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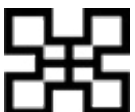
Monitoring, Evaluation and Technical Support Services (METSS)

Overview of the Results of the Population-Based Survey of Northern Ghana 2012

Judy Maberry, Vincent Amanor-Boadu, Kara L. Ross, and Yacob A. Zereyesus

METSS Kansas State University Office
March 2014

“Overview of the Results of the Population-Based Survey of Northern Ghana, 2012” report is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of the author and do not necessarily reflect the views of Kansas State University, USAID, USDA or the United States Government.



METSS-Ghana Research and Issue Paper Series

No. 03-2014 - March 2014

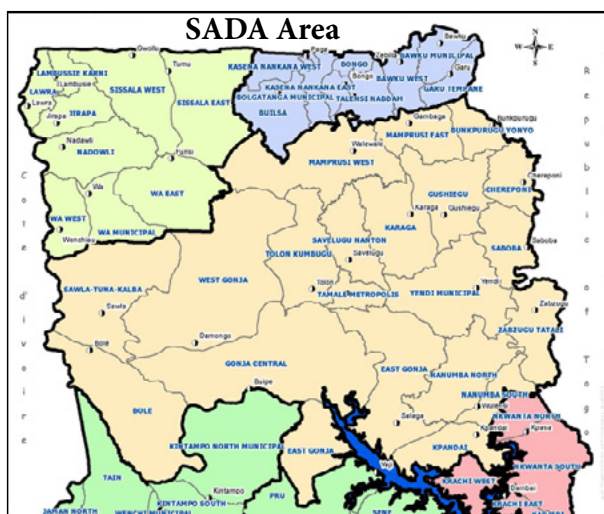
POPULATION-BASED SURVEY OF NORTHERN GHANA 2012

BASELINE RESULTS

5.16 Million

estimated population
in the SADA Area

The population-based survey of northern Ghana was undertaken in 2012 to provide baseline metrics for USAID's Feed the Future initiative. The survey was designed to produce, at the minimum, 11 indicators defined to facilitate international comparability across countries where USAID is conducting similar studies.



The survey was limited to Savannah Accelerator Development Authority (SADA) area, which encompasses the area above Ghana's 8th parallel. Therefore, the results from the study are focused on the socio-economic, health and nutrition conditions prevalent in the SADA Area between July and August 2012.

The sample in the analyses included 4,410 households with nearly 25,000 individuals in 45 districts across the four regions in the SADA Area, composed largely of people under the age of 20 with slightly more males than females. With numerous ethnic backgrounds, the single largest ethnic group is Mole-Dagbani, accounting for nearly 60.0 percent of respondents. While the sample presents numerous religions, Muslims account for nearly half of the respondents.

The study delimited three types of gendered households: Male and Female Adults; Female Adult Only; and Male Adult Only. The dominant gendered household type is "Male and Female Adults" households, accounting for 92.0 percent of all households. The average household size is about six people but 57.6 percent of all households have five or more people. The level of formal educational attainment in the sample is relatively low on average. Of respondents older than 18 years, nearly 76 percent have no formal education and could neither read nor write in English, their native language or any other language. Only 24% of respondents had received a minimum of basic education.

Most households own their own homes. Approximately 74.0 percent of the exterior walls of dwellings in the study area are constructed with mud or mud brick while about 24.0 percent are of cement block. Dwellings are roofed with corrugated sheet metal 64.0 percent of the time and thatch 29.0 percent of the time. Floors are similarly divided between concrete and dirt. Most of the households obtain water from private sources, including wells and boreholes, or from natural sources consisting of streams and lakes. The majority of households use firewood for cooking and only 32.0 percent of the homes are connected to the electricity grid.

Baseline Results

Household Types by Region

	Male and Female Adults	Female Adult	Male Adult
Northern	45.7%	1.8%	4.4%
Upper East	15.4%	1.6%	1.8%
Upper West	10.8%	3.7%	1.4%
Brong Ahafo	6.0%	8.7%	2.1%
Total	81.5%	8.7%	9.8%

Distribution of Respondents by Household Size

Region	0-4	5-9	10+
Northern	29%	28%	56%
Upper East	9%	9%	18%
Upper West	7%	7%	14%
Brong Ahafo	6%	6%	12%
Total	51%	49%	100%

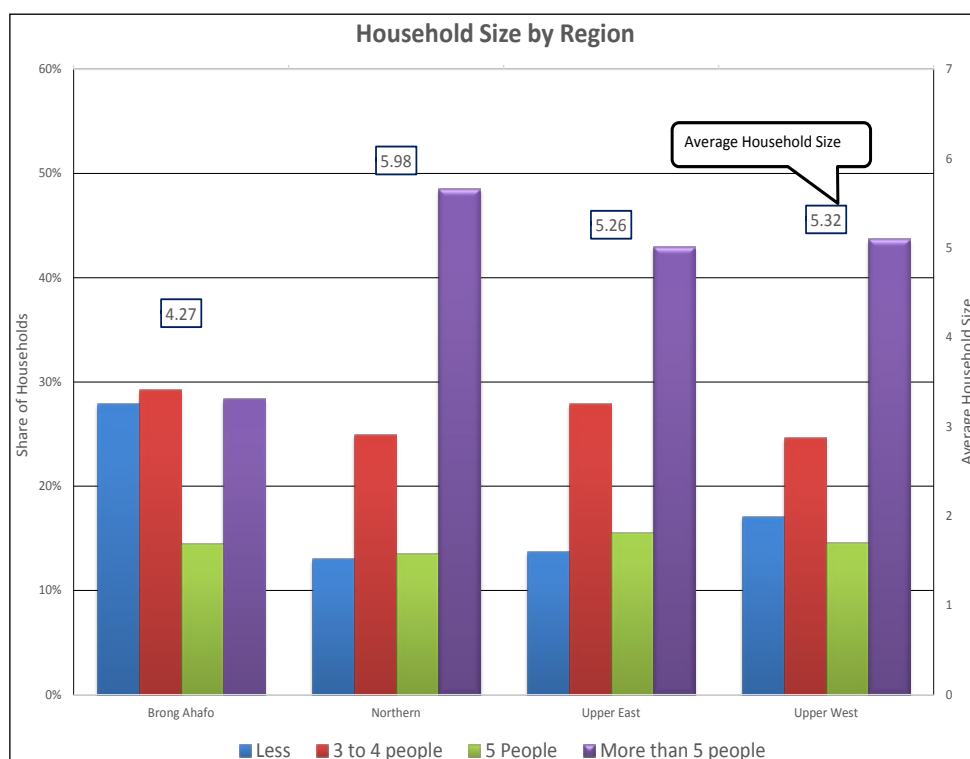
Distribution of Respondents by Gendered Head of Household

Region	Male	Female	Male & Female
Northern	29%	28%	56%
Upper East	9%	9%	18%
Upper West	7%	7%	14%
Brong Ahafo	6%	6%	12%
Total	51%	49%	100%

Highest Education Level for Respondents 18 years and Older by Region

Region	None	Basic	Secondary
Northern	43%	5%	4%
Upper East	13%	3%	3%
Upper West	12%	2%	2%
Brong Ahafo	8%	3%	1%
Total	76%	13%	11%

The resulting data can, however, be used for more than the original research motivation. With the depth of information on the households and individual respondent characteristics, their consumption expenditures, the food and nutrition situation of women and children and the empowerment situation and its antecedents, policymakers and researchers with interest in this the study area and in the issues motivating the study can mine the data to support their policymaking processes and shed light on other initiatives.



POPULATION-BASED SURVEY OF NORTHERN GHANA 2012

HOUSEHOLD EXPENDITURES

67%

of total household expenditures are allocated to food in SADA Area of Ghana

The average daily per capita expenditure for the SADA area is \$4.01. On average, households in the SADA area spend about 67% of their total household expenditure on food and 22% on non-food items, such as health, education and cooking fuel. The remainder is distributed almost equally between housing and durables, such as bicycles, cooking stoves and refrigerators.

