



# Nutritional benefits of grain legume cultivation within the N2Africa project in Northern Ghana

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## Background

N2Africa is a large-scale research project aiming to expand the area cropped with grain legumes and intensify production, to improve soil fertility and enhance nutrition security of smallholder farmers. This study assessed:

1. Increase in yields of soybean, cowpea and groundnut with P-fertilizer (TSP/NPK) and inoculants
2. Potential pathways linking improved agricultural productivity and nutrition
3. Effect of improved agricultural productivity on nutrient adequacy of the diet and the nutritional status among children under the age of 5

Study area: rural Northern Ghana

## Methods



Household surveys on agronomic management and use of inputs in legumes



Focus group discussions (male and female)

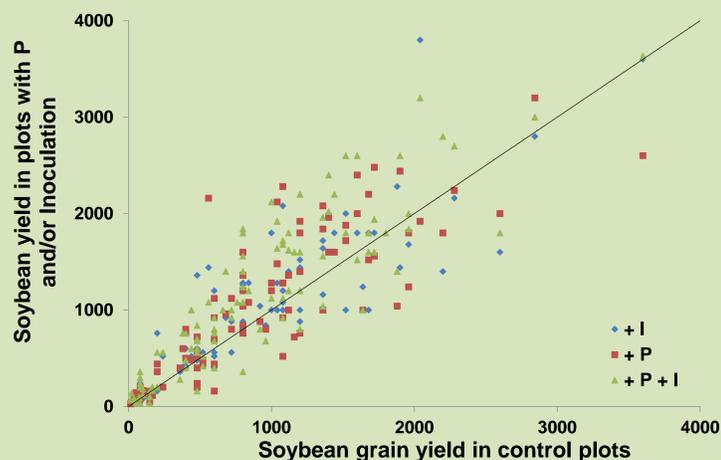


Individual dietary diversity score: 24-hour recalls  
Nutritional status: anthropometric measurements

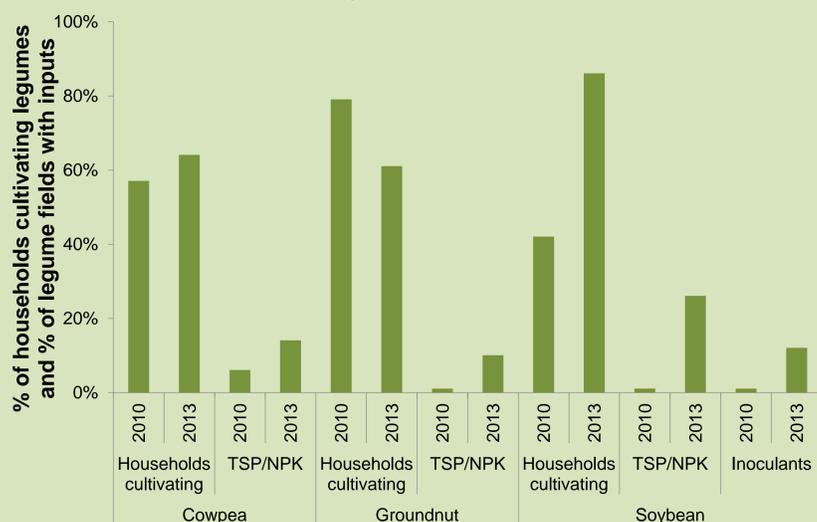
## Results

### 1. Increase in legume cultivation, use of inputs and legume yields

- Improved legume grain yields by increased use of inputs, although wide variability between farmers



- Strong increase in farmers cultivating soybean between 2010 and 2013
- Increase in use of inputs in legume cultivation by N2Africa farmers



### 2. Improved yields used for home consumption or sales

- Cowpea primarily used for home consumption (42% of N2Africa farmers)
- Groundnut and soybean largely for sale (72% and 60% of N2Africa farmers)

### 3. Potential pathways from increased yields to nutritional status

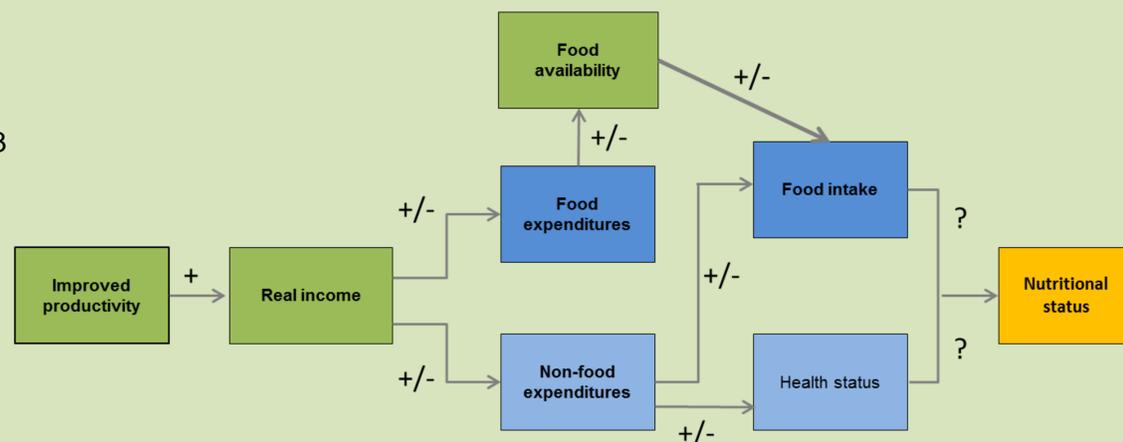
#### a. Via food availability

- Mostly indicated in female focus group discussions and by farmers who received training on soybean preparation methods



#### b. Via income

- Mostly indicated in male focus group discussions
- Pathway from income to nutritional status is unclear



### 4. Dietary diversity & Nutritional status

- Children under 5 of N2Africa farmers have a more nutrient adequate diet
- No difference in nutritional status

	N2Africa	Non-N2Africa
Individual dietary diversity score	5.5 (out of 14)	5.1* (out of 14)
Consumption 'legumes, nuts and seeds'	87 %	77 %*
Stunting (chronic malnutrition)	29 %	36 %
Wasting (acute malnutrition)	11 %	6 %
Underweight (chronic and acute)	23 %	24 %

\*P<0.05

## Discussion & Conclusions

- Children of N2Africa farmers consume more legumes than children of non-N2Africa farmers
- Female N2Africa farmers generally contribute directly to increased food availability for home consumption
- It is unclear if improved sales lead to enhanced nutritional status

## Recommendations

- To link improved productivity with nutrition via increased food availability for home consumption:
  - Target female farmers
  - Focus on crops mainly used for home consumption
  - Provide training on preparation methods

