



Beyond Firewood: Fuel Alternatives and Protection Strategies for Displaced Women and Girls



Women's Commission for Refugee Women and Children

March 2006



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Printed in the United States of America

ISBN: 1-58030-047-2

Mission Statement

The Women's Commission for Refugee Women and Children works to improve the lives and defend the rights of refugee and internally displaced women, children and adolescents. We advocate for their inclusion and participation in programs of humanitarian assistance and protection. We provide technical expertise and policy advice to donors and organizations that work with refugees and the displaced. We make recommendations to policy makers based on rigorous research and information gathered on fact-finding missions. We join with refugee women, children and adolescents to ensure that their voices are heard from the community level to the highest levels of governments and international organizations. We do this in the conviction that their empowerment is the surest route to the greater well-being of all forcibly displaced people.

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Fuel Alternatives and Protection Strategies
for Displaced Women and Girls

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CONTENTS

Acknowledgments	i
Acronyms	ii
Executive Summary	1
Key Recommendations	4
Introduction	6
Part 1: GBV in Refugee and IDP Camps	9
Part 2: Physical Protection Strategies	13
Part 3: Fuel-efficient or “Improved” Technologies	14
Part 4: Fuels and Fuel Alternatives	17
Part 5: Coordination	24
Part 6: The Need for Income Generation Activities	28
Part 7: Conclusion	
Key findings	30
Recommendations	32
Appendix I	
Matrices:	
Factors affecting choice of fuel	35
Qualities of specific fuels	36
Appendix II	
Methodology	37
Appendix III	
List of persons interviewed	39
List of meetings and trainings attended	41
Timeline of site visits	41
Bibliography	42
End Notes	44

ACKNOWLEDGMENTS

This report was researched and written by Erin Patrick, consultant to the Women’s Commission for Refugee Women and Children. However, it would not have been possible without the participation of countless refugees and IDP women in Nepal and Darfur, Sudan. Their input, advice, stories and recommendations underlie every chapter. The report was edited by Sandra Krause and Diana Quick of the Women’s Commission, and designed by Diana Quick.

The Women’s Commission is grateful for the logistical assistance and support provided by country hosts during assessment visits: IRC in Darfur and UNHCR in Nepal. In particular, thanks go to Amany Ebye, Tammy Hasselfeldt and Irshad Almayar of IRC-Khartoum, Margriet Verhoeven and Aisling Swaine of IRC-North Darfur, and Valerie LaForce and Lisa Cohan of IRC-South Darfur. In Nepal, thanks go to Thangarajah Kugathanan, Sardhanand Panchoe, Madhu Dhungana and Nini Gurung, and the UNHCR sub-office in Damak, particularly Milagros Leyes and Anup Aryal. In addition, we are particularly grateful to the field protection officers in Damak who allowed the Women’s Commission to accompany them in the camps: Aisha Khatoun, Depika Serchan, Ramesh Karki and Yagya Panta.

Additional thanks to all the individuals from UN agencies and NGOs throughout the world who gave their valuable time and insights in interviews and follow-up for this project. Gerry Simpson of NRC-South Darfur and Brian Gray of WFP-Rome deserve special thanks for their lightning-fast responses to numerous follow-up requests. A full list of interviewees is included in Appendix III.

The Women’s Commission thanks the American Jewish World Service (AJWS) for its support of the project.

The report is dedicated to the author’s father – “I told you I would finish.”

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ACRONYMS

AU	African Union
AMIS	African Union Mission in Sudan
BRWF	Bhutanese Refugee Women Forum
CFC	Ceasefire Committee (of the African Union Mission in Sudan)
CFUG	Community Forest Users Group (Nepal)
CHF	Cooperative Housing Foundation
CivPol	(African Union) Civilian Police
CMC	Camp Management Committee (Nepal)
CRT	Center for Rural Technology (Nepal)
ECU	Emergency Coordination Unit (of the Food and Agriculture Organization)
FAO	Food and Agriculture Organization
GBV	gender-based violence (also known as SGBV; sexual and gender-based violence)
GoS	government of Sudan
IASC	InterAgency Standing Committee
IDPs	internally displaced persons
IGA	income generation activity
IRC	International Rescue Committee
INGO	international nongovernmental organization
ITDG	Intermediate Technology Development Group (Sudan; also known as Practical Action)
LPG	liquid propane gas/liquefied petroleum gas
LWF	Lutheran World Federation (Nepal)
MSF	Médecins sans Frontières (Doctors without Borders)
NGO	nongovernmental organization
NRC	Norwegian Refugee Council
OCHA	Office for the Coordination of Humanitarian Affairs
RAAP	Refugee-Affected Areas Rehabilitation Program (of UNHCR)
RC/HC	resident coordinator/humanitarian coordinator (of the Office for the Coordination of Humanitarian Affairs)
SCI	Solar Cookers International
UNDP	United Nations Development Program
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children’s Fund
UNMIS	United Nations Mission in Sudan
UNMIS-HR	United Nations Mission in Sudan – Office for Human Rights
WFP	World Food Program

EXECUTIVE SUMMARY

The environment that surrounds refugee or internally displaced persons (IDP) camps, particularly in situations of ongoing conflict, is notoriously dangerous. Yet every day, in hundreds of camps around the world, millions of women and girls venture out into this danger, risking rape, assault, abduction, theft, exploitation or even murder, in order to collect enough firewood to cook for their families.

Cooking fuel is traditionally seen by both displaced communities and humanitarian organizations as a “women’s” issue, since it is a part of the cooking process. Because this is the case, and despite the well-known risks, the burdens associated with its collection fall almost exclusively on women and girls. Rarely is cooking fuel provided by the humanitarian community, and even more rarely do men collect the wood.

The risks associated with firewood collection have been well known for years, yet few effective strategies are yet in place to combat the problem. The Women’s Commission for Refugee Women and Children (Women’s Commission) therefore initiated a project to investigate methods for reducing the vulnerability of displaced women and girls to gender-based violence (GBV) during firewood collection. The project set out to assess alternative fuel options, firewood collection techniques and other protection strategies, appropriate to the local context and in all phases of an emergency. To accomplish these goals, the Women’s Commission researcher undertook desk reviews of fuel provision, collection and physical protection strategies in various IDP and refugee situations worldwide and conducted site visits in Darfur, Sudan and in the Bhutanese refugee camps in eastern Nepal.

Neither the threat nor the risks are the same in all refugee and IDP settings – as the site visits to the two very different locations of Darfur and Nepal made clear. In some situations, a woman or girl is at risk merely by setting foot outside the camp; in other situations, her relative risk may depend on the current state of relations between the displaced community and the local community, government or security forces. Relative risk may also either increase or decline over time.

Because of its complexity, the issue of GBV during firewood collection requires a multi-faceted response. There are, however, several ways of narrowing down the issue in order to determine the most appropriate response strategy or strategies.

To begin, **physical protection** strategies can actively prevent attack *during* the collection of firewood. The development of **alternative sources of cooking fuel**, on the other hand, can help to lessen the *potential* for attack. Another way of viewing a potential response strategy is by dividing it into two categories: decreasing the **threat** to women and girls; and reducing the **vulnerability** of women and girls.¹

The actual responses by the humanitarian community to the issue of GBV during firewood collection have typically involved one or a combination of four main strategies: the direct provision of fuel, physical protection during fuel collection, promotion of fuel-efficient technologies and development of alternative fuel sources.

To be most effective, however, all strategies aimed at reducing the threat to women and girls should necessarily be accompanied by effective advocacy campaigns, strengthening the capacity of judicial systems to prosecute perpetrators of GBV and training of security forces. Similarly, to truly reduce vulnerability, the development of alternative fuel sources must go hand in hand with the development of successful income generation activities. Women and girls must have access to means of earning income other than the collection and/or sale of firewood.

DIRECT PROVISION

Direct provision of fuel can eliminate the need for women and girls to leave the camps in search of firewood. There are two main problems associated with any direct provision strategy, regardless of which fuel is being provided: 1) It is expensive over the long term and therefore difficult to sustain; and 2) It tends to increase the dependency of refugees or IDPs not just on the providing agency, but on the fuel in general.

PHYSICAL PROTECTION

The patrolling of firewood collection routes by peacekeepers, national or international security forces, police or human rights monitors can be beneficial. Direct consultation with displaced women regarding their needs and concerns before beginning such patrols is crucial to ensuring their success. Further, patrols will only succeed with ongoing, frequent communication among the interested parties.

FUEL EFFICIENCY

The promotion of fuel efficiency can reduce both the frequency and amount of firewood collection. Fuel-efficient rations and cooking techniques, such as pre-soaking beans and sheltering cooking fires, are inexpensive, easily implemented techniques that should be widely promoted in all camp settings as a complement to any fuel strategy.

In addition, reducing overall wood consumption can both serve to protect the environment surrounding refugee and IDP camps and to reduce the distance that women and girls must travel in order to collect wood.

A wide variety of models of fuel-efficient stoves is available for use in camp settings, from basic, hand-made mud and brick designs to pre-manufactured stainless steel products. There is no question that fuel-efficient stoves reduce firewood consumption: typically 20-80 percent depending on the model of stove and conditions during use. In addition, fuel-efficient stoves can be very inexpensive and burn relatively smoke free, which reduces the risk of respiratory infections – a common health concern in camp settings. The contained fire also decreases the risk of fire and of burns to children who might be playing near the stove.

Despite the potential of fuel-efficient stoves as a protection tool, most trainings and stove distributions in refugee and IDP camps have, so far, been *ad hoc* in nature. There has been little sharing of best practices even within agencies or among agencies in the same regions, resulting in significant inefficiencies in programming and design.

The use of fuel-efficient stoves may help to reduce the threat to women and girls by decreasing the amount and frequency of firewood collection. However, women and girls remain vulnerable since the use of stoves does not eliminate the need

for firewood and therefore the *potential* for attack. The stoves use less wood, but they nonetheless require wood.

FIREWOOD AND FUEL ALTERNATIVES

FIREWOOD

Firewood is the most commonly used cooking fuel in nearly all camp settings – and indeed in most of the (non-displaced) world. It is easy to use, provides flexibility in cooking time and temperature, cooks food quickly and all refugee and IDP women are familiar with it. However, in addition to the risks associated with its collection, burning firewood creates significant smoke – increasing the risk of respiratory infections – and can be unsafe in windy or crowded environments.

Wood-based fires have many additional benefits apart from cooking, including heating, repelling mosquitoes or even binding thatch. Fire also often plays a central role in the cultural life of a family or community – for this reason, many refugee and IDP women are reluctant to accept fuels that do not create a fire.

CHARCOAL

Wood or coal-based charcoal briquettes provide a fire, allow flexibility of cooking time and temperature, and can be re-used if not fully burnt. They cook food relatively quickly but produce more smoke than many other non-wood based fuels. Coal may also be difficult to find near many camp settings.

So-called “biomass briquettes” (also known as “honeycomb” or “beehive” briquettes), are typically produced in or near camps from locally available materials. They burn without smoke and are fairly inexpensive. The production process tends to be labor-intensive, however, and requires a large amount of raw materials to make relatively few briquettes. There is no flexibility in cooking time or temperature. Further, biomass briquettes present a potential for tension between refugees and host communities regarding use of forest products.

All charcoal and briquette-based fuels, regardless of composition, share a common problem: they typically require more energy to produce than they emit during use. This fact may be less important in areas

where fuel in general is not scarce and/or where the production cost of fuel is less a priority than obtaining the fuel. In other displacement situations, however – particularly those in arid and/or very remote environments – energy itself may be a primary concern. In such cases, charcoal or other types of briquettes would not be a logical choice.

OTHER NATURAL MATERIALS

A variety of naturally occurring or waste products have been tried as cooking fuel in various rural and/or camp settings worldwide. Such products have included grass, peat, agricultural waste (such as rice husk), food waste (such as corn cobs) or animal dung, and have been either burned in raw form or compressed into briquettes. None, however, has proven to be efficient or sustainable enough for widespread promotion.

KEROSENE

Those who use kerosene are typically pleased with it, since it cooks food quickly, burns relatively cleanly and can be used both indoors and outside. It is also a tradable commodity, and refugees and IDPs have been known to sell their kerosene in exchange for cash or ration supplements.

Kerosene is far from a perfect fuel, however. Users *not* familiar with the fuel have experienced potentially serious complications, including explosions and fire. As with most petroleum-based fuels, kerosene is very expensive, and continually increasing in price – making it unsustainable in the longer term.

BIOGAS

Biogas is a methane-based fuel created from the fermentation of human or animal waste, and can be used for cooking or lighting purposes. The gas itself is without cost, but the capital investments required to build a biodigester are significant. Further, biodigesters require a significant amount of space and are generally considered permanent structures – and host governments are typically reluctant to allow the construction of permanent structures within refugee camps. For this reason, the use of biogas would only make sense in protracted situations and/or where there would be a direct additional benefit to host populations. Promoters of biogas have also run into problems of acceptability among potential users because of the source of the fuel.

SOLAR ENERGY

There are three main types of solar cookers: panel cookers, box ovens and parabolic cookers. They vary in size, portability, cooking time and – especially – cost. In many ways, using solar energy in refugee or IDP camps makes abundant sense, since most camps are located in regions of high solar radiation. Further, apart from the initial costs of the cooking device, solar energy is free, sustainable and does not negatively impact the environment surrounding the camp. Displaced women can safely use solar cookers in the immediate vicinity of their huts, without having to put themselves at risk of attack by collecting firewood.

Despite the free use of the sun, achieving effectiveness and acceptability of solar cookers in refugee and IDP camps is often prohibitively expensive for humanitarian agencies alone.

Where private funds are available, however, solar cookers could be considered for use in combination with other fuels or fuel technologies, such as fuel-efficient stoves or briquettes.

HOW TO DETERMINE WHICH FUEL TO USE

Specific fuel-related initiatives – both those aimed at reducing threat or at reducing vulnerability – may be more or less appropriate depending on a variety of factors unique to the situation in question. The stage of displacement may play a key role, as can factors such as transportation infrastructure, the environment surrounding the camp and relations with governments and host communities.

Any fuel or fuel technology considered for medium- to long-term use in a refugee or IDP situation must meet a series of criteria or priorities which include, but should not be limited to, the following:

- safe provision and use; culturally acceptable locally available raw materials
- locally producible fuel; potential role of fuel production as an income generation activity
- secure transport
- sustainable both in terms of cost and environmental impact, and/or with a clear transition plan to a more sustainable fuel appropriate for use with traditional staple foods or supplied rations

- will not increase tensions with local communities

In addition to these general factors, the specific needs and cooking preferences of refugee and IDP women should also be taken into account, since no fuel will achieve any of the stated goals if women will not use it.

COORDINATION

The coordination of fuel-related initiatives has been particularly problematic for the humanitarian community because the UN does not currently have an established capacity to deal effectively with cross-sectoral issues. Fuel-related initiatives in camp-based situations in general pique the interest and spur the involvement of a wide range of actors with a similarly diverse set of interests. While this situation inevitably causes some problems, particularly in terms of coordination, it should also be seen as an opportunity: none of the interests of the different actors involved in fuel-related initiatives is mutually exclusive.

More coordination, therefore, can reduce overall costs by focusing the expenditures of donors to each of the sectors and maximizing the impact of projects over as wide a range of sectors as possible.

INCOME GENERATION ACTIVITIES

Many displaced families rely on fuel as a key source of income as well as for cooking. Without alternative income generation activities, therefore, no fuel-saving or improved cooking technologies will have a strong impact on the number and frequency of women and girls collecting firewood outside camps.