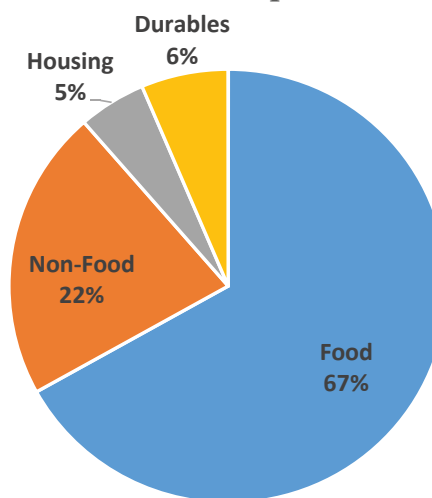
Average Daily Per Capita Expenditures

\$4.01 SADA Area

\$0.97 People living below the \$1.25 poverty line

\$4.79 People living above the \$1.25 poverty line

Distribution of Expenditures



Gendered Household Average Daily Per Capita Household Expenditures



Male & Female Adults Households

\$3.23



Female Adult Households

\$5.01



Male Adult Households

\$9.58

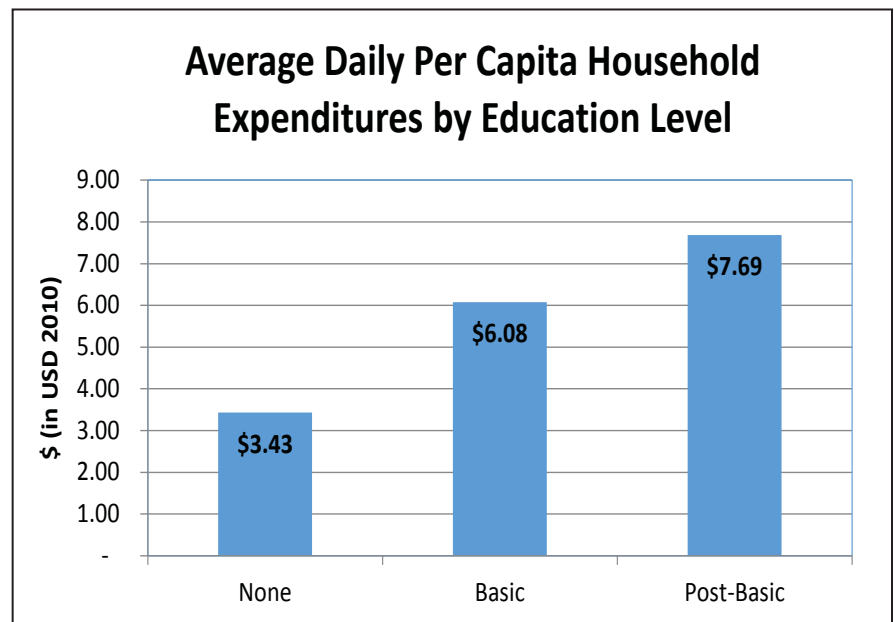
Average Household Daily Expenditures by Region and Locale

Regions	Northern	Upper East	Upper West	Brong Ahafo	Total
Rural	\$3.40	\$2.62	\$2.27	\$5.59	\$3.38
Urban	\$5.47	\$5.60	\$8.47	\$7.71	\$5.88
Average Household Expenditures	\$3.71	\$3.34	\$3.36	\$6.39	\$4.01

Upper East has 82% of its people living in Rural areas and only 18% in Urban areas.

Expenditures

Education level of the household head is a major determinant of average daily per capita household expenditures. Households whose heads have basic education have a daily per capita expenditures that are on average 77% higher than those whose head have no formal education. Those with post-basic education have daily per capita expenditures that are 124% higher than those without any education.



Per Capita Expenditures

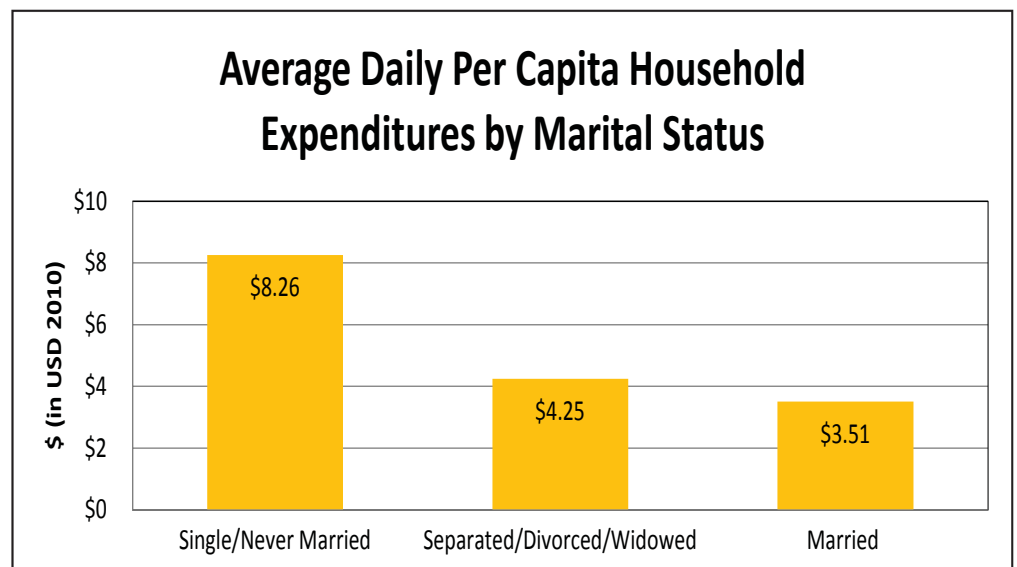
Lower 20 Percentile \$ 0.92

Upper 20 Percentile \$10.77

The gap between the average daily per capita expenditures of the bottom 20% and the top 20% of households is nearly **\$10**. In other words, the average daily per capita expenditures of the top 20% is **11.7** times that of the bottom 20% of the population in the SADA Area.

Marital Status influences per capita expenditures through household size.

Households in which the household head is married have higher household size. Single/never married households have an average of 2.5 people while separated/divorced/widowed have 3.7 people.



POPULATION-BASED SURVEY OF NORTHERN GHANA 2012

POVERTY

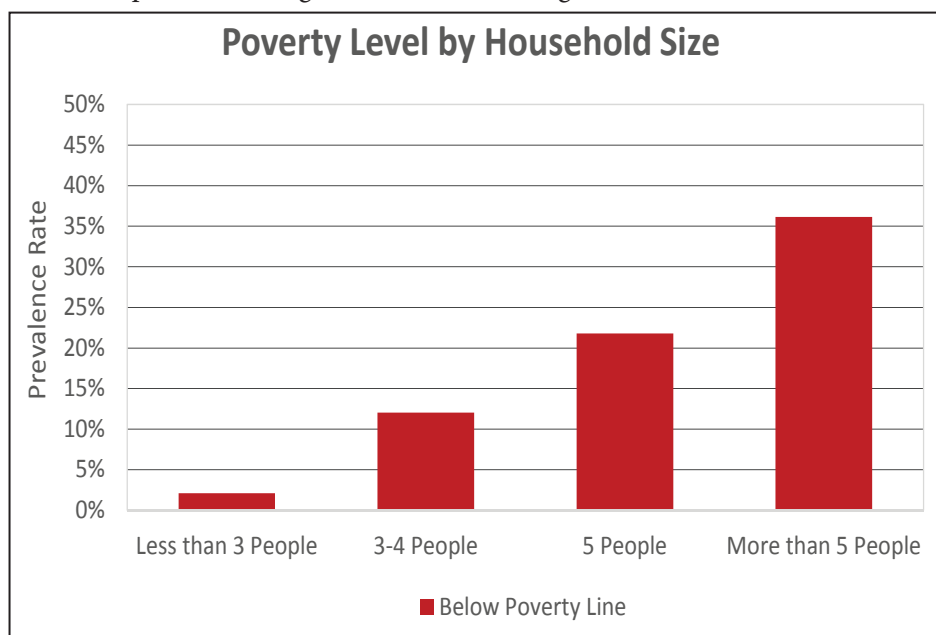
More than 1 in 5 households live below the \$1.25 poverty line



Poverty reduction is one of the principal development objectives being pursued by the Government of Ghana and its development partners. A household expenditure-based approach is used to estimate the prevalence of poverty. Total daily household expenditure, defined as the sum of four expenditure categories – Food, Housing, Non-Food and Consumer durables – is divided by the household size to determine the daily per capita household expenditure. The proportion of households with daily per capita expenditures below the poverty line defines the prevalence of poverty at the household level in the study area.

