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RECEIVED 04 November 2024

ACCEPTED 14 March 2025

PUBLISHED 08 April 2025

CITATION

Roger-Monzó V and Castelló-Sirvent F (2025)
The medium is the message... Also, in the
academy? Exploring the influence of
environment policy think tanks.
Front. Polit. Sci. 7:1522697.
doi: 10.3389/fpos.2025.1522697

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The medium is the message... Also, in the academy? Exploring the influence of environment policy think tanks

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This research aims to analyze how think tanks influence scholars' academic debate. Specifically, the influence strategies followed by think tanks specialized in environmental policy through funding scientific articles in high-impact academic journals are examined. Articles published between 2008 and 2023 ($n = 3,502$) in scientific journals indexed in Journal Citation Reports (JCR) according to the Science Social Sciences Citation Index (SSCI) and Science Citation Index Expanded (SCIE) were analyzed. Their impact was assessed in terms of number of citations ($n = 124,933$) and Normalized Impact per Year (NIY). Two sub-periods were constructed, before and after the start of the 2030 Agenda, to analyze the academic influence strategies of think tanks specialized in the study area, analyzing co-funding strategy and the most notable changes in the areas of interest and preference for funding think tanks. VOSviewer 1.6.20 was used to analyze the corpus of scientific publications in both periods. The results suggest that think tanks use financing for scientific research to boost their presence and influence in the academic debate. This trend intensified after the start of the 2030 Agenda, and several think tanks detected co-financing strategies. This exploratory study represents a novelty in the literature on the academic influence of think tanks. The main contribution of this article is to propose an analysis methodology that can be replicated in other areas of study and to offer evidence on the impact strategies of think tanks in the academic debate.

KEYWORDS

think tank, environment policy, academic debate, scholars, 2030 Agenda

1 Introduction

Think tanks are organizations dedicated to generating research and studies to influence and advise the political class and society (Misztal, 2012; Stone, 2007) that leverage objective scientific analysis to influence policymaking (Lyu et al., 2023). Like universities and political parties, think tanks present possible solutions to societal challenges (Castillero-Ostio et al., 2025). In this context, it is common for these institutions to transcend the political boundary and perpetuate their influence in the social sphere through the media (Almiron and Xifra, 2021; Landry, 2021). The ability of think tanks to influence the media narrative is due, in part, to their ability to establish close relationships with the media (McDonald, 2014) and present complex information in an accessible and persuasive way for the general public and policymakers (Medvetz, 2012). This idea is linked to McLuhan's (1964) theory on how the medium can modify the perception of the message. In this sense, think tanks can expand their impact by adapting their messages to different media formats. Scholars have analyzed and evaluated the influence of think tanks on the media, both in print and on television, radio or

digital channels (Castillo-Esparcia et al., 2017; Castelló-Sirvent and Roger-Monzó, 2021; Castelló-Sirvent et al., 2021; Roger-Monzó and Castelló-Sirvent, 2020; Lewis and Cushion, 2019; McDonald, 2014; Castillo-Esparcia et al., 2020; Castillo and Smolak, 2016, 2017). Their impact has been diverse, depending fundamentally on the communication strategies used, the alignment with government agendas, and the ideological orientation (Lalueza and Girona, 2016; McDonald, 2014; Rich and Weaver, 2000; Roger-Monzó and Castelló-Sirvent, 2020).

Anderson et al. (2017) define think tanks as entities that combine research, journalism, and political activism. The authors emphasize that the pre-eminence of these institutions has increased in recent decades due to their ability to quickly and efficiently promote knowledge in multiple social fields: political, economic, and media. In this sense, previous research highlights that think tanks act at the intersections of various social contexts, enabling their influence in multiple sectors simultaneously. They are formed as “border organizations” due to their ability to move between these fields (Medvetz, 2012). Similarly, think tanks are considered “brokers” of knowledge, facilitating the exchange between diverse actors and sectors, which has been vital in disseminating ideas and policies (Ansel et al., 2009).

As boundary organizations think tanks work with actors from diverse spheres and, importantly, draw “their own legitimacy from these other spheres” (Pautz, 2020, p. 5). In this context, Campbell and Pedersen (2014) explore how think tanks have complemented or transformed existing “knowledge regimes,” that is, the systems of organizations and institutions dedicated to producing and integrating knowledge into policy formulation.

Think tanks collaborate closely with universities, media, and other actors in policy formulation and evaluation (McGann and Messner, 2023; González Hernando and Williams, 2018). Not surprisingly, these organizations are part of widely funded networks that connect media outlets, political parties, interest groups, corporations, international organizations, civil society organizations, and civil service bureaucracies (Anderson et al., 2017; Pautz, 2020).