Assisting displaced women and girls to develop opportunities to earn income is a protection tool in that it can help to reduce dependence and vulnerability. Income generation activities should therefore be an integral part of any fuel strategy.

There are two parts to the issue of income generation activities: first, refugees and IDPs must be permitted by the government to legally engage in income generation activities. Second, in order to be successful, there must be an identified market for the goods or services that serve as income generation activities.

Where refugees or IDPs do not have the right to

legally engage in paid work, the international humanitarian agencies should undertake intensive lobbying efforts to change the law. In regions where refugees or IDPs may legally engage in paid work, in order for income generation activities to have the most chance at success and sustainability, they should be developed in conjunction with a market survey aimed at identifying potential markets for the refugees' or IDPs' goods or services.

As a rule of thumb, income generation activities with any chance of success in refugee or IDP communities must be as practical as possible. Potentially successful activities – just like alternative fuel sources – will use locally available materials.

KEY RECOMMENDATIONS²

COORDINATION

- The UN Office for the Coordination of Humanitarian Affairs (OCHA), UNHCR or another lead agency should designate a single UN agency or nongovernmental organization (NGO) to be responsible for coordination of all fuel-related initiatives in refugee and IDP settings.
- All humanitarian actors should share responsibility for multi-sectoral, holistic interventions to address fuel-related concerns.
- Donors should support the designation of an agency to coordinate fuel-related initiatives.
- The agency responsible for coordination of fuel-related initiatives should identify all alternative fuels or fuel technologies available for use in camp settings.

TIMING OF RESPONSE

- Direct provision of even partial fuel rations by UN agencies or NGOs should be considered as a necessary part of a protection strategy in the early stages of a crisis.
- Direct provision must always be accompanied by both a phase-out plan and medium- and longer-term fuel strategies.
- The UN agency or NGO tasked with the coordination of fuel-related initiatives should be

prepared to incorporate fuel as a key programmatic concern from the very beginning of crisis response planning.

- The Food and Agriculture Organization (FAO) should continue to promote the development of large-scale fuel-efficient stove manufacturing centers for use during the earliest stages of a crisis in order to increase stove coverage – and therefore decrease the need for firewood collection – as rapidly as possible.

DATA COLLECTION AND ADVOCACY

- GBV lead agencies should develop a coordinated, comprehensive data collection system for reporting and tracking incidences of GBV in individual displacement situations.
- The data collected through the system should serve as the basis for enhanced advocacy efforts on the issue of GBV prevention and response.
- UNHCR and other designated lead agencies for protection should continue to advocate effective strategies to protect women and girls from sexual violence.
- UN agencies and NGOs should seek to engage displaced men in fuel-related strategies aimed at protecting refugee or IDP women and girls.

PHYSICAL PROTECTION STRATEGIES

- UN peacekeeping missions and/or regional bodies, such as the African Union, should expand the use of accompaniment by security forces.
- Peacekeeping and/or security forces should consider transporting women and girls directly to designated collection locations.

FUEL EFFICIENCY

- The agency or NGO responsible for the coordination of fuel-related initiatives should promote the training, production and use of fuel-efficient stoves.

- The agency or NGO promoting the expansion of fuel-efficient stoves should support the development of non-wood-based fuel sources alongside the stoves.
- The World Food Program (WFP), UNHCR and partners should promote the use of fuel-efficient rations and cooking techniques from the very beginning of all displacement situations.
- UNHCR should ensure that environmental protection is factored into camp design and programming from the earliest stages of a crisis.

FUELS AND FUEL ALTERNATIVES

- Any fuel or fuel technology considered for medium- to long-term use in a refugee or IDP situation should meet a series of criteria or priorities that include, but should not be limited to, the following:
 - safe provision and use; culturally acceptable
 - locally available raw materials
 - locally producible fuel; potential role of fuel production as an income generation activity
 - secure transport
 - sustainable both in terms of cost and environmental impact, and/or with clear transition plan to a more sustainable fuel
 - appropriate for use with traditional staple foods or supplied rations
 - will not increase tensions with local communities
- UNHCR and camp management partners should encourage interested organizations, regardless of sectoral focus, to pilot alternative fuel schemes with receptive camp populations.

INCOME GENERATION ACTIVITIES

- Income generation activities should be an integral part of any fuel strategy.
- A market survey should guide the development of any income generation activity.
- The role of men as the traditional main income earners must be kept in mind by all actors when designing income generation activities for displaced women.

INTRODUCTION

Internally displaced women and girls in Darfur are at risk of rape, harassment and other forms of violence every time they leave the IDP camps to collect wood. This risk, however, is one they often have no choice but to take, since there are few other sources of cooking fuel *or* income available to them. The situation grows more dire every day. Darfur is mostly desert, and the few trees that provided a nearby source of cooking fuel when the camps were first created more than two years ago are long gone. Instead, women and girls walk three to six miles or more, three to five times per week, just to find a single tree. When trees cannot be found, they resort to digging by hand in the hard clay soil to find pieces of roots that might be combustible – as evidenced by the proliferation of holes that surround so many of the camps.

In northern Uganda, trees and grass are more plentiful than in Darfur, especially after the rainy season. Yet the same trees and grass that provide the means to cook also provide cover for the Lord's Resistance Army (LRA) rebels, who abduct women, and especially girls, to serve as sex slaves, cooks, porters and soldiers. The so-called “protectors” of displaced women and girls in northern Uganda – the Ugandan army – also await women and girls collecting firewood (or water, or vegetables), and sexually exploit them by threatening to falsely expose them as LRA collaborators.

In Tanzania, refugee women and girls are attacked by roving gangs when they travel in isolated jungle areas to find the means to cook food for their families. Many of these women and girls fled their homes in Burundi or the Democratic Republic of Congo in search of protection from the very same danger.

In Nepal, locally hired “forest guards” harass Bhutanese refugee women and girls collecting firewood outside the refugee camps, beating them, stealing their wood and personal property, forcing them to pay fines and often imprisoning them despite UNHCR's pleas that they not do so. Refugee girls have been gang-raped and murdered in the forest by opportunists from local communities who know they will not be

punished for their crimes.

Cooking fuel is traditionally seen by both displaced communities and humanitarian organizations as a “women's” issue, since it is a part of the cooking process. Because this is the case, the burdens associated with its collection fall almost exclusively on women and girls. In refugee and IDP settings worldwide, it has become common knowledge that women and girls are often at their most vulnerable when gathering fuel, often alone, in remote environments outside the camps.

The stories above are merely a few examples of the threats that await displaced women and girls outside the camps into which war or persecution has forced them. The environment that surrounds refugee or IDP camps, particularly in situations of ongoing conflict, are notoriously dangerous – yet every day, in hundreds of camps all over the world, millions of women and girls must knowingly venture out into this danger.

Why?

Refugee and displaced persons camps are created to be safe places, to protect and assist some of the most vulnerable populations in the world. In camps, refugees and IDPs are given shelter, water, health care and, of course, food – yet very rarely are they given the fuel needed to *cook* that food. Thus they must find it on their own, no matter the threat.

Why?

In some situations, fuel is considered too costly to distribute. In others, there is no agency mandated to do so. In many cases, the humanitarian community – even those tasked with protection – does not consider cooking fuel its responsibility. As this report will make clear, however, cooking fuel is in fact central to the mandates of many agencies. Protecting displaced women and girls from GBV and other forms of violence associated with firewood collection is not just the responsibility of “women's” organizations. It is the responsibility of *all* humanitarian agencies.

WHAT IS COOKING FUEL?

Cooking fuel is of crucial importance to nearly everyone in the world – almost as important as food itself. For the most part, it is taken for granted. Stoves are turned on, fires started, charcoal burned. For refugees, internally displaced persons and the agencies working to protect and assist them, however, cooking fuel is among the most complex and multi-faceted issues with which they deal on a daily basis. For refugees and IDPs, particularly the women and girls who are almost always responsible for obtaining it, cooking fuel cannot be taken for granted.

For refugees and IDPs, cooking fuel is a food item, since it provides the means to eat. It is a non-food item, since it is often used for so many other purposes – as construction material, for lighting, for heating or for health care. Cooking fuel is income, since it can be sold or traded. It is a protection issue, since women and girls are often attacked when they collect it. Cooking fuel is an assistance issue because most families cannot eat without it. It is an environmental issue because trees are lost and forests degraded during its collection. Cooking fuel is of concern from an energy standpoint because of the sheer magnitude of the need – an estimated 33 million refugees and IDPs in 2005.³ It is of concern from a transportation standpoint when it must be shipped long distances in insecure environments and on poor roads. Cooking fuel has financial, security, health and nutritional implications.

The complexity of cooking fuel itself is mirrored by the complexity of assuring its availability from a humanitarian standpoint, including by UN agencies and NGOs focusing on physical protection, food distribution, gender-based violence, environmental protection, development, renewable energies and energy technology, logistics and security.

In short, cooking fuel is a lot more than just firewood.

WHAT IS GENDER-BASED VIOLENCE?

Gender-based violence is endemic worldwide. The term “gender-based violence” includes physical, sexual, psychological, economic or socio-cultural attacks by strangers, by family members, by armies and police forces, even by peacekeepers. It

can include harassment, sexual exploitation and trafficking. While GBV can occur to anyone – male or female, young or old – it disproportionately affects women and girls.

Although GBV is not unique to refugee and IDP situations, it often becomes more acute during conflict and displacement. Traditional community support networks have been severed; the population has been traumatized by significant, often long-term exposure to violence; civilians often remain caught up in ongoing conflict, even in camps; perpetrators of violence can, at times, act with impunity; and women and girls in particular find themselves in a state of total dependence. Rape is often used as a weapon of war.

BACKGROUND TO THE PROJECT

The aim of the Women’s Commission’s project on refugee women and fuel needs was to investigate methods for reducing the vulnerability of displaced women and girls to GBV during the collection of firewood. The project set out to assess alternative fuel options, firewood collection techniques and other protection strategies, appropriate to the local context and in all phases of an emergency.

To accomplish these goals, the Women’s Commission researcher undertook desk reviews of fuel provision and collection, and physical protection strategies in various IDP and refugee situations worldwide. Additionally, the researcher conducted site visits in Darfur, Sudan and in the Bhutanese refugee camps in eastern Nepal in order to get a firsthand view of how UN agencies and NGOs approach cooking fuel needs in camp situations.

Darfur and Nepal were chosen as the two site visits because of their diversity. Darfur has a large IDP population and is still generally considered to be in an “emergency” phase, although relief agencies are, at the time of writing, beginning to shift beyond crisis planning. The Bhutanese in Nepal, on the other hand, are refugees – and constitute one of the most protracted refugee situations in the world today. Further, IDP camps in Darfur are located in a vast, remote, insecure desert and the population is still wracked by ongoing conflict. The seven refugee camps in Nepal, though facing increasing insecurity as a result of the Maoist insurgency, are located within less than one hour’s drive from UNHCR’s sub-office, in a lush, forested region.

The differences between Darfur and Nepal go even deeper. IDPs in Darfur are almost without exception responsible for collecting or purchasing their own cooking fuel: firewood. In Nepal, UNHCR has supported the direct, weekly provision of kerosene to all Bhutanese refugee families for over a decade – meaning, in theory, that there is no need for refugee women and girls to collect wood. Perhaps accordingly, the issue of GBV within the two populations is also quite different. Sexual assaults on IDP women and girls collecting wood outside the camps in Darfur occur with stunning frequency – in perhaps no other region of the world has the issue become so acute. In Nepal, by contrast, sexually based attacks outside the camps, though they occur, are relatively rare.

Lastly, although one must be careful not to generalize, the two populations themselves are different in many ways. Perhaps because of the sheer length of their encampment, the Bhutanese refugee population is highly organized, relatively highly skilled, and consists of various socio-economic classes – with some refugees owning their own generators and sending their children to schools outside the camps. In Darfur, the population is generally much poorer and less well-educated. While some

IDPs have retained possession of a donkey, by and large the population has yet to even begin to recover economically from the circumstances of their displacement.

The many differences between the two sites gave the Women’s Commission a wide range of experiences on which to base and compare findings. Whereas Darfur presented an opportunity to focus on the immediate protection needs of a female population under siege, Nepal provided a chance to carefully study and weigh a variety of different fuel options. It is hoped that the diverse site visits, in combination with desk studies, have resulted in recommendations that will be applicable in many different refugee and IDP situations – both current and future.

NOTE: The Women’s Commission has prepared case studies on the assessments carried out in Nepal and Darfur. The reports are available on the Women’s Commission’s Web site. *The perils of direct provision: UNHCR’s response to the fuel needs of Bhutanese refugees in Nepal* is available at www.womenscommission.org/pdf/np_fuel.pdf. *Finding trees in the desert: firewood collection and alternatives in Darfur* is available at www.womenscommission.org/pdf/df_fuel.pdf.

PART I. GBV IN REFUGEE AND IDP CAMPS

WHO IS RESPONSIBLE FOR PROTECTING DISPLACED WOMEN AND GIRLS FROM GBV?

Over all protection should be a shared responsibility of displaced communities as a whole – both men and women – as well as local and national authorities, the UN system and NGOs. More specific responsibilities for different aspects of protection become somewhat less straightforward – from an institutional standpoint, but especially on the ground.

Host country governments have primary responsibility for refugee protection. Within the UN system, UNHCR has responsibility for both the physical and legal protection of all refugees, including refugee women and girls.⁴ UNHCR, at times, maintains this role in IDP settings, although in some regions the responsibility has been taken on by other UN agencies such as OCHA. Further, guidelines on GBV prevention and response have been developed by the UN's InterAgency Standing Committee (IASC) – most recently the *Guidelines on Gender-based Violence Interventions in Humanitarian Settings* (2005), focusing on the specific roles of nearly all humanitarian agencies. The Office of the High Commissioner for Human Rights (OHCHR) plays a role in monitoring and investigating human rights abuses, including those directed against women and girls. UNICEF, for its part, responds to the specific needs of refugee and IDP children and adolescents.

NGOs are also crucial protection actors. They partner with UN agencies and/or work on their own to implement programs to prevent and respond to GBV in both refugee and IDP settings. In Darfur, for example, the International Rescue Committee (IRC) manages several women's centers within the camps, where displaced women and girls are able to report GBV incidents and receive medical and psychosocial care. NGO-run women's centers also typically offer skills-building courses and income generation activity trainings. In Nepal, UNHCR, WFP and the Lutheran World Federation (LWF) support the refugee-run Bhutanese Refugee Women Forum (BRWF) in its

programming directed toward decreasing the vulnerability and increasing the empowerment of refugee women (see Nepal case study⁵ for more information).

The role of displaced men in helping to protect refugee or IDP women and girls – their own wives, daughters and sisters – is integral to the success of any GBV prevention strategy and should be promoted. Collecting firewood is generally viewed as a part of the cooking process, and therefore “women's work.” If it is reframed, however, and becomes an issue not of cooking, but of protecting women and girls, men may be more likely to see it as something that is part of their responsibility.

Women and girls also have a key role to play in their own protection – every woman, displaced or not, should be aware of specific risks to her safety and of measures she can take to avoid such risks. Particularly when dealing with young, elderly, traumatized, dependent and otherwise vulnerable populations, however, the weight of responsibility should not fall squarely on their shoulders. Despite this fact, many fuel-related initiatives still place all or most of the burden for protection on women and girls themselves.⁶

RESPONSE TO GBV AND FUEL NEEDS

Cooking fuel does not fit well within traditional sectoral descriptions used by the humanitarian community. The new IASC *Guidelines for Gender-Based Violence Interventions in Humanitarian Settings* recognize the role of cooking fuel (or lack thereof) as a protection concern, defining it as a shelter and non-food item issue.⁷ Representatives of the Food and Agriculture Organization's (FAO) Emergency Coordination Unit (ECU) interviewed by the Women's Commission also consider fuel to be a non-food item, “just like blankets.”⁸ However, because fuel is necessary for cooking nearly all of the rations distributed by WFP in emergency settings, it could also be considered a food item.