The approach would suggest that household size influences the average daily per capita expenditures, and hence, the prevalence of poverty.

While less than 2.1% of households with less than 3 people fell below the poverty line, nearly 40% of households with more than 5 people fell below the poverty line.

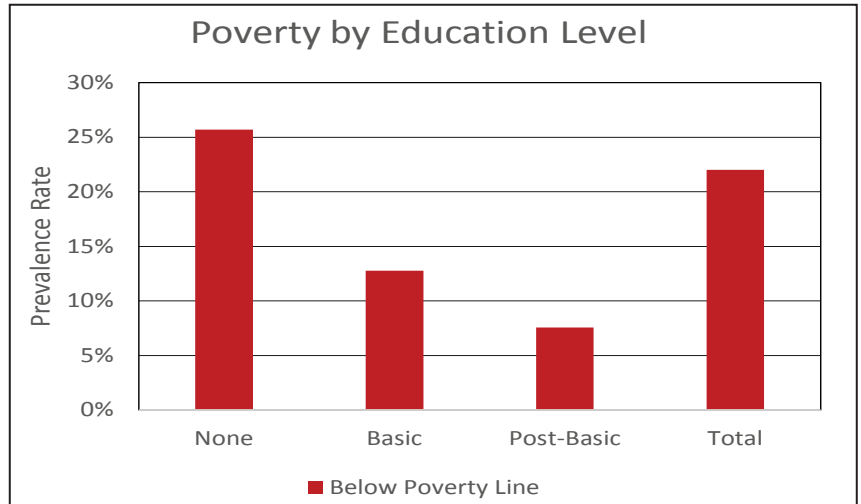


Prevalence of Poverty by Region and Gendered Household

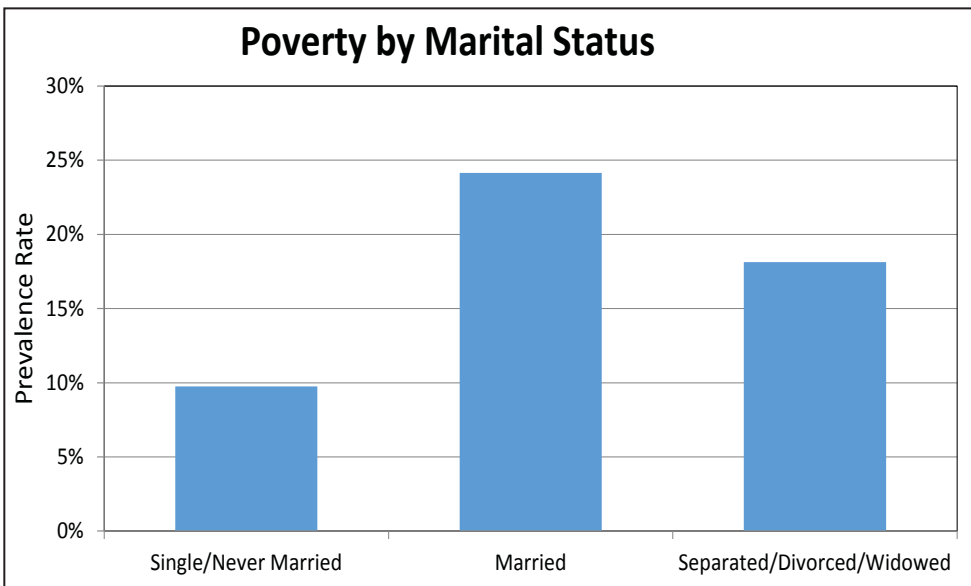
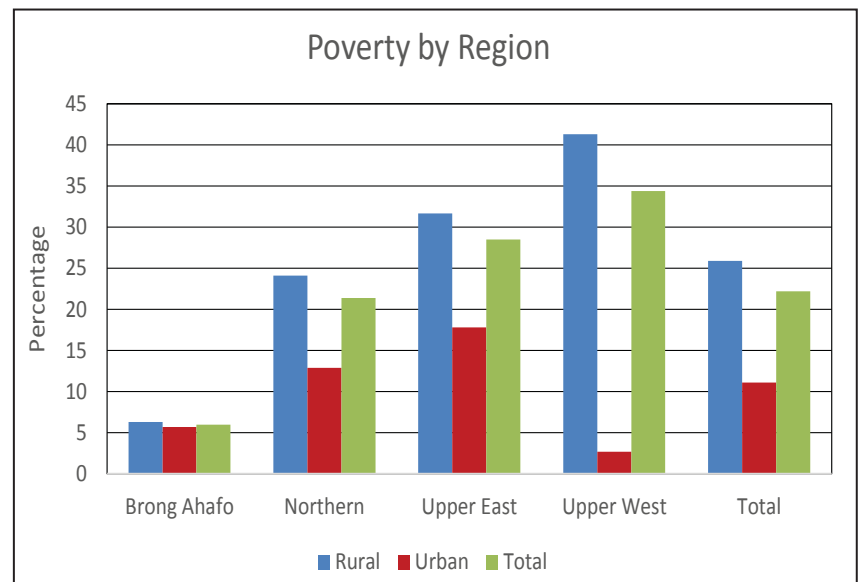
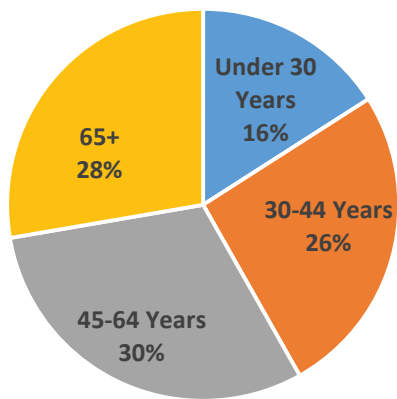
Regions	Northern	Upper East	Upper West	Brong Ahafo	Total
Male and Female Adults	23.6%	31.9%	39.7%	7.4%	25.4%
Female Adult	11.4%	17.6%	19.1%	3.6%	10.7%
Male Adult	3.3%	8.6%	11.8%	4.1%	5.7%
Total	21.5%	28.1%	34.6%	6.0%	22.2%

Poverty

The results show that the education level of the household head has a direct effect on the likelihood of the household falling below the poverty line. Similarly, household size is a strong indicator of household level poverty. These two correlates provide information on how policymakers may work with households in the study area to alleviate poverty.



Poverty by Age of Household Head



25.9%:

Proportion of households in **Rural areas** below the poverty line. This is more than twice the proportion of households in

Urban areas below the poverty line.



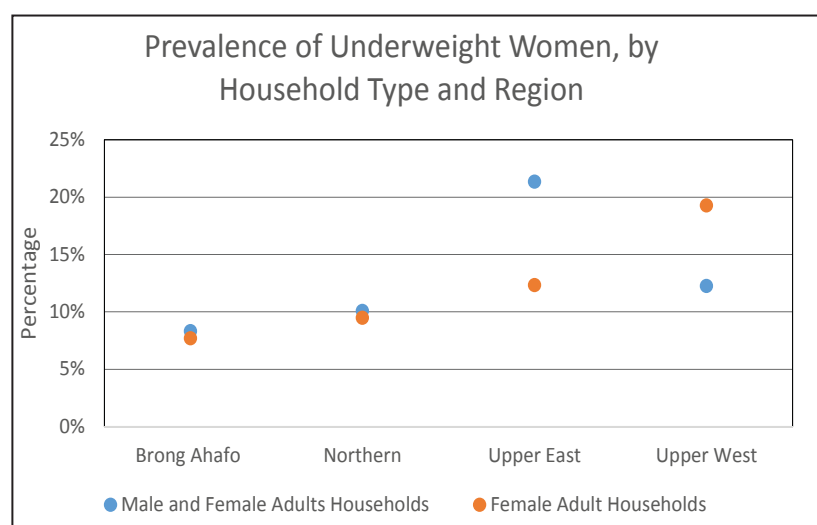
POPULATION-BASED SURVEY OF NORTHERN GHANA 2012

WOMEN'S ANTHROPOMETRY

73.0% of reproductive-age women in the SADA Area, have a normal Body Mass Index (BMI)

BMI is calculated as a ratio of weight in kilograms to the square of height in meters. Individuals with BMI values of less than 18.5 kgm^{-2} are considered underweight while those with BMI values greater than 25 kgm^{-2} but less than 30 kgm^{-2} are considered overweight. BMI values in excess of 30 kgm^{-2} fall in the obese group. A healthy or normal BMI ranges from 18.5 kgm^{-2} to 25 kgm^{-2} . The average height and weight of women of child-bearing age in the study area is 159.6 cm and 55.9 kg respectively. The average height and weight of women of child-bearing age in the study area is 159.6 cm and 55.9 kg respectively.

