

Waste Management in the News, 2019-2026: Attention, Geography and Tone of Global Waste Coverage, and How It Compares with Research and Invention

Fliar BI · Prism Research Layer · Working paper, October 2026 · Dataset and code: github.com/fliarbi/prism-news-api · Licence CC BY-NC 4.0

Abstract

We measure how waste management was covered in a global news index from January 2019 to July 2026, using 101,095 de-duplicated articles about the collection, disposal, treatment and recycling of waste, and set that coverage beside 49,802 research papers and 101,798 patent families on the same subject. Six results stand out:

1. **A steady, low share of attention.** Waste management took 8.05 of every 10,000 news articles in 2019 and 6.66 in 2025. The low point was 2020, at 5.73, which is 28.8% below 2019. Coverage has almost no seasonality: no month holds more than 8.96% of a typical year's articles.
2. **Geography.** India's share of located waste management news is 1.55 times its share of all news. The United States, the largest source of located articles (33.54%), is under-represented at 0.69. Indonesia (5.31), Jamaica (5.19), the Philippines (4.23) and Malaysia (4.15) are the most over-represented countries, and Africa (2.14) the most over-represented continent.
3. **States.** Within India, Chandigarh (4.72), Goa (2.83) and Haryana (2.1) lead by lift, and Bihar (0.36) trails. Within the United States, North Dakota (2.55), Oregon (2.22) and Missouri (2.2) lead, and New Jersey (0.2) trails.
4. **Tone and urgency.** 64.3% of waste management articles are positive in tone (all news: 56.8%), while the negative share (33.2%) matches all news (33.6%). Yet 60.8% are rated critical priority (all news: 42.6%).
5. **Measurement.** 33.9% of raw matches for waste vocabulary were templated feeds, advertising pages, stock-market items or repeated items. Counting them would inflate coverage and distort its geography.
6. **Research and invention.** Waste management papers grew from 4.79 to 9.76 per 10,000 papers between 2015 and 2025, a 2.04-fold rise in share. Patent families published per year grew 3.24-fold from 2015 to 2024, and 94.6% of office filings were in China.

Findings stated for citation

- **F1.** Waste management took 8.05 per 10,000 news articles in 2019, 6.66 in 2025 and 5.73 in 2020, its low.
- **F2.** Coverage has almost no seasonality: monthly shares range from 7.9% to 8.96% against 8.33% for an even spread.
- **F3.** India's share of located waste management news (20.44%) was 1.55 times its share of all news. The United States' (33.54%) was 0.69 times.

- **F4.** Indonesia (5.31), Jamaica (5.19), the Philippines (4.23) and Malaysia (4.15) were the most over-represented countries.
- **F5.** Africa (2.14), Oceania (1.59) and Asia (1.32) were over-represented; North America (0.76) and Europe (0.91) were not.
- **F6.** 64.3% of waste management articles were positive in tone, 1.13 times the all-news share.
- **F7.** 60.8% of waste management articles were rated critical priority, 1.43 times the all-news share.
- **F8.** Landfill management appeared in 10.39% of themed articles, 558.63 times its frequency in all news.
- **F9.** Composting and organic waste was the most frequent theme (18.99% of themed articles).
- **F10.** 33.9% of raw waste-vocabulary matches were templated feeds, advertising or repeated items.
- **F11.** Waste management papers rose 2.04-fold as a share of all papers between 2015 and 2025.
- **F12.** 94.6% of office filings of waste management patent families (2015–2024) were in China.
- **F13.** Patent families published per year grew 3.24-fold between 2015 and 2024, after a 2021 peak.
- **F14.** Within India's states and union territories, Chandigarh (4.72), Goa (2.83), Haryana (2.1) and Delhi (1.64) had the most over-represented coverage.
- **F15.** Within the United States, North Dakota (2.55), Oregon (2.22) and Missouri (2.2) had the most over-represented coverage.
- **F16.** Waste management coverage as a share of Indonesia's news rose 2.87-fold from 2023 to 2025.

1. Introduction

Every city collects, moves and disposes of waste, and most of that work is invisible until it fails. News records the failures and the changes: a landfill fire, a collection strike, a new waste-to-energy plant, a rule on segregation at source. Coverage also shapes what residents and councils treat as urgent. Yet coverage of waste is rarely measured as data in its own right. Waste statistics record tonnes. Bibliometric studies record research. Few sources record attention, meaning how much of the news waste takes, and where and in what tone.

This paper and its dataset do that. They combine three records for one topic: a global news index, research papers and patents. Each comparison uses a denominator, so that growth in the index or in publishing is not mistaken for growth in interest. The companion dataset publishes an article-level sample (25,139 rows) and full coverage tables, so every figure here can be re-derived. The [Prism News API](#) serves the full history.

2. Data and methods

News. The Prism news index holds articles from outlets worldwide; non-English articles are indexed in English translation. Each article carries its opening text (the first few sentences), a primary location, a graded tone label, an editorial priority rating (1–9), themes, keywords and named organisations. We count unique article identifiers; repeated rows for the same

article are removed. When this release was built, 92.88% of the index was readable, so all counts are lower bounds.

