

Short Communication

Food security and development in South Sudan: a call to action

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Abstract*Objective:* To examine household food insecurity and coping mechanisms in two relatively politically stable states of South Sudan.*Design:* Cross-sectional assessment including structured interviews and focus group discussions with food aid programme beneficiaries and staff. Structured interview findings were analysed with descriptive statistics using the statistical software package STATA version 11.*Setting:* Rural households in four *payams* (sub-county administrative districts) benefiting from a multi-year assistance programme funded by the US Agency for International Development. The study was conducted in January 2012, six months after independence.*Subjects:* Study subjects included eighty mothers of children aged 6–23 months in structured interviews and eight focus groups, each with six to ten participants, of mothers of children aged 6–23 months.*Results:* Ninety-three per cent of households surveyed in Warrap and 100% of households in Northern Bahr el Ghazal states were severely food access insecure. Nearly all households (97.5%) surveyed in both states reported there were months in 2011 without enough food to eat. The majority of households (88%) reported sometimes or often going to bed hungry in the month preceding the study. A number of coping mechanisms were used when households did not have enough food, including reduced meal size, skipping meals, selling assets and engaging in some kind business in order to generate money to buy food.*Conclusions:* Given the highly volatile political, economic and humanitarian situation in South Sudan, the priorities of the international community are understandably focused on securing greater stability in South Sudan and preventing humanitarian needs from escalating significantly. There is a need, however, for simultaneous emphasis on food assistance and longer-term development strategies throughout South Sudan, particularly in areas of agriculture, livelihoods and food security.**Keywords**
South Sudan
Food security
Livelihoods
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The Republic of South Sudan became an independent country, recognized as the 193rd UN member state, on 9 July 2011. Due to almost half a century of protracted conflict, poverty, lack of infrastructure and disruption of social services, it is among the world's least developed countries^(1,2). More than half of the population lives on less than \$US 1.25/d, and livelihood constraints are enormous⁽³⁾. Approximately 80% of the population is rural and depends on farming and livestock⁽⁴⁾. Only 4% of arable land is cultivated and labour and trade opportunities are limited⁽⁵⁾. While the Government of South Sudan and international partners have made substantial efforts to improve living conditions and social services since the Comprehensive Peace Agreement in 2005, the

stability and well-being of the population of South Sudan remain fragile.

The political, military and humanitarian situation has deteriorated substantially over the past year with the invasion of the contested oil-rich Abyei region by northern Sudanese armed forces and fighting in the ethnically mixed border states of South Kordofan and Blue Nile leading to large-scale internal displacement and an influx of refugees into South Sudan in Upper Nile and Unity states. Meanwhile, limited resources and livelihood opportunities in relatively stable areas of South Sudan have been stretched by the return of more than 360 000 people of South Sudanese origin since independence. The situation is further complicated by a cereal deficit,

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attributable to poor production in drought conditions, and high food prices accentuated by trade restrictions between Sudan and South Sudan and internal conflict⁽⁶⁾.

In early 2012, the UN World Food Programme (WFP) and its partners reported that close to 4.7 million people (37% of the population) were at risk of food insecurity in South Sudan, of whom approximately 1 million (11% of the population) were severely food insecure⁽⁷⁾. Humanitarian agencies are now involved in over thirty operations in the country, including food assistance, but are stretched to capacity. Current priorities are understandably related to addressing emergency humanitarian needs in the conflict-affected areas. Longer-term development initiatives are also underway, but donors express concern about investment in development projects and are hesitant to adopt long-term investment strategies in such a politically volatile context⁽²⁾. The aims of the present study were to assess the food insecurity of households that benefited from a food assistance programme funded by the US Agency for International Development (USAID) in 2011 and to gain an understanding of how households and communities in this relatively stable region of South Sudan cope with inadequate access to food.

