change and food insecurity become more evident, the sustainable use of forests and natural resources are more critical.

WFP’s interest and involvement in beneficiary access to firewood has many facets: protection and safety of beneficiaries; effectiveness of food and nutrition interventions; and mitigation of and adaptation to climate change.

To address these challenges, WFP decided to undertake two feasibility studies in North Darfur and Uganda, where fuel scarcity is negatively affecting WFP beneficiaries. The purpose of these studies is to understand how beneficiaries are coping with fuel scarcity (and the related ramifications) in the two contexts, to take stock of existing responses by both WFP and partners, and to propose a comprehensive approach that addresses human and environmental protection and recovery, livelihoods, food and nutrition.

This report will inform the first set of SAFE activities in the field: a project on safe access to fuel and alternative energy in North Darfur.

1.2 Methodology

In preparation for the mission the team conducted an extensive desk review based on the material contained in the website of the International Network on Household Energy in Humanitarian Settings (an online info-sharing network created by the SAFE Task Force www.fuelnetwork.org), including studies on household energy interventions in humanitarian settings, and relevant WFP policies and guidance material. A framework of analysis and a set of questions were developed to guide focus group discussions and interviews with key informants in the field.

Preparatory meetings were held in Khartoum with a wide range of stakeholders, including WFP management and staff, UN agencies, donors and government representatives. The members of the mission introduced the purpose of the SAFE mission and the intended outputs, and further examined the situation of access to fuel and alternative energy in Sudan, and more specifically in North Darfur, and the current humanitarian response.

An eight-day mission to North Darfur followed. Meetings were held with the Protection Cluster and the Food Security and Livelihood working groups, and bilateral meetings were organized with relevant organizations such as UNHCR, UNFPA, Practical Action, FAO, the Resident Coordinator's Office and others. In addition, the team conducted two focus group discussions with women in Zam Zam and Abu Shouk camps near El Fasher.

Finally, two debriefing sessions were held with WFP management in both El Fasher and Khartoum to share findings and agree on ways forward.

1.3 Situation analysis

In March 2003, the Sudan Liberation Movement/Army (SLM/A) and the Justice and Equality Movement (JEM), two rebel groups representing Darfuris, launched a rebellion against the Government of Sudan (GoS).

The Government responded deploying troops and setting up local militias, the so-called *Janjaweed* (literally 'a man with a gun on a horse') formed primarily by nomadic pastoralists of Arab origins. The opposition are settled non-Arab farmers from various ethnic groups. Although the Government has always strongly denied any support to the *Janjaweed*, there is evidence of the militia conducting joint attacks with the Government forces against the African tribes, wearing the same uniforms, and being recruited into the regular army.

The insurgency is in part the result of the marginalization of Darfur, particularly by the Arab-dominated Government in Khartoum, and the Government's manipulation of the ethnic identities in Darfur feeding the opposition between Arab and non-Arab tribes through mobilization and support to the Arab militia. Competition over scarce environmental resources have exacerbated by ethnic rivalries and has become another important contributing factor to the conflict³.

³ For a detailed account of the history and origins of the current conflict refer to: Aklilu, Yacob, Babiker Badri, Rebecca Dale, Abdul Monim Osman, Helen Young. (2005), *Darfur: Livelihoods Under Siege*, Feinstein International Famine Centre, Tufts University, p. 12. For a better understanding of the environmental dimension of the conflict refer to: Brendan Bromwich, Dr Abuelgasim Abdalla Adam, Dr Abduljabbar Abdulla Fadul et al. (2007), *Darfur: Relief in a vulnerable environment*, Tearfund.

The signature of the Darfur Peace Agreement (DPA) in May 2006 ignited a further deterioration of the security situation in Darfur. The terms of the agreement caused divisions within the opposing groups, and, in the end, only one faction signed it, the Zaghawa-dominated SLA-MM⁴. As a result, the current conflict is between the Government and the non-DPA factions, namely the different groups that have splintered from the SLA. By January 2009, the crisis in Darfur had affected some 4.7 million people through displacement, looting and destruction of assets and livelihoods, out of a total estimated population of 7.5 million. Reportedly, nearly 2.7 million are IDPs⁵, of whom over 500,000 in North Darfur.

Widespread violence and human rights violations continued despite the deployment of UNAMID in 2007. Much of the violence in Darfur, including looting, burning of villages, rape of women, deliberate and targeted killings of civilians, and the resulting massive displacement, has been attributed to the government-aligned militias.⁶

In March 2009, the International Criminal Court (ICC) issued a warrant of arrest for Omar Al Bashir, President of Sudan, for war crimes and crimes against humanity. Mr. Al-Bashir is the first sitting Head of State to be charged with crimes in the Rome Statute and to receive an arrest warrant from the ICC⁷. He has been charged with the design and implementation of attacks against the civilian population of Darfur belonging largely to the Fur, Masalit, and Zaghawa ethnic groups. Following the warrant, the GoS further limited the delivery of humanitarian assistance, including delaying and denying of work permits and visas of the staff of international non-governmental organizations (INGOs), restricting access for humanitarian missions in the field, and ousting of 13 NGOs.

In addition to restricted movement due to continued insecurity, land occupation by both opposing and pro-government groups, severe shortages in basic services, and the allure of opportunities provided by the new urbanization are major impediments to the return of IDPs to their areas of origin.

1.4 Humanitarian access

Several factors continue to jeopardize humanitarian operations in North Darfur. Armed confrontations between Government of Sudan (GoS) forces and opposition groups, and inter-tribal fighting and clashes between rebel groups (splinters of the SLA), have limited the capacity and movement of humanitarian organizations. As of July 2009, 4,2% of the affected population could not be

⁴ The DPA led to a series of splits in the rebel movement. The SLA-Abdul Wahid is headed by a Fur lawyer, Abdul Wahid Muhammed Ahmad Nur, founder of the original SLM, and is the largest amongst the three factions that stemmed from the split. The SLA- Minni Mannawi (SLM/MM) is the only faction to have signed the peace accord in 2006. The SLA/M and JEM work together militarily, but have different agendas and objectives. For a detailed account of the history and developments of different rebel factions in Darfur see: <http://mondediplo.com/2007/03/09factions>, and Aklilu, Yacob, Babiker Badri, Rebecca Dale, Abdul Monim Osman, Helen Young. (2005), *Darfur: Livelihoods Under Siege*, Feinstein International Famine Centre, Tufts University, p. 35.

⁵ UN (2009), *Darfur Humanitarian Profile N. 34*, Office of UN Deputy Special Representative of the UN Secretary-General for Sudan UN Resident and Humanitarian Coordinator, p. 3.

⁶ Ibid.

⁷ <http://www.icc-cpi.int/NR/exeres/0EF62173-05ED-403A-80C8-F15EE1D25BB3.htm>, accessed October 2009.

assisted due to lack of accessibility, while some 50% of the population are in areas with only limited access⁸.

Humanitarian access has also been curtailed by an increase in targeted attacks against humanitarian workers and assets. Major threats facing humanitarians include direct attacks against personnel and assets, harassment of aid workers at check points and in areas near IDP camps, kidnapping, and robbing offices and residences. Car hijacking, and in particular of Land Rovers, is also common in North Darfur – viewed as a potential sources of income by rebel groups. In 2008 only, 277 humanitarian vehicles were hijacked, of which 110 were WFP contracted and fleet trucks. As a result, 2 drivers were killed, 42 abducted and four WFP-contracted drivers remain missing⁹. The frequency and extent of the attacks forced a number of organizations to suspend their activities. For example,, Médecins Sans Frontières evacuated staff from Tawilla and Shangil Tobaya after a series of assaults in August 2008. Similarly, German Agro Action (GAA), a key partner of WFP, suspended its activities in Kutum in October 2008 due to insecurity, affecting the provision of food assistance to 450,000 beneficiaries. Following the kidnapping of two staff of the Irish NGO GOAL on the 3rd of July 2009, the head of WFP Kutum sub-office stayed in El Fasher for three months.