Matching. An article is about waste management when its opening text contains one of 19 terms as whole words: *waste management, solid waste, municipal waste, landfill(s), waste collection, garbage collection, garbage collectors, waste disposal, garbage dump(s), dumpsite(s), waste-to-energy, e-waste, waste pickers, garbage piles, piles of garbage* and *garbage crisis*. The bare word *garbage* was tested and dropped, because many of its uses in a test sample were figurative or incidental. *Garbage truck* was dropped for the same reason: it often appeared in traffic and accident reports. *Recycling* alone was not used, because it also covers water, batteries and figurative uses. Several families of matches are excluded:

- one syndicated city-promotion item that was repeated tens of thousands of times, and other items repeated hundreds of times under new identifiers;
- dumpster-rental and waste-hauling advertising written city by city;
- market-research listings and share-price items about a waste company of the same name, and a golf tournament named after it;
- computer-memory "garbage collection" and a band named after municipal waste;
- crime reports where a landfill or dump is only the place a body was found.

Together these removed 51,888 of 152,983 raw matches (33.9%). One reviewer read 40 randomly drawn matched openings. 36 were about waste management (precision 90%), and in 30 (75%) it was the main subject. The four false positives named a landfill only as a place, set a crime story at a dump site, or mentioned a waste disposal office in passing. Three of the 40 items were research abstracts carried by the index rather than news reports; they were on topic and counted as relevant.

Measures. Coverage over time is expressed per 10,000 articles in the index that month or year, because the index grew from 11,807,177 articles in 2019 to 26,990,006 in 2025. Seasonality uses each year's within-year month shares, averaged over the complete years 2019–2025. Geography, tone, priority and themes use January 2023 – July 2026. Geography is expressed as lift: a country's share of waste management articles divided by its share of all located articles. States are measured the same way within India and within the United States, against each country's own located news. Place tags derived from ordinary words ("Congress", "Earth", "Winter", "Cloud", "Mobile", "Hurricane" and others, 714 words in all) were treated as unlocated in every location field, which removed 15.3% of city-tagged articles.

Research and patents. Research papers are de-duplicated articles and reviews (2000–2025) with a waste management term in the title. Repository deposits are excluded, as are radioactive waste, wastewater and sewage, adsorbent materials made from waste, and computer-memory senses. Patent families (2005–2024) use the same title rule plus the word *garbage*, are counted once per filing office, and exclude computing and nuclear senses.

3. Results

3.1 How much and when

The index holds 101,095 waste management articles from January 2019 to July 2026. Raw counts rose from 9,505 in 2019 to 17,965 in 2025, but the index grew faster, so the share of all news fell: 8.05 per 10,000 in 2019, 7.06 in 2023 and 6.66 in 2025 (Table 1). The low point

was 2020, at 5.73 per 10,000. That is 28.8% below 2019. The highest monthly share was April 2019, at 9.22 per 10,000 (Figure 1).

Year	Waste management articles	All articles in index	Per 10,000
2019	9,505	11,807,177	8.05
2020	9,297	16,230,014	5.73
2021	11,148	17,281,220	6.45
2022	13,122	19,115,515	6.86
2023	14,466	20,484,506	7.06
2024	15,944	23,311,896	6.84
2025	17,965	26,990,006	6.66

Table 1. Waste management articles per year and as a share of the index. 2026 (January–July) is partial and omitted.

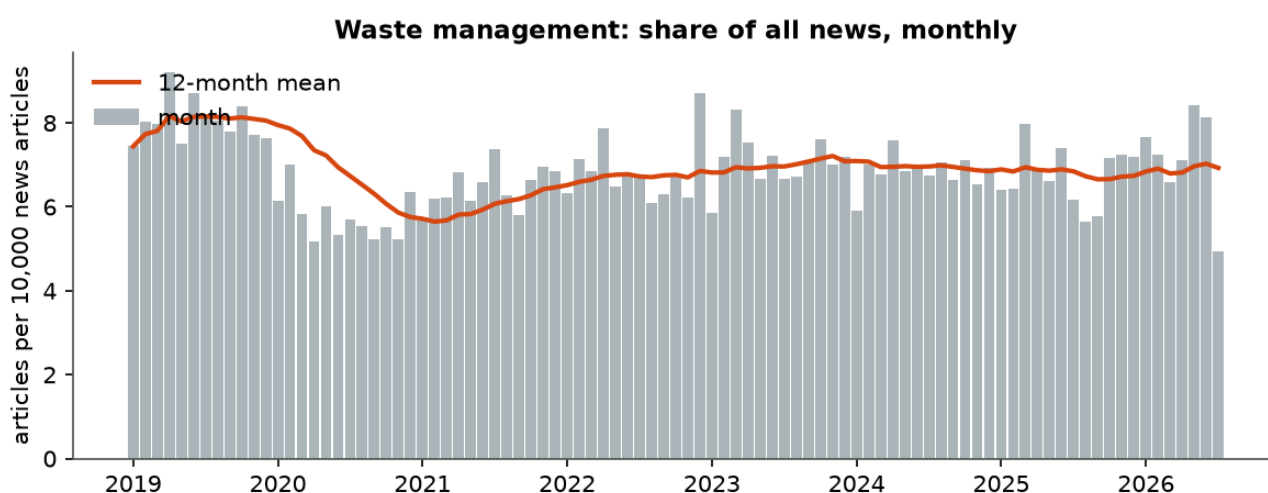


Figure 1. Waste management coverage as articles per 10,000 news articles, monthly, January 2019 – July 2026. Bars are months; the line is the 12-month mean.

Unlike coverage of weather hazards, waste coverage is not seasonal (Figure 2). Every month holds between 7.9% (November) and 8.96% (March) of a typical year's articles, close to the 8.33% of an even spread.