Methods

This mixed-methods study was conducted as part of a USAID-funded Title II Food Aid Multiyear Assistance Program (MYAP) implemented by the Adventist Development and

Relief Agency (ADRA), Concern Worldwide, Food for the Hungry and Malaria Consortium in Northern Bahr el Gazal and Warrap states of South Sudan (Fig. 1). Communities in each state that benefited from food distribution (as compared with locations that were benefiting from other MYAP activities or where food distribution was not occurring) were selected for inclusion in the sampling frame based on security and access considerations. Four communities (two in each state) were randomly selected to represent the range of communities benefitting from the food aid programme. The selected communities were in the *payams* of Kuach North, Gogrial West county and Toch East, Gogrial East county in Warrap State and in Ariath, Aweil North county and Gojuer Center, Aweil West county in Northern Bahr el Gazal State. Selection was independent from MYAP programme staff to reduce the potential of selection bias towards communities where the programme was thought to be performing well. Data collection was conducted in January 2012, six months after the initiation of ration distribution during a time of relative food security, where the 2011 lean season began in April and continued until August.

Sample sizes were identified based on anticipated saturation (i.e. no new information being discovered), length of the questionnaire and logistical considerations. Data collection included structured interviews with eighty mothers of children aged 6–23 months who benefited from food ration distributions, eight focus group discussions with mothers of children aged 6–23 months who received food distributions (two in each community), and

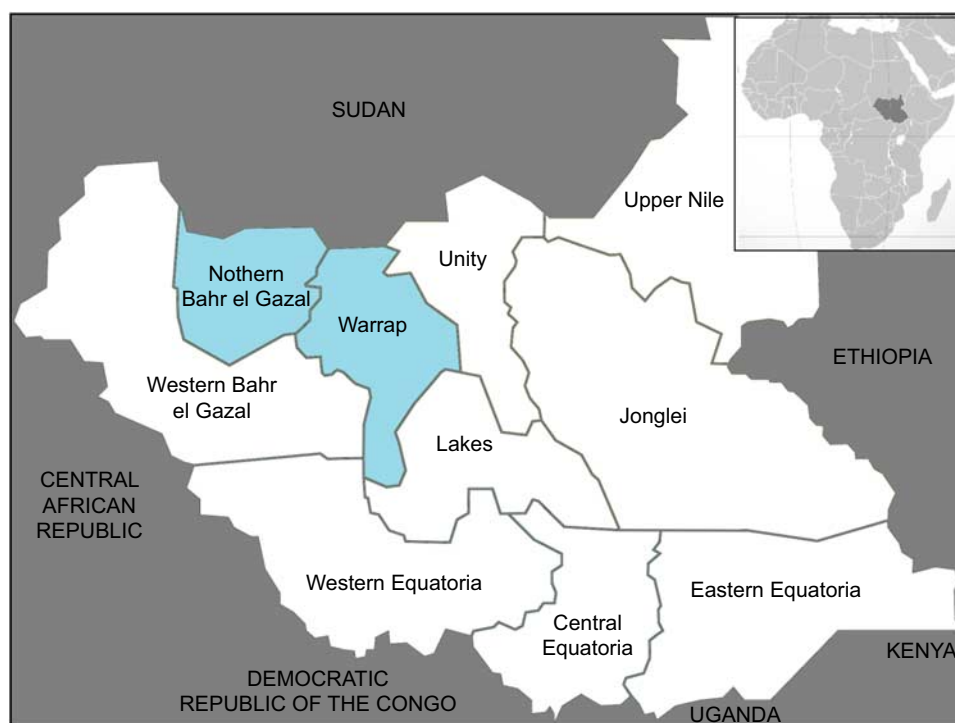


Fig. 1 (colour online) Map of South Sudan and project and assessment areas

two focus group discussions with ADRA field staff (one in each state). In each of the four communities selected, twenty mothers were interviewed using a structured questionnaire that incorporated validated and widely used instruments from the USAID-funded Food and Nutrition Technical Assistance Project (FANTA) and the WFP. Communities were segmented to ensure geographic distribution of the sample and within each area potential respondents were sampled by convenience. Approximately half of the mothers were recruited from the centre and the half from the outskirts of the community. Beneficiary status was assessed by visual confirmation of the mother's ration card. Different respondents were selected for structured interviews and focus groups. The nine-question Household Food Insecurity Access Scale (HFIAS) used was developed and validated by FANTA to distinguish food-secure households from food-insecure households across different cultural contexts⁽⁸⁾. The Coping Mechanism Index used was developed by the WFP and CARE International to serve as a context-specific measure of food insecurity⁽⁹⁾. All interviews and focus groups were conducted in Dinka, with structured questionnaires completed in English and focus group discussions summarized into English by trained data collectors. Focus group data were analysed using qualitative techniques of content analysis and close readings of summary texts to understand main themes or participant responses. Structured questionnaires were analysed using descriptive statistics, and Fisher's exact test was used to examine the significance of the difference in household food insecurity across states and coping mechanisms across seasons. All analysis was conducted with the statistical software package STATA version 11. Oral informed consent