At the time of writing, travelling to Kutum was still limited to life-saving missions. Insecurity is also hampering activities in camps near the capital city El-Fasher. The mission had to be escorted by UNAMID armed personnel during the visit to Zam Zam IDP camp, which is only 17 km from the city.

Another factor contributing to limiting access is the decision of the Government to expel 13 INGOs and disband 2 national NGOs in March 2009. As a result, there are significant gaps in the delivery of humanitarian assistance, particularly in remote areas and in the sectors of protection, including GBV prevention and response, and water and sanitation. According to an analysis conducted by UNHCR, the majority of the expelled NGOs had projects on protection and human rights, including protection from GBV¹⁰.

1.5 Overview of WFP's assistance

WFP has been operating in North Darfur since 1987, when the North Darfur Area Office was first established in El Fasher. With the outbreak of the Darfur conflict in 2003, the office was expanded to respond to the increasing emergency needs of the population in the region.

With the support of three sub-offices in El Fasher, Kutum, and Kebkabiya, the WFP North Darfur Area Office currently assists a total of 1.5 million conflict-affected people, primarily through General Food Distribution¹¹. Within this, about 30% (460,000 people) are IDPs in either camps or host communities,

⁸ Source: OCHA Darfur. Limited access describes areas where full time presence of humanitarian workers is not possible, but visits are still allowed.

⁹ Ibid, p. 5.

¹⁰ The analysis covers the activities of 10 between national and international NGOs. Among the international were: Care, Cooperative Housing Foundation (CHF) International, International Rescue Committee (IRC), Mercy Corps, Oxfam, and Save the Children US; while the 2 national are: Sudo and Amel.

¹¹ GFD accounts for about 95% of WFP activities in North Darfur. WFP (2009), *World Food Programme Sudan – North Darfur Area Office*, August 2009.

while the remaining are “residents” living in food insecure areas. Assistance is provided as follows:

- IDP in camps: full monthly ration throughout the year.
- People in rural areas: seasonal support during the “hunger gap” or lean season for an average 4-5 months (full ration every two months) depending on the food security situation and the results of the post-harvest assessment.
- Mixed IDP-residents: full ration every two months throughout the year.

Other ongoing activities include:

- Blanket Supplementary Feeding (BSF) for children under five years old, which started in 2008 and targeting 271,000 children in both IDP camps and rural areas through the distribution of premix and vegetable oil¹².
- Supplementary and Therapeutic Feeding (SF/TF), often in partnership with UNICEF, which assists nearly 5,000 moderately malnourished children and pregnant and lactating women throughout North Darfur.
- Food for Education (FFE), which has been in existence in North Darfur since 1987. In 2009 the programme covered about 186,000 children in 417 schools, out of the 800 schools that exist throughout the region¹³.

In addition, some transitional programmes such as Food for Recovery (FFR), Food for Work (FFW) and Food for Training (FFT) have been implemented. Of particular relevance for this feasibility study is a project on fuel-efficient stoves led by FAO with the support of WFP’s food aid. The programme started in June 2009 and plans to target 32,500 women through FFT by the end of the year.

WFP recently launched a pilot project on milling vouchers to beneficiaries. According to WFP data, beneficiaries in North Darfur are bartering between 25 to 50% of their food ration to meet their milling needs – severely limiting their nutritional intake. The amount depends on the supply of food in the market as millers have to sell the food to earn money. In periods of over supply, for example after harvesting, the price of food generally drops, and the amount requested by millers increases.

To date, WFP is distributing milling vouchers to 42,000 IDP in Shangil and Shadad camps, with the plan to reach 380,000 beneficiaries across North Darfur in 2010¹⁴. In addition to improving the nutritional intake of families, vouchers are believed to relieve the pressure on households that, in the absence of alternative livelihood opportunities, can better meet other primary needs such as firewood.

The departure of NGOs in March 2009 has been highly problematic. At the time of writing, WFP was discussing with both local and remaining international NGOs opportunities for implementation of additional programmes in various areas throughout North Darfur. At the same time, UNAMID and the UN system

¹² The ration consists of Corn Soya Blend (CSB), Dried Skimmed Milk (DSM), Sugar and Vegetable Oil. It is distributed on a monthly basis as a dried premix alongside General Food Distribution. Blending is done in WFP warehouse in El Fasher with support from people from the local community, and then distributed throughout the region. There are currently 86 community people employed by WFP in this activity.

¹³ WFP (2009), *World Food Programme Sudan – North Darfur Area Office*, August 2009.

¹⁴ Source: WFP Area Office El Fasher.

have begun to strategize for possibility of large-scale returns in 2010 should the security situation stabilize.

2 An overview of the current situation with regards to fuel in North Darfur

This section provides an overview of the sources of household energy, and availability and accessibility (trade and prices), in North Darfur. Woodfuel¹⁵ is the predominant energy source consumed in Darfur for household, service and industrial sectors. Firewood tends to largely predominate in household consumption in rural areas, while charcoal seems to be more common in urban settings.

The main uses of wood resources in North Darfur can be summarized as follows:

- Woodfuel for domestic use, both firewood and charcoal;
- Wood for commercial use (brick making, bakeries); and
- Timber for construction and furniture-making.

The main commercial demand for firewood is from brick-makers and bakeries¹⁶. Greenwood is normally used for furniture-making and charcoal production. However, brick-kiln operators are increasingly employing green wood as it burns slower and so less is required to produce bricks.

Desertification, prolonged droughts and significant depletion of forests due to the conflict meant that woodfuel resources in North Darfur has are meagre compared to the other Darfur states.

To date, Liquefied Petroleum Gas (LPG) is not common in North Darfur – available only in small quantities in the capital El Fasher. However, as the prices of charcoal and firewood soared, the use of LPG has increased, especially among town residents. While experts have no doubt that LPG represents the best future option for household consumption, logistics and other challenges will need to be addressed.

2.1 Firewood

Firewood is by far the predominant source of household energy in North Darfur, especially in rural areas. Preliminary data from an IOM assessment in Umm Keddada Rural Council for example show that firewood accounts for 72% of the energy sources for household consumption¹⁷, followed by charcoal and a mixed of the two. It is believed that the picture will be similar in the other councils¹⁸.

At the household level, firewood is used for cooking, heating and light. Some women also reported using it to repel mosquitoes and for other traditional cultural practices. According to the last WFP food security assessment (August

¹⁵ Woodfuel refers to all types of biofuels originating directly or indirectly from woody biomass, including firewood and charcoal.

¹⁶ UNEP (2008), *Destitution, distortion and deforestation. The impact of conflict on the timber and woodfuel trade in Darfur*, Sudan: UNEP, p. 9.

¹⁷ IOM (2009), *Interim Report for Umm Keddada Rural Council*, Population Baselines, Population Tracking and Village Assessment Project, p. 45.

¹⁸ Meeting with IOM, 7th October El Fasher.

2009), firewood accounts for about 5% of the household expenditures for non-food items, preceded only by education¹⁹. Throughout the year, firewood is consistently listed among the top three household expenditures by beneficiaries²⁰.

Firewood is also a valuable source of income in North Darfur. Traditionally, firewood was freely collected in rural areas. Supplying urban centres was an important source of income for rural dwellers, particularly in times of hardship. However, as alternative livelihood opportunities contracted, collection and selling of firewood has increasingly become a source of income for large part of the population in North Darfur²¹.

According to WFP Food Security Monitoring System (FSMS), collection of firewood for sale reaches its peak during the pre-lean season, when households start to exhaust their food stocks and become increasingly dependant on market purchases. During that period, firewood collection and selling is the second most important source of income after brick-making (21% of the overall income) for IDPs in camps, and the single highest source for residents in communities (29%)²². However, it is important to note that while IDPs almost entirely depend on sale of firewood to meet their basic needs, residents usually resort to it only in period of hardship to avoid selling their assets.

During the lean season the amount of household income derived from the sale of firewood was slightly smaller due to the availability of agricultural labour.

