

How does access to agricultural markets relate to yield, food security, and poverty in northern Ghana?

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Farmers in northern Ghana make limited use of...

AGRONOMIC PRACTICES

48% practice row planting with optimum spacing
28% practice cereal-legume intercropping

FERTILIZER

25% apply fertilizer optimization practices
101 kg/ha Average inorganic fertilizer applied to maize

IMPROVED CROP VARIETIES

11% of farmers use improved crop varieties
85% of seeds are recycled

AGRICULTURAL SERVICES

9% of farm households receive agricultural credit
61% receive advice from agricultural extension agents

As a result...

Maize yields, on-farm income and surplus production are all low. Average maize yield: 0.76 t/ha

Average net on-farm income is just US\$240/yr at the household level.¹

Food insecurity and poverty are high. 36% are poor (living on US\$1.90 or less a day)...
...and 43% are food insecure (calorie intake is less than the minimum dietary energy requirement)

78% of farm households have NO surplus harvest to sell

Only 49% are both non-poor and food secure

This raised the following key questions...

- Does improved access to complementary agricultural inputs enhance yields, food security, and income?
- Do productive farm households sell more at the market and consume more diverse diets?
- Does market access affect the relationship between on-farm diversity and dietary diversity?

...and here is what our research found...

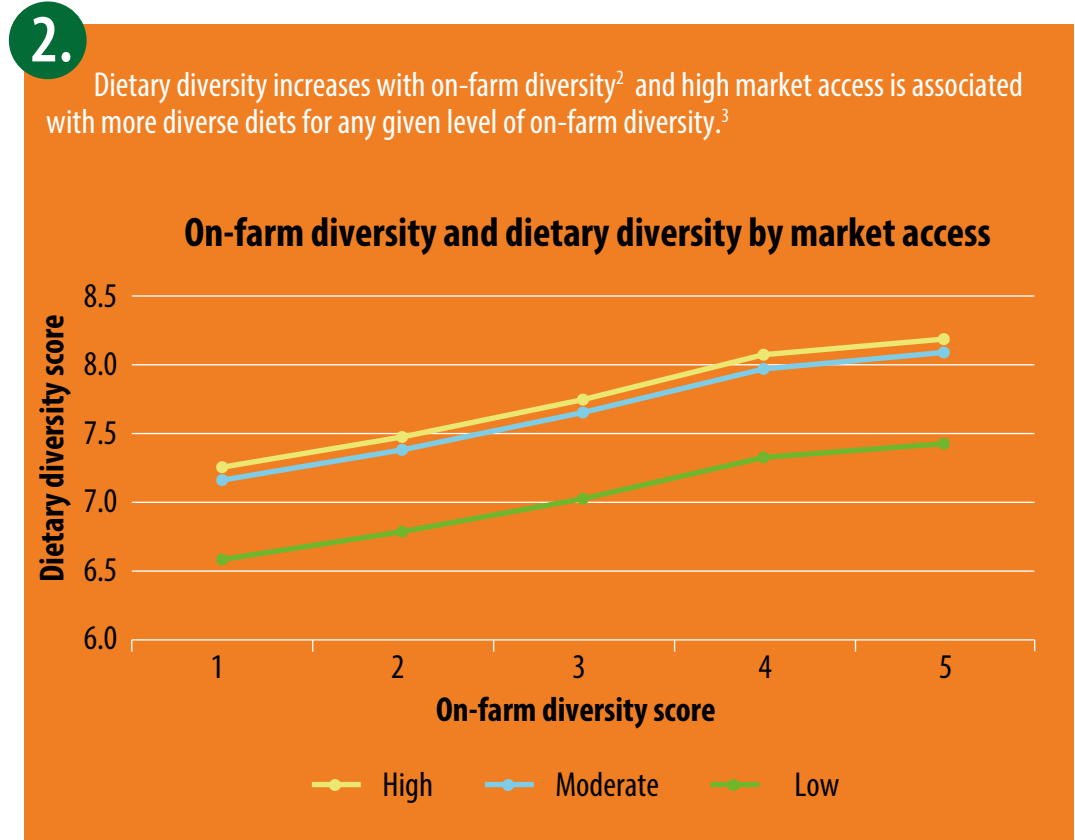
1. Greater use of inputs* and greater marketed surplus is associated with:

- Higher maize yield and higher on-farm income
- Increased food security and dietary diversity, lower poverty, and higher chance of being food secure and non-poor

Indicators by market integration for agricultural specialists and diversifiers

| Indicators | Access to agricultural inputs | | | Marketed surplus | | |
|---|-------------------------------|----------|------|------------------|----------|------|
| | Low | Moderate | High | Low | Moderate | High |
| Maize yield (t/ha) | 0.73 | 0.76 | 0.81 | 0.73 | 0.76 | 0.82 |
| Net on-farm income (Ghanaian cedi) | 1327 | 1535 | 1946 | 1318 | 1569 | 1923 |
| Food secure (%) | 54.1 | 55.7 | 60.3 | 56.4 | 57.1 | 56.7 |
| Household dietary diversity score | 7.26 | 7.65 | 8.06 | 7.28 | 7.58 | 8.11 |
| Non-poor based on US \$1.90 a day (%) | 62.0 | 63.4 | 67.3 | 62.1 | 63.1 | 67.5 |
| Non-poor and food secure households (%) | 46.6 | 47.6 | 51.7 | 48.0 | 48.6 | 49.4 |
| Number of households | 368 | 375 | 375 | 368 | 378 | 372 |

*improved seeds, inorganic fertilizers, hired labor, pesticides, herbicides, agricultural credit, and animal feed



These findings suggest that...

- A stepwise approach from promotion of basic, low-cost farming approaches (such as row planting with optimal spacing, intercropping, compost manure) to more advanced and agricultural innovations (such as irrigation and mechanization) should be supported.
- Good agronomic practices, judicious use of inputs, and market access are key to increasing productivity, income, food security, and dietary diversity.
- Boosting on-farm diversity is especially important to enhance dietary diversity when access to markets is limited.

¹International Food Policy Research Institute (IFPRI) (2015) Ghana Africa Research in Sustainable Intensification for the Next Generation (Africa RISING) Baseline Evaluation Survey, <https://doi.org/10.7910/DVN/QUB9UT>

²Controlling for household income and other characteristics. ³For example, the least diverse farms producing just one food group consume 6.9 good groups (out of 12 good groups) while the most diverse farms producing five food groups consume 8.2 food groups. For example, among farms producing just one food group, those with high market access consume 7.3 food groups, while those with low market access consume 6.6 groups.

More Information

International Food Policy Research Institute (IFPRI), 2015, Ghana Africa Research in Sustainable Intensification for the Next Generation (Africa RISING) Baseline Evaluation Survey, <https://doi.org/10.7910/DVN/QUB9UT>