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From Fuelwood to GBV: Repackaging the efficient-stove as a ‘solution’ to crises in Sudan/Darfur

Keywords

Gender-based violence (GBV), Fuel-efficient stove (FES), Non-government organisations (NGOs), Crisis, Sudan, Darfur

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Abstract

International awareness of rape and other forms of gender-based violence (GBV) in Darfur motivates intense advocacy, shapes international public and political opinion, influences donor policies, and motivates relief and development interventions (Mumdani 2009). In response to increasing attacks on displaced women and girls while collecting fuelwood, international non-governmental organisations (NGOs) began to promote fuel-efficient stoves (FES) as a means to reduce the need for fuelwood and reduce the risk of rape. Attention and resources directed to the development of FES programmes in Darfur encouraged competition among international NGOs in terms of efficiency and usability. Although it became clear that the promotion of stoves did little to reduce GBV, the language of sexual violence continues to be a powerful rallying cry drawing attention and resources to the Darfur humanitarian crisis (Abdelnour and Branzei 2010). The unsuccessful promotion of FES as a means to reduce rape risk is not without its consequences for beneficiaries, NGOs, and donors alike. Nor is it without its history. Ironically, efficient-stoves have been promoted as a solution to crises in Sudan for the past four decades. This article presents a brief history of efficient-stoves in Sudan, and how they have come to be repackaged as a solution to these crises. Themes and implications are drawn, and cautions provided for promoting stoves as a means to reduce GBV, or as technology for engaging the trade in carbon offsets. In conclusion, a number of suggestions are provided for development practitioners and policy makers regarding the use of FES during crises, and in development and relief contexts.

Introduction

In 2006, I travelled across Sudan for the first time to investigate enterprise capacity among internally displaced persons (IDPs) in Darfur and Southern Sudan. Through focus group interviews, our research team encountered accounts of rape and other forms of GBV. I vividly recall one trip to an IDP camp in Southern Sudan where we met with a community who, as a result of the civil war and incursions of the Lord's Resistance Army (LRA), experienced multiple displacements and severe human rights violations including GBV. An elderly woman shared how she and her daughter were captured by the LRA and repeatedly raped over a number of days; she survived the brutality but her daughter did not. Other women shared stories of GBV at the hands of the LRA and other supposedly more ‘friendly’ groups (Abdelnour et al. 2008).

The brutal use of GBV by the LRA as a means of strategic terror against civilians is well-documented (Vinci 2005). GBV reflects and promotes deep-rooted social and psychological disturbances, insecurities and abuse of power. Such abuses are horrific, and can shape international opinion and action against perpetrators. Similarly, the incidence of rape associated with the Darfur crisis conjured international criticism and calls for political consequences (Gingerich and Leaning 2004; Mamdani 2009). To address the high-levels of sexual violence against IDPs in Darfur, advocacy agencies began to promote the idea that providing efficient-stoves to women could reduce the risk of rape and other forms of GBV in Darfur. The idea that FES reduces GBV is based on the assumption that efficient-stoves require less fuel, and women using such technologies would reduce the time they spend venturing outside IDP camps to collect fuelwood. Spending less time collecting fuelwood reduces the risk of exposure to GBV. A call to widely promote FES to reduce the risk of rape (RI 2005) helped mobilise tremendous attention and resources to NGOs for distributing stoves to address the problem of GBV in Darfur. As a result, various NGOs launched FES initiatives to address GBV in Darfur. The complementary and competing FES programmes resulted in what one expert called, “Darfur’s stove wars” (based on personal communication with a FES expert).

Initial optimism surrounding the use of FES as a tool to reduce rape risk has faded, and it is now known that stove initiatives are questionable at best in their ability to prevent the risk of rape (RI 2007). What is unclear is whether the failure of FES to reduce the risk of GBV is specific to the FES technologies employed, or the way in which FES programmes were implemented. What is certain, however, is that many IDPs were unable to realise energy efficiencies from complex stoves; and where efficiencies did exist fuelwood remained in demand as a means for income generation (Abdelnour and Branzei 2010). In addition, few NGOs consider the implications of GBV which occurs inside IDP camps, and instead focus on GBV committed outside the camps (based on personal communication with Sudanese academics). Even after questions regarding the effectiveness of FES as a means to reduce GBV began to emerge, some advocacy and development organisations continued to promote FES as a solution to GBV in Darfur. This contradiction was not lost to a panel discussing GBV in Darfur during an international forum exploring the role of FES in humanitarian settings (WRC 2008).

