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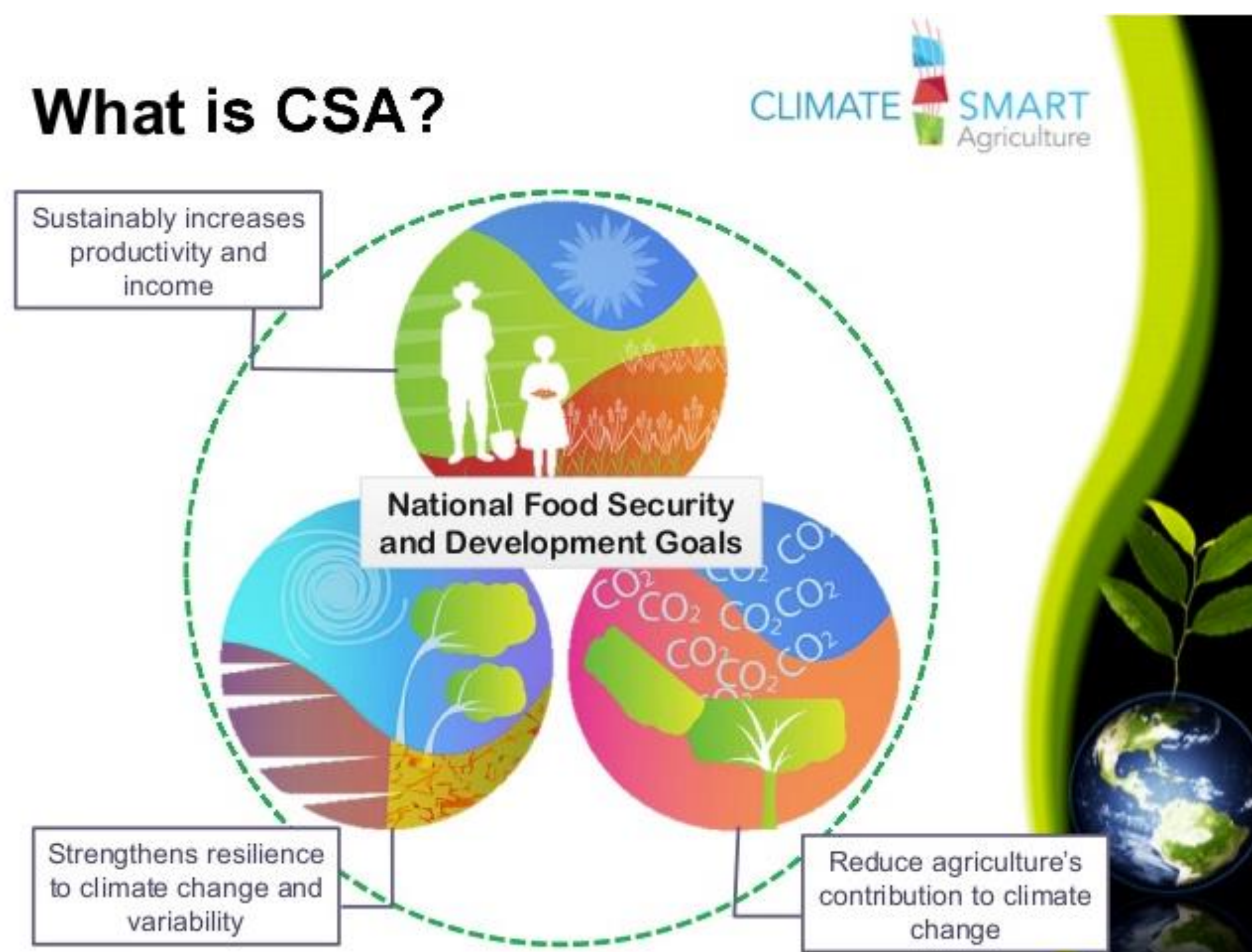
# Climate-smart Agriculture and Food Security

## Cross-country Evidence from West Africa

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### INTRODUCTION

#### What is CSA?



### WHAT DO WE DO?

- Examine the relationship between climate-smart agriculture (**CSA**), land productivity (**yields**) and **food security**
  - Is CSA land **productivity** increasing?
  - Does CSA increase **food security**?
  - Which** CSA practice matters most?
  - Should CSA be **bundled** or adopted **piecemeal**?
- Outcome measures:** Food consumption score (diversity and frequency)-Three FS categorizations: poor (0-21), borderline (21.5-35), and acceptable (>35)
- CSA measures:** Climate-smart varieties, Cereal legume Intercropping (cultural ecology), Organic fertilizers