Yet, the rapid depletion of natural resources, especially in the surrounding of towns, has severely contracted the access and availability of firewood. More and more households are now resorting to buying it at the market.

The price of firewood varies greatly across North Darfur, with the highest being found in El Fasher, where firewood shortages are most severe. Women in Abu Shouk camp reported paying 6 SDG (2.56 USD) per 4 sticks of firewood, which covers a household needs for one day. This indicates a further increase in the price of firewood, based on UNEP data from 2008 (see table below)²³.

¹⁹ WFP (2009), *Darfur Food Security Monitoring – North Darfur*, Round 3, August 2009, p. 3.

²⁰ Source: WFP Post Distribution Monitoring (PDM) reports, Area Office El Fasher.

²¹ UNEP (2008), *Destitution, distortion and deforestation. The impact of conflict on the timber and woodfuel trade in Darfur*, Sudan: UNEP.

²² Ibid.

²³ UNEP (2008), *Destitution, distortion and deforestation. The impact of conflict on the timber and woodfuel trade in Darfur*, Sudan: UNEP, p. 30. Prices correspond to about: 10.66-12.80 USD in 2004; 12.80-15.36 USD in 2005-2006; 17.06-21.33 USD in 2008.

Table 7.1. Price of firewood – Abu Shouk camp, El Fasher

2004	SDG 25-30 per <i>rahal</i> (bundle of 40 pieces of firewood)
2005-06	SDG 30-36 per <i>rahal</i>
2008	SDG 40-50 per <i>rahal</i>

Source: IDP traders, Abu Shouk camp

Since 2003, WFP has been monitoring the market price of firewood and charcoal in the three major towns of El Fasher, Kutum and Kebkabiya.

The price of firewood in 2003 was calculated on the basis of a donkey load (*rahal*), while the current price corresponds to a bundle, which is less than a quarter of a *rahal*. Additionally, the quality of firewood also diminished over the years²⁴. At the time of writing, the price of a bundle of firewood (ranging between 4-6 sticks) was as follows: a) 10 SDG (4.27 USD) in El Fasher; b) 5 SDG (2.13 USD) in Kebkabiya; and c) 6 SDG (2.56 USD) in Kutum. WFP staff also indicated that in El Fasher market the bundle is usually smaller than in the other two locations and the quality of wood significantly lower.

Women in Abu Shouk camp reported using both firewood and charcoal, though preferring the first, especially for cooking *asida*²⁵. Women used to collect their own firewood, but as supplies of deadwood were depleted and access to the bush became more risky, they increasingly have to buy it at the market. Yet, the cost of firewood in El Fasher is prohibitive for many. Women lamented having to use the entire daily salary (between 4 and 5 SDG, 1.71-2.13 USD) working as domestic worker or brick maker to buy the firewood to cook for the day. Those who cannot afford it, often resort to ‘negative’ coping mechanisms such as reducing the amount of meals to two per day, selling part of their food ration to buy firewood, or undercooking their food²⁶. Although not explicitly mentioned by women, other negative coping strategies may be happening such as trading sex for basic services and goods, including firewood.

WFP also heard by various stakeholders in North Darfur stories of children being asked to bring firewood to school to help communities with the burden of cooking school meals. This raised the concern that firewood (or lack thereof) in addition to exposing children to the risk of assault, may even become an obstacle to school attendance.

Reportedly, for IDPs in El Fasher it would take now up to seven days to collect one cart-load of wood. The collection and sale of firewood is becoming

²⁴ Source: WFP market monitoring system. According to informants contrary to the past the firewood now burns faster and last less.

²⁵ *Asida* is a staple food in Darfur made up of a cooked wheat or sorghum flour lump of dough mixed with water.

²⁶ The same seems to be happening in other areas in North Darfur. Aklilu, Yacob, Babiker Badri, Rebecca Dale, Abdul Monim Osman, Helen Young. (2005) *Darfur: Livelihoods Under Siege*, Feinstein International Famine Centre, Tufts University, p. 126.

increasingly dependent on trucks, and including at times military trucks. Trade is mostly in the hands of those who can afford to pay for transport and access to forest resources. In most cases this is a venture that poor women can no longer undertake²⁷. While the team did see women heading to the camp transporting firewood, especially in Zam Zam, it was difficult to ascertain where they were coming from or how long they have been travelling. One small group comprised of two old women and a little girl²⁸ approached by the team reported coming back from collection after many hours of walking. They were carrying few bundles of firewood sticks, resting in the shade of a shack.

At the time of writing, firewood to El Fasher is supplied from South Darfur (Hamada forest and Manawashi)²⁹. Trucks are often offloaded in Abu Shouk or Zam Zam camps to avoid paying taxes³⁰.

Different factors have contributed to the rise in the price of firewood since the conflict began in 2003. One critical factor is the construction boom experienced by many towns in Darfur at the time of the beginning of the conflict, particularly in 2004-2005, and the consequent surge in the demand for fired mud bricks. This is particularly evident in El Fasher, where, according to UNEP, in 2008 residents have become the most important source of demand for bricks³¹. This is unsurprising given that El-Fahser is the home of UNAMID headquarters. UNAMID is also and the most significant 'consumer' of good quality houses. Bakeries are another significant source of demand for firewood. Last but not least, the scale of displacement and the concentrations of the population in some areas triggered an unprecedented demand for firewood from surrounding areas, leading to overexploitation and to unsustainable practices such as using greenwood and digging roots. This was accompanied by an increase in the amount of firewood transported from other areas at very high costs. These factors, combined with restricted movement and limited natural resources, caused the price of firewood to soar drastically.

It is important to mention, however, it is believed that the highest quantity of firewood is used for consumption at the household level³².

2.2 Charcoal

Charcoal is the second most common woodfuel for domestic use in Darfur. Its use tends to be more common in urban areas as oppose to firewood, which predominates in rural areas. In sharp contrast with Abu Shouk, women in Zam

²⁷ UNEP (2008), *Destitution, distortion and deforestation. The impact of conflict on the timber and woodfuel trade in Darfur*, Sudan: UNEP, p. 29.

²⁸ This is consistent with the findings of some reports according to which older women and children were increasingly engaged in firewood collection as the risk of them being attacked is supposedly smaller. Aklilu, Yacob, Babiker Badri, Rebecca Dale, Abdul Monim Osman, Helen Young. (2005) *Darfur: Livelihoods Under Siege*, Feinstein International Famine Centre, Tufts University, p. 169.

²⁹ Ibid. p. 18.

³⁰ The Forestry National Corporation (FNC) imposes royalties and taxes on firewood. Traders usually have to pay taxes to enter forest areas as well at checkpoints along the road. In the rebel-controlled areas, payments are required by the SLA/M for accessing forest resources.

³¹ The impacts of brick production on the environment are devastating. Reportedly, to produce 100,000 bricks requires about 40m³, approximately 35 trees worth, of firewood. UNEP (2008), *Destitution, distortion and deforestation. The impact of conflict on the timber and woodfuel trade in Darfur*, Sudan: UNEP, p. 15-17.

³² UNEP (2008), *Destitution, distortion and deforestation. The impact of conflict on the timber and woodfuel trade in Darfur*, Sudan: UNEP, p. 41.

Zam camp stated their preference for charcoal. Among the reasons were its large availability in the camp, the lower price compare to firewood, its ease of use, and lower smoke emissions.

Charcoal production is a direct cause of deforestation in North Darfur. Charcoal is made from greenwood in the bush and then transported to market areas, often by traders with trucks. Most of the offloads take place in the IDP camps on the outskirts of towns, which operate as *de facto* tax havens³³. The unregulated markets in IDPs camps provide a convenient outlet for any sort of trade, also serving nearby towns. For example, Zam Zam camp is widely known for its charcoal market, which is now the main source of supply of charcoal to El Fasher. This resulted in many IDPs, particularly women, engaging in petty trading of charcoal, especially those who have donkeys, horse carts, or any other mean of transport. While men in fact are usually in charge of charcoal production, women are responsible for selling it. However, no difference was recorded in the price of charcoal in Zam Zam camp and its cost in the market³⁴.