The case of FES in Darfur is not the first time FES has been pursued and promoted as a ‘solution’ to a crisis in Sudan. After presenting an overview of the 40-year history of FES in Sudan, themes and implications are drawn for donors, policy-makers, and FES practitioners to consider.

40 years of FES in Sudan

“For huge numbers of people, fuelwood will be increasingly scarce and expensive. And no alternative fuels are in sight that could relieve this deepening crisis (Eckholm et al. 1984: 13)”.

As a result of the 1973 oil/energy/fuelwood crisis, global concern motivated bilateral agencies, international NGOs, research institutes, and governments to seek a solution to impending deforestation in low income countries. Fears that the poor would not be able to afford the conversion from fuelwood to petroleum energy did not escape Sudan, and in 1979 the Khartoum-based Sudanese Society for the Advancement of Sciences (SSAS) began a project to design and test metal-charcoal stoves. In 1983, the work of SASS was absorbed by Sudan’s Energy Research Council (ERC). ERC was created in 1980 by Sudan’s National Energy Administration (NEA) with financial assistance from the United States Agency for International Development (USAID). Various versions of these metal-charcoal stoves are still used across Sudan. In 1983, CARE imported a metal-ceramic stove design from Kenya and began experimenting with designs in El Obeid, Kurdofoan. After initial failures, ERC helped CARE improve their approach by marketing the stove through contests and contracts involving local artisans and entrepreneurs. At the suggestion of USAID, a Kenyan artisan/entrepreneur was brought to assist with this

process. The resulting market-oriented intervention saw efficient stoves gaining market acceptance and wide dissemination. Based on this success, CARE was awarded a grant by ERC in the mid-1980s to extend experimenting with FES across Kurdofan and Darfur, including the first mud stoves (Gamser 1988). CARE's first experiments with mud stoves in Kudofan and Darfur were seen as failures due to unsuccessful acceptance by women working with the projects; however, years later and without NGO engagement modified mud stoves were produced and sold through local markets, often by the same women involved in the initial CARE projects (based on an interview with an NGO official who had been part of the initial CARE FES projects). In the end, the promise of stoves to prevent deforestation did not materialise, although general benefits of the stoves were recognised.

“Blithe claims that new stoves are reducing wood consumption by half are simply unsupportable. Less dramatic savings could still provide ample justification for stove-promotion activities, particularly when the health benefits are taken into account (Eckholm et al. 1984: 95)”.

The global push to promote FES in the 1980s led to stove interventions in almost every low income country, creating ample opportunity to collect evidence of their effects. One positive benefit of FES technology is the reduction in smoke inhalation. This served as a platform for promoting FES in the 1990s as a solution to improve the health and living conditions of nearly half of the world's population at some estimates (WRI 1999). From the mid-1990s into the early 2000s, through international forums and extensive programming, international NGOs and UN agencies promoted a call to action to address the risks of smoke inhalation.

“The smoke from burning these fuels turns kitchens in the world's poorest countries into death traps. Indoor air pollution from the burning of solid fuels kills over 1.6 million people, predominately women and children, each year. This is more than three people per minute (Warwick and Doig 2004: 6)”

As in many low income countries, the emerging crisis of smoke and health made its way into FES programming in Sudan. The first programme of its kind sought to disseminate liquid petroleum gas (LPG) stoves.

“Prolonged exposure to biomass smoke is a significant cause of health problems [...] ITDG Sudan's Smoke and Health Project is the first of its kind in addressing these issues (ITDG Sudan 2003: 4).”

The launching of the first ‘Smoke and Health’ LPG FES programme in Sudan in July 2003 was upstaged by violent armed conflict in Darfur and the resulting humanitarian crisis. The call to action was clear, and FES once again was presented as a solution for emerging crisis.