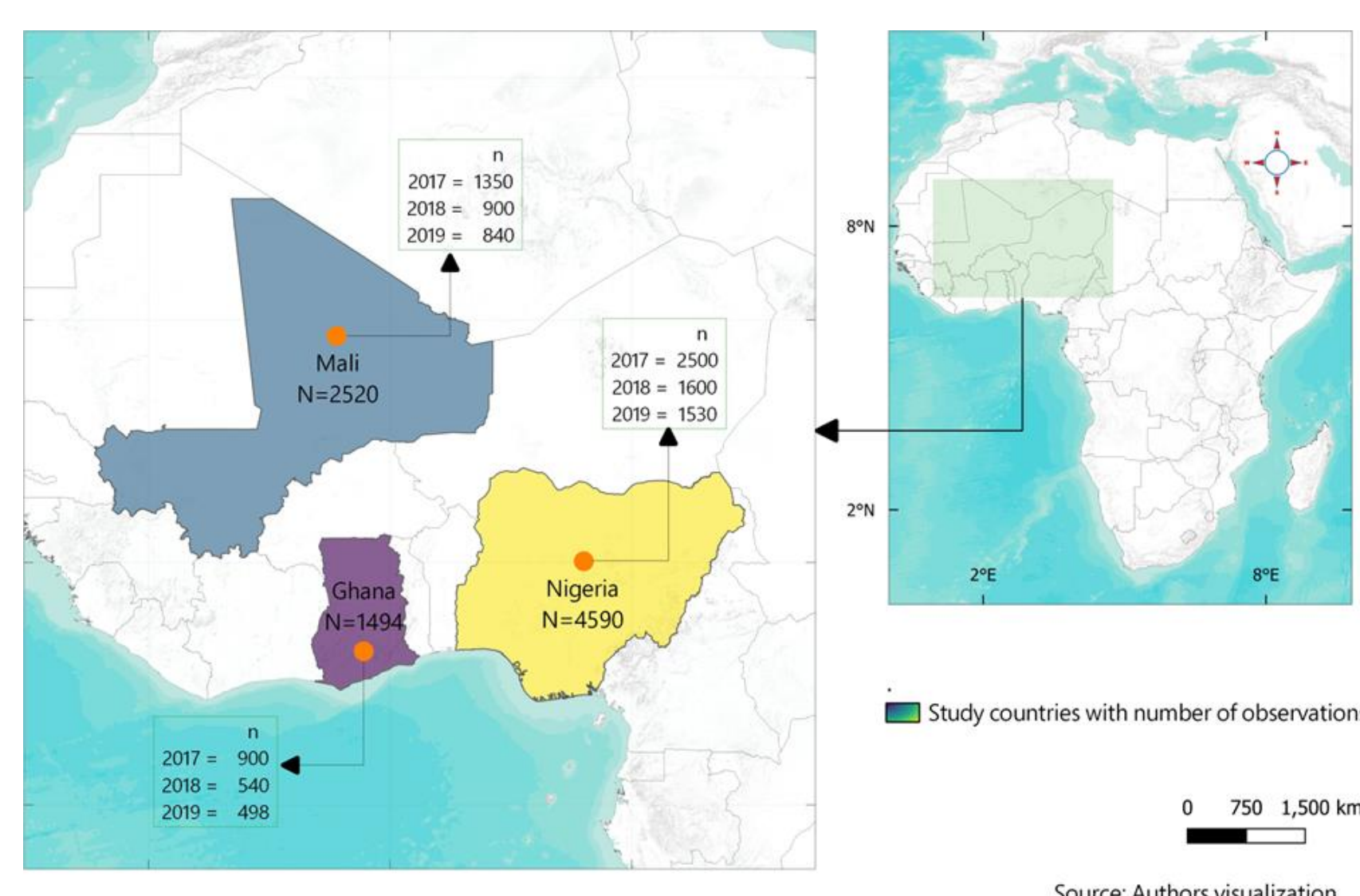
### WHAT DO WE FIND?

- Adoption of **CSA** (climate-smart varieties, cereal-legume intercropping, organic fertilizers) **increases** land productivity (**yields**)
- Farmers that **use** these climate-smart agricultural practices are more likely to **consume diverse** and **more nutritionally** valued foods
- The bundled use of CSA **practices matter** for **yield** increases and food **consumption** with implications for greater **caloric intake**. CSA is food and nutrition-sensitive!