The NGO-sponsored Sphere Guidelines (2000), make clear that cooking fuel availability should be taken into consideration when designing food baskets and distributions – including providing fuel when necessary.⁹

The definition of cooking fuel – that is, whether it is defined as a food item, non-food item or other – may seem esoteric, but it is in fact crucial to the determination of whether it must be supplied, as are food items, or not. As is discussed in more detail below, the direct provision of cooking fuel is often inadvisable. Further, cooking fuel – particularly firewood – is in fact often *both* a food and non-food item. The more important distinctions in terms of definition, therefore, are sectoral: how does each agency view its responsibility with regard to GBV, cooking fuel or promotion of fuel-efficient technologies?¹⁰

The way in which agencies see their role in the matter is important because the issue of physical abuse and GBV during firewood collection requires such a complex response. Generally, this response can be divided into two categories: 1) decreasing the *threat* to women and girls; and 2) decreasing the *vulnerability* of women and girls.¹¹

Most simply, decreasing the *threat* to women and girls requires responses such as advocacy and physical protection, and engages traditional protection actors, such as UNHCR, which may have long-term experience with GBV programming, but perhaps less direct experience with fuel sources and provision. Decreasing their *vulnerability* necessitates the development of alternative fuel sources and income generation activities, and encompasses a broader range of actors, including those focused on food security (WFP and FAO), livelihoods (UNDP), environmental protection (NGOs such as the Intermediate Technology Development Group, for example) and camp security. These organizations may have developed significantly more experience with the practicalities of livelihoods recovery or food distribution, but have little background in GBV programming.

Effective strategies for reducing the vulnerability of displaced women and girls to GBV associated with firewood collection will combine both the varied experience and comparative advantages of this wide range of actors.

ADVOCACY: THE IMPORTANCE OF DATA

Despite the clear role of the UN and NGOs in protection and the prevention of GBV, the actions of individuals – both the perpetrators of violence and the society that allows them to go unpunished – cannot be ignored. Although most of this report focuses on the specifics of different fuels and fuel technologies rather than on GBV itself, the need for advocacy around the issue underlies every section.

Advocacy on GBV means working with refugee and IDP communities to make clear to all that rape and sexual assault are punishable crimes. It also means strengthening accountability for protection activities within both host governments and the humanitarian community. It requires addressing the issue of impunity by promoting the proper training of security forces and strengthening the capacity of local police and judicial systems to ensure that survivors who have chosen to report can be confident that their claims will be followed up.

Without solid information on which to base programming strategies, advocacy on GBV is difficult. In most situations of displacement, there is no effective centralized system for reporting information on incidences of GBV. Data – particularly on the number, location and types of incidents of GBV – is often difficult to come by.

Data collection is problematic for numerous reasons, not the least of which is that survivors of sexual violence are often extremely reluctant to report the crimes against them to either medical or legal authorities – making overall statistics notoriously incomplete. Even when survivors *have* chosen to report, storing and processing the information must be done with extreme caution in order to maintain confidentiality, making sharing the information with other agencies or NGOs more complicated.

In Darfur, for example, UNFPA – as the lead agency for GBV – has responsibility for collecting and processing data. The agency is reluctant to

publicize or discuss the data it has collected – even with partner NGOs. This reluctance stems in part from concern about the confidentiality of the information, but also from concern about the possible misuse or “partial use” of the numbers.¹² These concerns are not unfounded.

The lack of accurate, reliable and complete data can also severely limit the effectiveness of GBV programming: without accurate estimates of the number and location of assaults, it is difficult to plan for or measure the impact or overall effectiveness of GBV interventions. If humanitarian agencies do not know how many rapes were occurring before their interventions, how can they tell if that number has declined after the interventions began? Further, without data it is difficult to assess precisely *where* targeted interventions are most needed and/or might have the most impact.

From a longer-term perspective, the lack of accurate data on the number of assaults – including on trends in assaults before and after specific GBV interventions – makes it more difficult for agencies and NGOs to effectively advocate on the issue of GBV and to accurately present the results of their activities to donors.

Also problematic for reporting and advocacy in many displacement situations is the attitude of host governments toward GBV on their territory and toward agencies reporting on it – periodically resulting in the dismissal of individual staff or entire agencies from certain countries. In Darfur, one NGO has attempted to address this concern by creating a data collection and advocacy system which places the responsibility for advocacy on UN bodies with formal mandates to bring protection-related concerns to the attention of the local and national authorities. The NGOs that contribute data to the system do so anonymously, with the UN serving as a buffer. Although the system is still in a pilot phase, it represents a new and potentially successful way of addressing the problem.¹³

PROBLEMS ASSOCIATED WITH COLLECTION OR PROVISION OF FUEL

COLLECTION

The risks associated with the collection of fuel – typically firewood – by displaced women and girls are well-documented: rape, abduction, theft,

exploitation and even murder are common. However, neither the threat nor the risks are the same in all refugee and IDP settings – as the Women’s Commission’s site visits made clear. In some situations, a woman or girl is at risk merely by setting foot outside the camp; in other situations, relative risk may depend on the current state of relations between the displaced community and the local community, government or security forces. In some settings, relative risk may decline over time; in others it may increase.

Some collection locations may be more sustainable than others. Tropical environments regenerate more quickly than arid regions, for example. Selective wood harvesting, coupled with reforestation programs, can also increase sustainability.

A series of questions can help guide a determination of the relative risk and sustainability of a particular collection location. For example:

- How much wood is (legally) available (i.e., are trees plentiful or scarce)?
- How far away from the camp is the collection location, and how rapidly is that distance increasing?
- Are there possibilities for environmental regeneration, and if so, how quickly will this happen?
- Have women and girls been trained in selective firewood-harvesting techniques?
- Who have been the main perpetrators of violence against women and girls outside the camp? Is there any possibility for UNHCR, OCHA or other agencies to mitigate against potential perpetrators (i.e., if army subordinates are the key perpetrators, could an intervention with army leadership make a difference)?
- What is the state of relations between the displaced community and the local population? Have tensions been increasing or decreasing?
- What is the primary fuel source of the local population (i.e., is there competition for resources)?

DIRECT PROVISION

In order to avoid the many risks associated with firewood collection, UNHCR has in some cases

provided cooking fuel directly to refugee or IDP women. The most well-known example of direct provision was the Dadaab firewood project, begun in the Dadaab camp in northern Kenya in 1998 in response to increasing reports of rapes and attacks occurring outside the camp during firewood collection.¹⁴ The project was controversial in part because of its expense, but more so because it did not work: a major evaluation of the project determined that 68 percent of all reported rapes continued to be perpetrated during the collection of firewood.¹⁵ Further, the project supplied only 11 percent of total household firewood consumption needs – clearly not enough to have a significant impact on the overall protection environment.¹⁶

The direct provision of kerosene has also been supported by UNHCR in some camp settings, most notably between 1993 and early 2006 in the Bhutanese refugee camps in Nepal,¹⁷ as well as in the camps for refugees from Darfur in Chad beginning in 2005-2006.

There are two main problems associated with any direct provision strategy, regardless of which fuel is being provided: 1) it is without question very expensive to meet the fuel needs of entire camp populations over the long term – making direct provision difficult, if not impossible, to sustain; and 2) the provision of fuel serves to increase the dependency of refugees and IDPs not just on the providing agency, but on the fuel in general – as

has clearly been the case with the Bhutanese in Nepal.

INDIRECT PROVISION: VOUCHERS

At least partially in response to concerns about dependency and sustainability, some agencies and NGOs have also tested so-called “indirect provision” schemes. These programs have generally involved the free distribution of vouchers that allow refugee or IDP women to purchase firewood from local markets.¹⁸ A key concern about voucher schemes, however, is that they can distort local markets.

Oxfam-GB, active in Darfur, has discussed the idea of supporting local traders to collect wood and giving IDPs vouchers with which to “purchase” it.¹⁹ To avoid potential concerns about excess collection and market distortions, Oxfam’s program would pay local traders based only on the number of vouchers they collected.

Although various payment strategies such as Oxfam’s could help mitigate against the negative consequences of voucher schemes, vouchers still do not represent a holistic response to the problems associated with firewood collection. As with fuel-efficient stoves (see Part 3, page 14), they are still a wood-based strategy and do not solve environmental concerns. Nor do vouchers fully address the potential for conflict between displaced and host communities.

PART 2: PHYSICAL PROTECTION STRATEGIES

TRANSPORTATION TO COLLECTION LOCATIONS

Transporting women to designated collection locations addresses several problems simultaneously: the women are protected because collection is directly monitored; environmental damage is limited because the sites are carefully selected; cost is managed because women are able to bring back larger amounts of firewood and therefore the collections do not occur as often as do firewood patrols.²⁰ Trucking to collection locations has also been tried with varying degrees of success in refugee camps in Tanzania and, more recently, in Chad.²¹

FIREWOOD PATROLS: ACCOMPANIMENT

African Union Civilian Police (AU CivPol) and Ceasefire Committee (CFC; the AU protection force in Darfur) soldiers began firewood patrols around a few camps in Darfur in 2005. For the most part, the patrols consist of two trucks containing both unarmed CivPol and armed CFC staff, which follow the women along a pre-determined route to the collection location.

A key concern regarding the firewood patrols in Darfur is the profound lack of clarity regarding the scope of CivPol and CFC's protection mandates, including among CivPol staff.²² According

to the CivPol members interviewed for this report, CivPol's basic mandate is to "observe and monitor," and to provide assistance and training to the local Sudanese police forces. CFC, for its part, is mandated to protect CivPol, *not* civilians, unless CFC directly observes civilians "under imminent threat and in the immediate vicinity, within resources and capability, it being understood that the protection of the civilian population is the responsibility of the government of Sudan."²³

Despite the confusion surrounding the protection mandate, the patrols have proven highly effective when they have been well organized and when CivPol sector commanders and CivPol staff have been personally engaged in ensuring their success. Where CivPol is less engaged, the patrols have proven less effective – mostly because fewer women and girls participate or even know of the existence of the patrols.²⁴

Direct consultation with displaced women regarding their needs and concerns *before* beginning any patrols is crucial. Further, patrols will only succeed with ongoing, frequent communication among the interested parties. In Darfur, such communication has occurred largely through frequent meetings of "firewood patrol committees," which consist of IDP women and girls, CivPol and facilitating NGOs.

PART 3: FUEL-EFFICIENT OR “IMPROVED” TECHNOLOGIES

FUEL-EFFICIENT STOVES

The most common model of fuel-efficient stove is made by hand, out of a combination of mud or clay mixed with water and animal dung or ash as a binding material. The cooking pot rests on a triangle of three bricks around which the mud mixture is built and dried. A small “door” for the firewood is cut into the base of the stove. The stove-making process is relatively easy to learn, and trainings generally take between three and five days from start to finish, including mixing and drying time.

There is no question that the stoves reduce firewood consumption. Different agencies have reported energy savings ranging anywhere from 20 to 80 percent,²⁶ depending on the model of stove, the technique of the user and the wind and other conditions during use. Particularly when combined with fuel-efficient rations and cooking techniques (see below), fuel-efficient stoves have a clear role to play in reducing the need for women to collect firewood and both the frequency and amount of firewood collected. Reducing overall wood consumption also serves to protect the environment surrounding refugee and IDP camps.

BEYOND MUD STOVES

Though mud stoves are the most common, readily available and least expensive model of fuel-efficient stoves, many other stove models have been tried in different locations. Different models have included combination ceramic/metal stoves in Thailand and Kenya; stoves made from pre-manufactured terracotta flowerpots and galvanized steel buckets in Nepal; and “3-in-1” stoves made to allow the user to switch between firewood, charcoal and bio-briquettes. UNHCR is also piloting a new German-manufactured stove in the Darfur refugee camps in Chad. Called the “Save80” stove because it has been shown to reduce firewood consumption by 80 percent, the stainless steel stove has proven to be popular with users due to its ability to cook quickly and flexibly.²⁵

As with fuel itself, the key consideration when choosing a stove model for use in camp settings is availability – that is, the stove should either be locally producible, from locally available materials (as is the mud stove), or easily, cheaply and quickly transported. Though many of the stainless steel models being tested in camp settings have proven to be highly efficient and popular with users, they can cost upwards of US\$50 per stove and must be transported long distances, making them an impractical choice in remote, insecure regions such as Darfur.

In addition to reducing wood consumption, fuel-efficient mud stoves are very inexpensive (typically less than US\$1 per stove).²⁷ They burn relatively smoke free, reducing the risk of respiratory infections – a common health concern in camp settings. Further, the fire is contained, which decreases the risk of fire and of burns to children who might be playing near the stove.

A key problem with stoves is that there has been little sharing of best practices or lessons learned in terms of design and efficiency of use. Although stoves are widespread throughout Darfur, for example, few of the UN agencies or NGOs sponsoring stove programs are communicating with each other, leading to serious inefficiencies.

FAO has suggested the possibility of creating large-scale manufacturing centers at the very beginning of a crisis to enable large quantities of stoves to be made very quickly, but this idea has not yet met with a great deal of success. According to FAO, this lack of success is because most agencies prefer to support many small-scale trainings, which allow a maximum number of beneficiaries to learn a valuable skill. FAO, however, believes that large-scale manufacture is the only way to increase stove coverage fast enough and early enough in a crisis to make a difference from a protection standpoint.²⁸

Regardless, the use of fuel-efficient stoves does not fully address the key concern of this report: the fact that women and girls put themselves at risk of attack during the collection of firewood. The stoves can certainly *decrease* the amount and frequency of firewood collection, but they nonetheless still require wood.

THE IMPORTANCE OF FUEL-EFFICIENT COOKING TECHNIQUES

A less-discussed, yet still important aspect of any project promoting fuel efficiency is the role of fuel-efficient rations and cooking techniques. Regardless of which fuel is used, these inexpensive, easily implemented techniques should be widely promoted in *all* camp settings, and are a complement to any fuel strategy, including fuel-efficient stoves. Such techniques include:

- pre-soaking beans, lentils or other legumes in order to shorten cooking time
- thorough milling of whole grains before cooking in order to shorten cooking time
- using only dry wood
- cutting wood and food into small pieces before burning or cooking
- sheltering cooking fires from the wind
- using tight-fitting lids where possible, or putting weight on the top of loose lids in order to trap heat inside pots
- beginning the cooking of a second pot of food (where two pots are available), by placing the second pot on top of the pot being cooked. This technique can also serve to weigh down loose-fitting lids.

All relief agencies involved in food and/or fuel distribution and GBV should have an interest in promoting fuel-efficient rations and cooking techniques. These simple interventions can have an impact much larger than the time invested by agency or NGO staff to promote them in women's centers or through community workers. Fuel-efficiency reduces the amount of time spent on food preparation as well as that required for fuel collection, thereby freeing up women's and girls' time to allow participation in other activities, such as vocational trainings or camp leadership structures, for example.

WFP can also play a major role in encouraging fuel efficiency by ensuring that food baskets are comprised of foods with which refugee or IDP women are familiar and therefore know how to cook without wasting food or fuel through improper or inefficient preparation. When the use of locally known foods is not possible, WFP can also distribute instructional leaflets and/or sponsor demonstrations to ensure that women learn proper cooking methods.