“By reducing the need for wood and emission of smoke, a switch to simple, more fuel-efficient stoves could reduce the time women spend collecting wood, a task that exposes them to the risk of rape and other forms of gender-based violence (RI 2005: 1).”

This statement inspired intense interest in FES programming, in part because it offered a deliverable technology as a ‘solution’ for protecting vulnerable women and girls in Darfur. At the time the statement was released, a number of advocacy organisations and NGOs were engaged in the promotion, production, and dissemination of FES for Darfur. This created a platform for increased engagement by international NGOs and also non-traditional FES actors, who brought with them a diverse array of FES technologies – including mud, brick, metal and solar designs – for the reduction of rape of IDPs in Darfur and Darfuri refugees in Chad. Development aid to Sudan and in particular to Darfur increased rapidly (to \$1787.2 million USD in 2005), providing motivation and resources for international NGOs and UN agencies seeking to provide services to the estimated 1.8 million IDPs in Darfur. FES mud programmes were seen as complementary to humanitarian relief efforts and by late 2004 numerous international NGOs entered

into Darfur with their own initiatives or partnered with existing programmes (Abdelnour and Branzei 2010).

After reports began to emerge contradicting anecdotal evidence that FES was effective in preventing risk of rape for large numbers of IDP women and girls, some advocacy organisations began to back away from claims that FES is a solution to GBV risk in Darfur. At the same time, the alternative benefits of the stove became recognised and positioned front-and-centre.

“While there is little evidence that producing fuel-efficient stoves reduces violence against women, the best fuel-efficient stoves did produce other benefits for women [...] Given the quality of living benefits that fuel efficient stove programs may bring in relation to their cost, the international community should continue to promote them but not solely — or even principally — as a protection measure against sexual violence but as a vital part of a holistic response to the urgent environmental and humanitarian issues confronting the conflict-affected peoples of Darfur (RI 2007: 18).”

Learning from history

A number of themes and implications can be drawn from the 40-year history of efficient-stoves in Sudan, and in particular the more recent history of FES in Darfur. These include the technology-user tension, the reliance on anecdotal evidence, and the limitations of existing models of relief/development.

Technology-user tension

The technology-user tension emerged particularly strong with FES programmes in Darfur because higher efficiency was assumed to correlate with greater reduction in rape risk. As a result, the fuel-efficiency of the stove became more central than usability for many NGOs. Among the organisations competing with different stove technologies and designs, a handful of reports and assessments were produced comparing the efficiency and presumed effectiveness of different FES technologies. Pressures to achieve maximum effectiveness through efficiency came at many costs.

“Overemphasis on technology, without concurrent work on behavioural change, market access and health impacts, resulted in limited results and unsustainability of many projects (USAID 2005: 7).”

In most FES programming for Darfur, there was limited assessment of basic market dynamics, user preferences and needs, or engagement of local actors and beneficiaries in the design and marketing of stoves. Technology-efficiency push made the engagement of local actors and beneficiaries less important for designers of more complex stoves. The Darfur experience provides an important lesson for those interested in promoting stoves as a means to accumulate carbon offsets in emergency and relief contexts (Booker, Guerra, Thompson 2007; Eltayeb 2010). Carbon offsets, like GBV, motivate technological efficiency as a primary goal. Donors, policy-makers and NGOs involved in FES should prepare for the unintended consequences of pursuing such an agenda.

“Despite their current popularity and promise, I have little energy for what amounts to a carbon-funded project rescue package. Any business model that requires permanent, external funding with exorbitant monitoring and evaluation overheads is doomed once the money stops. Selling a \$40 stove containing \$25 worth of metal for \$7 is simply begging artisans to tear them apart to access the cheap raw material (Pemberton-Pigott 2008).”