Charcoal is mostly used in tea-making, although its use for cooking also increased since the beginning of the conflict. As in the case of firewood collection and sale, charcoal production now continues throughout the year.

The price of charcoal ranges from 20 (8.53 USD, Kebkabiya) to 34 (14.50 USD, Kutum) SDG per sac (30 to 35kg), while the price in El Fasher is provided in the table below. According to the data, the price of charcoal in El Fasher rose from 17 SDG in 2003 to 30 SDG in 2009 (7.25-12.80 USD).

Reportedly, one sac of charcoal is enough to cover one family's cooking needs for about 30 days. This makes charcoal rather cheaper than firewood. Moreover, the crisis in Darfur fuelled a large production and market for charcoal, thus increasing its availability throughout North Darfur. And yet, firewood remains the main source of energy used at the domestic level. Charcoal is mainly produced by men, as it requires spending days in the bush, often far from villages and residential areas. In contrast, firewood is more easily accessible, and its collection has always been a woman's responsibility. As far as purchasing is concerned, greater availability at reasonable price in Zam Zam market may explain women's preference for charcoal. Some women also expressed their preference for the taste of staple dishes such as *asida*, when firewood is used.

³³ Ibid p. 24.

³⁴ Source: Focus Group Discussion (FGD) with women in Zam Zam camp (11.10.2009), and WFP market monitoring system.



Source: WFP Market monitoring system, WFP North Darfur Area Office. 1 SDG=0.43 USD.

2.3 Liquefied Petroleum Gas (LPG)

LPG is an alternative energy that is being used more frequently in North Darfur. As the prices of firewood and charcoal have risen, the use of natural gas in El Fasher town also increased.

To date, LPG is mainly produced in Khartoum. Nile Petroleum and Abercy Gas are the two main suppliers of gas, cylinders and appliances in Darfur. The supply of petroleum products to North Darfur is supplied via road. However, geographical remoteness, road conditions and distance from Khartoum make the market of petroleum in North Darfur difficult and costly. Similar to all commodities that are transported to North Darfur, supplies of LPG travel in big convoys, which take up to 20 days to reach the capital El Fasher.

The price of a filled LPG cylinder (12.5 kg) in El Fasher is about 135 SDG (57.58 USD), while it costs 35 SDG (14.93 USD) to refill it. Reportedly, this is three times as costly as in Khartoum. Yet, it is cheaper compared to firewood and charcoal, especially considering that one cylinder of LPG is believed to last for about 35 to 50 days³⁵. However, the upfront costs of the LPG appliances (cylinder and burner) and of refilling make it unaffordable for most, given that the majority of households rely on casual daily labour (average rate 4-5 SDG, 1.71-2.13 USD) for survival. As such, the use of natural gas in El Fasher is still limited to a small number of wealthier town residents, including government officials, business people and international organizations.

Logistics is one of the biggest impediments to a wider distribution and use of LPG in North Darfur. Transport costs from Khartoum to El Fasher accounts for

³⁵ Meeting with stakeholders in El Fasher, 7-15 October 2009.

about 60% of the final price³⁶. At the time of the mission, LPG depot was only available in El Fasher, which means that residents in rural areas and other towns would have to travel to El Fasher for refilling.

Another aspect that was frequently mentioned by UNEP was the overall limited supply of this gas currently available in Sudan. According to interviews with UNEP, even in Khartoum, where LPG is extensively used, supply cannot match demand³⁷. It was not clear if the problem relates to the actual availability of natural gas in the country, or limitations in the production capacity of the suppliers.

Other problems with wide scale LPG use in North Darfur are the limited supply of gas burners in North Darfur, and the fire hazards. Women in Abu Shouk camp expressed concern about not knowing how to use LPG appliances and the potential risks to their children left at home as the women search for work. In addition, women reported that in previous attempts at targeted dissemination (by Oxfam US), the leadership of the camp took away the equipment given its high value. To avoid further tension, women recommended future interventions to be targeted to the whole camp population.

The NGO Practical Action is now distributing LPG appliances to 1,700 families in El Fasher rural areas. More details about this project are provided in section 5 below.

Despite the above-mentioned constraints, the dissemination of LPG as an alternative (clean and more sustainable) household energy is still under scrutiny by various stakeholders, including UNEP, the Government of Sudan, the Sudanese private sector, UNDP³⁸, and others. One proposal put forward by UNEP to scale up the use of LPG in towns was to subsidize the price of the cylinder. There have also been some efforts by the Government to encourage the use of LPG through price control, import tax exemption, and scaling up supply and distribution networks.

3 Implications of collection, supply and use of firewood in North Darfur

This section explores the concerns associated with the collection, supply and use of firewood in North Darfur with a specific focus on the protection of women, the environment, and the nutritional and health status of households. These aspects have been selected for their relevance to WFP programming and as entry points for possible future interventions by the organization.

3.1 Protection risks in collecting firewood

Protection risks associated with firewood collection in North Darfur have long been known. Since the outset of the conflict, women have suffered attacks and

³⁶ UNEP (2008), *Destitution, distortion and deforestation. The impact of conflict on the timber and woodfuel trade in Darfur*, Sudan: UNEP, p. 31.

³⁷ Source: informants interview, Khartoum.

³⁸ Although not North Darfur-specific, the following link provides some information about UNDP's initiatives on LPG: <http://www.undp.org/energy/lpg.htm>.

sexual assaults, outside the camps or beyond the village boundary, when collecting firewood, fodder or forage, and farming³⁹. In a baseline survey conducted by UNFPA in all the three Darfur states, 43% of women indicated rape as the most common type of violence occurring in their areas with the most devastating consequences for them and their communities⁴⁰.

Throughout the mission, firewood collection was consistently indicated as one of the key vulnerability factors exposing women to the risk of sexual assault (along with farming). As previously mentioned, near El Fasher many women buy firewood instead of collecting it and, reportedly, the number of GBV incidents decreased. This was confirmed by focus group discussion with women in both Abu Shouk and Zam Zam camps.

This however should not generate any sense of complacency as GBV is still happening in many areas throughout North Darfur. Since women can no longer rely on firewood as a source of income, it is reasonable to expect that women resort to other risky behaviours in order to meet their family's needs.

The most at-risk areas are where firewood is available for collection by women, and where there is a strong presence of armed groups, particularly Arab militia who are often indicated as the main perpetrators. Rape is amongst the means used to intimidate the population, force displacement, and to maintain control over resources.

Yet, it is important to note that the extent of GBV in North Darfur is generally unknown. Information had been mainly provided by the NGOs (both national and international) that were expelled. In an analysis of the assistance gaps caused by the ousting of the NGOs in 2009, UNHCR highlighted the key role played by organizations such as Amel, IRC, Oxfam, SUDO and CHF in GBV-related activities, including information gathering, and legal and psycho-social support to GBV survivors⁴¹.

Underreporting is one of the major problems organizations face when dealing with these cases. Women do not feel comfortable reporting attacks for various reasons. Lack of trust in the legal, security and judiciary systems, and fear of stigmatization and rejection by families and communities are among the most common cited reasons behind women's silence. Women also expressed lack of trust in UNAMID police with little action and follow-up on reported cases.

Lack of access by humanitarian organizations is another hindering factor. Altogether, the shortage of solid data limits the opportunities for targeted interventions and impact assessment.

Nevertheless, informants agreed on indicating *Kutum*, *Kebkabiya*, and *Tawilla* as the areas most at risk of sexual and gender-based violence.

³⁹ Akililu, Yacob, Babiker Badri, Rebecca Dale, Abdul Monim Osman, Helen Young. (2005) *Darfur: Livelihoods Under Siege*, Feinstein International Famine Centre, Tufts University, p. 47. Helen Young (2007), "Looking beyond food aid to livelihoods, protection, and partnerships: strategies for WFP in the Darfur States", *Disasters* 31(S1): S40-S56, London: ODI. Buchanan-Smith, M. and Jaspars, S. (2007), "Conflict, camps and coercion: the ongoing livelihoods crisis in Darfur", *Disasters* 31(S1): S57-S76, London: ODI.