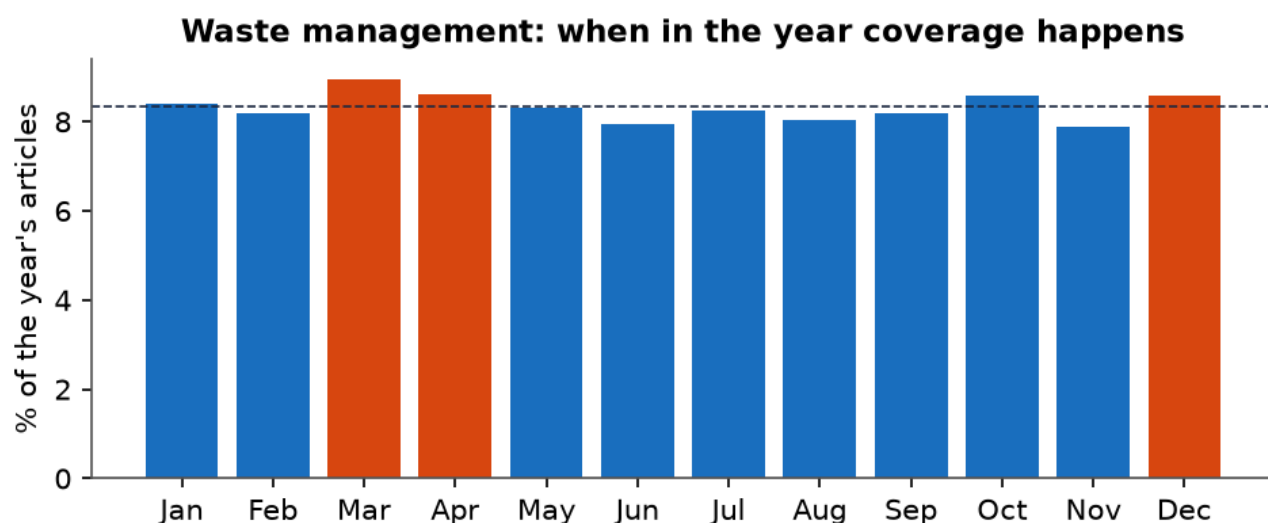


Figure 2. Share of each year's waste management articles published in each month, averaged over 2019–2025. Dashed line = an even spread (8.3% per month).

3.2 Where

Between January 2023 and July 2026, 23,988 waste management articles carried a primary location. The United States holds the largest raw share (33.54%), but its lift is 0.69: waste takes a smaller share of American news than of news overall. India's share (20.44%) comes with a lift of 1.55. The most over-represented countries are in Southeast Asia, West Africa and the Caribbean (Table 2, Figure 3).

Country	Located articles	Share %	Lift vs all news
United States	8,045	33.54	0.69
India	4,903	20.44	1.55
United Kingdom	1,705	7.11	1.22
Nigeria	816	3.4	2.48
Canada	672	2.8	1.31
Australia	665	2.77	1.29
France	417	1.74	0.88
Ghana	362	1.51	3.13
Indonesia	354	1.48	5.31
China	339	1.41	0.54
Philippines	320	1.33	4.23
New Zealand	312	1.3	2.01
Malaysia	179	0.75	4.15
Kenya	171	0.71	3.25
Jamaica	106	0.44	5.19

Table 2. The twelve countries with the most located waste management articles, January 2023 – July 2026, followed by Malaysia, Kenya and Jamaica, which complete the six countries with the highest lift (at least 100 articles); lift against all located news.

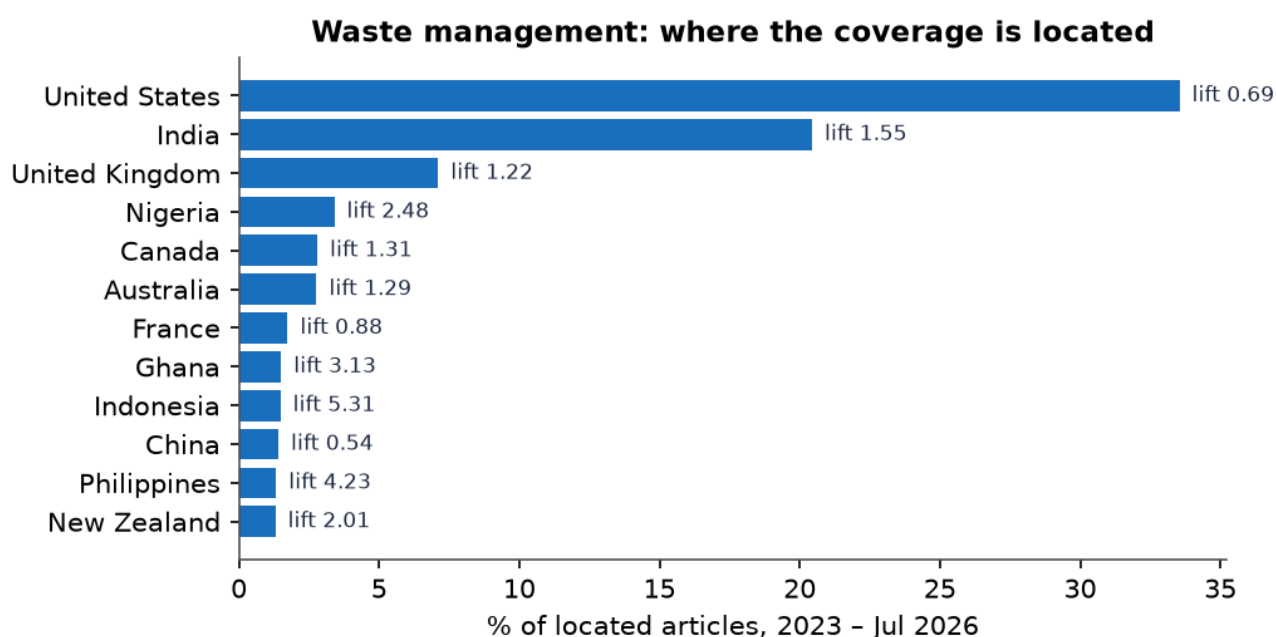


Figure 3. Leading countries by share of located waste management articles, 2023 – Jul 2026, labelled with lift against all located news.