Finally, it is important to understand *all* of the potential uses of a fuel, beyond just cooking. In colder climates or seasons, firewood or other fuels are sometimes used for heating. This increase in overall fuel needs could be offset if relief agencies supplied more blankets or warmer clothes. The provision of blankets is much less expensive than the provision of a security force or of most cooking fuels.

ENVIRONMENTAL REHABILITATION AND REFORESTATION PROGRAMS

Environmental protection should be factored into camp design and programming from the very beginning of a crisis – including expected fuel needs. Environmental degradation can be limited by the structure and placement of a camp. Further, the environmental consequences of the refugees' or IDPs' fuel needs can and should also be addressed as early as possible. Too often, cooking fuel is not viewed as the multi-sectoral issue that it is, and it is pushed aside in favor of “more pressing” concerns such as food or health care. By the time fuel needs begin to be addressed, it is too late to start programs from a holistic perspective and in a sustainable manner. Further, the longer environmental degradation continues before regeneration projects are implemented, the less chance such projects have of succeeding. The longer women and girls are left without fuel options other than the (unprotected and unmanaged) collection of firewood, the farther and farther from the camps they will have to venture to find the wood – increasing their risk of attack.

Environmental protection should *always* be seen as an integral part of any crisis response. A best practice in this area can be seen in Zambia.²⁹ With the support of the Zambian government and Ministry of the Environment, the international nongovernmental organization (INGO) CARE

was able to establish a strong environmental program as the camps for Congolese refugees were first established. The program has served to reduce the negative impact of the camp on the surrounding environment through, for example, the selective harvesting of firewood, which does not kill the trees, and tree-planting programs, which they began immediately. In addition, with the cooperation of the government, CARE used trucks to bring refugee women to designated, sustainable firewood collection locations.

Soon after the arrival of Bhutanese refugees in Nepal, UNHCR earmarked funding for forest protection and regeneration activities through its Refugee-Affected Areas Rehabilitation Program (RAAP). The RAAP was aimed in part at reducing the tensions between the local community and refugees that had resulted in an increasing number of attacks on refugees. Programs included fencing forests, replanting trees and rehabilitating forest infrastructure. The RAAP was run in collaboration with the Nepalese Ministry of Forestry, but expired in 2001 as UNHCR began scaling back its overall activities in the region.³⁰



Forest outside Beldangi I camp, Nepal

Environmental regeneration can also have income implications – either as income generation activities or through food-for-work programs. As discussed below, income generation is an integral part of reducing the vulnerability of displaced women and girls. In Aisha camp in Ethiopia, for example, refugees have been given solar cookers in exchange for planting trees.³¹

In Sudan, FAO has been investigating the possibility of using excess mesquite from the eastern part of the country as a fuel in Darfur.³² Though not yet underway, if such a project were to be implemented, it could potentially address four problems at the same time. It would: lessen the negative impact of mesquite overgrowth in the east; provide an environmentally friendly, sustainable fuel for IDPs in Darfur; reduce the need for displaced women and girls to put themselves at risk of attack when collecting firewood; and provide a possible income generation activity if the production of the mesquite briquettes were to occur in Darfur.

Although environmental protection should, as noted, be a central part of all crisis response strategies, some regeneration programs – particularly tree-planting schemes – are likely to have their greatest impact only in the medium to long term, and will be most effective in tropical environments. These factors should be taken into account when prioritizing fuel-related initiatives: tree-planting schemes should not be the primary aspect of a program in the desert of Darfur, for example.



Stove in Darfur

PART 4: FUELS AND FUEL ALTERNATIVES

BIOMASS FUELS

FIREWOOD

There is no need to state the basics of firewood as a fuel. What is important for the purposes of this section is the role that firewood plays in the lives of displaced families apart from its use as a cooking fuel – and the ramifications that these other uses have on the willingness of displaced women to accept fuel alternatives.

When women in Darfur were asked by the Women’s Commission to discuss what they thought were the most important qualities of any potential cooking fuel (apart from its ability to cook food), without exception their responses mentioned the use of fire: they mentioned heating, ironing, making extra food to sell if possible, repelling mosquitoes and even the role of fire in traditional cultural practices.³³ Smoke from fires also helps to bind the thatched roofs of many refugee and IDP huts.³⁴

This is not to say that at least some of these needs cannot be addressed by fuels other than firewood. However, the importance of the multiple uses and purposes of fire should also be recognized and addressed.

CHARCOAL AND BRIQUETTES

All charcoal and briquette-based fuels, regardless of composition, share a common problem: they typically require more energy to produce than they emit during use. This fact may be less important in areas where fuel in general is not scarce and/or where the production cost of fuel is less a priority than obtaining the fuel. In other displacement situations, however – particularly those in arid and/or very remote environments – energy itself may be the primary concern. In such cases, charcoal or other types of briquettes would not be a logical choice. As one interviewee explained to the Women’s Commission, “[briquetting] isn’t a fuel-saving technology.”³⁵

CHARCOAL (WOOD OR COAL-BASED)

Most refugees and IDPs interviewed for this report were at least familiar with charcoal and most accepted or even preferred it. Charcoal still provides a fire – a factor important to many refugees. Further, it allows flexibility of cooking time and temperature, and can be re-used if not fully burnt. The briquettes cook food relatively quickly but produce more smoke than either kerosene or honeycomb briquettes (below). Coal-based briquettes must often be imported or transported large distances, increasing overall cost, though wood-based briquettes can often be manufactured locally.

BIOMASS BRIQUETTES: “HONEYCOMB” OR “BEEHIVE” VARIETY



Honeycomb briquette in stove

“Honeycomb” or “beehive” briquettes, currently used in Nepal, are made from a combination of forest products (such as weeds or scrub bushes) or agricultural waste (such as rice husks), soil or sand and a binding material such as clay or molasses.³⁶ Key advantages of the briquettes include smokeless burning, the fact that the briquettes can be produced locally (using all local materials), and their relatively low cost. Disadvantages include the labor-intensive production process (as discussed below), large amount of raw materials needed to make relatively few briquettes, potential for tension between refugees and host communities regarding use of forest products, and lack of flexibility of cooking time or temperature.

The standard manufacturing process is labor-intensive and small-scale in nature: collection of raw materials, charring in pits or metal drums, grinding into dust and mixing with binder by hand, placing the pasty mix char and binder into a single-briquette mold and pressing into form by hitting the mold with a hammer. The briquettes are then dried in the sun for up to four days. The entire process, including collection of raw materials and drying, takes approximately 10 days (the longer the briquettes are allowed to dry, the more efficiently they burn). Burned briquettes can be used as fertilizer.

Various organizations in Nepal, Japan and elsewhere have developed more sophisticated, larger-scale and less labor-intensive means of producing the briquettes, such as bigger charring drums and screw-press machines. The more industrialized the process, however, the more expensive the start-up costs. The intensive capital investment required for mass production of briquettes would make more sense were the entire production located within host communities, with the machinery sold to pre-existing or start-up manufacturing centers at a subsidized rate.

NATURALLY OCCURRING MATERIALS, AGRICULTURAL, ANIMAL AND FOOD WASTE

A variety of naturally occurring or waste products have been tried as cooking fuel in various rural and/or camp settings worldwide. Such products have included grass, peat, agricultural waste (such as rice husks), food waste (such as corn cobs) or animal dung. Such materials have been burned in raw form or compressed into briquettes. None, however, has yet proven to be efficient or sustainable enough for widespread promotion.

Grass, for example, requires a special kind of stove and involves significant labor on the part of the user for harvesting, drying and bundling before it can be used. It was also found to have a short burn time. Peat has been tested as a fuel in Rwanda and Tanzania, but was determined to be both unsustainable and environmentally degrading.³⁷ FAO has promoted European-made sawdust briquettes for use in arid regions, since they have no impact on the local environment. However, the briquettes must still be transported long distances, increasing overall cost and limiting their effectiveness in the most urgent of situations.³⁸

GAS-BASED FUELS

KEROSENE

Kerosene is a common cooking fuel in much of the developing world. As such, it is widely available and many refugees and IDPs are familiar with its use. Those who use kerosene are typically pleased with it, since it cooks food quickly, burns relatively cleanly and can be used both indoors or outside. It is also a tradable commodity, and refugees have been known to sell their kerosene in exchange for cash or ration supplements – this has particularly been the case for Bhutanese refugees in Nepal, who have received kerosene on a weekly basis since 1992-93.³⁹

Kerosene is far from a perfect fuel, however. Users *not* familiar with it have experienced potentially serious complications, including explosions and fire – both of which are of particular concern in camp environments, where children are often nearby and living quarters very close together, hastening the spread of fire. Kerosene was tested on a very small scale in Darfur in 2004, but the program was quickly stopped after a series of fires and explosions.⁴⁰ Displaced women interviewed by the Women's Commission in Darfur almost without exception expressed hesitance to even try kerosene.⁴¹

As with most petroleum-based fuels, kerosene is also very expensive, and continually increasing in cost, making it an impractical choice from a sustainability perspective.⁴² Due to the rising cost of kerosene, UNHCR ceased distribution of the fuel to Bhutanese refugees in early 2006, causing much consternation but also spurring intensive efforts to find a substitute fuel.

Transportation and storage are also of concern, both because of safety (kerosene can explode if improperly transported or stored) and security (because of its value, kerosene is subject to theft).

LIQUID PROPANE GAS

Liquid propane gas (LPG) has been discussed as a possible fuel source for refugee or IDP camps, particularly in countries with large natural gas resources and/or gas pipelines. Such infrastructure is far from common in most refugee or IDP settings, and liquid propane gas is therefore unlikely to be a widespread fuel alternative. The gas can be transported in canisters, but this adds

to the overall cost of the fuel. Although it cooks quickly and easily, liquid propane gas is typically too expensive for large-scale distribution (and, like kerosene, is subject to rising costs).

BIOGAS

Biogas is a methane-based fuel created from the fermentation of human (or occasionally animal) waste, and can be used for cooking or lighting purposes. It is obtained by linking latrines to a sealed, underground biodigester, which vary in size depending on the number of latrines to which they are connected. The materials ferment within the biodigester, and gas lines transport the gas from the digester into nearby homes or institutions. Once the process is completed, the leftover slurry can be used as fertilizer.

Though biogas has yet to be effectively used in a camp setting, it has met with some success in rural communities, particularly in Nepal, India and Afghanistan. However, although the gas itself is without cost, the capital investments required to build a biodigester are significant: as much as US\$470 for a small plant of 7 cubic meters.⁴³ Further, biodigesters require a significant amount of space and are generally considered permanent structures – and host governments are typically reluctant to allow the construction of permanent structures within refugee camps. Concerns about permanency of the structures might not be as pronounced in IDP settings.

For these reasons, the use of biogas would only make sense in protracted situations and/or where there would be a direct additional benefit to host populations. Most governments – regardless of whether they are hosting refugees or have IDP populations – would be more likely to accept the construction of biodigesters if the biogas will benefit local communities in addition to the camp populations, either simultaneously or after return.

In some instances, cultural barriers have prevented biogas from being used as a cooking fuel – some potential users consider the fuel to be unclean. Even if this were the case, it could still be possible to use biogas for lighting or other needs in camps which typically use kerosene or firewood for such purposes, thereby reducing overall fuel requirements and lessening the frequency of firewood collection. In Rwanda, for example, proposed beneficiaries of small test projects refused to use

the gas for cooking, but the biodigesters did supply electricity to hospitals.⁴⁴

SOLAR ENERGY

The following is a description of the three main types of solar cooker devices, and their potential for use in camp settings.⁴⁵ A more general analysis of the use of solar in camp settings follows the individual descriptions.

PANEL COOKERS (THE HOTPOT, “COOKIT” AND SIMILAR)

Panel cookers are the least expensive of the three main models of solar cookers – between US\$2 and \$6 per cooker, depending on local availability of materials and labor cost.⁴⁶ They consist primarily of a large piece of cardboard, covered with aluminum foil, and can often be made on site, including in camp settings. Panel cookers use a black-painted pot which is placed in the center of the reflective panel. The Cookit panel cooker requires the pot to be placed in a plastic bag, though the HotPot model is an entirely self-contained unit, not requiring the (environmentally unfriendly) bag.

In addition to being relatively inexpensive, panel cookers rarely burn food and are lightweight and portable – meaning they could be brought home upon return. They can also be folded for easy storage and transportation. However, because they are made primarily of cardboard, panel cookers are flimsy – a concern in often-windy camp environments – and must be frequently replaced. They cook slowly (roughly 1.5 hours to cook rice; one liter of water can boil in 30 minutes)⁴⁷ and cannot be used to fry food.

Cookits are currently being used on a relatively small scale in Iridimi and Ouré Cassoni refugee camps in Chad (see Darfur case study,⁴⁸ text box 1). They have also been used on a larger scale in Kakuma camp in Kenya and Aisha camp in Ethiopia. A pilot solar program in Dadaab was discontinued once direct firewood distribution began (see “Direct Provision,” page 11).

BOX OVENS

Box ovens consist of a wooden box lined with a reflective mat on the bottom, insulated sides and an adjustable glass top. A black-painted pot is placed inside the box; some models can accommo-

date two pots simultaneously. Most, if not all, of the required materials are easy to find, and the cookers can be assembled locally, including in camp settings. Additionally, they rarely burn food.

Unlike panel cookers, however, box ovens are large and cumbersome to move and store – a concern since they cannot be left outside during rain, as warped wood will negatively affect cooking ability. The ovens must be carefully constructed, since improper construction will further reduce the oven's cooking effectiveness. Additionally, the glass tops used on the ovens are thin and prone to breakage – a problem reported by users in Beldangi I refugee camp in Nepal (see Nepal case study⁴⁹). Lastly, box ovens cook food slowly (an average of 2.5 hours per meal was recorded in Nepal), must be turned frequently to capture the most direct solar radiation and are expensive for large-scale use in camps – in Nepal, the per-oven cost was estimated to be US\$30.⁵⁰

PARABOLIC COOKERS (SK-14 AND SIMILAR MODELS)

Parabolic cookers are large dishes made up of interlocking reflective plates. The dish is mounted on a rotating frame and the single, insulated, black-painted pot is suspended in the center of the dish in order to absorb the maximum amount of solar energy. Parabolic devices cook much more quickly than the panel or box cooker models – roughly 45 minutes to one hour for a full family meal.⁵¹ In addition, parabolic cookers can fry food.

However, the parabolic cookers must be turned every 5 to 10 minutes to follow the most direct rays of the sun and to avoid burning, making the cooking process somewhat labor-intensive. They are very expensive, costing on average several



Parabolic cooker, Nepal

hundred dollars (US\$153 each in Nepal). Because of their large size, parabolic cookers are very difficult to transport once assembled and are impractical for use in any camp in which space is at a premium. Further, because of their expense, parabolic cookers are often shared by several families, necessitating scheduling and frequently causing tensions among users (see Nepal case study⁵²). There is some evidence that the devices can tip over in strong winds, though this was not reported as a problem in Nepal.⁵³

Parabolic cookers have been successfully used on a large scale in Beldangi I refugee camp in Nepal for many years (see Nepal case study⁵⁴ for more information).

THE HAYBOX



Haybox, Nepal

Most solar cooking devices also come with a haybox, used for cooking with retained heat. Hayboxes are made primarily of straw, banana leaves or other strong organic material, insulated with wool and lined with plastic.

During use, the pot is wrapped in an insulating blanket and placed in the box, which is then covered and typically placed on the roof of the user's hut. A haybox will keep food warm for up to nine hours and can finish cooking food – such as rice – if properly used.

Additionally, the haybox allows solar energy to be used for longer periods, since evening meals can be cooked during the daytime but served hot well into the evenings. Hayboxes can also be used as energy saving complements to fuel-efficient stoves or most other traditional cooking methods.