⁴⁰ UNFPA (2009), *Baseline Reproductive Health/GBV KAP Survey among Communities Affected by Conflict in Darfur*. Sudan: UNFPA, p. 52.

⁴¹ UNHCR (2009), *Gap analysis and gap filling analysis – PHR sector*, powerpoint presentation, June 2009.

Protection risks associated with firewood collection in *Kebkabiya* are not new. Reports of rape date back to the early stages of the conflict⁴². NGOs were considering introducing alternative fuels in response by mid-2004⁴³. In both *Kebkabiya* and *Kutum* areas, women and children continue travelling long distances to collect firewood on a daily basis, exposing themselves to the risk of assaults and gender-based violence. Over the summer, 14 cases were reported to the women's health centre in Kassab camp, Kutum⁴⁴. There are anecdotes of women being forced to go by their husbands to provide for the families, and having to choose between being raped or their husbands being killed⁴⁵.

The situation in *Tawilla* may be even worse, as insecurity forced the whole population to move into camps, Tawilla and Dali – leaving the town empty⁴⁶. *Tawilla* is only 70 km south-west from El Fasher and used to be an important source of supply of firewood to the capital, together with *Dar Es Salaam*⁴⁷. At present, most of the firewood supply in El Fasher is secured from South Darfur as wood sources in *Tawilla* (and other locations) were depleted and insecurity severely limited mobility outside the camps. But in the absence of any alternative energy supply option, collection of firewood for cooking purposes continues and exposes women to the risk of assaults.

As distances become longer, the risk of attacks also increases. However, in areas such as *Kebkabiya*, women were reportedly unable to travel 1km beyond the periphery of the town because of the risk of attack and rape by armed militia⁴⁸.

Assailants are mostly armed men, often identified by women as 'arabs'. Policemen have also been explicitly accused of perpetrating these acts, as well as individuals, especially in rural areas, who take advantage of the vulnerability of women while collecting firewood⁴⁹.

Interviewees recommended some caution when discussing GBV patterns. The reasons are threefold. First, while it is widely known that GBV happens predominantly during collection of firewood or fodder, farming and/or travelling to the market, information cannot indicate to specific abusers. Second, the risk of a 'politicization of reporting' was raised in relation to GBV cases. Field-based observations by UNFPA show that women are more willing to report cases perpetrated by members of other communities or other tribes, while very little is mentioned about what is happening in their own communities or families. For example, among the households surveyed by UNFPA domestic violence was not even perceived as a form of GBV. Lastly, increased reports of GBV does not necessarily imply increased prevalence nor does it allow the identification of a

⁴² Aklilu, Yacob, Babiker Badri, Rebecca Dale, Abdul Monim Osman, Helen Young. (2005) *Darfur: Livelihoods Under Siege*, Feinstein International Famine Centre, Tufts University, p. 122.

⁴³ UNIFEM (2005), *Fuel Provision and Gender-Based Violence: Fuel-efficiency as a prevention strategy*, New York: UNIFEM, p. 12.

⁴⁴ Source UNAMID.

⁴⁵ Aklilu, Yacob, Babiker Badri, Rebecca Dale, Abdul Monim Osman, Helen Young (2005), p. 169. The same concern was further expressed by UNHCR in El Fasher.

⁴⁶ WFP is currently assisting 46,659 beneficiaries in Tawilla of which only about 5,600 (12%) still live in rural areas, while the remaining 88% live in camps. Source: WFP Distribution Plan, September 2009.

⁴⁷ UNEP (2008), *Destitution, distortion and deforestation. The impact of conflict on the timber and woodfuel trade in Darfur*, Sudan: UNEP, p. 18.

⁴⁸ Aklilu, Yacob, Babiker Badri, Rebecca Dale, Abdul Monim Osman, Helen Young. (2005) *Darfur: Livelihoods Under Siege*, Feinstein International Famine Centre, Tufts University, p. 125.

⁴⁹ Source: informant interviews and working group meetings in El Fasher, North Darfur.

clear-cut typology of abusers, as it may be the result of better opportunities to report. In other words, while most of the stories and reports point to the *Janjaweed* as the main perpetrators of GBV acts, this may not provide an accurate account of the reality in North Darfur as others may be involved as well.

3.2 Environmental impact

The conflict has placed great strain on the already fragile environment in Darfur. The concentration of the population in some areas has caused a surge in the demand for already scarce natural resources and resulted in overexploitation of accessible land —creating tensions between different groups. This is particularly evident in the arid and semi-arid areas of North Darfur, where increased desertification, and prolonged droughts have already forced the population to move further south in search for land and water.

In general, the impacts of the conflict on the environment can be summarized as follows:

- Destruction of environmental assets such as water sources, farmland and trees as an intentional war tactic (for e.g. felling of trees by the military for defensive purposes, burning of farm land to prevent use and occupation by opposing groups, etc.)
- Soil depletion and declining yields caused by overgrazing and over cultivation in accessible areas, and lack of use in others that are not accessible
- Disruption of traditional environmental management systems, such as seasonal livestock migration, harvesting and dispute resolution.

The real impact of charcoal production on deforestation in North Darfur is yet to be understood as production is done in the bush, in areas difficult for international staff to access. In addition to construction and charcoal production, an increased number of brick-kiln operators are resorting to the slower-burning greenwood.

The situation is further exacerbated by the fact that the wood harvesting is completely depleting tree cover. Massive deforestation has already occurred around El Fasher and in many of the agriculturally-rich areas, and risks happening in the rest of North Darfur.

The increased reliance on fuelwood intensive livelihoods such as firewood collection, charcoal-production and brick-making has created an unsustainable demand on environmental resources and in turn erodes the livelihood asset base for all. This calls for alternative livelihoods opportunities that build rather deplete the resource base, which forms the basis of the proposed integrated approach (livelihoods, protection and environment) discussed in section 6 below.

3.3 Implications for food, nutrition and health

Evidence underscores that food aid in North Darfur has long played a positive role in mitigating some of the impacts of the crisis, including stabilizing the prices of food, acting as an important income transfer in the absence of alternative livelihood options, and reducing vulnerability to negative coping

strategies. Of particular interest for this study are the findings that in some areas such as *Kebkabiya* food aid reduced people's dependency on firewood collection as a source of income⁵⁰.

However, the more recent reliance of people on purchasing of firewood, combined with the rise in the price of firewood, have raised concerns about people selling higher portion of their food aid ration to meet their cooking needs⁵¹. Limited access to sufficient cooking fuel can also lead to unsafe cooking techniques and domestic practices, which can also negatively impact nutritional intake⁵². The problem is further exacerbated by the fact that the food ration provided by WFP in North Darfur has been reduced to 70% in 2009.

Women in Abu Shouk and Zam Zam camps confirmed selling part of their food ration to buy items such as onions, spices, and firewood. They also reported resorting, at times, to damaging coping strategies, such as reducing the number of meals cooked per day and/or undercooking when the amount of firewood they can afford is not enough.

This however does not apply evenly across the whole camp population and should not lead to any generalization. There are some households in fact that do not need to compromise their food ration to buy firewood (or charcoal), and others that are not in need of food aid at all, let alone their capacity to meet their energy needs. Typically, it is the most vulnerable who are suffering the most and have to stretch their limited resources to meet their basic needs, including firewood.

Disparities in the needs of the population in the camps are not new. Accurate targeting however has been an issue since 2005⁵³. To date, a comprehensive verification process has not been possible, mainly due to resistance on the part of sheikhs and local leaders, who are believed to benefit most from over-registration and multiple cards holding. As a result, it can be difficult to precisely assess the real situation of people in the camps also with regards to unsafe cooking and domestic practices and their potential negative impact on nutrition. What is certain though is that the cost of firewood is a critical issue that may negatively affect household food consumption.