3.3 Geo intelligence: continents, states and shifting attention

The world map (Figure 4) shows the pattern at a glance. Waste management is over-represented in the news of South and Southeast Asia, West and East Africa, the Caribbean and Oceania, and under-represented in the United States, much of Europe, China and Japan. By continent, Africa (2.14), Oceania (1.59) and Asia (1.32) are over-represented, while North America (0.76), Europe (0.91) and South America (0.93) are not (Figure 7, left). Nigeria (2.48), Ghana (3.13) and Kenya (3.25) carry most of the African coverage.

Waste management: which countries over- and under-cover the topic

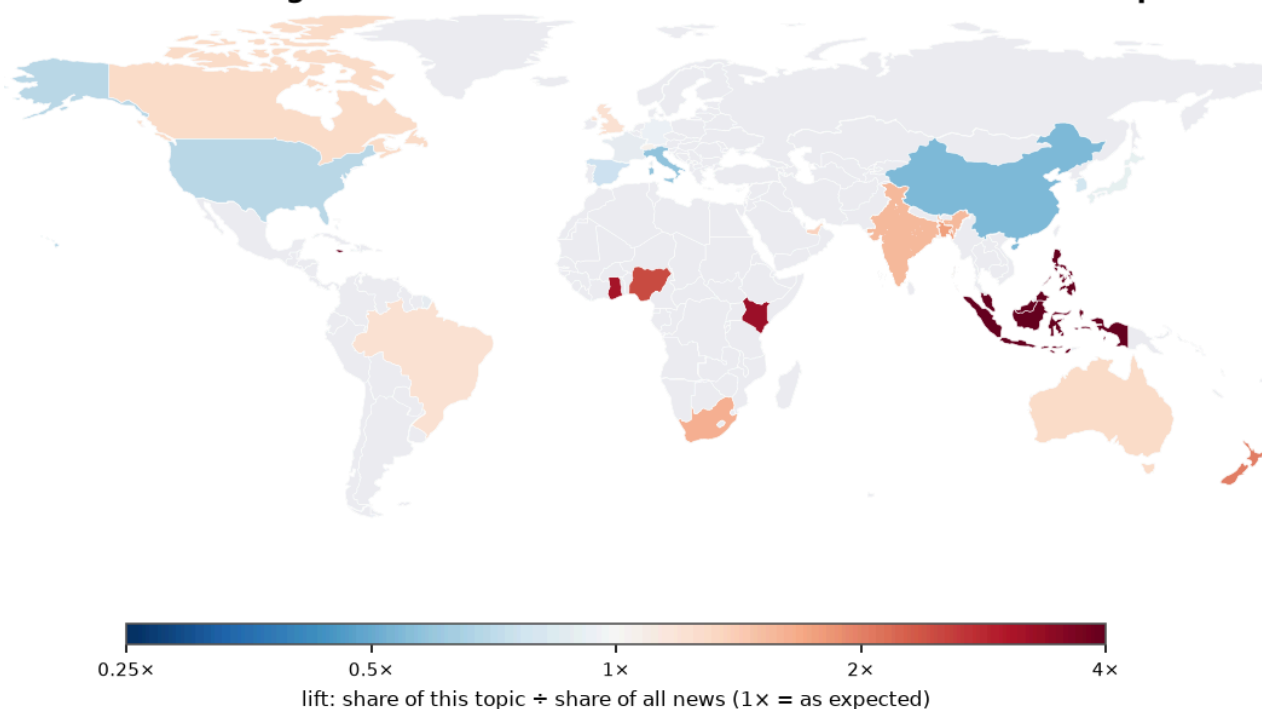


Figure 4. Lift of each country's share of located waste management articles, January 2023 – July 2026 (red = over-represented, blue = under-represented, grey = fewer than 100 articles). India is drawn with its official outline.

Within countries, the picture is sharper (Table 3). In India, waste coverage concentrates in the north-western states and union territories and in Goa. Measured against each state's share of Indian news, Chandigarh (4.72), Goa (2.83), Haryana (2.1), Delhi (1.64), and Punjab and Kerala (both 1.48) are the most over-represented. Delhi also holds the largest raw share (21.25% of located Indian articles). Bihar (0.36), West Bengal (0.47), Jharkhand (0.52) and Rajasthan (0.56) are under-represented (Figure 5). The Indian ranking is almost unchanged by treating ordinary-word place tags as unlocated. In the United States, Maine has the highest lift (3.35), but about a third of the sampled Maine articles concern Newcastle in England or Australia, tagged to Maine by a place-name homonym, so it is not interpreted. Among the remaining states, North Dakota (2.55), Oregon (2.22) and Missouri (2.2) lead, followed by Mississippi (2.18) and Maryland (2.08). Alabama, which ranked higher before ordinary-word tags such as "Mobile" were removed, now has a lift of 1.72. New Jersey (0.2), Pennsylvania (0.57) and New York (0.7) are far below their weight in American news (Figure 6). California has the most located US articles (787) at a lift of 1.16.