While being overweight or obese has been linked with diabetes and cardiovascular diseases, being underweight puts people at significant risk in their ability to go about their normal daily responsibilities and increases their vulnerability to infections. On average, 11.8% of women in the SADA Area were determined to be underweight.



Although Female Adult Only Households had 17% overweight/obese women compared to 14% of Male and Female Adult Households, there was no statistical difference between the two gendered household types.

At 26.1%, Brong Ahafo Region presents the highest proportion of overweight/obese women and lowest proportion of underweight women of reproductive age. Of the four regions, Upper East has the highest proportion of underweight women of reproductive age.

Underweight Women by Gendered Households

Regions	Northern	Upper East	Upper West	Brong Ahafo	Total
Male and Female Adults	10.1%	21.3%	12.7%	8.2%	12.1%
Female Adult Only	9.5%	12.3%	19.3%	7.7%	10.6%
Total	10.0%	20.5%	13.2%	8.0%	11.8%

Women's Anthropometry

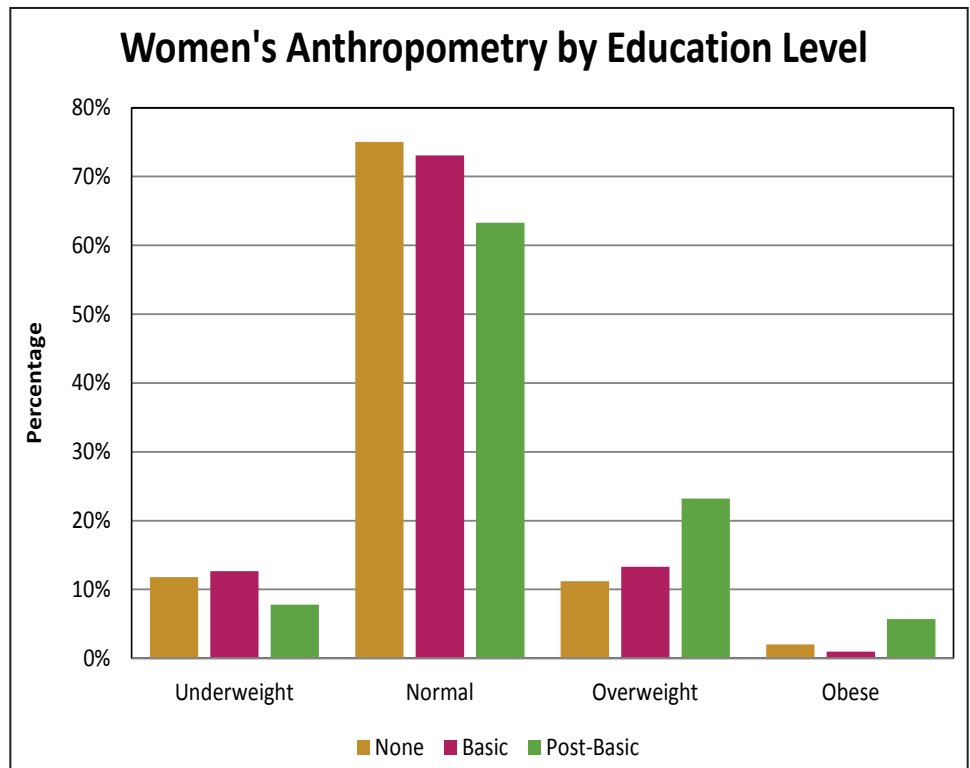
Being an underweight woman has been found to be a more serious problem in developing countries because of women's role in the economic well-being and health of children and other dependents. This is even more critical where the activities supporting livelihood require significant physical capacity. For women whose daily economic activities involve farm and similar physically-exhausting work, being underweight can present serious implications for poverty and child nutrition.

13%

Women with no formal education or only Basic education who are overweight or obese

29%

Women with post-Basic education who are overweight or obese



20.5%

Upper East has the highest prevalence rate of underweight women in the four regions

74.7%

Male and Female Adults Households have the higher prevalence rate of women with a normal BMI

With the exception of Northern Region, where there is no difference between the rural and urban areas, the prevalence of underweight women of reproductive-age is significantly higher in rural areas than urban areas.

Rural areas have a higher proportion of underweight women

12.8%



Urban areas prevalence rate

9.4%



POPULATION-BASED SURVEY OF NORTHERN GHANA 2012

WOMEN'S DIETARY DIVERSITY

17.4% of reproductive-age women are in the high diet diversity category in the study area

Women's Dietary Diversity Score (WDDS) measures the nutritious quality of reproduction-age women's diets in the study area. It is developed from nine food groups:

Cereals	Other meats
Dairy products	Vitamin A-rich dark green leafy vegetables
Organ meat	Other Vitamin A-rich vegetables and fruits
Eggs	Other fruits and vegetable

Low Diet Diversity- consuming foods from less than 3 of the food groups is low diet diversity.

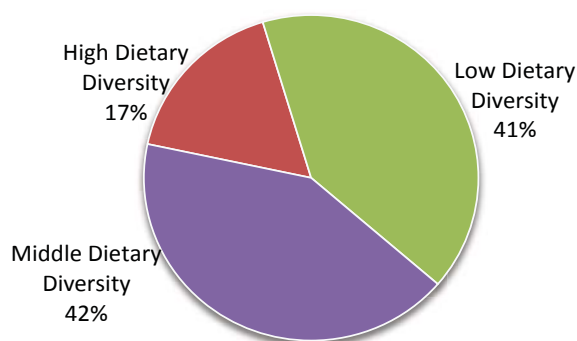
Middle Diet Diversity- consuming 4 to 5 different food groups.

High Diet Diversity- consuming more than 5 food groups.

The number of food groups in a woman's diet in the seven days preceding the survey defines her dietary score.

About **59.5%** of women of reproductive-age have middle to high dietary diversity. Upper East Region had the highest proportion of women in the low dietary diversity group. Contrarily, Northern Region had the highest proportion of its women of reproductive age in the middle to high dietary diversity group (approximately **63%**).

