



# Developing a local framework for the Brazilian food system incorporating socioeconomic, nutritional, and environmental aspects

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## Abstract

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**Background** The sustainability of food systems is commonly measured at the global or national level; however, the same measures and frameworks are not suitable for use at subnational levels, because data for many indicators are not available or are not applicable for states or cities. Furthermore, within large countries such as Brazil, food systems vary by state or region. We present the Sustainable Food System Assessment Framework for Brazil, which considers local behaviours and actions that can be used to compare states and regions of the country and their development over time.

**Methods** We did a literature review to identify suitable dimensions and indicators for inclusion in the Sustainable Food System Assessment Framework using exclusion criteria that considered relevance, analytical robustness, and clear measurability. This process yielded 25 indicators divided into three dimensions: environmental, socioeconomic, and nutritional.

**Findings** Indicators included in the environmental dimension were the carbon footprint of diets, the water footprint of diets, greenhouse gas emissions from agriculture, water use from agriculture, and fertiliser use. For the socioeconomic dimension, indicators included gender equality in agriculture, government food incentives for farmers, food access, food affordability, and food security. For the nutritional dimension, indicators included dietary diversity, undernutrition, being overweight, and diet quality.

**Interpretation** This framework enables the comparison of states on the basis of their performance regarding the included indicators and dimensions. Such comparisons can help policy makers to understand opportunities for improving their food systems, for identifying key indicators of improvement, and for designing new policies and interventions. The framework also enables comparison of states over time, which is also a starting point to monitor progress and ascertain whether actions and policies are effective. This study might also help other countries to develop their own frameworks and strategies to improve their local food systems.

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## Contributors

AMC conceptualised and designed the study, verified and analysed the data, and wrote the abstract. ADJ and DMLM verified the data and revised the abstract.

## Declaration of interests

We declare no competing interests.