

Background

- Biofuels – including cellulosic biofuels – have often been criticized because of perceived exacerbation of food insecurity due to competition for land.

Approach

- We carried out the most comprehensive evaluation to date of the impact of various drivers on food insecurity at a national level.
- Two previously-established metrics were considered: the Global Food Security Index (GFSI) and the Food Insecurity Experience Scale (FIES).

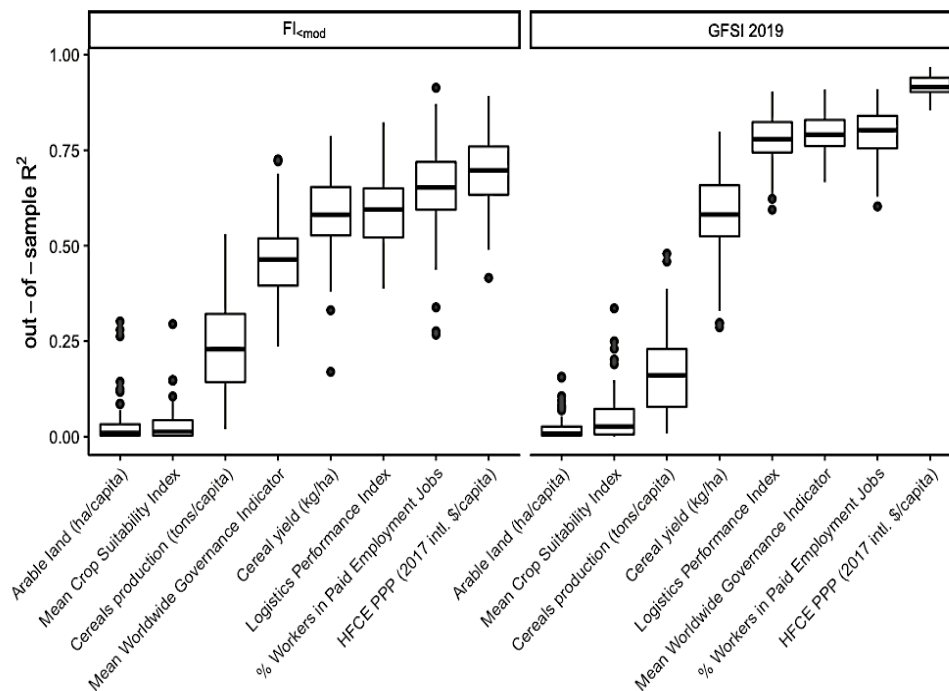
Outcome

- Household spending (HFCE) was by far the most important driver of food security using both metrics.
- Drivers of intermediate importance included per-capita cereal production, per-hectare cereal yield, an aggregate governance metric, logistics performance, and extent of paid employment.
- The quantity and quality of agricultural land were not predictive of either food security metric.

Significance

- Poverty is the main driver of food insecurity at a national level.
- Since land quality and quantity is not a significant driver of food insecurity, the dominant expected impact of biofuel production on food security is expected to arise from impacts on livelihoods, which can be large and positive.

A. Allee, L.R. Lynd, V. Vaze. Cross-National Analysis of Food Security Drivers: Comparing Results Based on the Food Insecurity Experience Scale and Global Food Security Index. *Food Security*, 2021, 1–17.



Boxplots summarizing the out-of-sample model performance of all possible univariate linear regression models. Each model was trained and tested over 100 bootstrap samples. The boxplot series are ordered ascendingly by the median out-of-sample R² for each response variable.