### METHODS

- Multinomial endogenous switching regression** (FIML) - Multinomial logit model (Bourguignon et al. 2007) and Bias-adjusted OLS model
- Actual vs counterfactual** framework
- Test **robustness** with multinomial endogenous treatment effect model (**METE**)
- Two possible sources of **endogeneity** that may bias results?
- Measurement error:** less likely as varieties have been promoted and known
- Selection bias:** Switching regressions

Figure 1: Location of the sites



### RESULTS

Figure 2: Adoption of CSA practices is low and varying in all the study countries

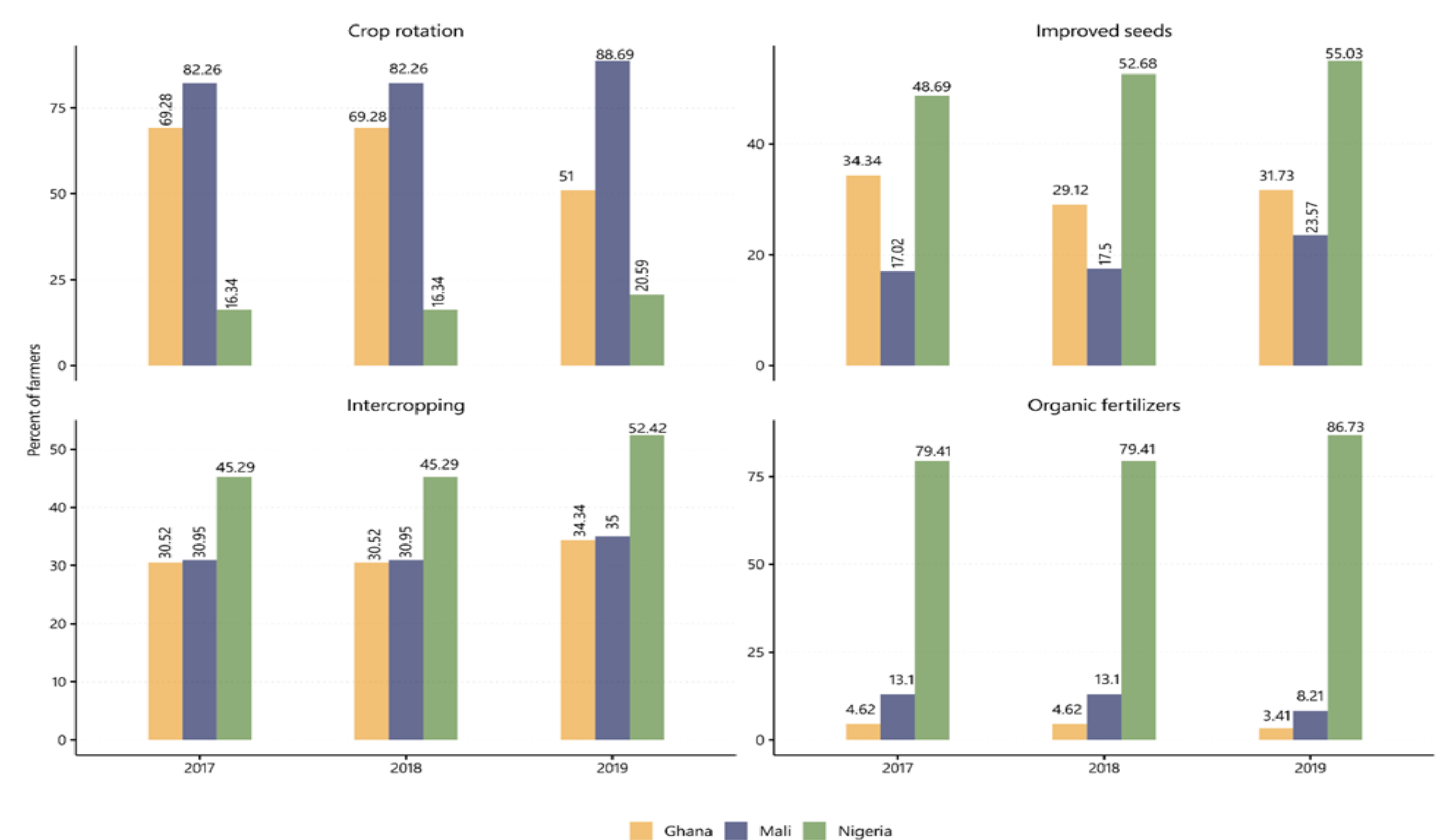


Figure 3: Positive association between CSA and yields