Reliance on anecdotal evidence

Advocacy groups and NGOs were crucial in elevating the urgency for promoting FES in Darfur. Many of these organisations used personal stories of the beneficiaries of their programmes in advocacy-oriented research and publications. These stories are extremely important and relevant; however, field researchers

know that communities receiving or hoping to receive aid are often uncritical of interventions even when flawed in design or approach. This raises questions surrounding the use of anecdotal evidence by organisations directly involved in development and relief. When anecdotal evidence is presented in marketing materials and reports used for securing funds from donors this raises deeper questions for NGOs regarding ethics and accountabilities (Ebrahim 2003). For example, some organisations used anecdotal evidence in marketing materials targeting concerned citizens in western countries, implying that the prevention of rape could be accomplished through a simple donation to an FES project. Many of these fundraising programmes continued even after questions emerged regarding the ability for FES to reduce the risk of rape in Darfur. NGOs should exercise caution when claiming to be able to address serious social and psychological problems through the provision of stoves or other technology solutions.

Some of the organisations involved in Darfur FES interventions published their own studies promoting the efficiency and acceptability of their own programmes over competing technologies (Practical Action Sudan 2007, Amrose et al. 2008). Two wider and comprehensive assessments examined the majority of stove technologies promoted in Darfur. One study was supported by USAID, and the other by a number of UN agencies and an NGO involved in one of the larger FES programmes in Sudan. These studies used different methodologies and sampling methods leading to varying results and implications, leaving many unanswered questions as to the most appropriate technologies for use in Darfur. The only certainty is that mud-stoves appear to have been more readily acceptable by women in Darfur for numerous reasons, and that efficient-stoves generally result in positive social and environmental benefits (AED/USAID 2008; ProAct 2008).

Based upon the above, it is clear that a need exists for diverse, independent, and ongoing research when assessing the suitability of particular technologies or programming. Research partnerships for development can increase the research capacity of partners and stakeholders, and prove valuable for informing policy and practice in Sudan (McGrath and Abdelnour, forthcoming). I suggest that it is important to understand the historical experience of development interventions in order to appropriately assess them. This is a central goal of two Sudan specific research projects, including a university-NGO initiative to explore the historical experience and future potential of technical and vocational rehabilitation for Southern Sudan (Atari et al. 2010; Abdelnour 2010), and a detailed case history of a marginalised community of tradesmen with an NGO partner in North Darfur (Abdelnour 2010).

Limitations of existing models of relief/development

The historical experience of FES in Sudan draws attention to the limits of relief and development interventions for addressing substantial social and environmental crises. In the case of Darfur, the response to the epidemic of GBV helped mobilise tremendous support for FES programming. Promoting technological interventions as a solution to reduce GBV created illusions of hope which, based upon history, predictably failed to meet promised expectations. The urgency associated with addressing the crisis of GBV pushed some NGOs to deliver costly technologies at little or no cost; displaced women warehoused in urban camps accessible to NGOs camps often received multiple stoves, while those in more inaccessible rural camps often went without.

I believe that the potential benefits of FES, health or otherwise, will not be realised without engaging longer-term, culturally-acceptable and/or market-based approaches. CARE's early efficient-stove failures from the mid-1980s provide a key lesson still relevant for today and the future of FES in Sudan; with ERC support for realigning programmes to ensure participation of local artisans and entrepreneurs, CARE was able to help create culturally-acceptable technologies spread through local markets.

“The impact of any programme will remain very limited as long as it depends on the efforts of outside promoters. The large-scale diffusion of stoves can take place only through continually expanding programme. In practice this means that the stove model introduced must be the one that local

entrepreneurs or users themselves are willing to build without outside assistance (Eckholm et al. 1984: 97).

Lessons from 40 years of FES in Sudan leave us with ample fuel for reflection. FES stakeholders might take this opportunity to consider their own roles in the story of efficient-stoves; lest efficient-stoves are once again repackaged as an unfeasible 'solution' to some impending crisis.

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Data for potential graphic*:

*please contact me for any other information/suggestions, etc.

Crisis	Year
1973 Oil Crisis (causing the fuelwood crisis and fears of deforestation)	1973, with first efficient stove programmes appearing in Sudan in 1979
Smoke and health	Mid-1990s into the early 2000s
GBV	2004-5, after start of large-scale armed conflict in Feb 2003 in Darfur, resulting mass displacement and the Darfur humanitarian emergency

The below gives an indication as to the different types of technologies promoted during the above (not sure this will be as useful):