The reputation of think tanks is essential, as they lack the institutional legitimacy inherent to universities, which enjoy historical recognition as knowledge generators. This legitimacy of the research produced within them is reinforced by an accepted system of merit evaluation based on the scientific impact of their academic publications (Chuliá, 2018). According to González Hernando and Williams (2018), peer-reviewed articles in high-impact scholarly journals remain essential for obtaining a position of academic authority.

On the other hand, both think tanks and universities share an interest in producing and disseminating knowledge (Chuliá, 2018), although their agendas do not always align (Abelson, 2024). Traditionally, universities have emerged as the leading knowledge producers, and their research has impacted public policy. However, the growing influence of think tanks has challenged this hegemony, becoming major competitors of universities in generating knowledge and expert analysis (Almiron and Xifra, 2021), increasingly occupying spaces previously dominated by academic public intellectuals (Misztal, 2012). Think tank experts have replaced academic intellectuals in many public debates, particularly in the media, where they present themselves as authoritative voices (Posner, 2001). This change is because think tanks effectively produce accessible and timely

knowledge. However, their ideological objectives call into question their independence and critical commitment, which characterize academic intellectuals (Misztal, 2012).

In this context, universities have difficulties competing with think tanks regarding media and political impact since they need more resources or strategies to position their research on the media or political agenda (Wiarda, 2015; Anderson et al., 2017). Although academic research by universities is recognized for its rigor, it tends to have a more limited circulation because it is not always adapted to the immediate demands of public debate. This circumstance could affect their influence on certain political decisions (Dumas and Anderson, 2014), although their contributions are usually integrated into public agendas in the long term (Wu, 2018). “While university research is oriented towards disciplinary debates and publication in academic outlets, think tank research is typically oriented towards current policy debates and more accessible publications aimed at policymakers” (Christensen and Holst, 2020, p. 226–227). Competition between academic institutions and the success of think tanks when they attract media and political attention (Anderson et al., 2017) have motivated universities to initiate programs to encourage their visibility in the media to enhance their ability to influence public debate and position their research as a key resource for decision-making (González Enríquez, 2018).

Schlesinger (2009) describes think tank experts as “media intellectuals” whose ability to simplify complex problems for broad audiences has made them more visible in public discourse than their academic counterparts. Think tanks offer alternative channels for advising policymakers, challenging the primacy of academia and research institutes in providing knowledge (Craft and Howlett, 2013). Many think tank contributors are university researchers, but their research is viewed with reservations by those solely engaged in academic research. The reasons are twofold: such research is attributed with less scientific rigor; think tanks operate as collaborators of established elites, to whom they ultimately legitimize and justify (Chuliá, 2018).

Some academics seek a more direct impact on public policy, but funding models limit their ability to act as agents of change. In many cases, they depend on funding from organizations that may compromise their ability to conduct independent research (Slaughter and Rhoades, 2004). Therefore, it is confirmed that there are not two types of researchers but two forms of activity (González Enríquez, 2018).

The ambivalence between the search for academic legitimacy and the ideological agenda of think tanks contributes to the selective dissemination of knowledge. This circumstance raises questions about its impact on the quality of public debate and democratic deliberation (Christensen and Holst, 2020). In the 21st century, think tanks face an “epistemic crisis” motivated by losing faith in experts and information contamination and overload (Pautz, 2020). However, “the scientific attitude allows the persuasive role of think tanks to be filled with legitimate content” (Almiron and Xifra, 2021, p. 113) since “without expert knowledge, a think tank is a mere instrument of influence or even propaganda” (Almiron and Xifra, 2021, p. 149). Hagland (2023) suggests that academic publications of think tanks serve as a significant indicator of their influence on public policy. Think tanks affect academic communications by publishing research accepted in scientific journals, indicating the acceptance of their ideas in academia (Douglass and Tanner, 2012).

As think tanks seek to influence public policymaking by producing and disseminating specialized knowledge, they need to exert significant influence on the academic debate through various tactics, such as collaborating with universities to leverage their academic credibility and the intellectual resources these institutions can offer (Abelson, 2024). Although think tanks have different priorities in the area of research, some of these habitual actions take the form of employing highly trained teams of researchers (Lyu et al., 2023), many of them with PhDs in specific areas, to offer high-quality research products (Wu, 2018; Weaver, 1989). “Only by first ensuring high standards and high quality of research results will it be possible to further influence the decisions of policymakers” (Wu, 2018, p. 33). Chuliá (2018) points out that the reports and analyses required by think tanks are often carried out by university professors who apply criteria of intellectual demand and scientific rigor to their work. Wu (2018) agrees with this idea, adding the drive for interdisciplinary studies integrating diverse perspectives to address complex problems. It also highlights the implementation by various think tanks of rigorous internal review mechanisms to ensure the objectivity and impartiality of their research. Furthermore, it underlines that some think tanks have created their own graduate schools to combine scientific research with the training of future experts and thus prioritize academic excellence as the basis of their influence (Wu, 2018).

