Top targets

Local challenges help to explain why some Sustainable Development Goals are prioritized over others. **Data analysis by Catherine Cheung. Infographic by Bec Crew, Tanner Maxwell and David Payne.**

HOW TO READ THIS GRAPHIC

The leading 20 cities and metropolitan areas for research in all 17 SDGs 2015–20 (this page) are broken down by Share in the ten SDGs most relevant to the natural-sciences focus of the Nature Index.

SDG Share

- 0
- < 100
- 100–199
- 200–299
- 300–399
- 400–499
- ≥ 500

Change in SDG Share from 2015

- ↑ Increase (change in SDG Share ≥ 1)
- → Maintain (–1 < change in SDG Share < 1)
- ↓ Decrease (change in SDG Share ≤ –1)

A TALE OF THREE SCIENCE CITIES

Among the 10 selected SDGs (of 17 total), 3 stand out as having the greatest related output in the Nature Index journals: SDG3 (Good health and well-being), SDG7 (Affordable clean energy) and SDG13 (Climate action).

Baltimore–Washington is the most prolific area for SDG3-related research, with a Share of 264.45. Baltimore is home to Johns Hopkins University, which in 2019 spent a record US$2.9 billion on research and development, higher than any other university in the United States for the 41st consecutive year, according to the US National Science Foundation. Despite such strong commitment to research, the city has significant health inequalities. The 2018 State of Health in Baltimore white paper reports that life expectancy varies by up to 19 years between neighbourhoods.

Many major science cities are highly active in clean-energy research, often in response to local challenges. Beijing leads, with a Share of 1,241.53 for SDG7. The city hosts the Bluetech Clean Air Alliance, a non-profit organization launched in 2012 to improve China's air quality. Of its 31 institutional members, 21 are drawn from the Chinese cities highlighted here, including 12 in Beijing.

Institutions in Boulder, Colorado, have the highest proportion of total research output related to all 17 SDGs (16.3%) among the leading 20 cities. The city's strongest performance is for SDG13 (ranked fifth), with a Share of 197.79. In 2018, Boulder and San Miguel counties partnered with the city of Boulder to file a lawsuit against Suncor and ExxonMobil for contributions to climate change, they claim the oil companies have made — the impacts of which include wildfires and drought.

The seven SDGs absent, including SDG8 (Decent work and economic growth) and SDG16 (Peace, justice and strong institutions), are associated with low outputs in the Nature Index, which specifically covers the natural sciences.

City/metropolitan area	Location	Total Share for 17 SDGs, 2015–20	Proportion of total Share related to 17 SDGs
Beijing	China mainland, Hong Kong, Macau	1,753.49	11.9%
San Francisco Bay Area	United States	875.16	8.5%
New York metropolitan area	United States	862.76	7.0%
Baltimore–Washington	United States	745.40	8.9%
Boston metropolitan area	United States	720.97	6.5%
Shanghai	China mainland, Hong Kong, Macau	579.22	7.9%
Nanjing	China mainland, Hong Kong, Macau	499.42	10.5%
Singapore	Singapore	427.73	11.9%
Los Angeles metropolitan area	United States	414.82	7.8%
Seoul metropolitan area	South Korea	395.26	8.7%
Wuhan	China mainland, Hong Kong, Macau	325.73	9.8%
Chicago metropolitan area	United States	316.02	6.7%
Paris metropolitan area	France	300.29	5.1%
San Diego metropolitan area	United States	295.05	8.0%
Guangzhou	China mainland, Hong Kong, Macau	286.37	9.8%
Tokyo metropolitan area	Japan	278.98	3.7%
Tianjin	China mainland, Hong Kong, Macau	273.49	12.5%
London metropolitan area	United Kingdom	268.96	6.0%
Boulder	United States	266.42	16.3%
Zurich	Switzerland	258.72	7.2%