was obtained from each participant prior to initiation of the interview or focus group. Permission to conduct the interviews was obtained from local authorities. The study was conducted according to the guidelines laid down in the Declaration of Helsinki and all procedures involving human subjects were approved by the Institutional Review Board at Johns Hopkins Bloomberg School of Public Health.

Results

Interviews were completed in eighty households in four communities in the states of Warrap and Northern Bahr el Gazal. Household size was significantly larger in Warrap (mean 11.2, median 10, range 6–20) than in Northern Bahr el Gazal (mean 8.7, median 8, range 5–17; $P < 0.001$). The average household had 2.3 children <5 years of age and 3.1 children aged 5–17 years; no significant differences in the proportion of households with children or the mean number of children were observed between the two states for any age group.

Nearly all households (97.5%) surveyed in both states reported months in 2011 without enough food to eat. The proportion of households reporting not having enough food is illustrated alongside ration distribution by month in Fig. 2. A majority of households reported not having enough food during five months of the past twelve months, a period which corresponds with the 2011 April to August lean season. Following initiation of household rations, the proportion of households reporting there was not enough food to eat remained below 10%. In the month preceding the study, 53% of respondents

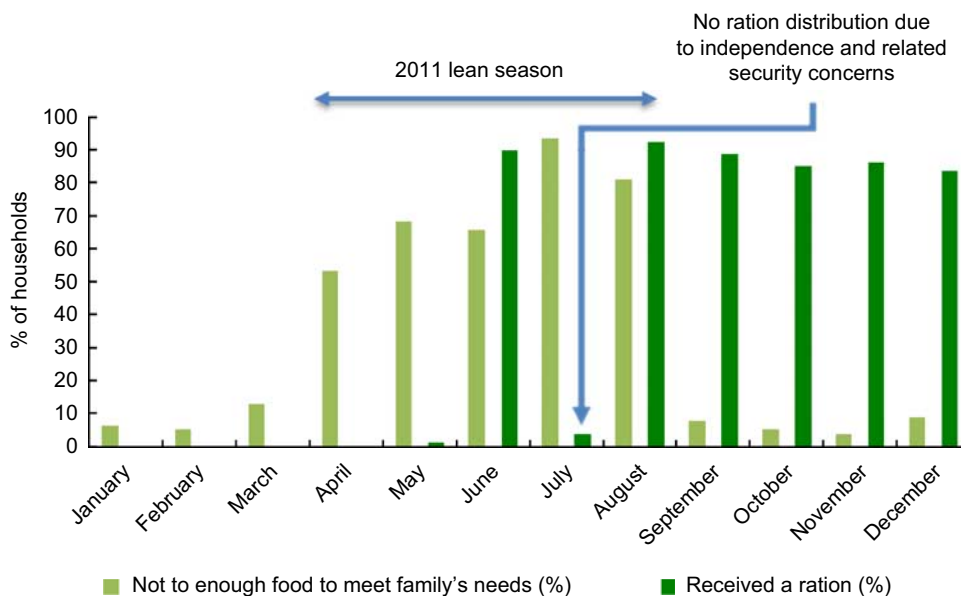


Fig. 2 (colour online) Food access and ration receipt in 2011 among rural households in four communities that benefited from food distribution in Northern Bahr el Gazal and Warrap states, South Sudan

sometimes worried and 29% often worried that there was not enough food for their household. More than one-third (39%) of households reported sometimes or often having no food in the household and nearly half (49%) reported sometimes or often going to bed hungry. This was further supported by focus group participants who explained that adults commonly skip meals so that children can eat. In the month preceding the study, 34% of households reported sometimes going a full day and night without eating. There were no statistically significant differences in food insecurity between households in Warrap and Northern Bahr el Ghazal states, except for the frequency that household members went to bed hungry. Based on the HFIAS presented in Table 1, 93% of households surveyed in Warrap and 100% of households in Northern Bahr el Ghazal states were severely food access insecure.

