

# POLICY BRIEF



## FERARI

FERTILIZER RESEARCH & RESPONSIBLE IMPLEMENTATION



## POVERTY AND FOOD AND NUTRITIONAL SECURITY AMONG FARM HOUSEHOLDS IN GHANA

### POLICY ENVIRONMENT

Ghana has made progress in reducing poverty and food insecurity. Nonetheless, many households are still trapped in these conditions, although regional differences in progress are great. The Ghana Living Standard Survey round 7 showed that one out of every four to five Ghanaian households live below a decent standard of living (i.e., annual consumption expenditure of GHS 1,314). The 2020 Global Hunger Index revealed that Ghana is only moderately food secure. These conditions are even more pronounced in rural agrarian areas. Yet, farmers play a central

role in the food and nutrition security status of the entire country, and increasing their agricultural productivity is the most important avenue out of poverty and food insecurity. The FERARI program determined the baseline status at its initiation by measuring the Poverty Probability Index (PPI), food consumption expenditure, Household Dietary Diversity Score (HDDS), and Household Food Insecurity Access Scale (HFIAS). A total of 1,450 farm households from eight regions in the Transitional, Guinea Savannah, and Sudan Savannah agroecological zones of Ghana were interviewed. This policy brief is based on those findings, as presented in FERARI Research Report No. 5 (Adzawla et al., 2021)<sup>1</sup>.

### FOOD AND NUTRITION SECURITY OF HOUSEHOLDS

**Household Dietary Diversity Score:** The HDDS is obtained by asking household members during an interview to recall any of the 12 food groups consumed in the previous 24-hour period. These food groups include cereals; white tubers and roots; vegetables; fruits; meat; eggs; fish and other seafood; legumes, nuts, and seeds; milk and milk products; oils and fats; sweets; and spices, condiments, and beverages. The HDDS is estimated by counting the number of food groups consumed by the household. For instance, an HDDS of 3 indicates the household consumed a combination of any three of the 12 food groups in the 24 hours prior to the interview. A typical Ghanaian 'banku' diet, for example, may include cereals, vegetables, meat/fish, and spices. Generally, a household with a higher HDDS has more

The survey included questions on household spending and consumption of different foods.

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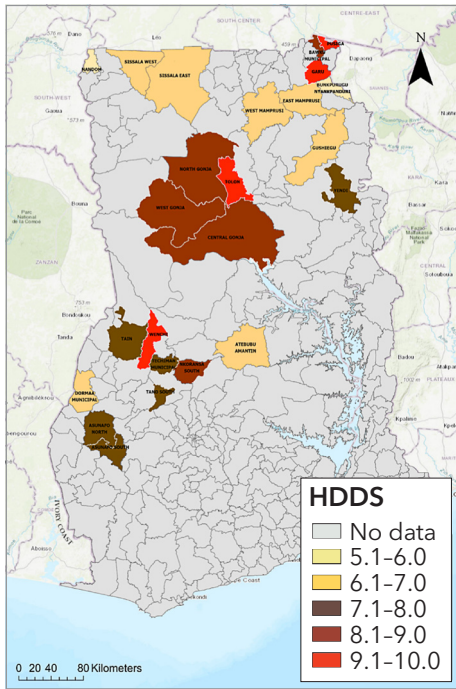
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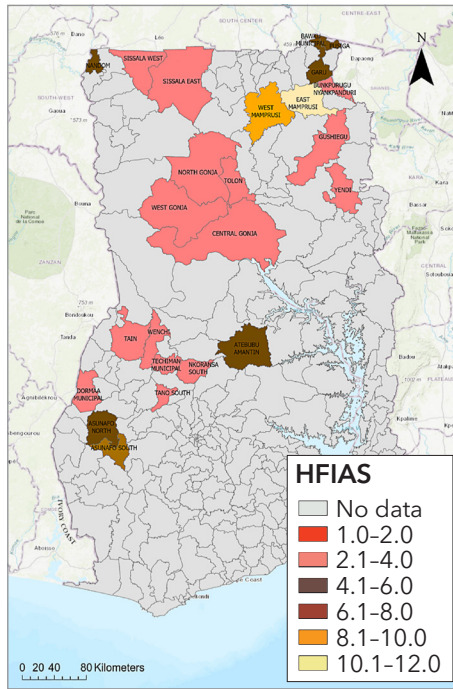
<sup>1</sup> Adzawla, W., I.N. Kissiedu, E. Martey, P.M. Etwire, W.K. Atakora, A. Gouzaye, and P.S. Bindraban. 2021. Baseline Study on Fertilizer Use and Food/Nutrition Security in Sudan Savannah, Guinea Savannah, and Transitional Zones of Ghana. IFDC FERARI Research Report No. 5.