In addition, think tanks build extensive networks of experts who act as advisors or affiliated researchers. This allows them to maximize their influence, access various perspectives and expertise, and expand their analytical capacity (McGann and Messner, 2023). University-affiliated think tanks must preserve their autonomy to operate effectively and maintain their influence in the academic debate. This independence allows them to choose research topics and collaborate with experts without external interference, which is essential to maintain the integrity and relevance of their research and influence the academic debate (Lyu et al., 2023). These actions position think tanks as a reference source on specific topics, granting them scientific legitimacy and amplifying their impact in the academic environment.

This article contributes to the academic literature by better understanding the impact of think tanks in this context. The media influence of think tanks has received greater scholarly attention than the limited attention devoted to their effect on the scientific debate. At the same time, the publication of scientific articles subject to double-masked peer review overcomes the limitations of perception and credibility positioning of university researchers who rely on funding from think tanks. The gap in research on the influence strategies of think tanks on the academic debate underlines the need to examine how these institutions influence the research agenda. Unlike their visible influence on the media, their impact among scholars is more subtle but equally significant.

The influence strategies of think tanks on the academic debate through funding research and publications can be analyzed using Marshall McLuhan's theory (the medium is the message). Thus, the medium through which a message is transmitted influences the perception of its content and, by extension, how society assimilates or interprets that message. This idea can be applied to analyzing how think tanks, acting as intermediaries in producing and disseminating academic knowledge, can condition research content, the perception of their proposals, and the legitimacy of certain narratives within the educational field.

This article aims to conduct an exploratory analysis of how think tanks impact the academic debate of scholars, specifically through their scientific publications in high-impact journals. Articles published between 2008 and 2023, funded by think tanks specialized in environmental policy, were examined. Additionally, two sub-periods were constructed before and after the start of the 2030 Agenda, and the evolution of the areas of interest of the think tanks was evaluated. VOSviewer 1.6.20 was used to compare the corpus of scientific publications and the main international collaboration networks between authors who published these articles.

This research significantly contributes to the literature on the influence of think tanks, providing valuable insights into how these organizations introduce and moderate their message in high-impact academic forums. The main novelty of this study is that it offers a guide to researchers and practitioners on the evolution of power dynamics of environmental policy think tanks after the start of the 2030 Agenda, a topic of great relevance and interest in the current academic and policy landscape. By understanding these power dynamics, researchers and practitioners can better navigate the academic and policy landscape, making informed decisions and contributing to the advancement of environmental policy.

The article is structured as follows: First, the materials and methods section is presented, showing the process of building the database of articles used and the primary analysis methodologies applied. Next, the results of the research are presented according to the trends identified in the generic strategies of funding academic research, the specific plan of influence and scientific impact, the analysis of the central thematic clusters of research funded by think tanks, and the strategies of simultaneous co-funding of research by more than one think tank. Finally, the discussion section presents the main findings regarding the evolution of the strategy, preferred funding themes, and co-funding strategies to establish the conclusions of the article, its limitations, and suggestions for future lines of research.

2 Materials and methods

A bibliometric analysis is carried out as it allows a quantitative and qualitative perspective to determine the degree to which think tanks manage to position their interests, narratives, and priorities in the academic field. This methodology facilitates the analysis of metrics (e.g., volume of publications, collaboration between authors, and representative keywords), focusing on think tanks' participation in academic production. Thus, it is possible to determine their capacity to influence scientific knowledge and global research agendas.

The think tanks included in the Global Go To Think Tank Index 2020 Report were selected within the environmental policy category (McGann, 2021), given that it was our object of study. This category provides a sample of 99 think tanks. This ranking is used because it is a consolidated reference in the analysis of think tanks, and its methodology combines expert evaluation, surveys, and impact analysis. It should be noted that this index identifies some entities as think tanks, although they have not traditionally been considered as such. This is the case of the United Nations Environment Programme (UNEP), which is defined as a think tank for its influence on policies and dissemination of ideas related to the environment, generation of knowledge, and impact on global strategic thinking.

Web of Science was used, and all articles published in journals indexed in the Journal Citation Reports (JCR) were selected, specifically in the Science Social Sciences Citation Index (SSCI) and Science Citation Index Expanded (SCIE). This established as a search criterion that these articles had obtained funding from one of the think tanks under study at any time and in any category of Web of Science. To search, both names of each think tank were used, original and standardized in English.