India: state	Articles	Lift	United States: state	Articles	Lift
Chandigarh	63	4.72	Maine*	98	3.35
Goa	67	2.83	North Dakota	81	2.55
Haryana	231	2.1	Oregon	151	2.22
Delhi	914	1.64	Missouri	149	2.2
Punjab	162	1.48	Mississippi	97	2.18
Kerala	155	1.48	Maryland	144	2.08
Assam	94	1.33	Utah	120	1.98
Karnataka	314	1.32	Virginia	128	1.92
<i>Lowest: Rajasthan</i>	83	0.56	<i>Lowest: New York</i>	553	0.7
Jharkhand	54	0.52	Pennsylvania	232	0.57
West Bengal	70	0.47	New Jersey	250	0.2
Bihar	75	0.36			

Table 3. States with the highest and lowest lift in waste management coverage, January 2023 – July 2026, among states with at least 50 located articles. Lift = the state's share of the country's located waste management articles ÷ its share of all located news from that country. *Maine's lift is inflated by articles about Newcastle (England, Australia) tagged to Maine.

Waste management: states of India by lift

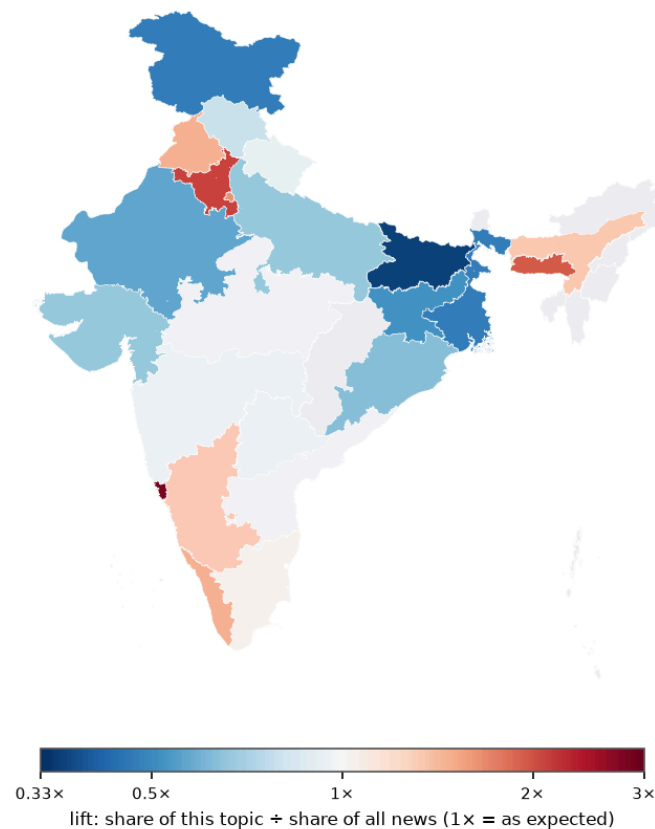


Figure 5. Lift of each Indian state's share of located waste management articles against its share of all located Indian news, January 2023 – July 2026. Official outline; Ladakh is drawn within Jammu and Kashmir in the boundary file used.

Waste management: states of United States by lift

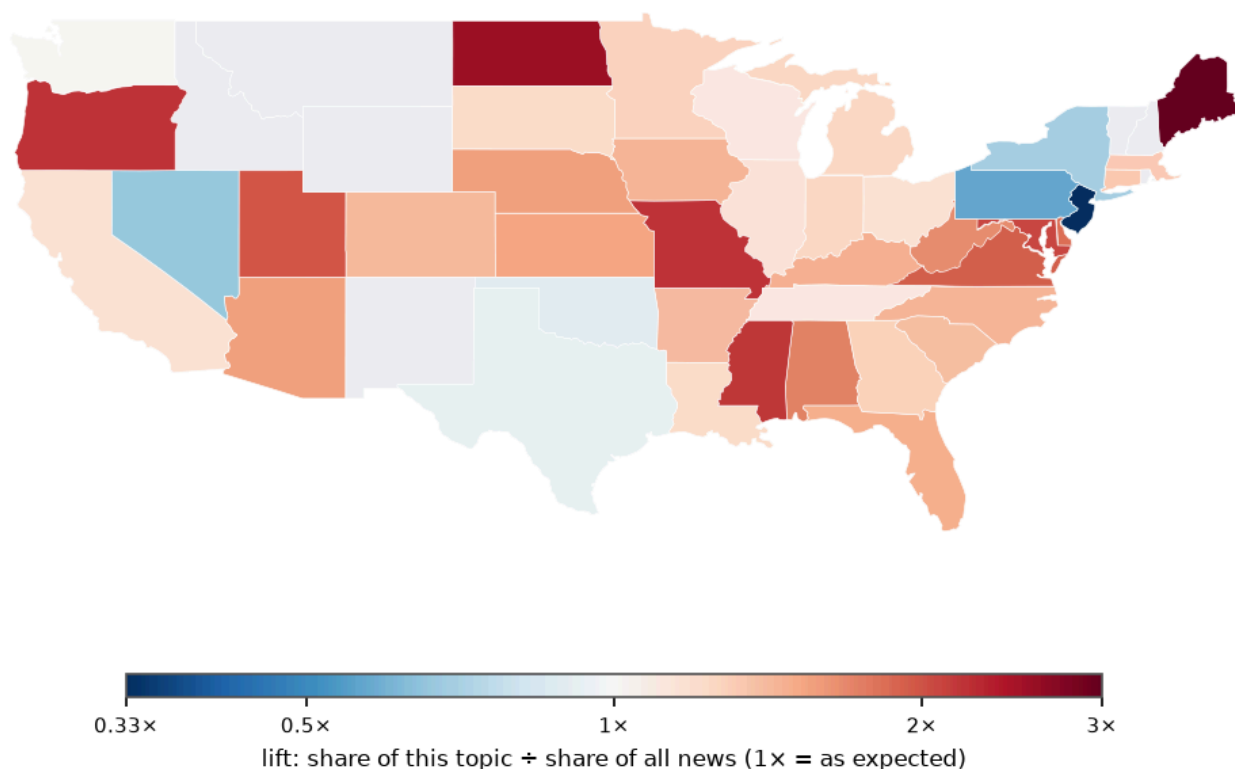


Figure 6. Lift of each US state's share of located waste management articles against its share of all located US news, January 2023 – July 2026.