Distribution of Reproductive-Age Women by Diet Diversity Group

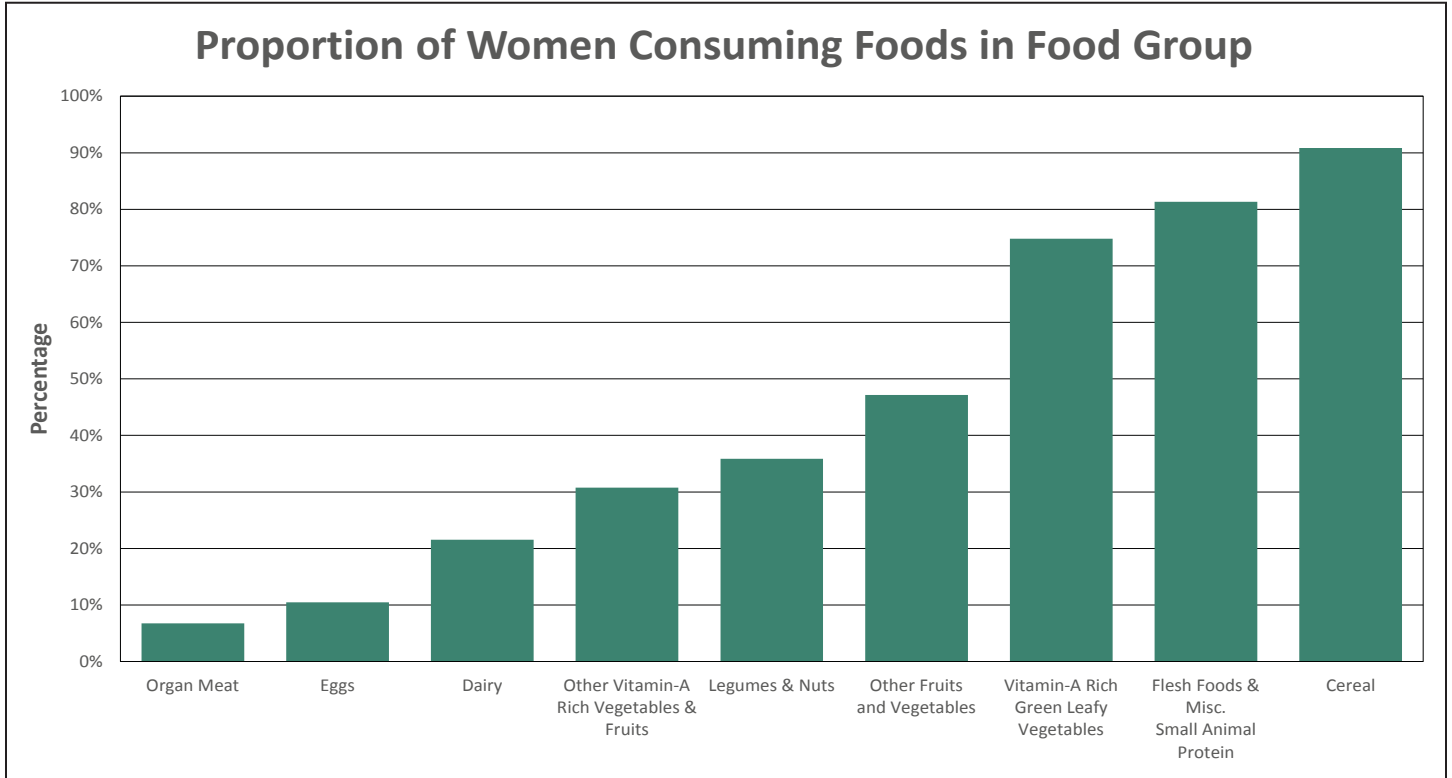


Women with Low Dietary Diversity by Region and Gendered Household

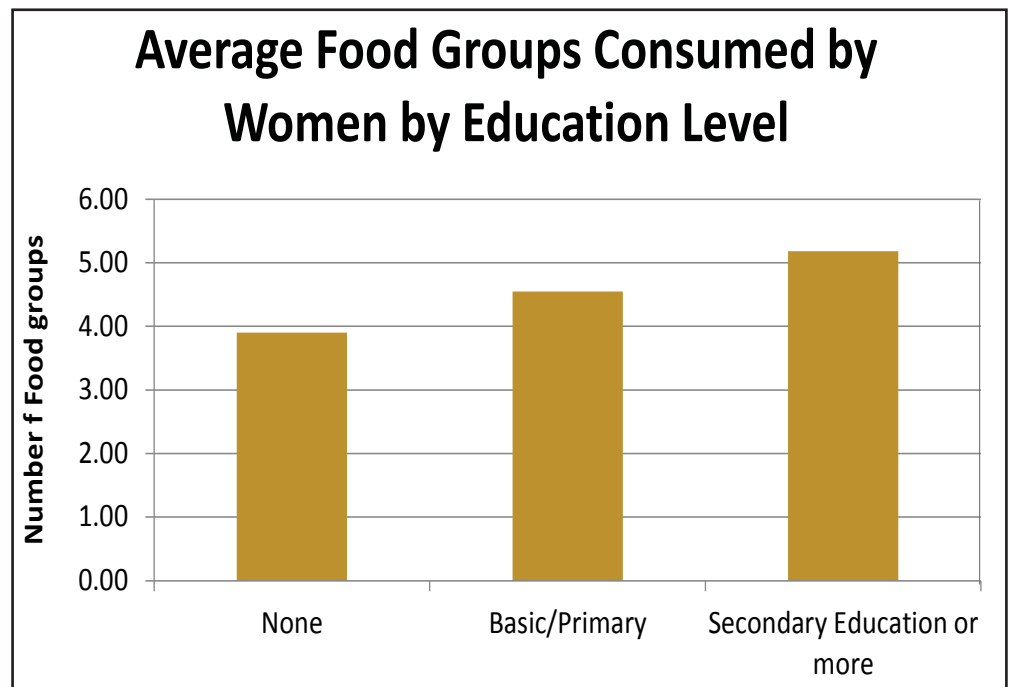
Regions	Northern	Upper East	Upper West	Brong Ahafo	Total
Male and Female Adults	37.1%	50.7%	43.6%	38.1%	40.29%
Female Adult Only	35.8%	56.0%	32.7%	44.7%	43.28%
Total	37.1%	51.1%	42.8%	39.6%	40.5%

Women's Dietary Diversity

WDDS declines with increasing household size and increases with education. The average WDDS for women in households with 5 or more people was 3.96. However, the average WDDS for women in households with 3 or 4 people is 4.1 compared to 4.13 for those in households with fewer than five people. These average WDDS are statistically different from each other at the 5% level.



Certain demographic characteristics of women are hypothesized to influence the diversity of their diets. For example, education not only improves a woman's knowledge about the nutrition quality of different diets, but possibly empowers her to access different foods.



POPULATION-BASED SURVEY OF NORTHERN GHANA 2012

CHILDREN'S MINIMUM ACCEPTABLE DIET

Only 15.5% of children receive a minimum acceptable diet

Dietary Diversity for better health outcomes is based on consumption of food products from at least four different food groups. The food groups for breastfed and non-breastfed children are as follows:

Breastfed Children	Non-Breastfed Children
Grains, roots and tubers	Grains, roots and tubers
Legumes and nuts	Legumes and nuts
Dairy products	Flesh foods
Flesh foods	Eggs
Eggs	Vitamin-A rich fruits and vegetables
Vitamin-A rich fruits and vegetables	Other fruits and vegetables
Other fruits and vegetables	Plus at least two milk feedings per day

15.0% of children in **Rural** households receive minimum acceptable diets

17.6% of children in **Urban** households receive minimum acceptable diets

Children Receiving Minimum Acceptable Diet by Gendered Household

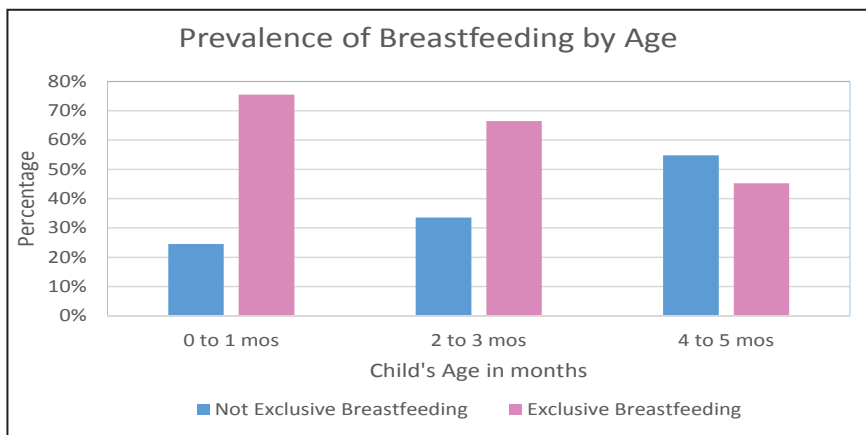
Regions	Northern	Upper East	Upper West	Brong Ahafo	Total
Male and Female Adults	13.8%	11.3%	27.9%	15.4%	15.1%
Female Adult Only	14.1%	37.2%	21.9%	19.8%	22.0%
Total	13.8%	13.2%	27.7%	16.4%	15.5%

POPULATION-BASED SURVEY OF NORTHERN GHANA 2012

EXCLUSIVELY BREASTFED CHILDREN

60.5% of children 0-5 months are exclusively breastfed

Exclusively breastfed children are children under six months who are fed only breast milk. Breastfeeding is important for establishing a safe health situation for children. The World Health Organization (WHO) recommends that children be breastfed for the first six months. After that age, mothers are encouraged to introduce complementary foods to their children.