In many ways, using solar energy in refugee or IDP

camps makes abundant sense: the vast majority of camps are located in the prime latitudes for solar radiation – between the equator and 40 degrees latitude.⁵⁵ Further, apart from the initial costs of the cooking device, solar energy is free, entirely sustainable and is not impacted by the aridity of the region. From a GBV perspective, displaced women can safely use solar cookers in the immediate vicinity of their huts, without having to put themselves at risk of attack by collecting firewood.

If solar energy is to be used in a camp setting it would, at first glance, make sense to promote panel cookers; since solar cookers must always be combined with at least one additional fuel source, choosing the least expensive solar cooker model would save on combined overall cost. In addition, panel cookers are easy to use and can be easily transported and stored – all important factors in camp situations.

However, it appears that panel cookers are not generally accepted by the refugee populations with whom they have been tested. With a second fuel source available, refugee women have tended to favor the non-solar fuel. The most common complaint about the panel cookers was slow cooking time – and nearly every refugee and IDP interviewed by the Women’s Commission listed “speed of cooking” as the key priority for any cooking fuel. It would, of course, not make sense to distribute the device if it is unlikely to be used – even if it is relatively inexpensive.

Parabolic cookers seem to address the speed of cooking issue: in Nepal, for example, the devices cooked food at nearly the same rate as kerosene. Unlike panel cookers, however, the parabolic cookers are very expensive, and since they too must be combined with a secondary fuel source, the overall cost is likely to become prohibitive for relief agencies.⁵⁶

However, there is significant private support for solar energy to be found worldwide. NGOs such as Solar Cookers International (SCI) or Solar Household Energy, Inc. (SHE-Inc) promote the development and expansion of solar cookers in rural, energy poor communities – including refugee camps – throughout the world. Their efforts are supported by foundations such as Vajra and KoZon. In Nepal, for example, the Vajra Foundation has independently supported the use of solar cookers in one of the seven Bhutanese

camps since 1998 – its project now covers more than 75 percent of the camp population.⁵⁷ KoZon has long-running experience using CookKits throughout Sahelian Africa.

Private funds cannot cover the cost of supplying solar cookers to the 33 million refugees and IDPs in the world today. However, they should not be entirely overlooked. Any increase in the use of solar cookers in a particular camp or region will necessarily decrease the amount of other, less safe or less sustainable fuels needed by that population, contributing to physical and/or environmental protection. Particularly where private funds are available, it is highly recommended that solar cookers be considered for use in combination with other fuels or fuel technologies, such as fuel-efficient stoves or briquettes. Solar cookers could also be supplied in exchange for tree planting or other environmental regeneration schemes.

FUELS STILL UNDER DEVELOPMENT

GEL FUEL

Gel fuel is an example of the types of fuels currently under development. The fuel itself is a type of ethanol alcohol produced from the fermentation of commonly available crops such as sugar cane or sorghum. The World Bank launched its “Millennium Gelfuel Initiative” in 2000, with the aim of developing and testing the performance, viability and acceptability of the fuel.⁵⁸ Though it has yet to be used on a large scale or in a camp environment, it addresses many of the priorities for use in camps: it is locally producible, made of locally available materials, sustainable and easily transported.

OTHER

Reducing fuel consumption and saving energy is not only important in refugee and IDP camps – it also has global implications. Because of worldwide interest in the subject – for rural communities, for the impoverished, for those who wish to save money *or* to save the environment – it is impossible to predict where the next “new” fuel might come from. The World Bank Development Marketplace has been a useful resource for development of alternative fuels over the last several years; several Europe-based foundations are actively researching improved methods for capturing

solar energy; and ethanol is beginning to take off in Brazil, India and even the United States. These organizations may not be actively searching for a means of reducing GBV against displaced women and girls, but their work could have unintended benefits. In the search for alternative fuels, therefore, it is important that humanitarian agencies not limit themselves to their traditional networks.

HOW TO DETERMINE THE APPROPRIATENESS OF A FUEL IN SPECIFIC SITUATIONS⁵⁹

There are many potential ways to address the appropriateness of a particular fuel or fuel response for a specific situation.

The first and most general involves a range of responses, starting at the earliest stages of an emergency with at least partial provision of the most locally available fuel (typically firewood) and the implementation of physical protection mechanisms targeting displaced women and girls as they collect whatever cannot be directly supplied. Simultaneously, fuel-efficient stoves or similar devices should be made – whether through many small-scale trainings or through a few mass production centers – and distributed as widely as possible. Underlying all the above is the need to develop income sources for displaced women so they are not compelled to collect and sell firewood. As fuel efficiency and income independence increase, provision and patrolling can slowly decrease.⁶⁰

Other factors that must be taken into account deal with the more specific circumstances of individual situations. They include, but are not limited to, the following:

- What is the local environment (i.e., desert? arid? tropical?)
- What is the state of the transportation infrastructure? How secure and accessible are the roads? What is the distance to the regional and national capitals (for communications and air transport purposes)?
- What are the weather patterns and seasons? Is there abundant sun? Are there rainy seasons that could make transport more difficult?
- What is the standard cooking fuel used by the local community? [If the camp has already

been established: what is the standard cooking fuel used in the camp?]

- How sustainable is this/are these fuel(s)?
- Are alternative fuels available locally? What raw and pre-manufactured materials are abundant?
- What is the cost of the standard and/or alternative fuels? What is the status of donor funding for the camp (i.e., stable, increasing or decreasing)?
- Are local authorities reliable and cooperative?
- What is the state of relations between the displaced and the local community? Are fuel sources a potential point of conflict?
- Is land abundant? If so, can refugees or IDPs make use of it? Is the available land resource poor or resource rich?
- How prevalent is GBV, and who are the key perpetrators? Do most incidents occur inside or outside the camp?
- Is physical protection present (i.e., is there a peacekeeping or other security force in or around the camp? Can local security forces be relied upon?)

These factors will likely have more or less impact on particular displacement settings depending on the timeline of the specific situation – whether in immediate crisis stage, emergency or post-emergency phase, or if the situation has become protracted. Of course, there is no easy way to determine in precisely what phase a particular situation may be at any given time – an emergency in one region may last years or rotate in and out of emergency status, whereas another camp may reach “normalcy” in only a matter of months. Instead of relying strictly on time as a means of determining the phase of a particular situation, it may therefore be more beneficial to use a set of indicators. Indicators may not be the same for all situations, but the most general for use in determining the fuel needs of displaced women would include – but are not limited to – the following:

- Is the camp still increasing in size? If so, is it increasing more rapidly or more slowly?
- Are the most immediate needs (food, water, shelter, health care) of the camp population being met?

- What are the global acute malnutrition rate, overall morbidity and mortality levels and other health indicators? (The Sphere indicators⁶¹ can be used for this purpose).
- How and how quickly is food being transported? What types of distributions are occurring?
- What is the prevalence of GBV, and where are attacks occurring?
- Do women have income generation options?
- After determining the phase of the situation, and the relative priority and importance of the various factors noted above, decisions can be made on which fuel or fuel strategy is most appropriate. Different actors may interpret all of the above in vastly different ways, however, highlighting the importance of effective coordination.



Displaced women pose with stoves they have made at the IRC-run women's center of Abu Shouk IDP camp, near El Fasher, north Darfur

PART 5: COORDINATION

The coordination of fuel-related initiatives has been particularly problematic for the humanitarian community because the UN does not currently have an established capacity to deal effectively with cross-sectoral issues. And, as noted previously, fuel is perhaps the most cross-sectoral of all relief issues. Piecing together the various aspects of fuel-related initiatives is, in the words of UNHCR, “a jigsaw puzzle.”⁶²

There was little doubt among interviewees from both UN agencies and NGOs that there is a profound need for better communication and coordination among agencies working on fuel-related projects. The proper venue for enhancing that communication and coordination, however, is much less clear. In fact, the discussion under way at the time of the Women’s Commission visit to Darfur in many ways echoed the debate surrounding the most appropriate means of protecting and assisting IDPs in general – a lead agency with overall responsibility for all fuel-related initiatives, or a more collaborative approach among the myriad agencies with an interest in the issue.

This either/or approach, however, is unnecessary. A key, overarching aspect of fuel-related initiatives (including firewood collection) in camp-based situations in general is that they pique the interest and spur the involvement of a wide range of actors with a similarly diverse set of interests and capacities. While this situation inevitably causes some problems, particularly in terms of coordination, it should also be seen as an opportunity: none of the interests of the different actors involved in fuel-related initiatives is mutually exclusive. Rather, working together while taking advantage of each agency’s comparative advantage can serve to enhance the effectiveness and efficiency both of the efforts of individual agencies as well as the broader, more comprehensive response.

Take, for example, the promotion of fuel-efficient stoves in Darfur. At the time of writing, mud stoves and/or stove trainings were being supported by FAO as a tool of food security, by WFP in part as a means of supporting the involvement of women in household food management, by IRC

and other NGOs in part as a protection tool and in part as a skills-building exercise, by the Intermediate Technology Development Group (ITDG) as a tool of environmental protection and by UNHCR as both a tool of physical protection and as part of that agency’s general program of environmental rehabilitation of refugee-affected areas.

However, the promotion of fuel-efficient stoves to reduce deforestation does not mean that it cannot at the same time be a tool of protection, and vice versa. The same activity, for the same cost, has positive effects in both arenas. More coordination, therefore, would serve not to increase competition, but rather to reduce overall costs by focusing the expenditures of donors to each of the sectors and maximizing the impact of projects over as wide a range of sectors as possible.

More generally, there is significant donor interest on the issue of alternative fuels, from both physical protection and environmental protection standpoints. Particularly in an era of declining funding for refugee- and IDP-related programming in general, and protection-related programming in particular, this interest could be used to offset funding shortfalls from other programs if focused correctly. For example, if protection funds for a particular emergency have been cut, a fuel-efficient stove project funded through an environmental group could be promoted as a means of accomplishing both environmental and at least some of the physical protection goals without a need for additional funds.

Another key issue is that of accountability. There is currently no actor – individual or agency – accountable for the success or failure of fuel-related programs, for following up with trainers and stove users, for managing the development and expansion of projects, for promoting best practices in all sectors, or for ensuring consistent funding. All such activities are undertaken on an *ad hoc*, per agency basis and are all too likely to be lost in the mix when new local crises or donor priorities emerge, as they so often do in emergency situations. Staff turnover adds to this problem.

Opinions on the potential for a responsible fuel/energy agency are mixed. In fact, a fuel and energy working group for Darfur was organized by OCHA in the fall of 2004, although no interviewees in the region one year later were aware of it or believed it ever got off the ground.

Establishing yet another working group, coordinating body or similar introduces the possibility of “working group fatigue” – too few staff attending too many meetings and spending more time talking about problems than actually working to fix them. Putting a specific agency in charge of the matter rather than convening working groups of multiple agencies (with multiple other concerns) could help to address this problem.

Effectiveness often depends much less on the particular agency in charge than it does on the individual staff member given responsibility within the agency – a lead agency with a disinterested leader will be no more effective than *ad hoc* collaboration among different actors. For this reason, it would be critical to ensure that the staff member(s) selected for the task are not overburdened with a broad portfolio but instead are able to concentrate their efforts on fuel-related initiatives, in all sectors. They must also be held directly accountable by their headquarters, by donors and by other interested agencies for their actions.

Finally, staff transitions must be done smoothly and thoughtfully. Weeks- or months-long gaps between staff positions are all too common in emergency situations and contribute to the *ad hoc* nature and lack of institutional memory associated with many fuel-related initiatives.

WHICH AGENCY?

Because of the diverse interests associated with fuel-related initiatives, there are several different UN agencies – or a dedicated NGO – that could logically take on coordination responsibility. None are perfect, but all are worth considering:

Office for the Coordination of Humanitarian Affairs (OCHA) (Resident Coordinators-Humanitarian Coordinators): As the UN’s overall humanitarian coordination body, it would make sense for OCHA to take responsibility for coordinating fuel-related initiatives, particularly in IDP situations where UNHCR may not be present. It could most

logically accomplish this through its Resident Coordinator-Humanitarian Coordinator (RC/HC) positions. However, OCHA’s non-operational mandate has in some instances limited its effectiveness. Additionally, its responsibility for addressing the (sometimes competing) needs of the many UN humanitarian bodies often makes the agency a slow mover in crisis situations. These two factors have led some agencies and NGOs to jump ahead of OCHA in crisis situations, including in terms of fuel-related initiatives (the fuel-efficient stove programs in Darfur, for example), leaving OCHA with the complex task of *post hoc* coordination. If the agency were to take on responsibility for fuel initiatives, it would need significantly more authority to compel the other UN humanitarian agencies to follow its lead – something the other agencies are unlikely to readily accept but which is nonetheless important for OCHA’s overall effectiveness on fuel in particular, but also on humanitarian response in general. Alternatively, the task of finding and designating a single NGO to have overall responsibility for fuel-related initiatives in a particular emergency could be written into each RC/HC’s terms of reference, for which the RC/HC would then be held accountable by OCHA’s top management.

UNHCR: The refugee agency would be a logical choice since it is already the UN’s global lead agency for all refugee-related concerns – most specifically protection – and has experience with fuel-related initiatives in several different regions. UNHCR is also operational and among the world’s first responders to any new refugee emergency, meaning it could likely get programs up and running faster than, for example, OCHA. UNHCR has more practical experience dealing with GBV concerns in refugee and IDP settings than any other UN agency. Considering that protection is the most nebulous and difficult to define element of the fuel “jigsaw puzzle,” this experience is important. However, UNHCR’s responsibilities are different in refugee situations than in IDP situations, and the overall UN response to situations of internal displacement is still being debated.⁶³ Were UNHCR to take on responsibility for fuel-related initiatives, this responsibility

would have to be clearly worked into the new cluster approach to humanitarian emergencies under discussion within the UN.

Food and Agriculture Organization: FAO is a relatively new actor on the emergency response and protection scene. It is typically more of a development body, working with governments and both displaced and host populations to increase food security and agricultural production. That said, interviews with staff at both country and headquarters level made clear that emergency response is a sector in which the agency is actively expanding its work. FAO sees its protection role particularly in terms of livelihood recovery, even during emergencies, and reducing the dependence of beneficiaries on the UN and INGOs. Because of this focus, as the responsible agency for fuel-related initiatives, FAO could be an important bridge between the more traditional emergency response actors, such as UNHCR and WFP, and development actors, such as UNDP. It also has experience with a variety of fuel-related initiatives throughout Africa. In order to be successful, however, the agency would need to greatly expand its field staff. It would also have to tread lightly in IDP situations because of its mandate to cooperate directly with governments.

World Food Program: Since WFP is typically in charge of food distribution in emergency situations (internal displacement or refugee), it would seem a logical expansion of the agency's mandate to include distribution of the means to cook the food it supplies. As noted earlier, the Sphere Guidelines (2000) make clear that cooking fuel is an important aspect of the design of food baskets – an activity typically managed by WFP.⁶⁴ Agency staff interviewed by the Women's Commission, however, did not seem to be aware of the Sphere recommendation.⁶⁵ Instead, WFP's main role in fuel and fuel technologies appears to be that of providing food for training during stove making or other related trainings conducted by its implementing partners. Unlike FAO, WFP has extensive field staff capacity and experience with emergency response.