**Figure 1.** Average HDDS distribution by district



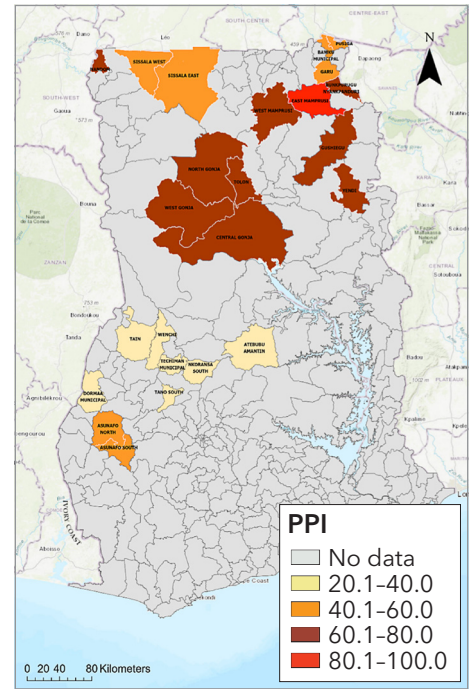
Note: The higher the index, the more diverse the diet.

**Figure 3.** Distribution of average HFIAS by district



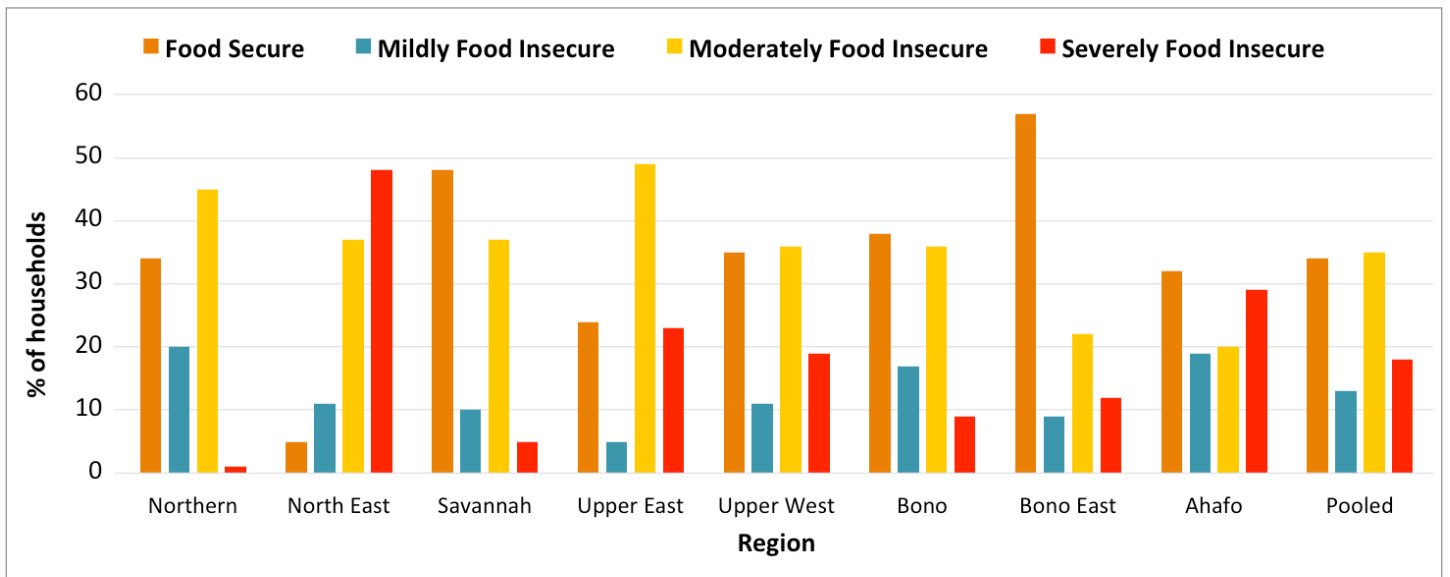
Note: The higher the index, the lower the food security of the household.

