Integrated Food & Nutrition Security Causal Analysis

Warrap and Northern Bahr el Ghazal

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Background and Objectives

**Background:**
- High acute malnutrition and food insecurity spanning over a decade;
- The economic downturn
- Large population of former returnees with no established livelihoods;
- Continued population movements back and forth Sudan;
- Long history of shocks; the economic crisis

**Key Questions**
- Behavior of key outcomes over time and space
- Underlying causes
- Seasonality aspects
- Food security and nutrition linkages
- Role of humanitarian assistance
- KAP of caretakers vs nutrition
- At risk population groups
Global Acute Malnutrition

- GAM highest in the Urban and GBeG – the vastest stratum
- GAM across the study area does not differ statistically;
- Sporadic Season-insensitive spikes – especially in the GBEG stratum;
- Mortality levels raise no concern

GAM % WHZ by Stratum

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<th>Stratum</th>
<th>GAM % WHZ</th>
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<tbody>
<tr>
<td>Western Groundnut</td>
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<td>Greater Bahr el Ghazal</td>
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<td>Oil Resources</td>
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<td>Urban</td>
<td>11.2</td>
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SAM % WHZ by Stratum

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<td>Greater Bahr el Ghazal</td>
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<td>Oil Resources</td>
<td>1.9</td>
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<td>Urban</td>
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Food Security

- A deteriorating food security situation since 2014 to now its historical high; worse deterioration in the lean season; now 7 to 10 HHs food insecure
- Seasonal fluctuations in food security situation; trend aligned with study timeline events;
- Highest long term FI in NBeG
- A severe deterioration in the harvest in the GBeG stratum in the harvest is notable.
## Food Security (cont...)  
### IPC Trends

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<tr>
<td><strong>Western Groundnut, sorghum &amp; cattle</strong></td>
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Food Consumption; days eaten foods

- **Consumption of fish**, reduced overtime; milk consumption sustained; benefits for nutrition missing;

- Minimal fruits’ consumption;

- Consumption of fish, milk and eggs increases in the lean period; rains replenish pastures;

- Experiencing **shocks, poverty, market access and gender** characterize HHs with inadequate food consumption.
Immediate Causes; Disease

- Retrospective child morbidity highest in strata with highest child malnutrition;

- Independently predicted nutrition status in the GBeG stratum

- **Malaria seasonal pattern; relationship with CF** denotes its key role in the causal pathway - >60% prevalence.

- **Historical data; All common illnesses** predicted nutrition status; **Diarrhea** more common predictor

- Colostrum, child birth weight and owning a toilet underlay morbidity

- A lack of preventive services, flooding in low lying areas, poor water quality
Individual Food Intake

- <10% of children meeting recommended feeding quality and quantity, a deterioration

- **Destructive cultural norms**: discarding of colostrum; BF a child with hot milk can cause diarrhea; BF and sexual intercourse; BF and pregnancy;

- **Women workload**, access to safe water; drivers of poor IYCF;

- **Historical data**: Perennially high woman wasting (highest in GBeG, Urban) – repeatedly predicted nutrition status; Others;
Increasing food prices, reducing purchasing power

- Casual labor rate to sorghum wage rate - Aweil
- TOT Medium goat to Sorghum - Kuajok
- Retail fuel prices diesel/litre - Aweil
- Nominal retail prices for cereals - Aweil market

Prices and wages are shown over the years 2009 to 2017, with specific data for Aweil and Kuajok markets.
Markets and Food Sources

Trend of Market Dependence

• Highest market dependence in Urban and GBeG strata; related to change in livelihoods;
• Disruption of seasonal pattern and increase in dependence on markets.
Gender/Returnees/Migration

• **Time poverty**, limited labor capacity of FHHs

• Poor ownership of assets, land, access to more lucrative income sources, service and credit exacerbates the situation;

• HH headed by women **mostly former returnees;** Up to 67% HH headed by women (Western Groundnut zone. **Highest influx seen in the GBeG**, in 2012;

• Returnees > Residents in **Western Groundnut** – highest FHHs;

• Economic crisis resulted in **migration** back to Sudan;

• **Engaging women in food issues** in HH predicted food security – 60% higher chance of better food consumption
Shortfall of male productive population in Western Groundnut and GBeG strata;
Livelihood Change

- **Reduction of employment** provided by the wealthier;
- Fishing and access to NOUFs hampered by civil insecurity;
- Cash crop production trend arising from independence era – increasing market dependence;
- **Polarisation of cattle** ownership-affected kinship and coping;
- Livelihoods analysis depict **large cash deficits among the better off**; the exchange relationships of all wealth groups key.
**Shocks, Conflict, Physical Access**

- **Insecurity and lack of access** - predicted food security status in Oil Resource and Ironstone;

- Access to markets in Ironstone and Western Groundnut predicted FS;

- Use of traditional medicine, delivery in health facility, prophylactic services for children, time to collect water – all worst in Oil Resources stratum – related to access