Both survey and focus group participants cited a number of coping mechanisms for when households do not have enough food, including reducing the size of meals, skipping entire meals, selling assets and engaging in some kind business in order to generate money to buy food. As illustrated in Table 2, there were no statistically significant differences in coping mechanism use during the month preceding the survey and during the 2011 lean season, except for the frequency that households coped with food shortages by gathering wild food or hunting. One potential explanation for this similarity is poor rains and low production in the 2011 agricultural season which offset potential improvements in household food access resulting from ration receipt.

One-third of households surveyed reported restricting adult consumption so that children had enough to eat

every day, and another third reported doing so at least once per week. Focus group participants explained that women will cut the amount of food prepared for each meal in half when food stores are getting low, and continue to reduce the amount of food prepared for each meal until food completely runs out. With a smaller amount of food to feed the whole household, women will reduce their own portion sizes in order to feed children a 'normal' sized portion as long as possible. Prepared food is served first to children, then men and finally women. Because women are the last people to eat, they are the first to suffer the impacts of food shortages.

In all communities, selling food was never reported as a means of satisfying other needs and, by and large, food was the highest priority need. Women explained that they try to generate income to purchase food through sales of gathered items in local markets before resorting to live-stock sales and that they are able to initiate these types of small business activities without consulting men. Selling livestock in order to purchase grain from the market was reported as a coping mechanism in all communities and is common in the Dinka cultural context. Approximately half of households surveyed reported selling livestock and selling assets to purchase food. This was described as a lean season coping mechanism; however, in Northern Bahr El Ghazal where rains failed and agricultural production was low in 2011, many reported livestock sales on a routine basis throughout the year. More than one-quarter of households surveyed (28%) reported sending household members to beg at least once in the month preceding the survey and 23% reported sending household members to stay elsewhere because there wasn't enough food to eat.

Table 1 Food insecurity, assessed using the Household Food Insecurity Access Scale (HFIAS), among rural households in four communities that benefited from food distribution in Northern Bahr el Gazal and Warrap states, South Sudan, January 2012

HFIAS (experiences within the past month)	Warrap				Northern Bahr el Gazal				P value†
	%	Frequency* (%)			%	Frequency* (%)			
		Rarely (1–2 times)	Sometimes (3–10 times)	Often (>10 times)		Rarely (1–2 times)	Sometimes (3–10 times)	Often (>10 times)	
Worried there was not enough food	98	15	59	26	98	18	46	36	1.00
Did not eat preferred foods	88	40	57	6	90	50	44	6	1.00
Limited variety of foods	100	25	35	40	100	8	38	55	1.00
Ate non-preferred foods	83	52	45	3	93	65	32	3	0.31
Reduced portion size	98	23	46	31	98	18	33	49	1.00
Consumed fewer meals	98	23	38	38	100	15	35	50	1.00
Had no food in the household	65	50	35	15	80	53	34	13	0.21
Went to bed hungry	73	41	48	10	95	50	42	8	0.01
Went a whole day and night without eating	63	56	36	8	73	48	52	0	0.47
Meals consumed on the preceding day									
Mean			1.71				1.60		0.42
sd			0.611				0.590		
≤1 (%)			50				50		1.00
HFIAS score									
Mean			14.23				15.75		0.02
sd			0.508				0.352		
HFIAS prevalence									
Severely food insecure (%)			93				100		0.08

*Only among those responding yes.

†Fisher's exact test.

Table 2 Coping mechanisms used in the past month and in the lean season among rural households in four communities that benefited from food distribution in Northern Bahr el Gazal and Warrap states, South Sudan, January 2012

