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**Title:** Food consumption in India: comparison of national and regional dietary data sources

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## **Introduction**

Accurate data on dietary intake is important for public health, nutrition and agriculture. The commonly-used National Sample Survey (NSS) estimates nutritional outcomes in India and has shown a decrease in calories eaten over recent decades as incomes have grown. Despite policymakers' reliance on the NSS, it has not been compared to other dietary data sources.

## **Methods**

We compare intake of food groups across six Indian national and regional surveys, representing various dietary intake estimation methodologies, including two national household consumer expenditure surveys (NSS and IHDS), a large-scale rural 24-hour recall survey (NNMB), two regional food-frequency questionnaires (FFQs), and FAO food balance sheets (FBSs). Surveys were conducted between 2004-2012. We matched data for years, regions, and economic groups. Relative differences in food group intake were compared.

## **Findings**

The NSS and NNMB showed a decline in food intake nationally between 2005-2012, while the IHDS and FBSs showed an increase. Differences in intake were smallest between the two national expenditure surveys. Relative to these, FFQs and FBS overestimated, and the 24-hour recall underestimated intake. Cereal consumption had high agreement across survey types, while dairy, sugar, fruit and nuts, and meat and fish had the least agreement.

## **Conclusions**

Intake of foods eaten out of the home may explain the relative underestimation of expenditure surveys and 24-hour recalls compared to FFQs and FBSs, while FBSs may overestimate intake. Although not possible to validate these data against a gold standard, relative differences in consumption highlight sources of under- or over-estimation for policymakers using these data.

