

Reporting Summary

Nature Portfolio wishes to improve the reproducibility of the work that we publish. This form provides structure for consistency and transparency in reporting. For further information on Nature Portfolio policies, see our [Editorial Policies](#) and the [Editorial Policy Checklist](#).

Statistics

For all statistical analyses, confirm that the following items are present in the figure legend, table legend, main text, or Methods section.

n/a	Confirmed
☒	☒ The exact sample size (<i>n</i>) for each experimental group/condition, given as a discrete number and unit of measurement
☒	☐ A statement on whether measurements were taken from distinct samples or whether the same sample was measured repeatedly
☒	☐ The statistical test(s) used AND whether they are one- or two-sided <i>Only common tests should be described solely by name; describe more complex techniques in the Methods section.</i>
☒	☐ A description of all covariates tested
☒	☐ A description of any assumptions or corrections, such as tests of normality and adjustment for multiple comparisons
☐	☒ A full description of the statistical parameters including central tendency (e.g. means) or other basic estimates (e.g. regression coefficient) AND variation (e.g. standard deviation) or associated estimates of uncertainty (e.g. confidence intervals)
☐	☒ For null hypothesis testing, the test statistic (e.g. <i>F</i> , <i>t</i> , <i>r</i>) with confidence intervals, effect sizes, degrees of freedom and <i>P</i> value noted <i>Give P values as exact values whenever suitable.</i>
☒	☐ For Bayesian analysis, information on the choice of priors and Markov chain Monte Carlo settings
☒	☐ For hierarchical and complex designs, identification of the appropriate level for tests and full reporting of outcomes
☒	☐ Estimates of effect sizes (e.g. Cohen's <i>d</i> , Pearson's <i>r</i>), indicating how they were calculated

Our web collection on [statistics for biologists](#) contains articles on many of the points above.

Software and code

Policy information about [availability of computer code](#)

Data collection	R version 4.4 was used in October 2024 to pull data available through APIs and data source specific R packages. Literature review data were collected using Dimensions.ai through their R package version 0.0.3 and a license provided by Johns Hopkins University. No other software was used for data collection. Replication code for this paper is available on GitHub at https://github.com/KateSchneider-FoodPol/FSCI_2024Interactions_Replication .
Data analysis	All data compilation and analyses are carried out in R version 4.4. The R environment file available in the replication files at https://github.com/KateSchneider-FoodPol/FSCI_2024Interactions_Replication contains all the packages and versions used and needed to replicate the analysis. Replication code for this paper is available on GitHub at https://github.com/KateSchneider-FoodPol/FSCI_2024Interactions_Replication .

For manuscripts utilizing custom algorithms or software that are central to the research but not yet described in published literature, software must be made available to editors and reviewers. We strongly encourage code deposition in a community repository (e.g. GitHub). See the Nature Portfolio [guidelines for submitting code & software](#) for further information.

Data

Policy information about [availability of data](#)

All manuscripts must include a [data availability statement](#). This statement should provide the following information, where applicable:

- Accession codes, unique identifiers, or web links for publicly available datasets
- A description of any restrictions on data availability
- For clinical datasets or third party data, please ensure that the statement adheres to our [policy](#)

Data are available on the Food Systems Dashboard and the source data for this manuscript and raw underlying data with accompanying replication files are on GitHub at https://github.com/KateSchneider-FoodPol/FSCI_2024Interactions_Replication. Use of any materials in the GitHub repository are subject to a CC-BY-NC-SA 4.0 (non-commercial, share alike) license.

Research involving human participants, their data, or biological material

Policy information about studies with [human participants or human data](#). See also policy information about [sex, gender \(identity/presentation\), and sexual orientation](#) and [race, ethnicity and racism](#).

Reporting on sex and gender	NA
Reporting on race, ethnicity, or other socially relevant groupings	NA
Population characteristics	NA
Recruitment	NA
Ethics oversight	NA

Note that full information on the approval of the study protocol must also be provided in the manuscript.

Field-specific reporting

Please select the one below that is the best fit for your research. If you are not sure, read the appropriate sections before making your selection.

☐ Life sciences ☒ Behavioural & social sciences ☐ Ecological, evolutionary & environmental sciences

For a reference copy of the document with all sections, see [nature.com/documents/nr-reporting-summary-flat.pdf](https://www.nature.com/documents/nr-reporting-summary-flat.pdf)

Behavioural & social sciences study design

All studies must disclose on these points even when the disclosure is negative.

Study description	This is a mixed methods study comprised of an analysis of existing quantitative data and results of a qualitative expert elicitation process on monitoring global food systems and interactions across indicators.
Research sample	For the quantitative data, the unit of analysis is the country-year. All data are representative at the country level except the reduced coping strategies, which is not a representative sample and reflects a status assessment in at-risk populations. For the qualitative data, the research sample is comprised of the coauthors organized into thematic working groups.
Sampling strategy	Qualitative analysis was done with a purposive sample comprised of the co-authors within each working group. No sampling was done to obtain the secondary quantitative data.
Data collection	Data were collected via interactive conversation by thematic working group teams who filled out a matrix through discussion to indicate where the experts assessed there was a direct connection.
Timing	Qualitative data collection took place between December 2023 and February 2024.
Data exclusions	No data were excluded.
Non-participation	All co-authors participated in the expert assessment.
Randomization	No randomization was carried out because this is an observational study.

Reporting for specific materials, systems and methods

We require information from authors about some types of materials, experimental systems and methods used in many studies. Here, indicate whether each material, system or method listed is relevant to your study. If you are not sure if a list item applies to your research, read the appropriate section before selecting a response.

Materials & experimental systems

n/a	Involved in the study
☒	☐ Antibodies
☒	☐ Eukaryotic cell lines
☒	☐ Palaeontology and archaeology
☒	☐ Animals and other organisms
☒	☐ Clinical data
☒	☐ Dual use research of concern
☒	☐ Plants

Methods

n/a	Involved in the study
☒	☐ ChIP-seq
☒	☐ Flow cytometry
☒	☐ MRI-based neuroimaging

Plants

Seed stocks

NA

Novel plant genotypes

NA

Authentication

NA