United Nations Development Program: Having UNDP, traditionally a development

actor, in charge of coordinating fuel-related initiatives could serve to bridge the widespread gap between emergency relief and development interventions. Additionally, UNDP's experience with supporting micro-credit schemes and other livelihoods recovery efforts could promote a strong emphasis on sustainable income generation activities. In this sense, UNDP would be a logical choice for any fuel-related programs that aim for continuance after return (including fuel-efficient stove trainings). Like FAO, UNDP is not a traditional leader in emergency response, and its field staff capacity would have to be enhanced before it could take on additional responsibilities. Like FAO, UNDP also traditionally works directly with governments, a potentially complicating factor in IDP situations.

Nongovernmental Organizations: A different option would be for OCHA, UNHCR or another lead agency to designate not a UN agency but an NGO partner to focus exclusively on all aspects of fuel-related initiatives in a particular emergency. Such an approach could help prevent the sectoral bias or competition that could accompany the selection of a specific UN agency and ensure a more holistic response. Further, having one NGO focusing exclusively on fuel-related issues would avoid many of the problems caused by lack of communication or coordination among different agencies and help ensure accountability. There are few NGOs currently specialized in fuel-related initiatives, however, although it is not inconceivable that an NGO with previous experience in one or more of the relevant sectors could seek to develop additional expertise in order to fulfill a (non-traditional) lead agency role.

An additional question is whether it would be most appropriate to delegate a single, responsible agency for *all* emergencies, or instead to make such a determination on a case-by case basis. On the surface it would appear that a single responsible agency would be most effective in solving the myriad coordination problems discussed above. Similarly, knowing which agency is in charge of which issues from the very beginning of an emergency can go a long way toward avoiding many of the coordination problems currently found in

Darfur, for example. Depending on which agency has the responsibility, however, it is conceivable that the response could be complicated by the location of the emergency and the population affected: whether IDPs or refugees, for example. Such concerns would have to be addressed in advance of implementation.

Even with a single responsible agency, cooperation

is necessary. Many UN and NGO interviewees noted the importance of ensuring that whatever actor accepted responsibility for fuel-related initiatives should not be singularly focused on only one aspect of the complex issue (be it GBV, environmental protection, development or other). Overemphasis on one sector could in turn cause agencies with other emphases to lose interest in the fuel issue.

PART 6: THE NEED FOR INCOME GENERATION ACTIVITIES

Without income or the means to earn a living, displaced women are more dependent on men and on relief agencies – even more so than before displacement, since traditional support networks, families and communities have often been lost in the trauma of flight. This is of concern from a GBV perspective, since increased dependency is almost always accompanied by increased vulnerability. Providing displaced women and girls with an opportunity to earn income other than through collection and sale of fuel, therefore, is a protection tool that can help to reduce dependence and vulnerability, as well as promote self-reliance.

Income generation activities should be an integral part of any fuel strategy. Without alternative income generation activities, no fuel-saving or improved cooking technologies will have a strong impact on the number and frequency of women and girls collecting firewood outside camps; as discussed earlier, many displaced families rely on fuel as a key source of income as well as for cooking. In some cases, women and girls collect firewood to sell directly for income; in other cases, they sell or trade agency-distributed fuel rations and collect firewood for personal use. In both cases, they are putting themselves at risk of attack because of their need for income.

At times, it is also possible to frame fuel collection and dispersal as a source of income generation for both displaced populations and host communities. These practices could enhance sustainability and reduce tensions between the two populations, although security factors need to be carefully considered before implementing such programs.

WHAT TYPES OF INCOME GENERATION ACTIVITIES WILL WORK?

There are two parts to the issue of income generation activities: first, refugees and IDPs must be permitted by the government to legally engage in income generation activities. Second, in order to be successful, there must be an identified market for the goods or services produced or offered as income generation activities.

THE LAW

In many – if not most – refugee situations, refugees are not permitted by the host government to engage in any type of paid work or to produce goods for sale (this is less often the case in situations of internal displacement). If refugees do not have the right to work outside the camps, they may still be able to work within the confines of the camps. In such situations refugees can work for pay for relief agencies, for example, as teachers or health care workers. They may also be able to produce goods, such as soap, schoolbooks and sanitary napkins, for purchase by relief agencies, which then redistribute the goods within the camps.

Even work within camps is not assured, however. Some of the income generation activities sponsored by the Bhutanese Refugee Women Forum in Nepal, for example, have been stopped by the Nepalese government after complaints from local producers. If refugees are not permitted to work legally or produce goods for sale in any capacity, UNHCR and partners should lobby the local or national government for a change in the law, at least to allow legal, paid work within the confines of the camp. This is particularly true in protracted situations, such as the case of Bhutanese in Nepal.

THE MARKET

In some situations, refugees or IDPs are legally allowed to work or to sell goods for income. To have the most chance at success and sustainability, income generation activities should be developed in conjunction with a market survey, aimed at

identifying potential markets for the refugees' or IDPs' goods or services.

Most basically, a market survey should seek to determine the following:

- What goods or services are needed in the region?
- What goods or services are wanted in the region?
- How accessible are local markets?
- Who are the target consumers (i.e., fellow refugees/IDPs, relief agencies, the local community, the regional community, national/international markets)? If extra-regional markets exist, are they accessible?
- Is the market likely to be sustainable (i.e., is the income level of the target purchases likely to remain stable, or is it subject to fluctuation)?
- What raw materials are readily available locally?
- Is there any local competition? If so, are partnerships possible?

As a rule of thumb, income generation activities with any chance of success in refugee or IDP communities must be as practical in nature as possible. Handicrafts or other luxuries should not even be attempted unless an extra-regional market is secured beforehand and the expense and reliability of transport to those markets taken into account. Similarly, potentially successful income generation activities – just like alternative fuel sources – will use locally available materials.

Beyond market surveys, a series of questions should guide the development of specific income generation activities for displaced women:

- What do women *want* to do?
- What pre-existing skills do they have and/or what can they learn?
- How much time do they have available for income generation activities (i.e., what are their other responsibilities)?

Another priority that should guide the establishment of income generation activities is the status of the displaced community itself: are they likely to return home in the near future? If they are, it would make sense to extend the survey to areas of return in order to determine needs and markets in

that region, in addition to or perhaps even instead of the camp location. If the displaced community is not likely to return in the near future, a focus on the region nearer the camp is more logical.

However, it would still be useful from a long-term perspective to attempt to determine whether or not there are any potential income generation activities for which a market might exist both near the camp as well as in the area of eventual return.

The method of support for income generation activities must also be determined. Will trainings be sponsored or subsidized, and if so, by whom? From a long-term perspective, it would make the most sense for interested actors – whether UN agencies, NGOs or others – to offer small business loans or micro-credit schemes rather than outright grants, in order to promote sustainability. However, it should be determined in advance whether or not the target population has any experience with loans or credit.

In Dadaab camp in Kenya, for example, CARE managed a program providing small business loans to vulnerable refugee women.⁶⁶ Not only did the women have prior experience with using credit, the large market within the camp was an ideal venue for this type of activity. Dadaab's market may not be replicable in all camps, but nonetheless, small business loans or similar micro-credit programs should be considered.

THE ROLE OF MEN

Finally, it is important to keep in mind the role of displaced men when designing income generation activities for displaced women. It is common knowledge that refugee and IDP men often feel eclipsed by the attention given to their wives and to women and girls in situations of displacement – with many agency and NGO programs geared toward the specific needs of the female population and seemingly far fewer programs for men. Adding to this problem is the fact that most displaced men have lost jobs and, often, their traditional role as the sole provider for the family. Any income generation activities for women should take these factors into account and, if at all possible, provide a role for or a separate income generation activity for willing men as well. No responsible humanitarian agency would want to, even unwittingly, add to domestic tensions within displaced families.

PART 7: CONCLUSION

KEY FINDINGS

- There is no single answer to the problem of GBV during firewood collection. Nor is there one cooking fuel or protection strategy that will address the diverse requirements of different displacement situations. Rather, a holistic approach that takes a variety of indicators into consideration in the design of specific initiatives is needed.
- The issue of cooking fuel in situations of displacement is unique in that it touches many different agencies with diverse and often competing interests. Although this fact inevitably causes some complications, it should also be seen as an opportunity – more actors mean more potential, more creativity, a larger donor base and increased opportunity for lessons learned.
- Fuel-related initiatives are often *ad hoc*, even within the same region or agency. There is little sharing of experiences and a significant amount of duplication. High-level coordination of fuel-related initiatives is crucial to ensuring their success.
- There is significant donor interest on the issue of alternative fuels both for physical and environmental protection reasons. In an era of declining funding for refugee and IDP-related programming in general, and protection-related programming in particular, if focused correctly this interest could help offset funding shortfalls.
- Refugee and IDP camps present a unique testing ground for alternative fuels: an often receptive population, easy to identify and communicate with, likely to remain in the same setting for a significant period of time (for follow-up), cooking a fairly consistent range of foods, and with few outside fuel options.
- The most important aspect of cooking fuel for displaced women (apart from its ability to cook food) appears to be the speed of cooking. Other important qualities are the creation of a fire, low smoke emissions, flexibility of cooking time and temperature, ability to cook either inside or outside (depending on the typical practices of the population) and taste of the food.
- There must be incentives for all involved – donors, agencies and users – to develop and use alternative fuels. The incentives will vary from case to case and could include lessening the burden on women and girls, lowering the cost and/or increasing the availability of fuel, or reducing environmental degradation. Regardless of the incentive, without it, new fuels are unlikely to be developed or accepted.
- Direct provision of cooking fuel is expensive and unsustainable in the long term, but could be a necessary component of a protection strategy in the earliest stages of an emergency.
- Physical protection strategies, such as transportation to collection locations and firewood patrols, can be successful if they involve ongoing, direct communication and feedback with participants.
- Fuel-efficient stoves have a clear role to play in reducing the amount of firewood women and girls need to collect, as well as the frequency of collection.
- Fuel-efficient rations and cooking techniques will not single-handedly solve the problems associated with firewood collection, but they are the least expensive and easiest way of reducing the total amount of fuel consumed.
- Briquettes typically require more energy to manufacture than they produce during use. However, they can often be produced locally from a variety of locally available raw materials.
- Gas-based fuels are typically efficient and well

liked by users but are expensive, require significant infrastructure and/or are difficult to transport, store and use safely.

- The weather in most camps settings is conducive to the use of solar cookers, though there are significant cultural barriers to their promotion. The solar cooker model that cooks food quickly requires abundant land and is expensive; the model that is small, portable and inexpensive cooks very slowly.
- Many displaced families rely on fuel as a key source of income as well as for cooking. In some cases, women and girls collect firewood to sell; in other cases, they sell fuel rations and collect firewood for personal use. Such practices are common and continue to leave women and girls at risk of GBV.
- The fact that women and girls continue to collect wood for income highlights the role of alternative income generation activities as an integral part of any GBV reduction strategy.
- Any successful income generation activity will offer financial returns equal to or greater than those accrued from the sale of firewood.

The issue of protecting displaced women and girls from GBV during the collection of firewood can be divided into two main themes: methods for reducing the *threat* to women and girls and methods of reducing the *vulnerability* of women and girls.

Decreasing the *threat* to women and girls necessitates responses such as advocacy and physical protection. Advocacy strategies can come in many forms, but most generally must seek to change the attitudes of both the perpetrators of violence and the society that allows them to go unpunished. Security forces can also reduce the threat to women and girls by physically protecting them as they gather wood, either by transporting them directly to collection locations or by following and monitoring them as they go in search of wood.

Fuel-efficient stoves and fuel-efficient rations and cooking techniques also fall into the category of reducing threat, since they aim to reduce the fre-

quency and amount of firewood collection.

Decreasing the *vulnerability* of displaced women and girls to GBV during firewood collection necessitates the development of alternative fuel sources and income generation activities. The availability of fuels other than firewood at the very least offers displaced women and girls a choice as to whether or not they will leave the camp to collect wood, since they are no longer dependent on firewood for cooking purposes.

Such a choice, however, is only truly a “choice” if women and girls at the same time have a means of earning income other than the collection and sale of firewood. If firewood sale is their only source of cash, it is likely that they will continue to put themselves at risk in collecting it in order to maintain their key income source. This is particularly true in refugee and IDP situations where rations are insufficient and women and girls must earn income in order to obtain even basic necessities for their families. In order to reduce the threat in actuality, therefore, any fuel-related initiatives must be accompanied by the development of alternative income generation activities.

Specific fuel-related initiatives – both those aimed at reducing threat or at reducing vulnerability – may be more or less appropriate depending on a variety of factors unique to the situation in question. The stage of displacement may play a key role, as can factors such as transportation infrastructure, the environment surrounding the camp and relations with government and host communities.

What is common across all situations of displacement – refugee or IDP, emergency or protracted, in deserts or jungles – is the fundamental right to physical integrity. Cooking fuel has traditionally been viewed by the humanitarian community strictly as a means to an end – it makes food edible. Its role as a protection tool – or even more often the potential threat its collection poses to displaced women and girls – is often overlooked.

As this report has made clear, cooking fuel is much more than just the means to cook food. It lies at the heart of effective protection and assistance efforts.

RECOMMENDATIONS

COORDINATION

- OCHA, UNHCR or another lead agency should designate a single UN agency or NGO to be responsible for coordination of all fuel-related initiatives in refugee and IDP settings. This agency or NGO should act as a central repository and dispenser of relevant information and be held accountable for fuel-related programs, for following up with trainers and stove users (for example), for managing the design and coordination of projects, for promoting best practices in all sectors and for ensuring consistent funding.
- All humanitarian actors should share responsibility for multi-sectoral, holistic interventions to address fuel-related concerns. Factors that should be taken into consideration include, but are not limited to: the prevalence and primary location(s) of GBV incidents; the environment surrounding the camp; relations with host communities; available raw materials; transportation infrastructure; and security.
- Donors should support the designation of an agency to coordinate fuel-related initiatives as a means of reducing overall cost, tapping creativity, sharing experiences and lessons learned, preventing duplication and maximizing overall effectiveness.
- The agency responsible for coordination of fuel-related initiatives should identify alternative fuels or fuel technologies available for use in camp settings, regardless of sectoral focus.

TIMING OF RESPONSE

- Direct provision of even partial fuel rations by UN agencies or NGOs should be considered as a necessary part of a protection strategy in the early stages of a crisis, particularly in arid and/or highly insecure environments. In such situations, the UN system should consider designating fuel as a non-food item, to be distributed in the same manner and by the same agency/agencies as other non-food items, such as tarpaulins.
- Direct provision must always be accompanied

by both a phase-out plan and medium- and longer-term fuel strategies, including physical protection, promotion of fuel-efficiency, the development of alternative fuels/fuel sources and growth of income generation activities. As fuel-efficiency and income independence increases, provision and patrolling can correspondingly decrease.

- The UN agency or NGO tasked with the coordination of fuel-related initiatives should be prepared to incorporate fuel as a key programmatic concern from the very beginning of crisis response planning or even contingency planning exercises. Food distribution is not viewed as tangential or as something that can be focused on “down the road”; the ability to cook the distributed food should not be any less important.
- FAO should continue to promote the development of large-scale fuel-efficient stove manufacturing centers for use during the earliest stages of a crisis in order to increase stove coverage – and therefore decrease the need for firewood collection – as rapidly as possible.

DATA COLLECTION AND ADVOCACY

- GBV lead agencies should develop a coordinated, comprehensive data collection system for reporting and tracking incidences of GBV in individual displacement situations. This agency should have the responsibility to ensure that such data is routinely collected, appropriately analyzed and accessible by relevant UN agencies and NGOs.
- The data collected through the system should serve as the basis for enhanced advocacy efforts by UNFPA, UNHCR and NGO partners with local and national government officials, donors and other interested parties on the issue of GBV prevention and response. The lead agencies can address possible government sensitivities about collecting, storing and using the data by framing the system within a human rights context or by ensuring that only large UN agencies with broad protection mandates and activities, such as OCHA or UN country missions, are attached in name to the system.