Proportion of children exclusively breastfed in
Rural areas

58.6%



Proportion of exclusively breastfed children in
Urban areas

68.6%



Exclusively Breastfed Children by Gendered Household



Male & Female Adults Households

61.5%



Female Adult Households

45.9%

Regions	Northern	Upper East	Upper West	Brong Ahafo
Exclusively Breastfed Children	67.0%	49.0%	44.5%	54.2%

POPULATION-BASED SURVEY OF NORTHERN GHANA 2012 CHILDREN'S MALNUTRITION AND ANTHROPOMETRY

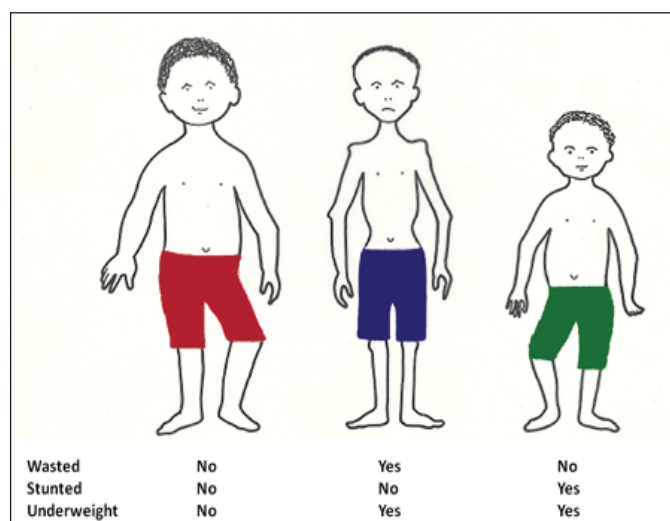
729,230 estimated number of children, under 5 years in the SADA Area

Three children's anthropometry indicators are used to measure the prevalence of growth retardation. They are based on standardized World Health Organization (WHO) and National Center for Health Statistics definitions and measurements. The three indicators are:

- **Height-for-Age (Stunted):** Low height-for-age is an indicator of failure to reach linear growth potential, often a result of inadequate health and/or nutrition conditions.

- **Weight-for-Height (Wasted):** Low weight-for-height often indicates a recent and severe weight loss resulting from acute starvation and/or disease. In the absence of severe food shortages, the prevalence of wasting is often below 5%, even in poor countries.

- **Weight-for-Age (Underweight):** Low weight-for-age is influenced by the other two indicators.



Adapted from Waterlow, J.C.; A. Tomkins, and S.M. Grantham-McGregor, *Protein-energy malnutrition*. 1992: Edward Arnold, Hodder and Stoughton.

Children under five years of age are the focus of the children's malnutrition and anthropometry.

WHO defines the prevalence ranges that qualify as low, medium, high or very high for each of these indicators.

Child Anthropometry Indicators for Public Health Significance

Indicator	SADA Area	Severity of Malnutrition By Prevalence Ranges (%)			
		Low	Medium	High	Very high
Stunting	36.0%	<20	20-29	30-39	>=40
Underweight	18.4%	<10	10-19	20-29	>=30
Wasting	10.9%	< 5	5-9	10-14	>=15

Children's Malnutrition and Anthropometry

Children's Malnutrition by Severity

	Total	Northern	Upper East	Upper West	Brong Ahafo
Stunted Children	High	High	High	Medium	Medium
Underweight Children	Medium	High	Medium	Medium	Low
Wasted Children	High	High	High	Medium	Medium

Children's Malnutrition by Gender

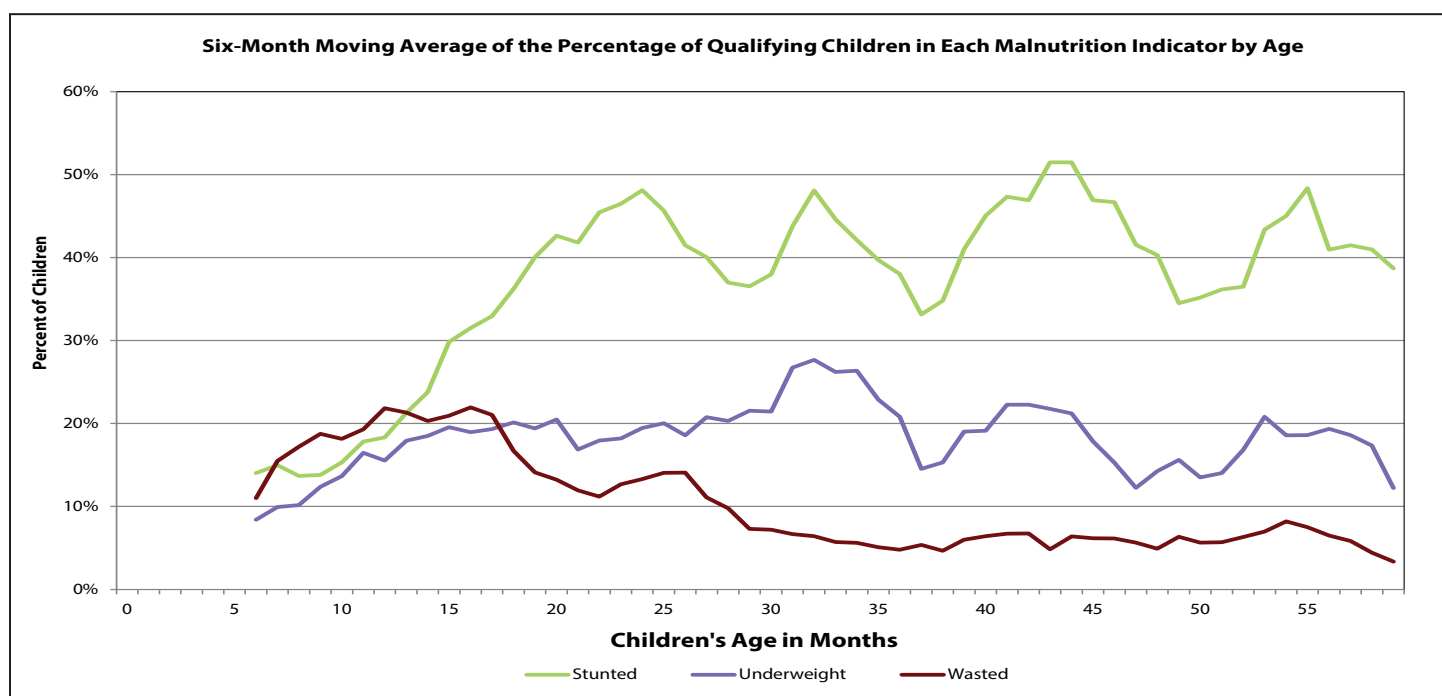
	Stunting	Underweight	Wasting
Boys	38.2%	18.2%	11.3%
Girls	34.0%	18.7%	10.7%

Children's Malnutrition by Locale

	Stunting	Underweight	Wasting
Rural	38.1%	19.3%	10.7%
Urban	27.4%	14.5%	11.9%

Children's Malnutrition by Gendered Household

	Stunting	Underweight	Wasting
Male & Female Adults Households	35.8%	18.4%	11.2%
Female Adult Only Households	34.9%	17.5%	9.1%
Male Adult Only Households	68.4%	19.7%	0
Total	36.1%	18.4%	10.9%