Attention also moves between countries from year to year (Table 4, Figure 7, right). Measured as waste management articles per 10,000 of each country's located news, Indonesia rose from 15.5 in 2023 to 44.54 in 2025 (2.87 times), Ghana 1.67 times and Nigeria 1.49 times. France (0.54 times) and China (0.61 times) fell over the same years, and the United States eased from 4.51 to 4.0. Canada and Australia were almost flat.

Country	2023 per 10,000	2025 per 10,000	2025 ÷ 2023
Indonesia	15.5	44.54	2.87
Ghana	13.73	22.92	1.67
Nigeria	13.67	20.36	1.49
United Kingdom	6.59	8.4	1.27
India	10.26	11.12	1.08
Canada	7.14	7.27	1.02
Australia	8.13	7.68	0.94
United States	4.51	4.0	0.89
China	4.51	2.77	0.61
France	9.11	4.89	0.54

Table 4. Waste management articles per 10,000 of each country's located news, 2023 and 2025, for the ten countries with the most located waste management articles.

Tone differs by country once each country's own baseline is taken into account. Waste coverage is more negative than the country's news overall in the Philippines (63.4% negative against 39.4%, a gap of 24.0 points), New Zealand (61.2% against 45.7%, 15.5 points), Japan (32.2% against 23.3%), Canada (35.2% against 27.1%), China (34.7% against 27.2%) and Indonesia (39.3% against 32.8%). It is less negative than the national baseline in

Nigeria (30.9% against 44.4%), Australia (24.1% against 38.4%), Ghana (34.5% against 43.3%), India (35.3% against 41.2%), Brazil (32.9% against 38.3%) and the United Arab Emirates (3.3% against 24.6%, on 212 articles).

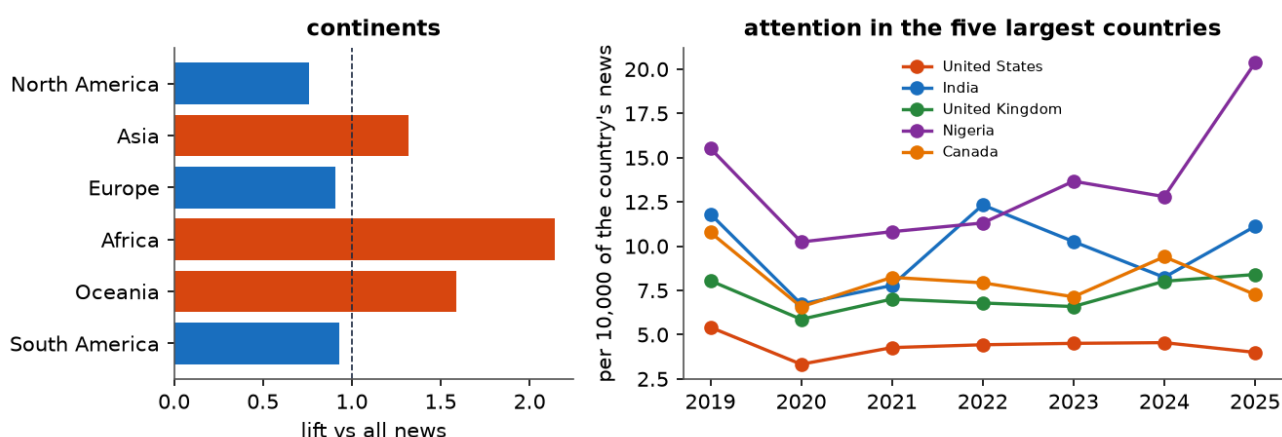


Figure 7. Left: lift by continent, January 2023 – July 2026. Right: waste management articles per 10,000 of each country's located news, 2019–2025, for the five countries with the most articles.

3.4 Tone, urgency and themes

Waste management coverage is more positive than news in general, but it is also rated more urgent (Figure 8). Among articles with a tone label, 64.3% are positive, against 56.8% across the index (1.13 times), and 33.2% are negative, close to the 33.6% of all news. Machine-assigned editorial priority puts 60.8% of waste management articles at critical level (7 or higher), against 42.6% of all news (1.43 times).