- UNHCR and other designated lead agencies for protection should continue to advocate effective strategies to protect women and girls from sexual violence. Advocacy campaigns should address the issue of impunity within refugee and IDP communities to make clear to all that rape and sexual assault are punishable crimes, promote the proper training of security forces and strengthen the capacity of local police and judicial systems to ensure that survivors who have chosen to report are provided safety and are confident that their claims will be followed up.
- UN agencies and NGOs, particularly community services officers, should seek to engage displaced men in fuel-related strategies aimed at protecting refugee or IDP women and girls. Displaced men have a role to play in physical protection (accompaniment), in the development and promotion of fuels and fuel technologies (briquette making, assembling solar cookers, building fuel-efficient stoves) and in environmental rehabilitation programs (reforestation, selective firewood harvesting).

PHYSICAL PROTECTION STRATEGIES

- UN peacekeeping missions and/or regional bodies such as the African Union should expand the use of accompaniment by security forces in regions where displaced women and girls must collect fuel outside the camps. The expansion of such patrols should only begin after discussions with displaced women about their needs and concerns.
- Peacekeeping and/or security forces should also consider transporting women and girls directly to designated collection locations.

FUEL EFFICIENCY

- The agency or NGO responsible for the coordination of fuel-related initiatives should promote the training, production and use of fuel-efficient stoves. Stoves should be promoted in a coordinated manner that maximizes efficiency and sharing of best practices, particularly in terms of stove models.
- The agency or NGO promoting the expansion of fuel-efficient stoves should only do so with

the understanding that most of the stoves still rely on wood, and in arid environments are only delaying – not solving – the problem of deforestation. The agency or NGO should support the development of alternative fuel sources alongside the stoves.

- WFP, UNHCR and their partners should promote the use of fuel-efficient rations (such as food staples with which displaced women are familiar and blankets and warm clothes to save on the need for fuel for heating purposes) and fuel-efficient cooking techniques (such as sheltering fires from the wind and pre-soaking beans) from the very beginning of all displacement situations.
- WFP should distribute instructional leaflets or sponsor brief training programs in situations where it is not possible to distribute rations with which displaced women are familiar, in order to ensure that women learn how to cook the new foods without wasting fuel.
- UNHCR should ensure that environmental protection is factored into camp design and programming from the earliest stages of a crisis. Such protection strategies can include selective harvesting, reforestation, harvesting of invasive matter and the use of designated collection areas and can, over time, decrease the distances women and girls must travel to collect firewood.

FUELS AND FUEL ALTERNATIVES

[All of the following recommendations apply to the agency or NGO responsible for the coordination of fuel-related initiatives.]

- Any fuel or fuel technology considered for medium- to long-term use in a refugee or IDP situation should meet a series of criteria or priorities which include, but should not be limited to, the following:
 - safe provision and use; culturally acceptable
 - locally available raw materials
 - locally producible fuel; potential role of fuel production as an income generation activity
 - secure transport

- sustainable both in terms of cost and environmental impact, and/or with a clear transition plan to a more sustainable fuel
 - appropriate for use with traditional staple foods or supplied rations
 - will not increase tensions with local communities
- Recognize that any fuel for which there is a market is likely to be sold by refugees or IDPs, particularly when other food and non-food rations are inadequate, and will therefore not solve all firewood-related concerns.
 - Consult with displaced communities, particularly women and girls, regarding fuel collection mechanisms and fuel alternatives.
 - Take into account the central role played by fire in the cultural life of many displaced communities when designing alternative fuel strategies: either the presence of fire should be retained, or alternative methods for achieving the same purposes must be designed.
 - Do not promote most types of briquettes for long-term use in regions where fuel is scarce because they require large amounts of energy to manufacture.
 - Promote petroleum-based fuels such as kerosene only in emergency situations, since near-constant price increases make them unlikely to be sustainable in the long term. Any time petroleum-based fuels are used, they should be accompanied by a short-term phase-out plan.
 - Be aware of the many safety and security risks associated with the transportation, use and storage of kerosene in camp populations unfamiliar with the fuel and/or in insecure environments.
 - Consider biogas for use in protracted situations where benefits of the fuel would accrue to both displaced and host populations. Promote the use of biogas to provide heating or lighting in order to reduce overall fuel needs.
- Promote solar energy where private funding and a secondary fuel source are available. Because they cook food quickly and are the most accepted model of solar cooker, parabolic cookers are a logical choice. Because the parabolic cookers are expensive and require significant physical space, however, panel cookers could be promoted in crowded camp settings and/or where large-scale funding is not available.
 - UNHCR and camp management partners should encourage interested organizations, regardless of sectoral focus, to pilot alternative fuel schemes with receptive camp populations.

INCOME GENERATION ACTIVITIES

- Income generation activities should be an integral part of any fuel strategy. All humanitarian agencies have an interest in ensuring that displaced women and girls have means of earning income other than putting themselves at risk during the collection of firewood.
- The agency or NGO tasked with responsibility for coordinating fuel-related initiatives should ensure that a market survey, aimed at identifying potential markets for the refugees' or IDPs' goods or services, guides the development of any income generation activity. Income generation activities with the most chance of success in displaced communities must be as practical in nature as possible and use locally available materials. The potential for continuation of the income generation activity upon return, as well as method of support for training and capital investment, must also be taken into account.
- The role of men as the traditional main income-earners must be kept in mind by all actors when designing income generation activities for displaced women. No humanitarian agency should – even unwittingly – add to the potential for domestic tensions with displaced families.

APPENDIX I

MATRICES

Factors Affecting Choice of Fuel

	Cost	Environment	Transportation infrastructure	Cooperation of government/ local community	Physical security	Prevalence of GBV outside camps	Land availability/ space constraints	Availability of std. local fuel	Availability of alternative fuel	Weather
Physical protection					*	*				
Direct provision	*		*							
Fuel efficiency		*			*	*				
Firewood		*								
Briquettes		*								
Kerosene	*		*							
Biogas				*			*			
Solar-parabolic							*	*	*	*
Solar panel								*	*	*

Qualities of Specific Fuels

	Speed of cooking	Smokeless	Taste	Flexibility of cooking time/temp	Indoor	Outdoor	Fire?	Risk assoc. with collection	Impt. to have good relations with local community?	Flexibility of cooking style?	Locally available	Potential safe income generation activities?
Firewood	yes	no	yes	yes	yes	yes	yes	yes	yes	yes	yes	no
Charcoal briquettes	yes	no	yes	yes	yes	yes	yes	yes*	yes*	yes	unlikely	unlikely
Bio-briquettes	yes	yes	yes	no	yes	yes	no	yes	yes	no	yes	yes
Kerosene	yes	no	yes	yes	yes	yes	yes	no	no	yes	unlikely	no
Biogas	yes	yes	no	yes	yes	no**	yes	no	yes	yes	yes***	unlikely
Solar-parabolic	yes	yes	no	no	no	yes	no	no	no	no	no	yes
Solar panel	no	yes	no	no	no	yes	no	no	no	no	yes	yes

* if collected locally

** unless specially designed

*** requires infrastructure investment

APPENDIX II

METHODOLOGY

GOALS

The aim of the Women's Commission's project on refugee women and girls and fuel needs was to investigate methods for reducing the vulnerability of displaced women and girls to GBV during the collection of firewood. The project set out to assess alternative fuel options, firewood collection techniques and other protection strategies appropriate to the local context and in all phases of an emergency.

DESK RESEARCH⁶⁷

To accomplish these goals, the Women's Commission researcher undertook desk reviews of fuel provision, collection and physical protection strategies in various IDP and refugee situations worldwide. Key sources for written documents included UN/IASC humanitarian agencies, refugee/IDP and human rights policy organizations, such as Human Rights Watch and Refugees International, and NGOs and other organizations focused on specific fuels or fuel-related technologies, such as Solar Cookers International and the Center for Rural Technology. Humanitarian NGOs such as IRC, Oxfam and others also provided the Women's Commission with evaluations, assessments and other relevant documents related to past and current programming in all regions.

SITE VISITS

Additionally, the researcher conducted site visits in Darfur, Sudan and in the Bhutanese refugee camps in eastern Nepal in order to get a first hand view of how UN agencies and NGOs approach cooking fuel needs in camp situations.

As discussed in more detail in the main report, Darfur and Nepal were chosen as the two site visits because of their diversity. Basic differences are outlined in the table:

DARFUR	NEPAL
IDP population	Refugee population
Average length of stay in camp: 2 years	Average length of stay in camp: 12 years
Main cooking fuel: firewood	Main cooking fuel: kerosene ⁶⁸
Cooking fuel is collected	Cooking fuel is distributed
GBV outside camps: very common	GBV outside camps: rare
Environment surrounding camp: arid	Environment surrounding camp: tropical
Camps are far apart in remote region	Camps are near UNHCR sub-office
Transportation/communication: poor	Transportation/communication: sufficient
IGAs: legal	IGAs: illegal
Population: relatively low skilled	Population: relatively high skilled
Wealth: very poor	Wealth: varied socio-economic classes
Fuels being tested: few	Fuels being tested: many

The many differences between the two sites gave the Women's Commission a wide range of experiences on which to base and compare findings. Whereas Darfur presented an opportunity to focus on the immediate protection needs of a female population under siege, Nepal provided a chance to carefully study and weigh a variety of different fuel options.

FOCUS GROUPS

In Darfur, the Women's Commission organized group discussions with approximately 20 women in the IRC-run Women's Center of Abu Shouk IDP camp, near El Fasher (North Darfur) and a slightly larger group of female trainers and participants in a fuel-efficient stove-making program in

Kass (South Darfur) in October 2005. The women were asked questions related to if, how and when they collect firewood, their feelings about their own security during firewood collection, whether or not they purchase or sell firewood, their experiences with fuel-efficient stoves and stove trainings, alternative income generation projects, the most important qualities of cooking fuels, their experiences with and willingness to try “improved” cooking technologies and their opinions on communal cooking.

In Nepal, the Women’s Commission organized a series of slightly smaller focus group discussions through the Bhutanese Refugee Women Forum (BRWF) in three of the four camps visited (Sanischare, Kudunabari and Beldangi II) in November 2005. The first group consisted mostly of BRWF leaders, the second was strictly BRWF project participants and trainees (that is, not leadership level), and the third was secondary school teachers and counselors. The first two groups were asked their opinions about kerosene, kerosene stoves, whether or not they had tried or heard of alternative fuels such as bio-briquettes or solar cookers and their opinions thereon, as well as the most important qualities of any potential cooking fuel and their opinions on communal cooking. They were asked about the sale of kerosene or use of kerosene for purposes other than cooking and whether or not they had access to other means of earning income. Lastly, they were asked about their feelings of security outside the camps. The secondary school teachers and counselors were primarily asked questions related to opportunities available to refugee girls after finishing their education.

INTERVIEWS

In addition to group discussions with displaced women, the Women’s Commission conducted a series of one-on-one interviews with refugee and IDP women, as well as with UN and NGO staff at

field, country and headquarters level.⁶⁹ CivPol patrollers and firewood patrol committee members were also interviewed in Darfur. The interviews were conducted in a free-flowing manner, aimed at encouraging as much discussion as possible on a wide range of topics.

Displaced women were asked their opinions on fuel-related trainings they had participated in, such as bio-briquette making in Nepal or stove making in Darfur. Women using solar cookers in Beldangi I camp in Nepal were asked about their opinions of the cookers, including how often they used the cookers, the speed of cooking, taste of the food and scheduling use of the cookers with their neighbors.

UN and NGO staff were asked questions specific to their agencies, including about fuel-efficient rations and cooking techniques in the case of WFP and FAO, as well as how both agencies view their respective protection roles. NGOs such as IRC were asked questions related to their specific protection activities in the field or to their development and testing of fuels and fuel technologies. All humanitarian actors were asked their opinions on coordination of fuel-related initiatives. CivPol patrollers were primarily asked questions related to their understanding of their protection mandates as well as communication among and between patrols in different regions of Darfur.

MEETINGS AND TRAININGS

During the site visit to Darfur, the Women’s Commission attended a series of working group meetings in order to observe the current status of coordination efforts in Darfur. The Women’s Commission also observed fuel-efficient stove trainings in Darfur and was given a one-on-one demonstration of bio-briquette trainings in Nepal (the actual trainings had been conducted before the Women’s Commission’s visit).

APPENDIX III

LIST OF PERSONS INTERVIEWED

[All interviews in person unless otherwise noted.]

UNITED STATES

Daniel Wolf, Independent Consultant, Refugees International and APROVECHO. Washington, DC. September 28, 2005.

Sarah Martin, Advocate, Refugees International. Washington, DC. September 28, 2005.

Camille McCarthy, Project Associate, Solar Household Energy, Inc. Washington, DC. September 29, 2005.

Pascale Dennery, Technical Assistance Director, Solar Cookers International. Via telephone. September 29, 2005.

Jenny McAvoy, Protection Advisor, Oxfam-Darfur. New York City, October 7, 2005.

Beth Vann, Global Gender-Based Violence Technical Advisor, JSI. Via telephone. October 14, 2005.

Kristen Geary, Child Protection and Gender Based Violence Officer, UNICEF. Via telephone. December 13, 2005.

Neil Ahlsten, Chad-Darfur Program Officer, US Department of State, Bureau of Population, Refugees and Migration (PRM). Washington, DC. December 14, 2005.

SUDAN

African Union Civilian Police (three persons; names and location withheld on request). Sudan. October 2005.

Samira Rafiq, Protection Officer, Mercy Corps-Zalingei. Via email. October 2, 2005.

Amanya Michael Ebye, Darfur Director, International Rescue Committee. Khartoum. October 22, 2005.

Siddiq A.J. Syed, GBV Coordinator, Darfur Humanitarian Response Unit, UNFPA. Abu Shouk

IDP Camp. El Fasher, Darfur. October 24, 2005.

Aisling Swaine, Women's Health Coordinator, North Darfur, International Rescue Committee. El Fasher, Darfur. October 24, 2005.

Hassan Noor, Protection Coordinator, North Darfur, International Rescue Committee. El Fasher, Darfur. October 25, 2005.

Miriaam Adam, Neima Bashir and Elsara Yusif, Women's Center staff. Zam Zam IDP camp, El Fasher, Darfur. October 25, 2005.

Abu Shouk women's group (focus group of approximately 20 displaced women), Women's Center, Abu Shouk IDP camp. El Fasher, Darfur. October 25, 2005.

Fethelgaleil Mohammed Ahmed, Program Manager, Intermediate Technology Development Group (ITDG). El Fasher, Darfur. October 25, 2005.

Samira Mohammed Ahmed, IRC fuel-efficient stove trainer, As Salaam IDP Camp. El Fasher, Darfur. October 26, 2005.

Valerie LaForce, IRC Women's Health Coordinator, Nyala, Darfur. October 27, 2005.

Gerry Simpson, Norwegian Refugee Council (NRC), Nyala, Darfur. October 27, 2005.

IRC fuel-efficient stove program trainers and participants (focus group of approximately 30 displaced women), Women's Center, el Humeira IDP camp. Kass, Darfur. October 29, 2005.

Firewood Patrol Committee, community representatives (group of 12 women). Kass, Darfur. October 29, 2005.

Lisa Cohan, Women's Health Manager, Kass, International Rescue Committee. Kass, Darfur. October 29, 2005.

Nicole Widdersheim, Protection Advisor, USAID Office of Transition Initiatives. Nyala, Darfur, October 30, 2005.