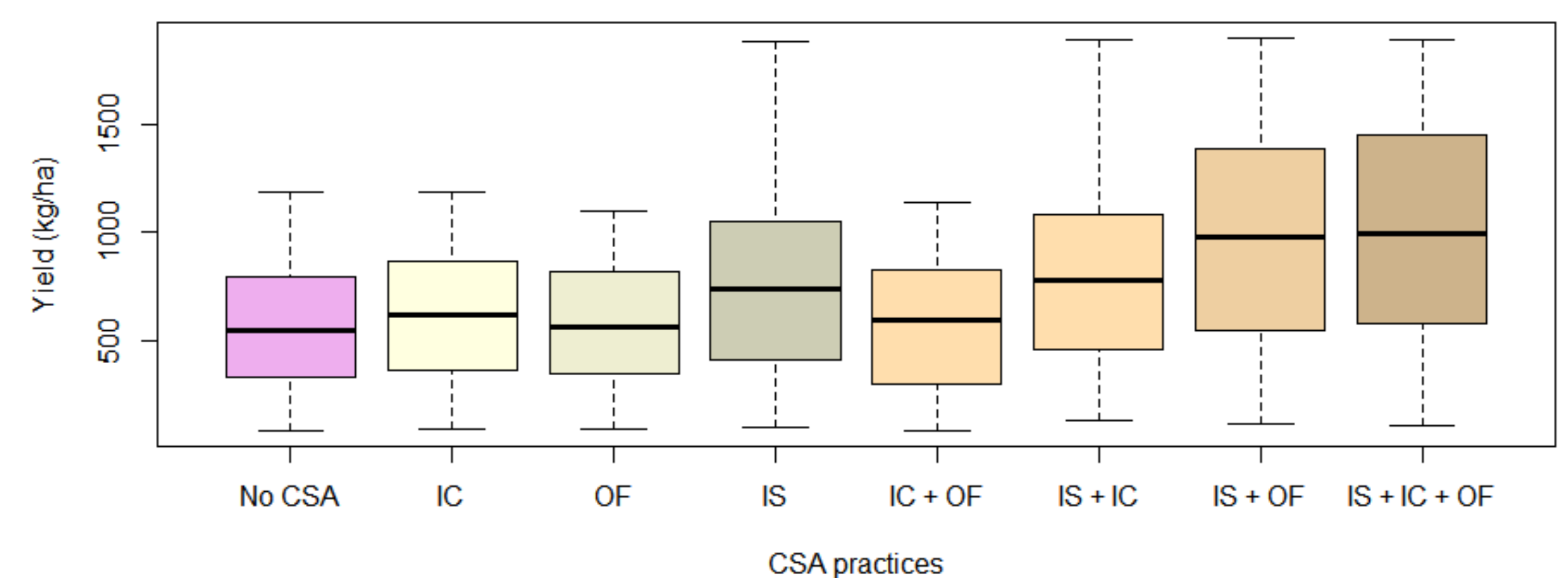


Figure 4: Positive association between CSA and food consumption score

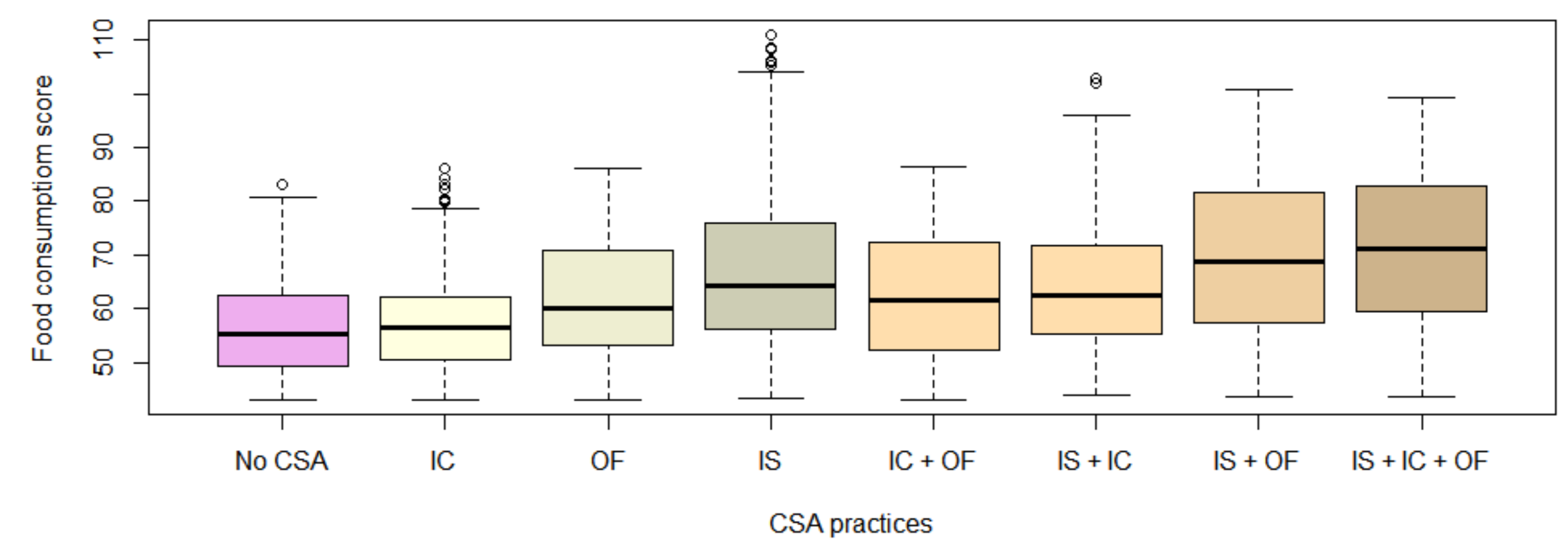


Figure 5: CSA increases food consumption (insights robust)

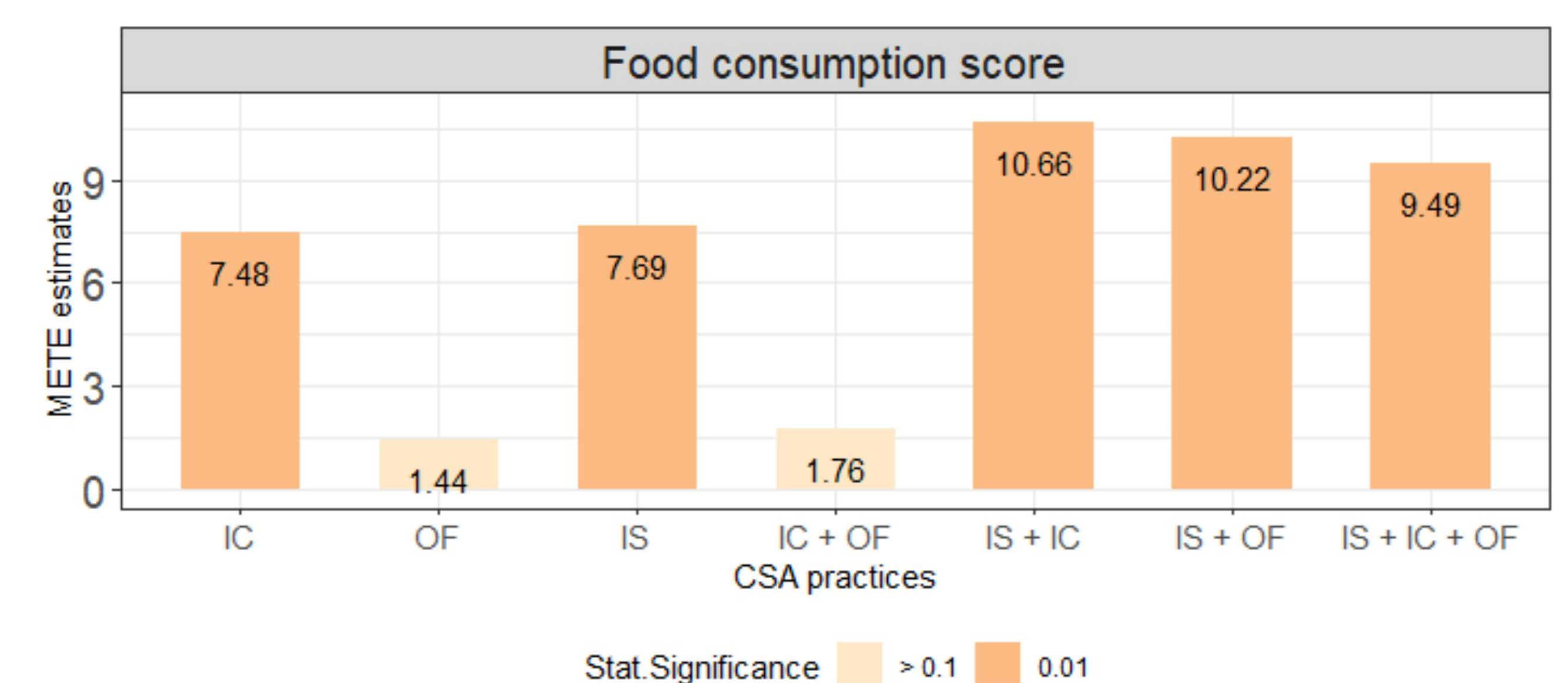


Figure 6: CSA increases different dimensions of the food consumption score