**Figure 5.** Distribution of average PPI by district

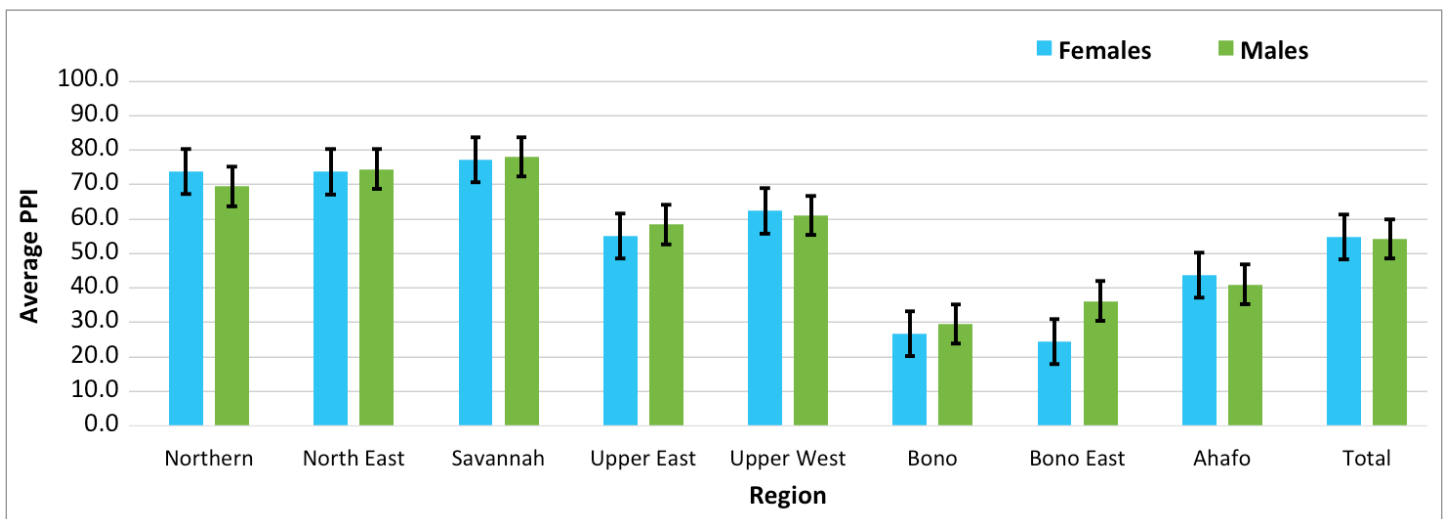


Note: The higher the index, the higher the poverty probability

**Figure 2.** Percentage distribution of HFIAS classification by region



**Figure 4.** Poverty rate by gender and location



food diversity or food security. The farm households that were interviewed averaged an HDDS of 7.6 on a scale of 1-12 with significant regional differences (Figure 1). Even within regions, dietary diversity differed among districts; it was highest in Tolon, Pusiga, Garu, and Wenchi districts and lowest in Nabdom and Bunkpurugu/Nyankpanduri districts.

**Household Food Insecurity Access Scale:** The HFIAS measures the accessibility component of food security. Each household is given a nine-question survey that is based on the previous four-week period. These questions address how frequently (0 if not at all, 1 if rarely, 2 if sometimes, or 3 if often) over the past four weeks the respondent or any household member:

1. Worried that there would not be enough food for the household.
2. Had to eat a limited variety of foods due to a lack of resources.
3. Had to eat some foods that he or she really did not want to eat because of a lack of resources to obtain other types of food.
4. Had to eat a smaller meal than necessary because there was not enough food.
5. Had to eat fewer meals in a day because there was not enough food.
6. Did not have any food in the household due to a lack of resources.
7. Went to sleep hungry because there was not enough food.
8. Went an entire day and night without eating anything because there was not enough food.
9. Was not able to eat the preferred kinds of food due to a lack of resources.

The HFIAS ranges from 0 (respondent answered 0 to all nine questions) to 27 (respondent answered 3 to all nine questions). The lower the index, the higher the food security of the household, and vice versa.

The survey results showed that the households averaged an HFIAS of 4.4, which indicates relatively high food security. The households were categorized into four food security groups, as in Figure 2.

Overall, the highest percentage (35%) of the households were moderately food insecure, which is consistent with the Global Hunger Index classification of Ghana as a moderately food-secure nation. While 34% of the sampled farm households were food secure, 18% and 13% were severely or mildly food insecure, respectively. Food-secure households were common in Bono East Region and less common in North East Region. Severe food insecurity was highest in North East Region and lowest in Northern Region. These estimates have decreased compared to the estimates of 38%, 24%, and 20% food-insecure



Rural women at work cleaning maize.

households in Upper East, Upper West, and Northern (now Northern, Savannah, and North East) regions, respectively, by the United Nations World Food Programme almost 10 years ago (WFP, 2012).

Figure 3 shows that food security was high in most of the selected districts, especially those in Northern, Savannah, and Bono East regions. However, food insecurity was higher in West and East Mamprusi districts of North East Region.

