# Knowledge of Households, Cropping Systems and Perceptions on Conservation Agricultural Practices in Upper West Region of Ghana

*Iddrisu Yahaya[1], Ibrahim Hashim[1], Jesse B. Naab[2], P.V. Vara Prasad[2] and Timothy J. Dalton[2*]*

*[1]Savanna Agricultural Research Institute, Ghana; and [2]Kansas State University, USA*

**E-mail: tdalton@k-state.edu*

## Objectives

**Objectives of this research were to:**

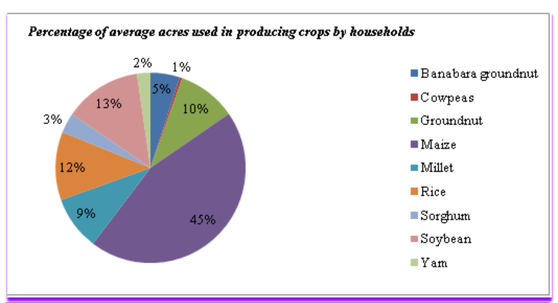
**(a) Collect baseline information on socio-economic conditions in three districts of upper west region in northern Ghana; and**

**(b) Quantify farmers perceptions and knowledge about conservation agricultural practices.**

## Methods and Results

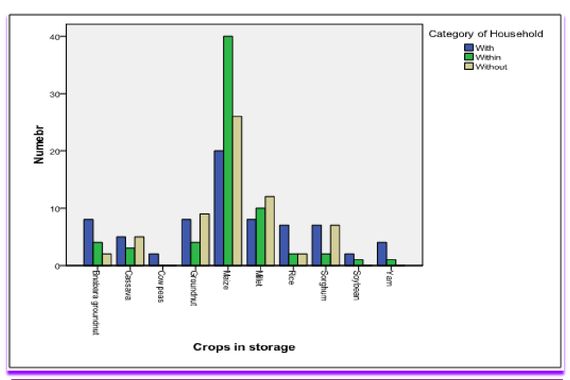
**A total of 358 farmers (201 male and 157 female) were randomly sampled in 12 communities of three districts (Wa West, Wa Municipal and Lawra). Results indicate that:**

- **Majority of the household heads (60%) had no education.**
- **Average total household wealth ranged from $900 – $1250.**
- **Sole or mono-cropping with peanut, maize, millet, rice, soybean and yam was practiced by most households (42%). Mixed cropping was followed by 31% with cereal and legume.**
- **About 97% of agriculture was rainfed without irrigation.**
- **Average farm size was 10 acres per household, most of the land (87%) was owned (inheritance and purchase).**
- **Most seed was retained from previous crop. Value of purchased inputs (means: $150 for seed; $55 for fertilizer with subsidy; and $5 for other inputs).**

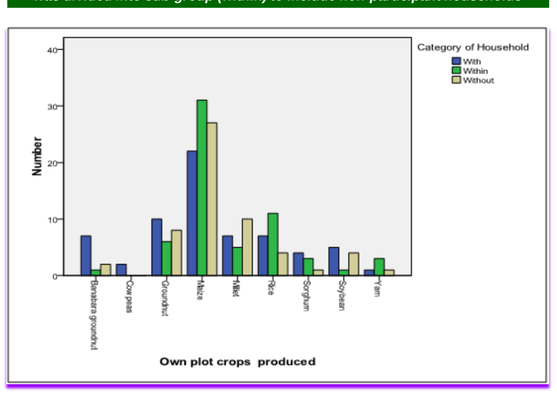



*Distribution of crops as total land use by households*

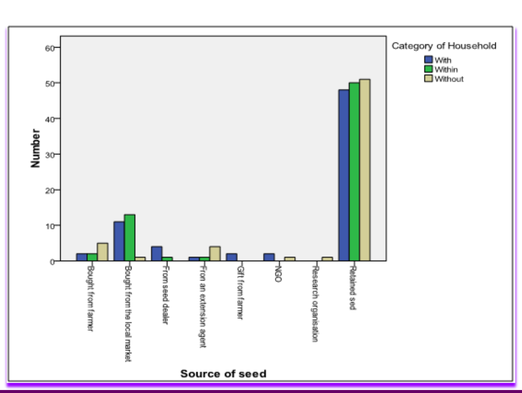
*Categories::*
*Out of 12 communities, 7 were classified as the intervention (with); and 5 communities as the non-intervention (without); and the 'with' category was divided into sub-group (within) to include non-participant households*




*Household responses to crops held in storage in 2009 season*




*Frequency of major crops grown in the region in owned plots*




*Frequency of seed source for crop production in owned plots*

## Results

- **Soybean, peanut and cowpea are predominantly (90-100%) marketed and sold. Value of all crops sold highly varied (mean = $1860; median = $300).**
- **Majority of households (77%) were involved in sale of their produce. Overall, households were net sellers of products. Transactions occurred at local markets (45%), town market (26%) and own farm (9%).**
- **Most household heads (60%) belonged to a club or local farmer group, and about 55% report receiving some form of information from NGOs and government institutions.**
- **Most farmers understood basic agronomic practices and intended benefits of conservation agricultural practices. Exceptions include no-tillage and direct sowing.**

| Knowledge of Conservation Practices | Response | Male | Female |
|---|---|---|---|
| | | (%) | |
| Crop residue are sources of organic matter to soil | True | 98.5 | 93.6 |
| | False | 1.5 | 6.4 |
| Organic matter improves soil water holding capacity | True | 93 | 90.4 |
| | False | 7 | 9.6 |
| Manure is as strong as purchased fertilizer | True | 80.6 | 79 |
| | False | 16.4 | 21 |
| Manure improves soil water holding capacity | True | 91.5 | 86.6 |
| | False | 8.5 | 13.4 |
| One can plant directly without ploughing | True | 39.8 | 38.8 |
| | False | 60.2 | 61.2 |
| Tilling the soil assists in water infiltration | True | 79.6 | 73.9 |
| | False | 20.4 | 26.1 |
| Seed bed increases water holding capacity | True | 82.6 | 78.9 |
| | False | 17.4 | 21.1 |
| Seed bed improves aeration in the soil | True | 94.5 | 82.8 |
| | False | 5.5 | 17.2 |
| Rotating cereals and legumes improves soil fertility | True | 98 | 85.3 |
| | False | 2 | 14.7 |
| Crop rotations prevents some plant diseases | True | 95 | 85.3 |
| | False | 5 | 14.7 |
| Cover crops prevent soil erosion | True | 90.5 | 86.6 |
| | False | 9.5 | 13.4 |
| Cover crops increase microbial action in the soil | True | 87.6 | 81.5 |
| | False | 12.4 | 18.5 |

- **Perceptions about conservation agricultural practices were similar among male and female respondents.**
- **Farmers were aware of importance of soil organic matter, manures, crop rotations, cover crops and water harvesting.**
- **Farmers showed strong interest in learning about benefits and use of tillage, residue management, improved genotypes, weed control and integrated nutrient and pest management.**