- **Flooding** in the Ironstone has demonstrated impact on morbidity and WASH levels

- Shocks related to **food prices** most predominant in Urban, GBeG and Western Groundnut
Coping

- Livelihood coping affects 4 in 10 of households in worst affected strata; huge implication on future productivity
- More severe consumption and livelihood coping prevails than before
- Less seasonal trend emerges

![Consumption coping (av no. of days)](image)
FOOD UTILIZATION
Social and Care Environment

- **Economic crash - men abandon their several wives**: impacts of lack of male representation

- **Hefty bride prices** lead to exploitation of younger brides in polygamous dominated area - Time poverty of mothers

- Poor access to services exacerbates the situation; In urban areas, **Birth place** of the child predicted nutrition status

- In the Ironstone zone, **Seeking treatment when child** is sick predicted nutrition status

- **Early marriages** (year of 1st menstruation - about 13)/forced marriages;

- **Early pregnancies** – poor diet to control size of baby, and to prevent syndromes; complications and deaths;

- **Polygamy**: roles and responsibilities of wives;

- **Female headed households**: inheritance; landlessness; child heads
Public Health Environment

- Time spent **collecting water**;
- Study area water access far from recommended Sphere standard;
- Exhaustive **lack of toilets, treatment of drinking water, hand washing** renders poor food utilization;
- Low lying areas with open wells especially in the Ironstone. Stratum has highest diarrhea prevalence. Only 10% of visited HHs treat drinking water in this stratum;
- Indiscriminate **fecal disposal**.
FOOD AVAILABILITY
Crop and Livestock Production

- Significant cereal deficits; highest in GBeG, Oil Resources strata;

- Economic downturn affected labor capacity, poorer prefer to work for cash/food rather than cultivate, workload hampering engagement of women/FHH in cultivation;

- Proportion of land accessed that was cultivated lowest in Western Groundnut & GBeG

- Size of Land accessed

- Tsetse fly infestation in Ironstone stratum;
Assistance

- Mostly seasonal assistance;
- **% in need reached improved** in 2016, not catching up with increasing caseload;
- Less <20% population reached except in lean – **insufficient for FS phase graduation**;
- **Historical Assistance** data; Assistance predicts nutrition and FS

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**% State Population Received Food Assistance**

- **2011 to 2013**
- **2014-2017**

**% Assisted Vs IPC Phase 3, 4 & 5 popn - NBeG**

- **2014**
- **2015**
- **2016**
- **2017**

- **% received Assistance**
- **% in Phase 3, 4 & 5**
Basic Causes: Wealth

- Urban and peri-urban/Returnees
- Oil Resources, Maize and Cattle
- Greater Bahr el Ghazal Sorghum and Cattle
- Western Groundnuts, Sisim and Sorghum
- Ironstone Plateau Agro-pastoral

Worse off | Lower middle | Middle | Upper middle | Better Off
Wealth and Food Security/Nutrition

• The study area trails the Greater Upper Nile in poverty levels;

• Higher poverty odds among **FHHS, Illiterate and Returnees**

• Concentration of wealth among the elite poses FS issues – reduces kinship

• **Wealth** is a **common predictor** of food security and nutrition status across the strata;
  
  - Predicted food security in the Ironstone, Oil Resource and Urban strata
  - Predicted Nutrition status in the GBeG stratum
Wealth and ....

- **Food Consumption**
  - Inadequate FC
  - Adequate FC

- **Seeking treatment when sick**
  - Sought treatment
  - Did not seek treatment

- **Toilet ownership**
  - No toilet
  - Own toilet

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**Wealth**
Education

- Extremely **high illiteracy levels**: in rural strata, 15% respondents could read/write, <5% completed primary education;
- Illiteracy degrades human capital via poor access to information, employment and income
- In the **Ironstone stratum, ability to read/write predicted FS** status
- Highest non-school attendance of boys and girls in most food insecure strata
Key Conclusions

- **The Economic Crisis and Impact of Returnees** and related gender inequalities major underlying factors of the more recent deterioration in FS&N

- **Other shocks and lack of access** also prominent

- **Seasonality:** FS&N outcomes and underlying factors are mainly seasonal albeit a non-seasonal trend is emerging; programmatic adjustments in order;

- **Disruption of employer employee dynamics:** requires support to all wealth groups

- **Nutrition Food Security Linkage:** Seasonal patterns and causal factors display an array of FSN interlinkages; multi-sectoral/multi-pronged response sensitive to area variations strongly implied;

- **Emerging causes:** Critical role of changing contexts; invariably associated with FS&N

- **Urban populations:** more malnourished while rural are more food insecure
Recommendation; FSN Linkages, Programmatic Implications

Food Insecurity

High

Low

Malnutrition

Low

High

Food Security Programs

Joint nutrition and food security programs

Continue with Development/Resilience Programs

Nutrition Programs

Food Insecurity

0%

5%

10%

15%

20%

GAM

0%

20%

40%

60%

80%