Coping mechanism	Past month (December 2011) (%)					Lean season (April to August 2011) (%)					P value*
	Never	<1 time/week	1-2 times/week	3-6 times/week	Every day	Never	<1 time/week	1-2 times/week	3-6 times/week	Every day	
	Relied on less preferred or expensive foods	10	15	36	35	4	9	38	40	5	
Borrowed or was given food by relatives/friends	53	26	20	1	0	45	23	5	0	0	0.53
Purchased food on credit	34	29	25	11	0	30	30	19	1	1	0.36
Gathered wild food or hunted	16	5	35	21	21	18	13	19	31	31	0.00
Consumed seed stock for next season's planting	29	15	40	11	5	29	21	9	9	9	0.65
Limited portion size within the past month	3	13	21	25	38	0	24	24	44	44	0.64
Restricted consumption so that children had enough to eat	18	14	24	14	34	14	10	9	31	31	0.53
Reduced the number of meals eaten in day	4	11	26	23	26	3	36	26	50	50	0.20
Skipped meals	13	41	31	13	1	9	36	19	3	3	0.62
Gone entire days without eating	16	28	39	15	1	5	43	13	1	1	0.11
Sold livestock to purchase food	54	19	16	11	0	56	19	6	0	0	0.75
Sold assets to purchase food	51	16	24	8	0	51	16	8	0	0	1.00
Sent household members to beg	68	28	3	3	0	71	24	1	1	1	0.90
Household members lived elsewhere because there wasn't enough to eat	76	23	0	0	0	79	0	0	0	0	0.85
Coping Mechanism Index score											
Mean			21.57							22.57	0.25
SD			5.43							5.44	

*Fisher's exact test.

Discussion

This rapid assessment provides a snapshot of living conditions in northern states of South Sudan that are outside areas currently designated as emergencies and is not intended to be generalizable to all of South Sudan. The study observed that 93% of households in Warrap and 100% of households in Northern Bahr el Gazal were severely food insecure using the HFIAS and that Coping Mechanism Index scores were similar in the month preceding the assessment, a period that is typically relatively food secure, to the 2011 lean season. In 2012, both Warrap and Northern Bahr El Gazal states were considered key areas of concern where food insecurity is projected to deteriorate and an early lean season is anticipated⁽¹⁰⁾.

The high prevalence of household food insecurity and coping mechanisms illustrated in this rapid assessment highlights the need for immediate food assistance to be integrated with long-term development initiatives to prevent or mitigate potential food crises in both conflict-affected and more politically stable areas of South Sudan. In communities included in the present study, food stocks were depleted earlier than usual and households were becoming increasingly reliant on market purchase as a primary source of food. Food prices have nearly doubled since independence in some areas, although mixed trends were observed in markets across South Sudan in early 2012⁽⁶⁾. Supply chain disruptions and poor transportation infrastructure are persistent challenges to availability of food in markets and the stability of local market prices. These have been exacerbated by the high demand for food from large numbers of returnees and internal displaced persons, crop failures resulting from poor 2011 rains, fuel shortages, and the curtailment of oil production in early 2012 which forced the government to transition to an austerity budget^(6,11). Cereal prices are expected to remain above average due to inflation and high fuel prices, particularly during the rainy and lean seasons⁽¹²⁾.

The 2011–2013 South Sudan Development Plan highlights rural development as one of its core targets, with specific objectives of increasing crop production and improving road networks to enhance economic growth⁽¹³⁾. Achievement of these objectives will require clarification of issues pertaining to land access and tenure, improving access to extension services and agricultural inputs, and carefully designed development assistance programmes to ensure food security and livelihoods⁽¹⁴⁾. Other potential challenges include donor commitment to long-term development initiatives in a volatile context and the prioritization of emergency assistance. At present, Northern Bahr el Ghazal, Warrap, Unity, Upper Nile and Jonglei states are designated as having stressed levels of food insecurity (Integrated Phase Classification 2), and projections suggest that high levels of food insecurity will persist through 2013 and have the potential to deteriorate further into Crisis levels (Integrated Phase Classification 3)

in parts of Unity and Jonglei states due to the impacts of displacement on asset levels and food sources⁽¹²⁾.

In the context of widespread crisis levels of food insecurity that persist throughout many states in South Sudan and the current deteriorating security situation, the results of this rapid assessment, where food aid beneficiaries were severely food insecure prior to the lean season, further demonstrate the need for additional interventions in South Sudan. Continued prioritization of food assistance, including emergency food aid, and long-term strategies with the aim of fostering secure livelihoods in more stable regions of South Sudan are essential for both the immediate well-being of the South Sudanese population and as a foundation for the further development of a newly established nation.

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