According to the last FSMS, IDPs in camps represent the majority (63%) of the households who sell food aid. According to the last FSMS, purchasing of firewood is not among the main reasons mentioned by beneficiaries for doing so⁵⁴. This however contradicts with the findings that firewood is consistently in the top

⁵⁰ Buchanan -Smith, M. and Jaspars, S. (2007), "Conflict, camps and coercion: the ongoing livelihoods crisis in Darfur", *Disasters* 31(S1): S57-S76, London: ODI. Helen Young (2007), "Looking beyond food aid to livelihoods, protection, and partnerships: strategies for WFP in the Darfur States", *Disasters* 31(S1): S40-S56, London: ODI.

⁵¹ UNEP (2008), *Destitution, distortion and deforestation. The impact of conflict on the timber and woodfuel trade in Darfur*, Sudan: UNEP, p. 29.

⁵² IASC Task Force Safe Access to Firewood and Alternative Energy in Humanitarian Settings (SAFE) (2009), *Matrix on Agency Roles and Responsibilities for Ensuring a Coordinated Multi-Sectoral Fuel Strategy in Humanitarian Settings*.

⁵³ For a detailed account of the targeting issues experienced by WFP in Darfur refer to: Young, H. and Maxwell, D. (2009), *Targeting in Complex Emergencies: Darfur Case Study*, Boston: Feinstein International Center, Tufts University.

⁵⁴ The main reasons include: buy other food items, milling, pay education fees, pay health services and repay loans. WFP (2009), *Darfur Food Security Monitoring – North Darfur*, Round 3, August 2009, p. 5.

three household expenditures. It may be that the money earned from petty trade and casual daily labour is used for buying firewood. It is unclear how others, especially for IDPs who have limited (if any) livelihood alternatives, can afford to purchase firewood without selling food aid.

As far as malnutrition is concerned, discussion with WFP staff in El Fasher revealed that current malnutrition rates among the assisted population are mainly related to lack of access to safe water, and can not be attributable to insufficient or inadequate food. Recent data in fact showed a significant deterioration of the nutritional level of adult women, which is not accompanied by a similar deterioration in the consumption or food security situation⁵⁵. Altogether these data point to the conclusion that at present there is no indication of malnutrition growing due to an increase in the amount of food aid sold for purchasing cooking fuel. However, this does not explain how women are compensating for higher costs of firewood.

Another consequence of using woodfuel as primary cooking fuel is the impact on health. According to WHO, indoor air pollution (IAP) resulting from cooking and heating with solid fuel such as firewood and charcoal kills 1.5 million of people every year⁵⁶, is responsible for 2.7% of the global burden of disease, and increases the risk of respiratory illnesses such as bronchitis and pneumonia⁵⁷. The evidence strongly points to the positive impact of cleaner energy technologies, such as LPG, on health and on the reduction in indoor air pollution⁵⁸. Unfortunately, limited mobility to and within the camps prevented the members of the mission from visiting cooking spaces. However, it is well known that dependency on firewood and poor ventilation systems within traditional shelters are common in many households in North Darfur, both in camps and in resident communities.

3.4 Trade and livelihoods

Traditionally livelihoods in North Darfur consisted of livestock herding and farming. These were once practiced in juxtaposition to one another by sedentary agro-pastoralists on one side, and nomadic pastoralists on the other, and were usually associated with different tribal groups. But over time, most farmers also acquired livestock, while nearly all pastoralists began to cultivate crops⁵⁹. To supplement these activities, people also collected natural resources such as firewood, fodder and wild foods.

The conflict has devastated the livelihoods of sedentary farmers and nomadic pastoralists. Restricted mobility is the single most fundamental threat. It impedes access to farmland, blocks seasonal livestock migration, and limits trade and access to the market for both buyers and sellers. This has been further exacerbated by the political manipulation of the traditional tensions between groups with competing livelihoods strategies.

⁵⁵ Ibid.

⁵⁶ WHO (2006), *Fuel for Life – Household Energy and Health*, Geneva: WHO, p. 4.

⁵⁷ <http://www.who.int/indoorair/en/>, and

<http://www.who.int/mediacentre/news/statements/2004/statement5/en/index.html>, accessed in October 2009.

⁵⁸ <http://www.who.int/heli/risks/indoorair/indoorair/en/index.html>, accessed October 2009.

⁵⁹ Aklilu, Yacob, Babiker Badri, Rebecca Dale, Abdul Monim Osman, Helen Young. (2005), *Darfur: Livelihoods Under Siege*, Feinstein International Famine Centre, Tufts University, p. 40.

This has placed great strain on supply, particularly in the surroundings of urban centres where most of the people are concentrated. Moreover, competition between different groups over access to and control over resources intensified, and the protection risks associated with these practices increased. Besides the risks of sexual assaults faced by women, which will be discussed in more detail below, interviewees reported payments for ‘custodians’ of forest resources, mainly pastoralists in now emptied rural areas, and wood loads being stolen and confiscated.

4 Existing fuel-related response

This section discusses some key fuel-related interventions in response to the concerns outlined above. It is not intended to be an all-inclusive account of all the fuel-related projects currently in place in North Darfur rather it provides an overview of the major initiatives, their opportunities and challenges, to determine options for future programming.

4.1 FES and alternative energy

With the increased awareness of the risks of assaults associated to firewood collection, fuel-related protection initiatives have flourished. The introduction of fuel-efficient stove (FES) is probably the most important both in terms of coverage and of consistency. FES projects have been attempted throughout North Darfur since 2004. Results have been mixed, depending on the design of the stove and its energy-saving attributes, the quality of the training and awareness raising provided to women, and the level of understanding of traditional cooking practices and food habits.

Camomilla, origano, salvia, alloro, 3 cucchiari di bicarbonato di sodio.

Recently the growing investment made by various organizations in fuel-efficient stoves prompted the establishment of the Darfur Fuel-Efficient Stove Working Group (FESWG)⁶⁰, with the aim of conducting a comprehensive review of all the programmes and assessing their effectiveness *vis-à-vis* the stated objectives.

The review concluded that none of the FES programmes implemented have been stand-alone, and instead have been add-ons to broader project activities. As a result, there was very poor capacity to monitor and evaluate the specific impact, as objectives and implementation strategies and approaches varied widely and were in the context of larger project frameworks⁶¹.

⁶⁰ The group were first established in North Darfur in 2006 recognition of the need for better coordination in the implementation of the FES programmes. Initially the group was co-chaired by the Resident Coordinator Support Office (RCSO) and CHF International, an NGO that stopped operating in North Darfur in March 2009. At the time of the mission, the group was operating under the auspices of the Food Security and Livelihood Working Group.

⁶¹ ProAct Network (2008), *Assessing the Effectiveness of Fuel-Efficient Stove Programming – A Darfur-wide Review*.

However, the consistent and correct use of fuel-efficient stoves reduced firewood consumption by up to 50% in North Darfur. This is associated with an equivalent reduction in the time spent on collecting firewood⁶², which could in turn be used for other livelihood activities. At the same time, in areas where the prevalent method of acquisition of firewood is purchasing, the review indicated a 50% cash saving. The review also concluded a significant decrease in the wood consumed at the household level, and a reduced level of smoke and indoor air pollution.

Overall, the review concluded that that fuel efficient stoves contributed to a reduction of firewood consumption ranging between 30 to 60%, depending on the model of stove, and its use together with proper cooking utensils (e.g. pot, lid, and so on) and techniques (e.g. protecting the fire from the wind).

However, the review also indicated a general lack of thoughtfulness with regards to project design, monitoring and evaluation, and follow-up activities. This was further confirmed by discussions with key informants and general observations during focus group discussions with women.

The women in both the focus groups reported being targeted by fuel-efficient interventions, ranging from training and dissemination of stove of various designs to distribution of gas appliances (the latter was in Abu Shouk only). While expressing their appreciation for the stoves, most of them said they are currently not using them as they lacked the materials (clay, dung and water) to repair/rebuild them after they broke. Discussions with FAO and Practical Action, one of the organizations with the longest experience on fuel-efficient technologies in the region, confirmed that the materials are not accessible or not available in all areas. More attention needs to be placed on training and acquisition of material for this technology to be sustainable.

