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From Farm to Fork. How Production Diversity Determines Nutrition Security of Smallholder Farmers in Rural India

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Abstract

There are various pathways through which agricultural production can affect dietary intake of individuals and households. On-farm production diversity of smallholder farmers can improve the nutrition security of the household. We understand on-farm production diversity as any production of food items at the household level (i.e. field crops, garden crops, livestock). The objective is to determine the significance and relevance of this relationship by considering the different degrees of separability between both the commercial and consumptive production of food. A household-level survey covering socioeconomic, agricultural and nutritional data was conducted in three regions of India from January to June 2017 including 1324 households in 119 villages. We use an instrument variable identification strategy to estimate the effect of production diversity on dietary diversity. Various regression specifications (OLS, Poisson, Probit, IV / non-IV) were used for robustness checks. Considering agroecological zones represented by climatic and geographical characteristics, we use average yearly rainfall since 1981 as the excluded instrument. A positive association is estimated (β : 0.417 / 0.016 — IV / non-IV). We extend the framework by interacting production with access to markets and we find that households that are more integrated into regional markets, improve dietary diversity on average by 0.5 food groups. The increase is significant only for a few food groups (dairy products, nuts and vegetable) and primarily, it is the higher income groups that benefit from market integration. In conclusion, production diversity does improve nutrition security, but the positive market effect is stronger for farming households that have a higher income.

Keywords: Agricultural production, dietary diversity, India, nutrition-sensitive agriculture