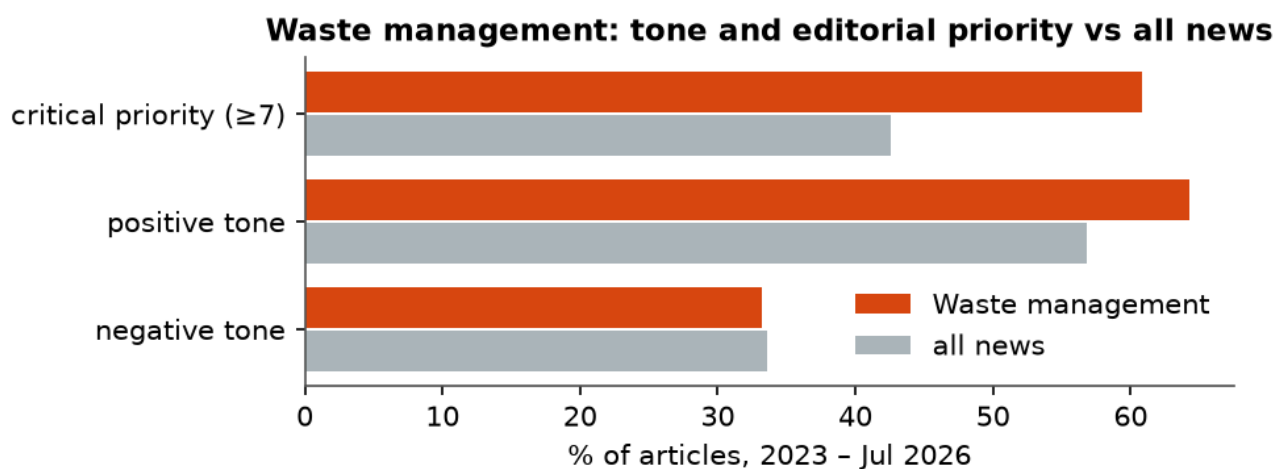


Figure 8. Tone and the share rated critical priority, waste management articles vs all news, 2023 – Jul 2026.

Themes show what waste stories are about (Table 5). Composting and organic waste is the most common theme (18.99% of themed articles), followed by municipal collection systems (16.92%) and collection logistics (12.51%). Landfill operations (10.39%) and leachate management (3.68%) are the most specific to the topic, at 558.63 and 787.46 times their frequency in all news.

Theme	Articles	Share %	Lift
composting and organic waste management	6,920	18.99	219.89
municipal solid waste collection systems	6,167	16.92	395.54
waste collection logistics and optimization	4,561	12.51	374.35
landfill management and operations	3,787	10.39	558.63
community education on waste segregation	2,790	7.65	301.53
waste-to-energy conversion technologies	2,606	7.15	200.11
hazardous waste disposal methods	1,785	4.9	347.78
leachate management in landfills	1,340	3.68	787.46

Table 5. Leading themes in waste management coverage, with lift against all themed news, January 2023 – July 2026.

The organisations named most often include the United States Environmental Protection Agency (1,335 articles), the waste company Republic Services (460), India's Central Pollution Control Board (281), the World Bank (206) and England's Environment Agency (195). The most frequent tag, "waste management" (10,557 articles), mixes the generic phrase with a company of that name and is not interpreted.

3.5 Research attention and invention

Research on waste management grew faster than the scientific literature. Papers with a waste management term in the title rose from 4.79 per 10,000 papers in 2015 to 9.76 in 2025, a 2.04-fold increase in share, while the number of papers in the corpus as a whole stayed about the same (a factor of 1.0). Between 2015 and 2025, 49,802 such papers were published. The journal *Waste Management* published the most (1,179). The most-cited works include a global review of solid waste management [1], a study of the challenges for cities in developing countries [2], reviews of disposal and recycling options [3–5], a review of waste management in India [6] and an overview of electronic waste management [7].

News attention does not track research attention (Figure 9). Research share rose every year, while news share fell in 2020 and has stayed below its 2019 level since.

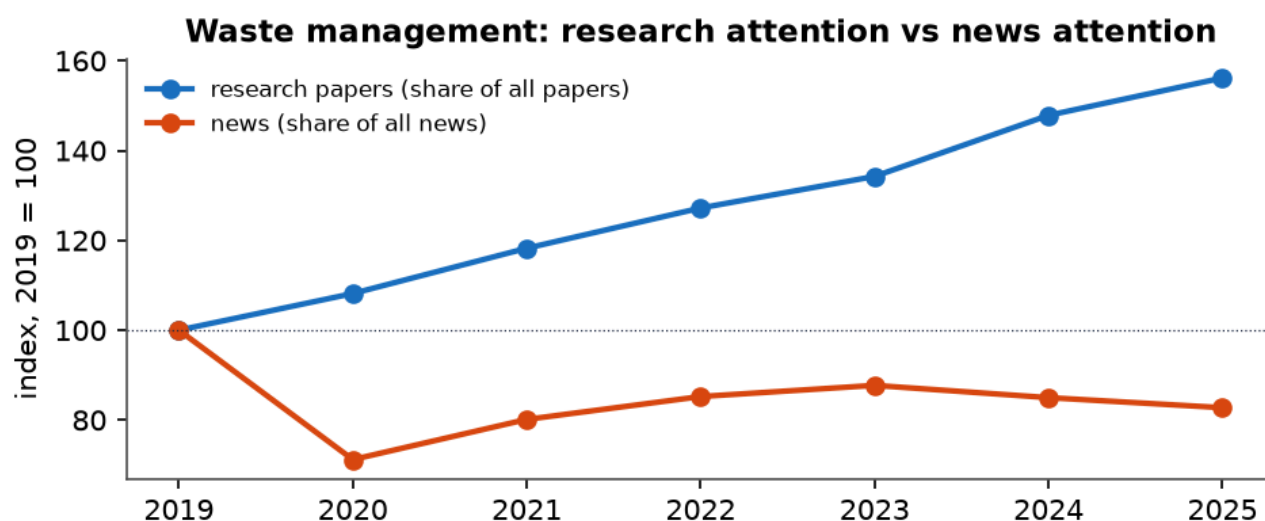


Figure 9. Research papers with waste management terms in the title (share of all papers) and waste management news (share of all news), each indexed to 2019 = 100.

