

## Reporting Summary

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### Statistical parameters

When statistical analyses are reported, confirm that the following items are present in the relevant location (e.g. figure legend, table legend, main text, or Methods section).

n/a Confirmed

- ☐ ☒ The exact sample size ( $n$ ) for each experimental group/condition, given as a discrete number and unit of measurement
- ☐ ☒ An indication of 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  
*Only common tests should be described solely by name; describe more complex techniques in the Methods section.*
- ☒ ☐ 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 statistics 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.  $F$ ,  $t$ ,  $r$ ) with confidence intervals, effect sizes, degrees of freedom and  $P$  value noted  
*Give  $P$  values as exact values whenever suitable.*
- ☒ ☐ 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  $d$ , Pearson's  $r$ ), indicating how they were calculated
- ☐ ☒ Clearly defined error bars  
*State explicitly what error bars represent (e.g. SD, SE, CI)*

Our web collection on [statistics for biologists](#) may be useful.

### Software and code

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

#### Data collection

Data for the selected indicators in this study were obtained from the following authoritative sources: National Bureau of Statistics of the People's Republic of China, China Statistical Yearbook Finance Yearbook of China, China Statistical Yearbook on the Environment, Educational Statistics Yearbook of China, China Health Statistics Yearbook, China Energy Statistical Yearbook, China Population Statistics Yearbook etc. See Table S1 for a list of SDGs and their corresponding indicators and data sources used in this paper.

#### Data analysis

I use Microsoft Excel 2013 and Matlab 2017b to analyze data.

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/reviewers upon request. 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

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## Field-specific reporting

Please select 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/authors/policies/ReportingSummary-flat.pdf](https://nature.com/authors/policies/ReportingSummary-flat.pdf)

## Ecological, evolutionary & environmental sciences study design

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

### Study description

Global challenges such as hunger, water scarcity, energy shortage, environmental pollution, gender inequality and climate change pose threats to sustainability and human well-being worldwide. To address these and other challenges, nearly every country in the world has committed to the 17 United Nations Sustainable Development Goals (SDGs). Quantifying SDGs at the national and subnational levels can help track global progress towards sustainable development and identify priorities for policy-making and implementation, because nations and sub-nations are the basic units for implementing SDGs. However, there is no systematic spatio-temporal assessment of SDGs at national and subnational levels to guide policy development and implementation. To fill this gap, we used China, the largest developing country that increasingly shapes the world's future, as the first demonstration of examining the spatio-temporal dynamics of the 17 SDGs at both national and subnational levels. Our results indicate that China had an increasing SDG Index score (aggregated score representing China's overall performance in achieving all 17 SDGs) at the national level from 2000 to 2015. At the provincial level, east China had higher SDG Index score than west China in the 2000s, while south China had higher SDG Index score than north China in 2015. The SDG Index scores of all provinces increased over this period. Developed provinces had higher SDG index scores than developing provinces, but developing provinces experienced greater increases in SDG Index scores than did developed provinces. The Chinese government could consider prioritizing SDGs with low scores such as 15 (life on land), 14 (life below water) and 17 (partnerships for the goals). Also, since north China lags behind other areas it would warrant special attention. This study also suggests the need to track the spatio-temporal dynamics of progress toward SDGs in other nations to uncover significant shifts in sustainable development at national and subnational levels. Such insights can inform policy-making and implementation to achieve global sustainability.

### Research sample

Data for the selected indicators in this study were obtained from the following authoritative sources: National Bureau of Statistics of the People's Republic of China, China Statistical Yearbook Finance Yearbook of China, China Statistical Yearbook on the Environment, Educational Statistics Yearbook of China, China Health Statistics Yearbook, China Energy Statistical Yearbook, China Population Statistics Yearbook etc. See Table S1 for a list of SDGs and their corresponding indicators and data sources used in this paper. At the national level, we aggregated China's 17 SDG scores into one national SDG Index score for each year from 2000 to 2015, yielding 16 SDG Index scores. At the provincial level, we aggregated each province's 17 SDG scores for 2000, 2005, 2010 and 2015 separately, yielding four SDG Index scores per province. In addition, we calculated the change in SDG scores separately for each of the 17 individual SDG scores and for China and its provinces, by subtracting the normalized score in 2000 from the score in 2015. The SDGs with bottom five scores in 2015 were considered as bottom five SDGs that lag behind other SDGs.

### Sampling strategy

We study China and China's provinces over time, so the number of them is certain.

### Data collection

Data for the selected indicators in this study were obtained from the following authoritative sources: National Bureau of Statistics of the People's Republic of China, China Statistical Yearbook Finance Yearbook of China, China Statistical Yearbook on the Environment, Educational Statistics Yearbook of China, China Health Statistics Yearbook, China Energy Statistical Yearbook, China Population Statistics Yearbook etc. See Table S1 for a list of SDGs and their corresponding indicators and data sources used in this paper.

### Timing and spatial scale

We study China at national scale from 2000 to 2015, while study China's provinces in 2000, 2005, 2010 and 2015.

### Data exclusions

No data was excluded

### Reproducibility

We have followed the framework and guidelines in the 2019 report on reproducibility and replication by the National Science Foundation and the U.S. Department of Education (<https://www.nsf.gov/pubs/2019/nsf19022/nsf19022.pdf>). For instance, we have provided detailed, transparent, and clear descriptions of the methods (e.g., models, analysis procedures, data sources) that have led

to the findings. We are committed to making all data, models, code, etc. used in our research available to those interested individuals so that they can be used by others to exactly reproduce our findings.

Randomization

No allocation. We study China and China's provinces.

Blinding

No blinding. We study China and China's provinces.

Did the study involve field work? ☐ Yes ☒ No

## Reporting for specific materials, systems and methods

### Materials & experimental systems

| n/a                                 | Involvement in the study                             |
|-------------------------------------|------------------------------------------------------|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> Unique biological materials |
| <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               |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> Animals and other organisms |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> Human research participants |

### Methods

| n/a                                 | Involvement 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 |