POPULATION-BASED SURVEY OF NORTHERN GHANA 2012

HOUSEHOLD HUNGER SCALE

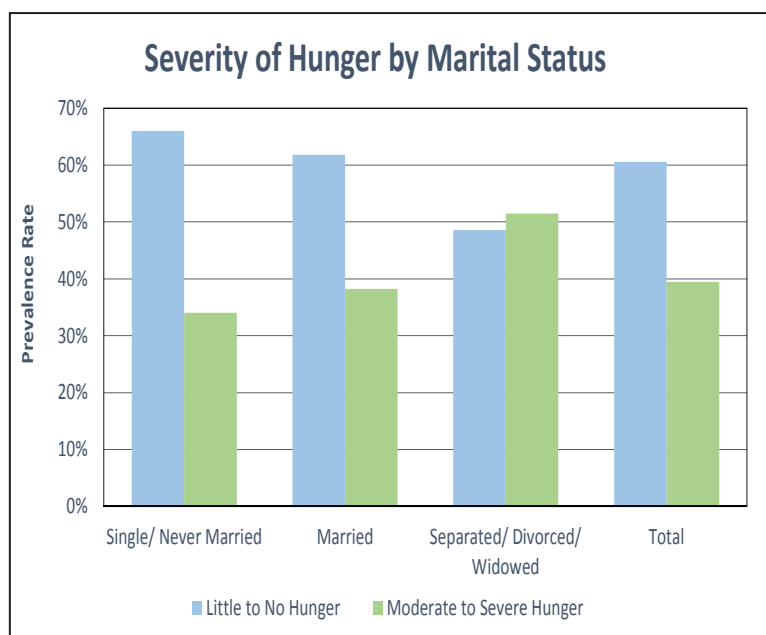
Nearly **4 in 10** households experience moderate to severe hunger in the SADA Area

The Household Hunger Scale (HHS) is a simple indicator used to estimate the prevalence of household hunger in food insecure areas. The HHS in this study was developed using information obtained from the following sets of incidence of hunger and their frequency of occurrence over a 30-day (or 4-week) period:

- Incidence and frequency of a “No food” situation in the household
- Incidence and frequency of at least one person going to bed at night hungry
- Incidence and frequency of at least one person going all day and night without food

About 6 in 10 (59.7%) households in Upper East Region and 57.5% of households in Upper West Region experienced moderate to severe hunger in the four weeks prior to the survey. The prevalence of moderate to severe hunger in Brong Ahafo and Northern Region households in the four weeks preceding the survey was 26.5% and 31.1% respectively.

More than half (51.5%) of all households in which the household head is separated/divorced/widowed had experienced moderate to severe hunger in the four weeks prior to the survey. The prevalence of moderate to severe hunger for households in which the household head is single/never married and married 34% and 38%, respectively.

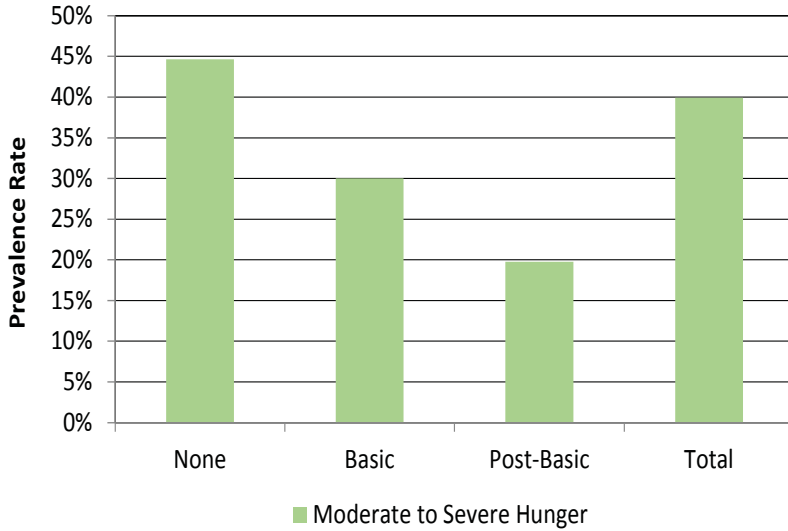


Distribution of Moderate to Severe Household Hunger by Gendered Household

Regions	Northern	Upper East	Upper West	Brong Ahafo	Total
Male and Female Adults	30.8%	40.0%	59.7%	25.3%	39.5%
Female Adult	43.6%	56.1%	58.0%	28.6%	42.3%
Male Adult	29.2%	60.9%	39.7%	28.3%	36.4%
Total	31.1%	59.7%	57.5%	26.5%	39.4%

Household Hunger Scale

Severity of Hunger by Education Level



Less than 1 in 5 households in which the household head has post-basic education reported experiencing moderate to severe hunger in the four weeks preceding the survey.

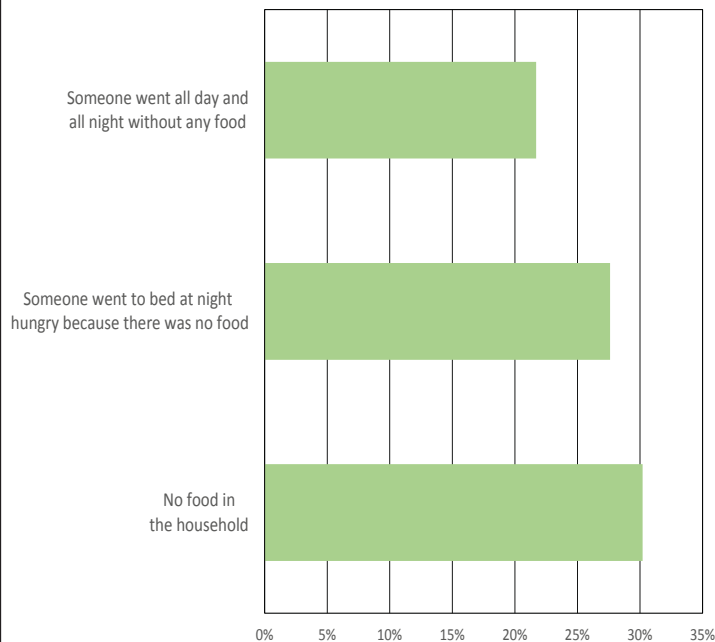
The prevalence of moderate to severe hunger for households in which the household head has no formal education is **45%**.

The prevalence of moderate to severe hunger for households in which the household head has only basic education is approximately **30%**.

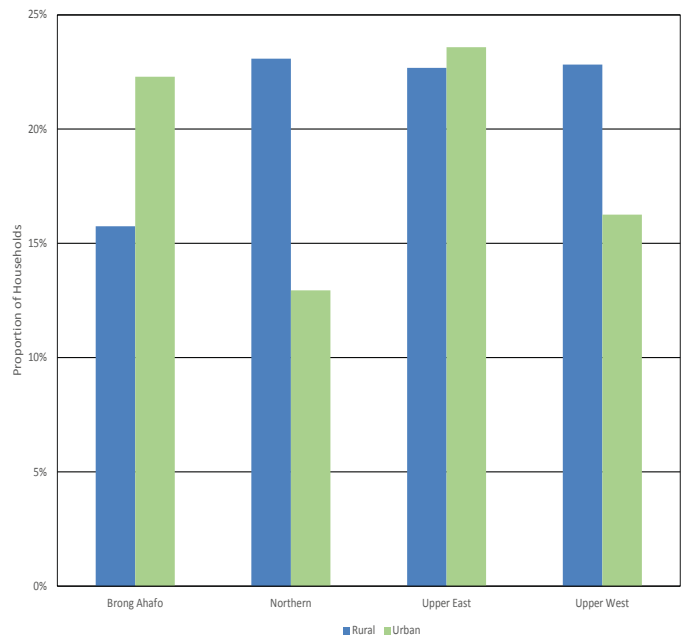
Less than a quarter of all households in rural or urban areas in all regions experienced a situation where someone went all day and night without food three or more times in the four weeks preceding the survey.

Overall, **18%** of Brong Ahafo households experienced this situation compared to **23%** in Upper East Region and **22%** each in Upper West and Northern Region.

Proportion of Households Experiencing Event 3 or more Times



Proportion of Households in Which Someone Went All Day & Night Without Food 3 or more times in the 4 weeks before the survey (Region and Locale)



POPULATION-BASED SURVEY OF NORTHERN GHANA 2012

Women's Empowerment in Agriculture Index (WEAI)

72.5% Proportion of women who are disempowered in the study area

The Women's Empowerment in Agriculture Index (WEAI) provides an empirical measure of women's empowerment. The WEAI is a composite metric of two indicators – 5 Domains of Empowerment (5DE); and Gender Parity Index (GPI). The 5DE Index by itself measures the degree of empowerment or disempowerment, which defines women's control over their lives in five domains: (1) Decisions about agricultural production; (2) Access to and decision-making power over production resources; (3) Control over income use; (4) Leadership in the community; and (5) Time use. The GPI measures the relative difference between the empowerment level of women and men in the same household. WEAI is determined using the equation $WEAI = \alpha(5DE) + (1-\alpha)GPI$, where α is set at 0.9 in this study. The (5DE) is the inadequacy score.

