Supporting Information

Measuring and Increasing Adoption Rates of Cookstoves in a Humanitarian Crisis

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Summary of Contents

The supporting information contains a full acknowledgement of participants in this study as well as an expanded Background section that discuses the Berkeley-Darfur Stove's context and supporting figures and tables referenced in the main text. These supporting figures and tables are intended to give the reader additional insight into study timeline and design (including phased rollout), stove use monitor (SUM) failures, and the internally displaced persons context.

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Background and Methods Supporting Information

Qualitative reports suggest that the BDS is well-liked. Owing to its speedy cooking and the difficulty Arabic speakers have pronouncing "The Berkeley-Darfur Stove," the BDS has earned its own Arabic nickname: كانون خمس دقائق ("Five-Minute Stove"). Most BDS units have been distributed free of charge into large IDP camps such as Al-Salam, Abu Shouk, and Zam Zam in North Darfur. Approximately 5,000 cookstoves have been sold in sales trials within villages near these camps. Large-scale dissemination of the BDS is enabled by three key parties: Potential Energy is a USA-based non profit that manages logistics and fund raising, Shri Hari Industries manufactures BDS kits in Mumbai, India and ships them to Sudan, and Sustainable Action Group, a Sundanese Non-Governmental Organization, assembles kits into complete BDSs and distributes them in Darfur.

Supporting Information Figures and Tables

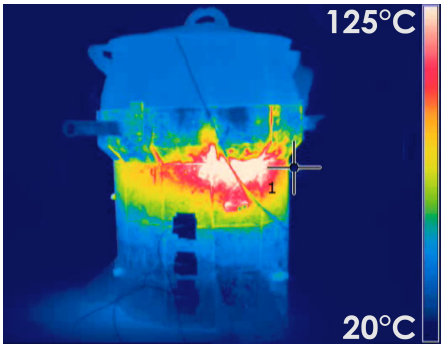

Figure S1: An infrared image of a wood-fired BDS with pot and lid being lab tested for sensor placement. Dark squares are low emissivity aluminum tape holding thermocouples on potential cookstove mounting locations. Tape appears cool because it is reflecting the low-temperature infrared of the cool surroundings.

Table S1: The scheduling of baseline survey, 1st followup, and 2nd followup and the spectra of SUMs sampling periods used in this study.

Scheduling by Unit	Korma	Al-Fashir	Zaghawa	Jebel Si	Tawila
start date (MM/DD/2013)	07/29	07/30	07/31	08/01	08/02
participants	36	36	36	36	36
duration to 1st followup (weeks)	4	6	8	10	12
1st to 2nd followup (weeks)	-	-	2	2	2
period of primary SUMs (min)	4.9	7.4	9.8	12.3	14.7
cookstoves by SUMs period					
primary[a] + dummy	26	26	26	26	26
primary[a] + 1-minute[b]	4	4	4	4	4
4-minute[c] + dummy	4	4	4	4	4

[a]measured entire duration between baseline and 1st followup
[b]measured the last 8,200 minutes (5.7 days) before followup
[c]measured the last 33,000 minutes (23 days) before followup

Table S2: A summary of SUMs fates

SUMs fate by Unit	Korma	Al-Fashir	Zaghawa	Jebel Si	Tawila	Total
SUMs loss totals	8	7	14	12	18	59
SUMs loss before 1st followup	8	7	12	9	11	47
thermal damage	3	3	10	8	5	29
dead at 1st programming	3	0	0	0	1	4
lost before first programming	1	1	2	0	1	5
participant did not return	1	2	1	0	5	9
stolen stove	0	1	0	0	0	1
other	0	0	0	1	0	1
SUMs loss after 1st followup	-	-	1	3	6	10
thermal damage	-	-	1	3	0	4
participant did not return	-	-	0	0	6	6

Notes: There was only one followup for Korma and Al Fashir. Three stove users in Tawila and one in Zaghawa who did not return for the first followup returned for the second followup, making part of their missing pre-1st-followup data available.

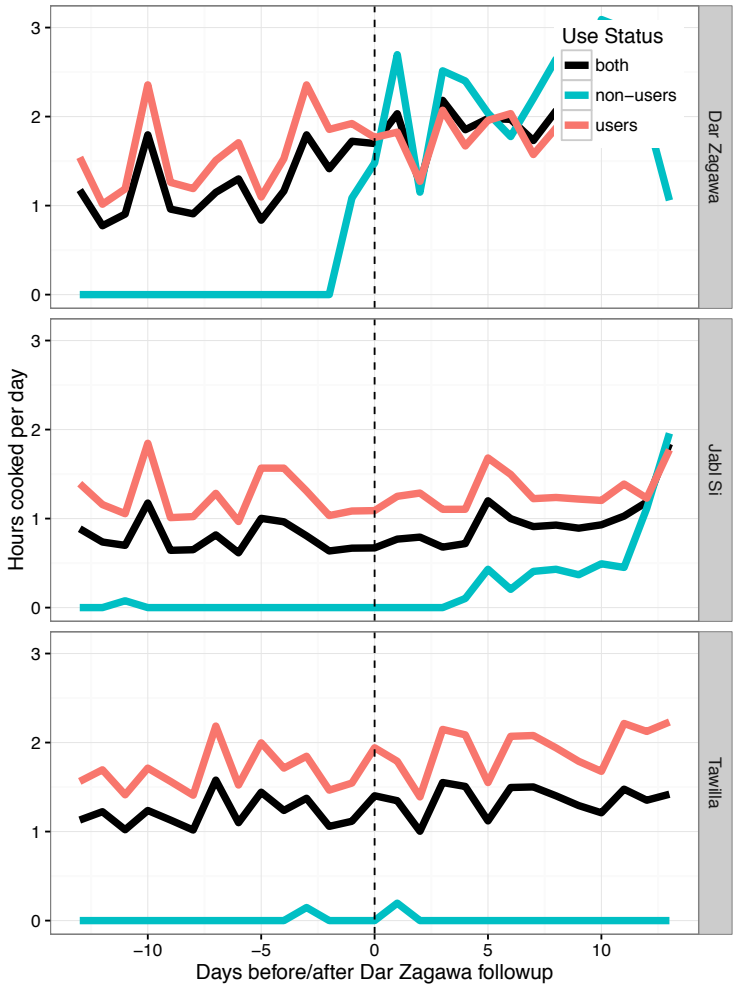

Figure S2: This figure illustrates the effects of the follow up survey on Dar Zaghawa Unit while other Units, who had surveys on different calendar days as part of the phased roll-out, serve as controls. The effects of the Dar Zaghawa follow up are clearly shown on the Dar Zaghawa Unit, but not on other units. Increased adoption in the Jabl Si Unit can be seen around 14 days after the Dar Zaghawa follow up, but this is in anticipation for their own follow up survey (which happened 2 weeks after Zaghawa's). Tawila, which did not have a follow up survey in the proximity of this x-axis, shows no significant change in adoption in proximity to Zaghawa or Jabl Si's follow ups.

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A preliminary analysis of this data set originally appeared in a conference paper for the 2014 Tech4Dev International Conference put on by the UNESCO Chair in Technologies for Development with the theme "What is Essential?" The conference paper, among others, was published as a book chapter by Springer.[14] This paper in its current form represents significant progress in analysis and insight into the original data set. For readability and flow, this paper summarizes the Background and Methods sections as well as some analysis presented in the conference paper and book chapter, but no copywritten text or figures are duplicated herein. Additionally, the photos for the TOC art in the paper were taken by field staff in Darfur during the completion of this study.