Patenting rose unevenly: 3,660 waste management patent families were published in 2015 and 11,855 in 2024 (3.24 times), after a peak of 19,731 in 2021. The 2024 count is 39.9% below that peak. China's office holds 94.6% of office filings from 2015 to 2024, followed by

South Korea (1.3%) and the United States (1.1%) (Figure 10). The leading technology classes are waste-management climate technologies (Y02W, 9,999 families), refuse collection and handling (B65F, 7,797) and solid waste disposal (B09B, 3,546).

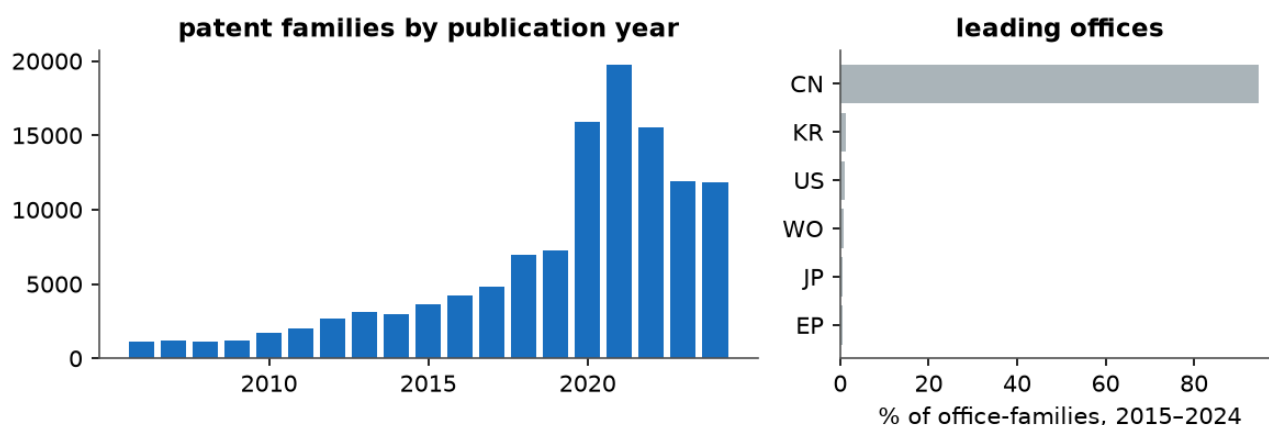


Figure 10. Waste management patent families by publication year (left) and the leading filing offices, 2015–2024 (right).

4. Discussion

Three points matter for anyone who uses news as a record of waste management. First, coverage measures attention. Waste took a steady, small share of the news, and that share has not returned to its 2019 level, even as research and patenting grew. Second, raw shares mislead. The United States leads in raw terms but is under-represented relative to its weight in the index. Relative to each country's share of all news, waste is most over-represented in Indonesia, Jamaica, the Philippines, Malaysia, Kenya and Ghana. Within India, the union territory of Chandigarh, the state of Goa and the National Capital Region stand out, and this pattern survived the removal of ordinary-word place tags almost unchanged. The US state ranking did not: Alabama fell and Maine rose to the top on a place-name homonym, so US state lifts should be read with the sample at hand. Third, a large share of what keyword searches return as "waste news" is not journalism. One repeated promotional item, city-by-city advertising and market listings made up a third of raw matches.

Research, invention and news run on different clocks. Research share doubled in a decade. Patent families published per year (a raw count, not a share) peaked in 2021 and are concentrated in one office. News share is flat and shows no season. The dataset lets researchers link the three, for example to test whether a landfill crisis with heavy coverage is followed by research or patent activity in the affected country.

5. Limitations

- **Index availability.** 92.88% of the index was readable at build time, so counts are lower bounds. Shares and lifts are less affected, because the missing part is spread across topics.
- **Coverage after May 2026.** The index thins after May 2026, so 2026 is partial and is excluded from year comparisons.
- **Matching.** Matching uses the article opening. Articles that mention waste only later are missed, and recycling stories that use none of the 19 terms are not counted. About 10% of matches are not about waste management.
- **Exclusions.** The exclusion patterns remove known feeds and advertising. Smaller templated series with different wording may remain, and they can move small-state

and small-country lifts.

- **Machine labels.** Location, tone, priority and themes are machine-labelled. The city field is noisy and is not analysed.
- **Place tags.** Place tags derived from ordinary words were treated as unlocated, which removed 15.3% of city-tagged articles and reduces located counts. Place-name homonyms remain: Newcastle in England is sometimes tagged to Maine, which inflates Maine's lift. Smaller homonyms (Newport in Wales tagged to Oregon, St James parish in Jamaica tagged to Missouri) account for a minority of those states' sampled articles.
- **Outlet mix.** The index over-represents English-language outlets. This shapes the geography, and countries with few indexed outlets have unstable lifts.
- **Research and patent counts.** These match titles only. Office shares reflect filing practice; utility models are numerous in China.

Data availability

The dataset (article sample, monthly and country tables, research and patent tables, all metrics) is released under CC BY-NC 4.0 with this paper. The sample holds 25,139 of 101,077 matched articles to 31 July 2026. Full article text, headlines, publishers, later articles and other topics are served by the Prism News API: <https://github.com/fliarbi/prism-news-api> (base URL <https://radar-api.fliarbi.com/news>). A worked query: `prism-news trends "waste management" --since 2019-01-01 --until 2026-07-31 --granularity monthly`.

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