

Reporting Summary

Nature Research 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 Research 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

- | | | |
|-------------------------------------|-------------------------------------|--|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | The exact sample size (n) for each experimental group/condition, given as a discrete number and unit of measurement |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | A statement on whether measurements were taken from distinct samples or whether the same sample was measured repeatedly |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | 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> |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | A description of all covariates tested |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | A description of any assumptions or corrections, such as tests of normality and adjustment for multiple comparisons |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | 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) |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | For null hypothesis testing, the test statistic (e.g. F , t , r) with confidence intervals, effect sizes, degrees of freedom and P value noted
<i>Give P values as exact values whenever suitable.</i> |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | For Bayesian analysis, information on the choice of priors and Markov chain Monte Carlo settings |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | For hierarchical and complex designs, identification of the appropriate level for tests and full reporting of outcomes |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Estimates of effect sizes (e.g. Cohen's d , Pearson's r), 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 Data was collected using a systematic review approach. Information from selected articles and reports were structured and coded using the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI centre, University of London, <https://eppi.ioe.ac.uk>) tool. Quantitative data on food security projections was harvested and standardized from selected articles where possible. See Methods for details.

Data analysis All analysis and visualization was conducted using R version 4.0.2.

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 Research [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 list of figures that have associated raw data
- A description of any restrictions on data availability

All data will be made available before publication by means of a Zenodo repository. All code will be made available before publication by means of a Zenodo repository. The combination of data and code ensures that all results can be reproduced.

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)

Ecological, evolutionary & environmental sciences study design

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

Study description	To select relevant studies on global food security projections, we followed the guidelines for the qualified application of systematic review by the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI centre, University of London, https://eppi.ioe.ac.uk), including the preparation of a research protocol. We also prepared a PRISMA checklist and flowchart. The query of the scientific literature repositories resulted in 3667 studies. After abstract and full text screening, a total of 57 studies were selected to be included in the systematic literature review.
Research sample	For 26 out of the 57 studies that resulted from the systematic literature review of global food security projection studies, we were able to extract quantitative and comparable information on food security projections. The database contains 593 unique projections for food consumption per capita and total food consumption and 358 projections for population at risk of hunger. We used a meta-regression model to analyze 317 food consumption and 200 population at risk of hunger baseline projections (see Methods and SI for details of sample selection).
Sampling strategy	The literature search generated a list of potentially relevant studies that were combined and, after removing duplicates, further screened using the EPPI tool, a specialized piece of software for systematic literature reviews. The literature screening was done in two phases. A first selection was made by screening the title and abstract, followed by a full text screening for studies that were identified as being relevant. In case of doubt, the study was evaluated by a second reviewer and, if needed, further discussed by the research team. Quantitative projections were harvested for two indicators: people at risk of hunger and food consumption from the 57 selected studies. This could be done for only 26 studies as the other 31 studies did not provide sufficient detail. The SI of the article describes in detail why data could not be extracted from all studies.
Data collection	The research team with support of two research assistants screened all literature and coded the information from the 57 studies. The research team harvested and standardized the projections for the 26 studies for which data was available.
Timing and spatial scale	The core of the review was conducted between September 2017 and December 2017. We conducted an additional search mid-2018, using the same protocol, to collect studies that were published in the first half of 2018. Only studies which provide global food security projections were included.
Data exclusions	One observation was considered as an outlier on the basis of IQR criteria and excluded from the meta-regression. See Methods and SI for details.
Reproducibility	All data and code will be publicly available to reproduce the results.
Randomization	Not relevant.
Blinding	Not relevant.
Did the study involve field work?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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
<input checked="" type="checkbox"/>	<input type="checkbox"/> Antibodies
<input checked="" type="checkbox"/>	<input type="checkbox"/> Eukaryotic cell lines
<input checked="" type="checkbox"/>	<input type="checkbox"/> Palaeontology and archaeology
<input checked="" type="checkbox"/>	<input type="checkbox"/> Animals and other organisms
<input checked="" type="checkbox"/>	<input type="checkbox"/> Human research participants
<input checked="" type="checkbox"/>	<input type="checkbox"/> Clinical data
<input checked="" type="checkbox"/>	<input type="checkbox"/> Dual use research of concern

Methods

n/a	Involved in the study
<input checked="" type="checkbox"/>	<input type="checkbox"/> ChIP-seq
<input checked="" type="checkbox"/>	<input type="checkbox"/> Flow cytometry
<input checked="" type="checkbox"/>	<input type="checkbox"/> MRI-based neuroimaging