Susan Purdin, Senior Technical Advisor, Reproductive Health, IRC. Nyala, Darfur, October 30, 2005.

Abd Alrahman Tameem, Clinic Administrator, Otash IDP Camp. Nyala, Darfur. October 31, 2005.

Ikumi Ogiwari, National Gender Officer and Hanan el Abbas, Program Officer, Gender, World Food Program. Khartoum. November 1, 2005.

Roselidah Ondeko, GBV Core Group, team leader, UNFPA. Khartoum. November 1, 2005.

Marc Bellemans, Emergency Coordinator – Sudan and Toni Ettels, Deputy Emergency Coordinator – Sudan, Emergency Coordination Unit, Food and Agriculture Organization. Khartoum. November 2, 2005.

Liz Pender, Women's Health Manager (Zalingei), IRC. Via email. November 16, 2005.

EUROPE

Maeve Murphy, Technical Advisor (SGBV), Valentine Ndiabalema, Senior Technical Advisor (environment) and Dominique Bigras (Junior Professional Consultant), United Nations High Commissioner for Refugees (UNHCR)-Geneva. Via telephone. October 17, 2005.

Brian Gray, Program Adviser (gender), World Food Program (WFP). Rome. November 7, 2005.

Kaori Abe, Operations Officer and Gender Focal Point, Emergency Operations Service, FAO. Rome. November 8, 2005.

NEPAL

Thangarajah Kugathanan, Deputy Representative, Sardhanand Panchoe, Protection Officer, Madhu Dhungana, Associate Program Officer and Nini Gurung, External Relations Assistant, UNHCR. Kathmandu. November 11, 2005.

Saori Kitajima, Officer in Charge, WFP-Nepal. Kathmandu. Via phone and email. November 11, 2005.

Field Protection, Community Services and SGBV Staff (8 persons total), UNHCR Sub-Office. Damak. November 14, 2005.

Mina Parajuli Panthi, Community Service Officer and Chanakya Adhikari, Program Officer – Bhutanese Refugee Project, Lutheran World Federation (LWF). Damak. November 14, 2005.

Badri Maharjan, Deputy Eastern Region Coordinator, Refugee Relief and Rehabilitation Program – Bhutanese Refugee Program, LWF. Damak. November 14, 2005.

Anub Aryal, Program Assistant, UNHCR Sub-Office. Damak. November 14, 2005.

Salima Khatoon, Program Assistant and Acting Officer in Charge, WFP. Damak. November 14, 2005.

Pratap Subba, Camp Secretary, Sanischare Refugee Camp. Morang District. November 15, 2005.

D.B. Bhattarai, Teacher and Counselor, CARITAS. Sanischare Refugee Camp, Morang District. November 15, 2005.

Prabhu Ran Chuwan, Incentive Post in-Charge, LWF. Sanischare Refugee Camp, Morang District. November 15, 2005.

Chari Maya Thatal, Bio-briquette Trainee, Sanischare Refugee Camp. Morang District. November 15, 2005.

Garima Adhikari, Coordinator, Amber Singh Subba, Program Manager and Bhim Kumari Sapkota, Supplementary Income Generating Activities In-Charge, Bhutanese Refugee Women Forum (BRWF) Secretariat. Sanischare Refugee Camp, Morang District, Nepal. November 15, 2005.

Geert Brugman, Field Volunteer, Vajra Foundation-Nepal. Beldangi I Refugee Camp, Jhapa District. November 16, 2005.

Sita Rai, Bio-briquette Trainee, Beldangi I Refugee Camp. Jhapa District. November 16, 2005.

Bhutanese Refugee Women Forum (BRWF), focus group of six BRWF leaders. Kudunabari Refugee Camp, Jhapa District. November 17, 2005.

Kudunabari Secondary School, focus group of five female teachers/counselors. Kudunabari Refugee Camp, Jhapa District. November 17, 2005.

Manoj Rai, Administrator, Kudunabari Refugee Camp. Jhapa District. November 17, 2005.

BRWF, focus group of 13 members. Beldangi II Refugee Camp, Jhapa District. November 18, 2005.

Ganesh Ram Shrestha, Executive Director, and

program, training and management staff, Center for Rural Technology (CRT). Kathmandu. November 21, 2005.

MEETINGS AND TRAININGS ATTENDED

UNFPA GBV Training, Women's Outreach Workers, Abu Shouk Women's Center. Abu Shouk IDP Camp, El Fasher, Darfur. October 24, 2005.

Protection Working Group, North Darfur. OCHA – El Fasher, Darfur. October 25, 2005.

IRC-CHF fuel-efficient mud stove training, As

Salaam Women's Center. As Salaam IDP Camp, El Fasher, Darfur. October 26, 2005.

GBV Working Group, South Darfur. OCHA – Nyala, Darfur. October 27, 2005.

Firewood Patrol Committee, South Darfur. IRC – Kass, Darfur. October 29, 2005.

TIMELINE OF SITE VISITS (ALL 2005)

SUDAN

21 – 24 October: Khartoum

24 – 27 October: El Fasher, North Darfur

Abu Shouk camp

As Salaam camp

Zam Zam camp

27 – 29 October: Nyala, South Darfur⁷⁰

29 – 30 October: Kass, South Darfur

el Humeira camp

30 – 31 October: Nyala, South Darfur

Otash camp

31 October – 3 November: Khartoum

NEPAL

10 – 13 November: Kathmandu

13 – 19 November: Jhapa and Morang Districts

Sanischare camp

Beldangi I camp

Kudunabari camp

Beldangi II camp

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ENDNOTES

¹ This section is based on a matrix entitled “Exposure to Violence Associated with Collection of Firewood,” developed in Darfur in September 2004 by representatives of Oxfam, UNICEF and IRC. The document was obtained from Oxfam by the author.

² For a more comprehensive set of recommendations, see the full report.

³ US Committee for Refugees, *World Refugee Survey* (2005), “Key Statistics.”

⁴ See UNHCR, *Guidelines on the Protection of Refugee Women*. (1991)

⁵ *The perils of direct provision: UNHCR’s response to the fuel needs of Bhutanese refugees in Nepal* www.womenscommission.org/pdf/np_fuel.pdf.

⁶ Kristen Geary (former Child Protection and GBV Officer), UNICEF-Darfur, telephone interview with author, December 13, 2005.

⁷ IASC, *Guidelines for Gender-Based Violence Interventions in Humanitarian Settings*, Chapter 7, “Shelter, Site Planning and Non-food Items,” pp. 58-60. (September 2005)

⁸ Marc Bellemans (Emergency Coordinator) and Toni Ettels (Deputy Emergency Coordinator), FAO Emergency Coordination Unit, interview with author, Khartoum, November 2, 2005.

⁹ Guidance Note #2, *Sphere Humanitarian Charter and Guidelines on Minimum Standards in Disaster Response*, Chapter 3, “Minimum Standards in Food Security, Nutrition and Food Aid” (2004 revised edition), p. 159.

¹⁰ Physical protection is also an integral part of the response to GBV during fuel collection, but is more straightforward in terms of sectoral responsibility.

¹¹ This section is based on a matrix entitled “Exposure to Violence Associated with Collection of Firewood,” developed in Darfur in September 2004 by representatives of Oxfam, UNICEF and IRC. The document was obtained from Oxfam by the author.

¹² In an email to the author, UNFPA’s GBV Core Group team leader, Roselidah Ondeko, explained: “As far as possible it would be good not to quote numbers given the various reasons, i.e. people may use numbers in different ways, i.e. for or against the program or they may give a partial or false impression of the situation,” January 4, 2006.

¹³ For more information on the data collection and advocacy system, see Darfur case study, *Finding trees in the desert: firewood collection and alternatives in Darfur*, www.womenscommission.org/pdf/df_fuel.pdf.

¹⁴ For more detailed information on the Dadaab firewood project, see CASA Consulting, *Evaluation of the Dadaab Firewood Project, Kenya* (evaluation report prepared for the UNHCR Evaluation and Policy Analysis Unit), June 2001.

¹⁵ CASA Consulting, p. 5, para. 21. The report adds that “...firewood collection provides a convenient context or location for rape, but should not be viewed as its ‘cause.’ We cannot conclude that if women were provided with more firewood, they would be significantly less at risk” (p. 4, para. 15).

¹⁶ Ibid.

¹⁷ For more detailed information on kerosene provision in Nepal, see Nepal case study, www.womenscommission.org/pdf/np_fuel.pdf.

¹⁸ Bellemans and Ettels, interview.

¹⁹ Jenny McAvoy (former Protection Advisor), Oxfam-Darfur, interview with author, New York City, October 7, 2005.

²⁰ Patrols in Darfur, for example, merely follow the women and girls as they collect wood but do not, under any circumstances, actually transport the wood. The patrols must therefore take place several times per week in order to meet the fuel needs of the population. See Darfur case study, www.womenscommission.org/pdf/df_fuel.pdf for more information.

²¹ See Darfur case study, Text Box 1, “Note on Chad” for more information, www.womenscommission.org/pdf/df_fuel.pdf.

²² The Women’s Commission did not have the opportunity to speak directly with CFC soldiers.

²³ Sally Chin and Jonathan Morgenstein, *No Power to Protect: The African Union Mission in Sudan*, Refugees International (November 2005), p. 5.

²⁴ For more on the firewood patrols in Darfur, see Darfur case study, www.womenscommission.org/pdf/df_fuel.pdf.

²⁵ For more on the Save80 stove, see the Darfur case study, Text Box 2, “The Save80 Stove,” www.womenscommission.org/pdf/df_fuel.pdf

²⁶ See, for example: Daniel Wolf, International Lifeline Fund and Matthew Langol, Aprovecho Research Center-Uganda, “Darfur Humanitarian Stove Project Assessment,” October 24, 2005; ITDG Darfur Program, “Training of Trainers on the manufacturing and use of improved wood stoves and fuel saving skills,” October-January 2005; ASB, “The Save80 Project,” (undated); and Oxfam-Kebkebiya, “Evaluation Report: Fuel-Efficient Stoves Project, Kebkebiya,” June 8, 2005.

²⁷ Wolf and Langol, p. 16.

²⁸ Bellemans and Ettels, interview.

²⁹ Beth Vann (Global GBV Technical Advisor, JSI), telephone interview with author, October 14, 2005.

³⁰ UNHCR-Nepal country office staff, interview with author, Kathmandu, November 11, 2005.

³¹ Pascale Dennery (Technical Assistance Director), Solar Cookers International (SCI), telephone interview with author, September 30, 2005.

³² Bellemans and Ettels, interview.

³³ For example, some women in Darfur use cooking fires as a traditional cleansing method, which involves standing over the fire wrapped in a blanket and using the smoke as a type of deodorant. See the Darfur case study for more information, www.womenscommission.org/pdf/df_fuel.pdf.

³⁴ See CHART 3, “Qualities of specific fuels,” for more information.

³⁵ Bhadri Maharjan (Deputy Eastern Region Coordinator, Refugee Relief and Rehabilitation Program), LWF-Bhutanese Refugee Project, interview with author, Damak (Jhapa, Nepal), November 14, 2005.

³⁶ For more detailed information on biomass briquettes, see Nepal case study, www.womenscommission.org/pdf/np_fuel.pdf.

³⁷ Valentine Ndibalema (Senior Technical Advisor – environment), UNHCR, telephone interview with author, October 17, 2005. For more information on these various fuels, see UNHCR Environment Unit, *Cooking Options in Refugee Situations: A Handbook of Experiences in Energy Conservation and Alternative Fuels* (2002).

³⁸ Bellemans and Ettels, interview.

³⁹ For more on the use of kerosene in Nepal, see Nepal case study, www.womenscommission.org/pdf/np_fuel.pdf.

⁴⁰ McAvoy, interview.

⁴¹ Women interviewed in Abu Shouk camp near El Fasher, North Darfur (October 25, 2005), rejected kerosene because of safety concerns. Women interviewed in el Humeira camp in Kass, South Darfur (October 29, 2005), were either unfamiliar with or skeptical of the fuel.

⁴² Regardless of concerns about sustainability, UNHCR began limited kerosene distribution in refugee camps in Chad in 2005 (for more on Chad, see Darfur case study, Text Box 1, www.womenscommission.org/pdf/df_fuel.pdf).

⁴³ Anup Aryal (Program Assistant), UNHCR sub-office, interview with author, Damak (Jhapa, Nepal), November 14, 2005.

⁴⁴ Ndibalema, interview.

⁴⁵ The author is indebted to Pascale Dennery, Technical Assistance Director of Solar Cookers International (SCI) and Camille McCarthy, Project Associated at Solar Household Energy, Inc. (SHE-Inc), for their assistance in explaining the various solar cooker models.

⁴⁶ Dennery, email to author, January 9, 2006.

⁴⁷ Camille McCarthy, interview with author, Washington, DC, September 30, 2005.

⁴⁸ *Finding trees in the desert: firewood collection*

and alternatives in Darfur is available at www.womenscommission.org/pdf/df_fuel.pdf.

⁴⁹ *The perils of direct provision: UNHCR's response to the fuel needs of Bhutanese refugees in Nepal* is available at www.womenscommission.org/pdf/np_fuel.pdf.

⁵⁰ Geert Brugman (field volunteer), Vajra Foundation, interview with author, Beldangi I camp, Jhapa (Nepal), November 16, 2005.

⁵¹ Brugman, interview, and informal discussions with refugee women using parabolic cookers in Beldangi I camp, November 16, 2005.

⁵² *The perils of direct provision: UNHCR's response to the fuel needs of Bhutanese refugees in Nepal* is available at www.womenscommission.org/pdf/np_fuel.pdf.

⁵³ Denny, email.

⁵⁴ *The perils of direct provision: UNHCR's response to the fuel needs of Bhutanese refugees in Nepal* is available at www.womenscommission.org/pdf/np_fuel.pdf.

⁵⁵ SCI, "Predicting usefulness and spread of solar cookers: checklist," (undated).

⁵⁶ Box ovens have not been addressed in detail in this section since they do not seem to overcome the speed of cooking issue nor are they particularly inexpensive.

⁵⁷ Brugman, interview.

⁵⁸ Information on the Millennium Gelfuel Initiative taken from the Web site of the World Bank Development Marketplace (<http://www.worldbank.org/wbsite/external/opportunities/grants/devmarketplace/.../html>) and the Web site of the UK-based environmental NGO

Greenheat (<http://www.greenheat.co.uk/world-bank.htm>). The Women's Commission's attempts to speak directly with World Bank representatives about the fuel were unsuccessful.

⁵⁹ For a graphic explanation of this section, see Appendix I.

⁶⁰ This paragraph is based on the author's interview with Jenny McAvoy, Oxfam.

⁶¹ *Sphere Humanitarian Charter and Guidelines*, Chapter 5, "Minimum Standards in Health Service."

⁶² Ndibalema, interview.

⁶³ For more information on the new "cluster approach" to IDP response, see "Discussion and Outcomes of the IASC Meeting in New York on Humanitarian Reform Initiatives," September 20, 2005.

⁶⁴ *Sphere Humanitarian Charter and Guidelines*, p. 159.

⁶⁵ Ikumi Ogiwari (National Gender Officer) and Hanan el Abbas (Program Officer, Gender), WFP-Sudan, interview with author, Khartoum, November 1, 2005 and Brian Gray (Program Adviser - gender), WFP, interview with author, Rome, November 7, 2005.

⁶⁶ Vann, interview.

⁶⁷ A full list of documents consulted is included in Annex III.

⁶⁸ At the time of the Women's Commission visit in November 2005.

⁶⁹ For a full list of interviewees, see Annex III.

⁷⁰ A planned visit to Kalma camp was canceled as a result of security concerns.

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