Women acknowledged the positive impacts of using the stoves in terms of a reduced need for firewood and reduction of kitchen smoke, and stated their desire to start re-using them, if material is provided.

According to them, however, one limitation of the stoves is a diminished control over the fire as compared to the traditional three stone fire, which could easily be augmented in the preparation of *asida*.

Among the different designs being proposed, the improved mud stove remains the one with the highest uptake⁶³, and the one mostly referred to by the women interviewed. The main reasons were ease of construction and use, and adaptability to existing cooking practices and tools. In the FES training currently implemented by GAA in the Kutum area with support from WFP, women are encouraged to build tailor-made stoves based on the size of their pots.

The main concerns were related to the quality of the training provided, particularly the skills and experience of the trainers, the lack of a standardized and uniformed training approach and methodology, and the failure to follow-up. Most trainings last for 4-5 days during which women learn how to make a stove

⁶² The only exception was found in Geneina where the extra time was used to collect firewood for sale, thus offsetting the benefits of saved time within the household. ProAct Network (2008), *Assessing the Effectiveness of Fuel-Efficient Stove Programming – A Darfur-wide Review*, p. 37.

⁶³ Ibid, p. 44.

through a “learning-by-doing” approach. The quality of the training and the skills of the trainers are critical for a good quality stove. Implementation by most organizations is trickle-down, where the first generation trainees train others on the same technology. While this has clear advantages in terms of coverage and dissemination of the technology to remote areas, the review indicates that as the training passes through several generations of trainees the quality of stove manufacturing deteriorates. Guidance is needed to ensure a uniformed approach to FES and to build the capacity of partners and beneficiaries to manage FES interventions more effectively.

4.2 Environmental protection and restocking of destroyed natural resources

A series of projects aimed at regenerating and promoting the recovery of the natural resource base have also been implemented. However, while most FES programmes have been focused on mitigating the impact of firewood consumption on the environment, little attention has been placed on replenishing the supply side⁶⁴.

Some possible initiatives to address the need to protect the environment are the creation of woodlots for harvesting wood, incentivised community forests⁶⁵, and production and distribution of tree seedlings. One example of an effort to tackle both consumption and supply is the UNEP/FAO Darfur Timber and Energy Project. The project aims to regenerate the forest resources through the creation of woodlots and community forests, while rolling out 100,000 fuel-efficient stoves for each state in Darfur⁶⁶.

4.3 Patrolling

Although firewood patrols have been in place since 2005, there is still plenty of scepticism about their actual capacity to provide physical protection to women. The team registered some improvements compared to the early stage with regards to reliability, consistency and routes coverage.

At present, patrols in North Darfur are for safe access to firewood, farming and for market routes. Effectiveness varies greatly from location to location, depending on UNAMID’s capacity on the ground, the level of commitment of commanders, and the relationships between patrolling forces and the communities. Reportedly, patrols have been somewhat effective in El Fasher, where UNAMID has its Headquarters and capacity is strongest. This is not the case in other locations such as Kutum, where patrols ceased in June 2009 due to lack of coordination between the UNAMID police and protection forces and lack of communication with the displaced communities⁶⁷.

⁶⁴ ProAct Network (2008), *Assessing the Effectiveness of Fuel-Efficient Stove Programming – A Darfur-wide Review*, p. 39.

⁶⁵ Incentivised community forestry is a means of providing incentives to planting and protecting trees. Brendan Bromwich, Dr Abuelgasim Abdalla Adam, Dr Abduljabbar Abdulla Fadul et al. (2007), *Darfur: Relief in a vulnerable environment*, Tearfund, p. 38.

⁶⁶ Source: UNEP/FAO (2008), Progress Report, Darfur Timber and Energy Project.

⁶⁷ Source: UNAMID El Fasher.

The team was not able to observe any patrol during the visit in North Darfur⁶⁸. According to interviewees, the (almost) daily El Fasher patrols are still not enough to cover the actual needs of the population. Distance is a key concern. Diminishing availability of firewood in the surroundings of villages or camps forces women to travel greater distances and to start earlier in the morning (3-4 am), which patrols have not been able to accommodate.

Another key concern regarding patrols is their capacity to provide real protection to the people. While UNAMID's mandate calls for a specific responsibility "to contribute to the protection of civilian populations under imminent threat of physical violence and prevent attacks against civilians..."⁶⁹, peacekeepers themselves are constantly under attack and they demonstrated limited capacity to respond and to provide for the the protection of civilians.

Protection actors continue to encourage an increased and more flexible presence of UNAMID patrols throughout North Darfur. A new strategy under discussion is to alternate patrols by trucks with foot patrols. This would allow patrolling forces to follow the women more closely and even to walk in the middle of the group.

4.4 Community-based coping strategies

Besides interventions by the international community, women have shown high level of self-sufficiency and innovations in providing for their own protection.

Women often go in groups to collect firewood. Some women indicated repeating the same routes where harassment already took place, convinced that it is not likely that perpetrators will repeat an attack in the same locations⁷⁰. Others were reportedly going to collect firewood at night, hoping that the darkness would provide safety.

Women also resort to damage-control measures. Some informants indicated that women may be reluctant to be accompanied by men, not only because men risk being killed in case of attacks⁷¹, but also because the presence of men will make the news of an attack more difficult to keep quiet. In fact, if women are alone when raped, they have control over who finds out about it, while if a man was present, everybody would know and women risk being further stigmatized.

Although the effectiveness of these coping strategies is difficult to assess, direct consultations with women regarding their needs, concerns and solutions is crucial for the success of any interventions. Women have shown attempts to organize for safety themselves, and are key actors in their own protection. It is important to recognize that under the current circumstances, many women are receiving very little protection from the international community and they primarily depend on their own coping strategies and capacities. Even when some support is provided, it will not be permanent. The principle of supporting and

⁶⁸ For a detailed description of how patrols work refer to: Women's Commission for Refugee Women and Children (2006), *Finding Trees in the Desert: Firewood Collection and Alternatives in Darfur*, New York: Women's Commission for Refugee Women and Children, p. 13.

⁶⁹ <http://www.un.org/en/peacekeeping/missions/unamid/mandate.shtml>, accessed October 2009.

⁷⁰ ProAct Network (2008), *Assessing the Effectiveness of Fuel-Efficient Stove Programming – A Darfur-wide Review*, p. 34.

⁷¹ See section on protection risks associated with firewood collection.

strengthening community-based protection strategies should be maintained when planning and implementing interventions aimed at enhance people's safety and well-being.

4.5 UN HABITAT brick making and construction

A final initiative worth highlighting is the UNHABITAT-led project on alternative construction technologies. The project consists of training IDPs on the usage of a Stabilized Soil Block (SSB) machine, which allows the production of bricks from soil, water and a small percentage of cement (6%) as stabilizer. The SSB technology moves away from the traditional fired bricks, as it is not firewood dependant. This new technology is believed to have the following advantages:

- It saves up to 40% of the bricks that normally break after combustion, reducing construction costs at comparable quality
- It does not require burning, avoiding carbon emissions and saving trees in the production of building materials
- It has the potential to create new job opportunities and income, while at the same time alleviating the burden on the environment for reconstruction in times of return

Though not directly related to household energy, this technology was mentioned by some interviewees as the option with the greatest potential for reducing the demand for firewood and reversing the current deforestation trends in North Darfur, while at the same time supporting sustainable return and reconstruction processes⁷².

Additional analysis and wider practice on SSB implementation in North Darfur are needed to better assess its merits and to redress some of the current challenges. While there is evidence of similar technology being successfully applied in Uganda, Eastern Congo and Somalia, so far only a small number of IDPs have been trained in North Darfur, including Nyala, El Fasher, Geneina and Zalingei⁷³.