 **SDG 2** Zero hunger	 **SDG 3** Good health and well being	 **SDG 6** Clean water and sanitation	 **SDG 7** Affordable and clean energy	 **SDG 10** Reduced inequalities	 **SDG 11** Sustainable cities and communities	 **SDG 12** Responsible consumption and production	 **SDG 13** Climate action	 **SDG 14** Life below water	 **SDG 15** Life on land
7.82 ↑	110.59 ↑	33.90 ↑	1,241.53 ↑	4.85 →	37.91 ↑	9.08 ↑	339.93 ↑	17.88 ↑	15.84 ↑
3.81 →	157.33 ↑	32.67 ↓	430.79 ↑	11.79 ↑	6.91 →	7.84 →	224.06 ↓	13.24 →	12.56 →
6.07 →	203.35 ↑	10.86 →	273.44 ↑	11.16 →	11.55 →	1.85 →	325.00 ↑	13.01 →	14.75 ↑
6.83 →	264.45 ↑	13.92 →	213.72 ↓	2.42 →	7.61 →	1.56 →	222.39 ↑	12.53 ↑	16.07 →
8.92 →	228.04 ↑	10.45 ↑	272.70 ↑	8.20 →	11.88 →	4.87 →	163.89 ↓	13.66 ↓	2.38 →
2.31 →	40.28 ↑	8.56 ↑	473.35 ↑	0.47 →	5.88 →	7.20 →	48.56 ↑	8.55 ↑	0.36 →
3.65 →	17.42 ↑	14.90 ↑	332.42 ↑	0.19 →	13.07 ↑	8.12 ↑	112.03 ↑	13.64 ↑	2.10 →
1.14 →	63.48 ↑	7.01 →	315.29 ↑	1.36 →	3.18 →	2.32 ↑	46.09 ↑	1.10 →	4.26 →
1.29 →	49.66 ↑	5.85 →	188.30 ↑	4.26 →	5.76 ↑	0.26 →	160.34 ↑	4.51 →	0.40 →
0.03 →	19.81 ↑	5.21 ↑	323.68 ↑	0.14 →	2.70 →	1.32 →	49.48 ↑	3.50 →	0.09 →
1.14 →	19.61 ↑	3.69 ↑	260.88 ↑	0.71 →	2.22 →	2.22 →	40.18 ↑	5.95 →	0.06 →
1.17 →	30.27 ↑	2.38 →	225.71 ↑	2.21 ↑	7.95 →	3.18 →	41.59 ↓	5.05 ↑	2.01 ↑
2.64 →	62.33 ↑	5.81 ↑	121.71 ↑	2.48 ↑	2.72 →	0.20 →	90.34 ↑	7.52 →	5.45 ↑
1.80 →	149.88 ↑	1.62 →	58.41 →	0.59 →	0.69 →	0.00 →	71.22 ↑	10.03 →	1.75 →
0.79 →	29.23 ↑	4.53 ↑	210.78 ↑	0.00 →	3.52 →	0.33 →	41.82 ↑	2.13 ↑	1.98 →
0.32 →	27.62 ↑	2.55 ↑	176.20 ↑	1.88 →	1.56 →	1.32 →	57.66 ↑	7.82 ↑	0.76 →
0.00 →	12.34 ↑	2.13 ↑	241.18 ↑	1.07 ↑	3.40 →	0.00 →	29.02 ↑	1.51 →	0.00 →
2.71 →	88.32 ↑	4.15 →	85.11 ↑	6.19 →	7.93 →	2.79 ↑	63.19 ↑	1.95 →	12.00 →
0.32 →	6.42 →	4.85 →	51.25 ↓	0.47 →	3.81 ↑	0.00 →	197.79 ↑	4.61 →	1.00 →
3.36 →	19.74 ↑	11.08 →	94.86 →	2.66 →	4.25 →	3.28 →	109.06 ↓	2.59 →	10.91 ↑

SOURCE: NATURE INDEX