#### FOOD INSECURITY COPING STRATEGIES

Table 1 lists the coping strategies used by households to alleviate food insecurity. The main strategies included consumption of less expensive, low-quality, and less preferred foods, elimination of some food items from meals, and restricting adults' consumption to ensure children have enough food to eat. The least used coping strategies included migration, sending household members to eat elsewhere, making handicrafts to raise money, sending household members to beg for food, and gathering wild or immature animals and crops. On average, a household adopted about four strategies to cope with food insecurity. Two components under the HFIAS that accurately reflect the common coping strategies are the consumption of less preferred food and fewer varieties of food due to limited household resources.

#### POVERTY AMONG HOUSEHOLDS

**Food Consumption Expenditure:** Table 2 presents the average food consumption expenditure, which is a combination of the households' own and purchased food consumption expenditures. On average, a household spent about GHS 6,915.3 on food annually, and the actual per capita food consumption expenditure in the surveyed regions was about GHS 1,070. A more representative per capita food expenditure was calculated by adjusting the household size based on the different ages of individuals in the household and by adjusting consumption to reflect a reduction in total consumption per additional person

**Table 1.** Strategies to cope with food insecurity

COPING STRATEGY	% OF HOUSEHOLDS
Rely on less expensive food	53
Consume low-quality food	50
Consume less preferred food	49
Eliminate some components from a meal	48
Limit portion sizes at mealtimes	40
Skip meals	37
Restrict adults' consumption so small children can eat	35
Consume seed stock intended for the next season	23
Perform an occasional job	23
Purchase food on credit	21
Borrow food from a friend or relative	16
Gather wild food, hunt, or harvest immature crops	13
Head of household migrates to work	13
Make handicrafts to raise money for food	12
Send (ask) household members to eat elsewhere	11
Send household members to beg	2
<b>Average # coping mechanisms adopted</b>	<b>4.5</b>

(economies of scale). This adjusted value showed an average per capita food consumption expenditure of GHS 2,514. Thus, a typical adult in a household spent GHS 2,514 annually on food.

The consumption expenditure was high for cereals, roots, and tubers, as well as animal protein. The per capita expenditure in the survey was higher than the estimated GHS 1,931.0 average food consumption expenditure of Ghana and GHS 1,411 of rural households in the country in 2016/17. This can be explained by the increase in the cost of living and different adjustment methods.

**Poverty Probability Index:** The Poverty Probability Index (PPI) of each household was based on a 10-question survey, which indicated the likelihood that a household lived below the poverty line. About 55% of the sampled farmers were likely to live below Ghana's poverty line (Figure 4). The difference in the PPI between genders was marginal, but the lower PPI for females is consistent with Ghana's poverty distribution measured in 2016/17. Regionally, Northern, Savannah, and North East regions

**Table 2.** Annual food consumption expenditure in GHS of households

FOOD COMPONENT (WEEKLY)	MEAN	MIN	MAX
Cereals (e.g., maize, rice)	42.5	2	300
Roots and tubers (e.g., cassava, yam)	33.5	1	150
Legumes (e.g., cowpea)	12.9	2	55
Vegetables (e.g., tomato)	12.2	1	150
Sauces/spices	6.3	0.5	30
Animal proteins (e.g., meat, fish, egg)	33.5	1	300
Non-alcoholic beverages	11.2	1	100
Alcoholic drinks, tobacco	10.2	1	100
Fruits	8.1	1	30
Milk and milk products	8.8	1	54
Bread, sugar, honey, and confectionery	12.0	1	80
<i>Total weekly expenditure</i>	133.0	10	880
<i>Total annual expenditure</i>	6,915	208	45,760
<i>Per capita food expenditure (annual)</i>	1,069	18.9	24,960
<b>Adjusted per capita food expenditure*</b>	2,513	156.8	25,740

Notes: Adjusted for household size (\*for adjustments see text).

(formerly the Northern Region) had the highest PPIs, while Bono East, Bono, and Ahafo regions (formerly Brong-Ahafo region) had the lowest. The PPIs of the various districts (Figure 5) show that the poverty level was higher in East Mamprusi than in the other districts. As previously mentioned, food insecurity was also highest in East Mamprusi District.

## CONCLUSIONS

Food security and poverty remain major challenges for households in the Guinea, Sudan, and Transitional zones of Ghana. The estimated HDDS and HFIAS are complementary, since areas with lower food diversity (lower HDDS) had lower food security (higher HFIAS). Overall, households are moderately food insecure. North East Region, especially East Mamprusi District, fared the worst in the food and nutrition security and poverty estimates. The high level of poverty in the study area justifies the need for FERARI to aim for supporting national programs to implement truly poverty-reducing interventions that can significantly and sustainably improve the welfare of Ghanaian farm households.