5 Conclusions and ways forward: options for an integrated approach to safe access to firewood and alternative energy in North Darfur

Most of the challenges reported in this report are not new; rather they have been echoed and discussed for quite some time. The devastating impact of the conflict on traditional livelihoods in Darfur is widely known. Herding, farming, trade and labour migration have become progressively difficult with population displacement, destruction and looting of assets, including livestock loss, and restricted movement⁷⁴. In the absence of other opportunities, people have

⁷² UNEP (2008), *Destitution, distortion and deforestation. The impact of conflict on the timber and woodfuel trade in Darfur*, Sudan: UNEP, p. 43.

⁷³ UN-HABITAT (2009), *Interlocking Stabilized Soil Block – Appropriate Earth Technology in Uganda*. Nairobi: UN-HABITAT.

⁷⁴ For a more detailed account of the impact of the conflict in Darfur on the lives and livelihoods: Young, H., Osman, A.M., Aklilu, Y., Dale, R., Badri, B. and Fuddle, A.J.A. (2005), *Darfur: Livelihoods Under Siege*. Feinstein International Famine Center, Tufts University, Medford, MA, USA; Buchanan -Smith, M. and Jaspars, S.

become dependant on petty trade and daily labour, especially in urban areas. At the time of the mission, the main sources of daily labouring in El Fasher were brick making and domestic labour, mainly due to the high demand for housing and related services by UNAMID personnel and other international organizations.

Another major source of income is the collection and sale of natural resources such as grass, fodder and firewood. This activity brings risk of sexual assault and other forms of violence. In this context, relief food has become, and continues to be, a critical source of income transfer, especially for IDPs and poor households in rural areas. Food aid also protects people from resorting to risky livelihoods strategies, including a reduction in firewood collection in unsafe locations⁷⁵. Yet, growing pressures on the international community for the development of viable return and recovery strategies coupled with cuts in food aid by donors, have made the need for practical alternatives to food aid more urgent.

Past years have seen a proliferation of attempts to address one or another of these issues. Recently practitioners and researchers have realized that an integrated approach is required to create an effective humanitarian response. This calls for a comprehensive approach to livelihoods, protection and environmental recovery.

During discussions with key informants, the team found consensus on the need to gradually shift from lifesaving humanitarian assistance to investment in livelihood interventions. As far as WFP is concerned, this means broadening the response strategy beyond food aid towards an increased investment in transitional programmes such as FFW and FFT to address protection, livelihoods and environmental recovery and regeneration.

5.1 Why WFP?

WFP's comparative advantage in promoting a coordinated, multi-sectoral strategy to cooking fuel in North Darfur is its mandate, the scale and reach of its operation, and a network of experienced field-based partners. WFP's commitment to the work of the SAFE Task Force stemmed from the recognition of the complexity and multi-faceted implications of access to fuel in emergency contexts. This is in the Strategic Plan, which calls for WFP operations to be carried out in ways that contribute to the safety and dignity of beneficiaries, including protection from gender-based violence.

At present, WFP is the agency with the greatest access and presence, either directly or through its partners, and the one with the biggest ongoing operations in terms of coverage and beneficiary caseload in North Darfur. Its unique approach in addressing lifesaving food distribution and in restoring the livelihoods (to date small scale) of conflict-affected and vulnerable populations provides a window of opportunity for increased investment in a wide array of projects from rehabilitation of water ponds (*hafirs*) and irrigation systems, to tree planting and revitalization of agricultural production and trade.

(2007), "Conflict, camps and coercion: the ongoing livelihoods crisis in Darfur", Disasters 31(S1): S57-S76, London: ODI.

⁷⁵ Buchanan-Smith, M. and Jaspars, S. (2007), "Conflict, camps and coercion: the ongoing livelihoods crisis in Darfur", Disasters 31(S1): S57-S76, London: ODI.

Finally, WFP's Gender Policy sets the framework of the organization's work on addressing gender-related protection challenges, including those arising from firewood collection. More specifically, it commits WFP to mobilize resources to provide safe access to fuel, including the provision of fuel-efficient stoves, by the most vulnerable women.⁷⁶

5.2 Proposed approach

Building on these strengths and with a view to addressing the complexities outlined above, WFP proposes the adoption of a four-pronged approach aimed at:

- 1) **Reducing the vulnerability of women** to rape and other forms of violence while searching for firewood through the scaling up and dissemination of fuel-efficient stoves;
- 2) **Creating alternative livelihood opportunities** through an increased investment in FFT and FFW activities specifically targeted to women;
- 3) **Reducing dependency on firewood in schools** through the introduction of fuel-efficient technologies, including LPG.
- 4) **Exploring and piloting innovative fuel-related technologies** such as for example briquettes and LPG.

The team proposes to focus on three areas where protection risks associated with access to fuel are highest: *Kutum, Kebkabiya and Tawilla*. While maintaining a strong focus on protection and using it as an entry point for the identification of areas and population at risk, WFP's intervention intends to achieve a vast array of objectives that include:

- **Environmental protection and recovery:** this will be achieved by reversing deforestation and soil degradation associated with unsustainable woodfuel harvesting, while investing in the regeneration of the forest base through interventions such as woodlots, community forests and tree-planting.
- **Livelihoods recovery:** to the extent possible, the same women targeted by interventions on fuel-efficient technology will be provided with alternative livelihood options. This will allow for maximizing the effectiveness of such interventions by reducing the need for firewood not only for cooking, but also as a source of income -- revitalizing the livelihood asset base with a strong focus on women's engagement.⁷⁷
- **Promotion of food security, nutrition and health:** reducing the need for firewood will limit the risk of selling of food ration to purchase firewood, which may compromise the nutritional intake and lessen the impact of food assistance on assisted households. Moreover, it has been demonstrated that fuel-efficient stoves, if used correctly and consistently, can decrease indoor air pollution by increasing the efficiency of fuel combustion and heat transfer over that of a traditional three-stone (open) fire and can reduce unhealthy smoke and particle emissions.

⁷⁶ WFP (2009), *Promoting Gender Equality and the Empowerment of Women in Addressing Food and Nutrition Challenges*, Rome: WFP, p. 10. WFP/EB.1/2009/5-A

⁷⁷ For details about the planned livelihood activities refer to the SAFE project proposal attached.

A detailed description of the activities encompassed in the proposed approach is provided in the attached project proposal. It is important to emphasize the integrated approach that WFP is planning to undertake to tackle this issue. A approach that has been missing in previous attempts.⁷⁸ Its uniqueness lies in the comprehensive set of objectives it intends to achieve in view of the multi-faceted implications of collection, supply and use of household fuel in North Darfur, and its articulation as a stand-alone project with set of specific indicators and dedicated resources, both human and financial, which are deemed vital to monitor its implementation and to assess its impact on the targeted population.

This project requires the concerted effort of a wide range of stakeholders with specific expertise in the context of a well-conceived framework for action. This should include FAO, UNICEF, UNEP and Practical Action and existing WFP cooperating partners, such as the Sudanese Red Crescent Society, German Agro Action and the Kebkabiya Smallholders Charity (KSHC). Community participation will be encouraged throughout the project cycle, from planning to monitoring and evaluation, through the engagement of grassroots structures such as the Kutum Agriculture, Extension and Development Society (KAEDS) and the Women Development Association⁷⁹. Specific efforts will be made to ensure communication and consultation with women on their needs, concerns and ideas regarding the proposed activities.

⁷⁸ ProAct Network (2008), *Assessing the Effectiveness of Fuel-Efficient Stove Programming – A Darfur-wide Review*.

⁷⁹ Kutum Agriculture Extension and Development Society (KAEDS) is a local organization that works in partnership with German Agro Action in the implementation of WFP's activities in Kutum Area. Together with KSHC and the Sudanese Red Crescent Society (SRCS) these organizations ensure communities' participation in WFP's implemented activities. The Women Development Association is a network of 54 local women's associations active in North Darfur. Throughout the mission informants indicated the Women Development Association as a potential partner of WFP for the SAFE project.