Average WEAI = **0.714**

Average Inadequacy Score for Disempowered Women: **40.9%**

70.4%: Proportion of women experiencing gender disparity

Control over resources and production decisions together account for nearly 60% of women's inadequacy in the SADA Area. Sole control over income use contributes the least to women's inadequacy in the SADA Area. There are three components of the resources dimension: asset ownership; asset purchase, sale or transfer; and access to and decisions about credit. Resources contribution to inadequacy was 31%, and control over credit decisions alone accounted for about 42% of this. Control over asset ownership accounted for the smallest contribution from the resource domain to inadequacy, only about 22%.

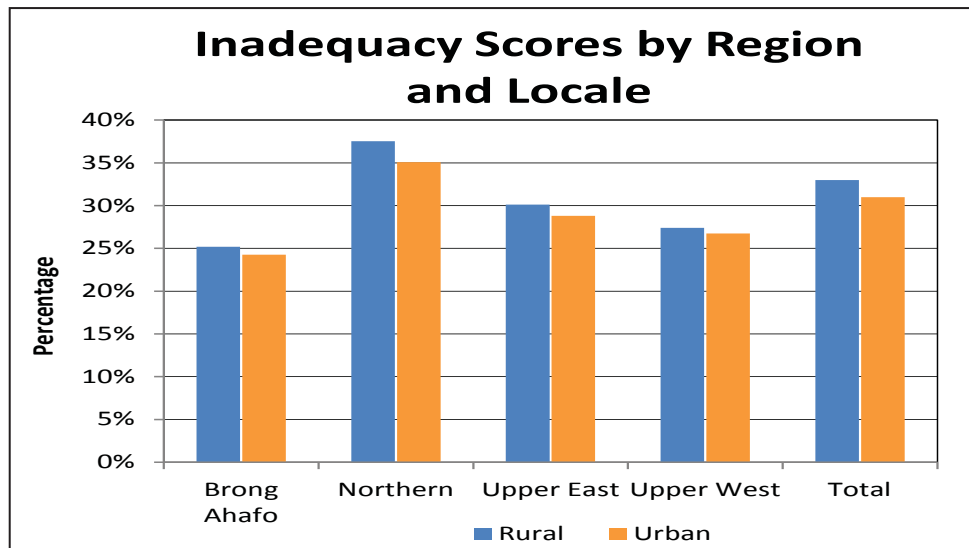
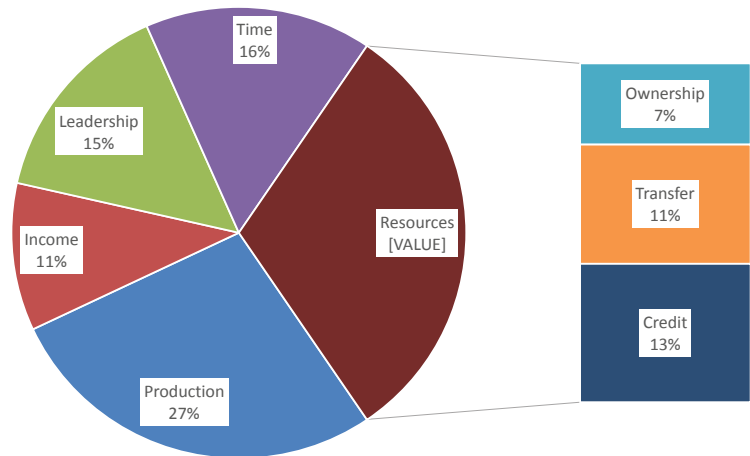
Empowerment Score by Gendered Household

Regions	Northern	Upper East	Upper West	Brong Ahafo
Adequate	19.3%	31.0%	34.8%	48.0%
Inadequate	80.7%	69.0%	65.2%	52.0%
Total	59.8%	68.8%	69.9%	73.2%

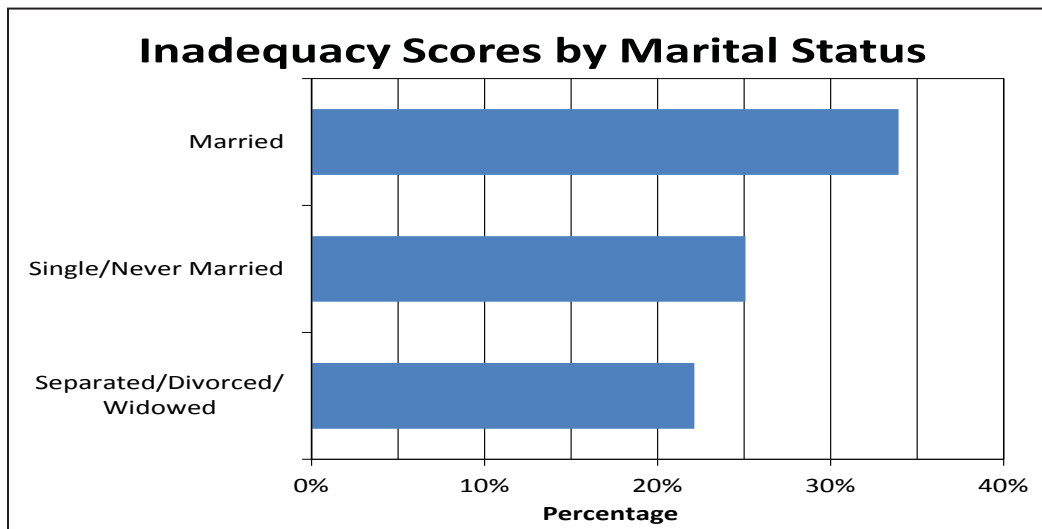
Women's Empowerment in Agriculture Index (WEAI)

The average inadequacy score for rural women was 0.33 compared to 0.31 for urban women. Women in Brong Ahafo Region have the lowest inadequacy scores while the highest inadequacy scores are found among women in Northern Region. Rural women in Northern Region have an average inadequacy score of 0.38 while their urban counterparts have an inadequacy score of 0.35. On the other hand, rural Brong Ahafo women have an inadequacy score of 0.25 while their urban counterparts have 0.25. Inadequacy is higher in rural areas in all regions.

Contributions of 5DE Components to Disempowerment



Education improves adequacy. The inadequacy score of women without any formal education is 0.33. This is nearly 22% higher than the inadequacy score of women with at least basic education.



The inadequacy score of married women is more than **25%** higher than that of single/ never married women and nearly **35%** higher than that of women who are separated/ divorced/widowed.

Population-Based Survey Objectives

The Feed the Future indicators define the survey objectives and are used to establish the baseline of economic and health conditions in the SADA Area.

Feed the Future Indicators		Expected Impact
Economic Wellbeing	Prevalence of Poverty: Percent of people living on less than \$1.25/day	Sustainably reduce global poverty and hunger
	Per capita expenditures of USG targeted beneficiaries	Inclusive agricultural sector growth
Women and Children's Health Status	Prevalence of underweight children under five years of age	Sustainably reduce global poverty and hunger
	Prevalence of stunted children under five years of age	Improve nutritional status of children
	Prevalence of wasted children under five years of age	Improve nutritional status of children
	Prevalence of underweight women	Improve nutritional status of women
Food and Nutrition Status	Prevalence of households with moderate or severe hunger	Increased resilience of vulnerable communities and households
	Prevalence of children 6-23 months receiving a minimum acceptable diet	Improved access to diverse and quality foods
	Women's Dietary Diversity: Mean number of food groups consumed by women of reproductive age	Improved access to diverse and quality foods
	Prevalence of exclusive breastfeeding of children under six months of age	Improved nutrition-related behaviors
WEAI	Women's Empowerment in Agriculture Index	Inclusive agricultural sector growth