The Web of Science database results were grouped into two subsamples, according to two periods. The periods were constructed by setting the beginning of the 2030 Agenda as the threshold, taking into account the emerging issues driven by the sociotechnical transitions enacted by the Sustainable Development Goals (SDGs) (Sapinski, 2019; Kickbusch and Hanefeld, 2017) and by bibliographic evidence on the transformation of the academic debate on sustainability and environment policy from the threshold that 2015 represents (Roger-Monzó et al., 2023).

Period 1 included articles published from the first article funded by a think tank (2008) to the year before the beginning of the 2030 Agenda (2015). Period 2 included articles published from the start of the 2030 Agenda (2016) to 2023.

Next, following Castelló-Sirvent (2022), each article's Normalized Impact per Year (NIY) was calculated. The Average Impact per Year (AIY) of the articles funded by each think tank was calculated for each of the two periods according to the average NIY of the articles funded by each think tank.

Additionally, the bibliometric software VOS viewer 1.6.20 (Van Eck and Waltman, 2010) was used to perform a keyword co-occurrence analysis for the articles included in each subsample to identify the main thematic clusters of each period. VOS viewer allows mapping the academic production of a specific topic (López-Robles et al., 2021).

3 Results

3.1 Think tanks and trends in their academic research funding strategies

According to the 2020 Global Go To Think Tank Index Report Ranking (McGann, 2021), 99 think tanks specializing in environmental policy were selected. Table 1 shows the total number of think tanks by economic area. The United States and the European Union account for 42% of the think tanks studied, and think tanks established in the BRICS countries (Brazil, Russia, India, China, and South Africa) represent 15% of the total analyzed.

From a perspective of the dynamic evolution of academic influence strategies of think tanks, the available evidence suggests that this type of organization used research funding with increasing

intensity over the years analyzed. The results (Table 2 and Figure 1) show a constant evolution trend in the number of articles funded by think tanks specializing in environmental policy.

The total period analyzed begins in 2008, when the first article funded by a think tank under study was published, and ends in 2023. In these 21 years, 3,502 articles were funded in JCR-indexed journals, and the impact of this think tank strategy obtained 124,933 citations.

In 2021, the highest number of scientific articles funded by think tanks was recorded, although the articles published in 2016 ($n = 275$) obtained the highest level of impact in the academic debate (12,603 citations).

This indicates that think tanks have generated research with a strong influence in the academic community, in addition to increasing the number of publications. The discrepancy between the volume of publications and their impact reflects that the success of think tank strategies does not depend solely on the number of articles published but also on their ability to address relevant issues and establish narratives that resonate in the global academic debate.

According to the analysis by period, Table 3 shows the increase in funding activities recorded in the academic influence strategy of think tanks specialized in environment policy.

Period 2 saw an increase of over 140% in academic output funded by think tanks in JCR journals. Regarding relative academic impact per year, the available evidence also shows an increase in AIY in Period 2 compared to Period 1.

3.2 Financing of academic production and scientific impact

Table 4 shows the think tanks under study and reports their name, countries, operating languages, and foundation years. Table 5 shows the sources of funding for each think tank.

From an individual analysis perspective of the academic influence strategies implemented by think tanks in both periods, the results suggest substantial heterogeneity in their funding behavior and impact on academic influence. Table 6 reports the academic production funded by think tanks specializing in environmental policy according to articles published in JCR-indexed journals. The number of articles, the total impact, and the average normalized impact (AIY) are reported for both periods.

In the first period (P1), the think tanks with the highest academic output were Earth Institute, with 100 articles; the United Nations Environment Programme (UNEP), with 90 publications; and the CGIAR, with 80 articles. These institutes were also the leaders in the number of funded research projects, suggesting a strong strategic focus on generating knowledge on environmental and sustainable issues.

In terms of academic impact, assessed through the number of citations, Earth Institute is again in first place with 10,022 citations, reflecting the influence of its research in the educational community. It is followed by UNEP with 8,187 citations and CGIAR with 7,548, evidencing its relevance in sustainability and environmental development research.

Let us consider the Average Impact per Year (AIY), which adjusts the influence of each publication based on the time elapsed from the publication of an article until the time of analysis. The Intergovernmental Panel on Climate Change (IPCC) stands out with

TABLE 1 Think tanks.

Economic area	Number
United States	14
European Union	28
BRICS	15
Other countries	42

TABLE 2 Evolution of funded scientific articles.

Year	Articles	Citations	AIY
2008	43	3,495	5.1
2009	120	8,917	5.0
2010	115	6,080	3.8
2011	109	6,968	4.9
2012	126	9,684	6.4
2013	168	9,587	5.2
2014	160	7,581	4.7
2015	231	12,418	6.0
2016	275	12,603	5.7
2017	264	10,882	5.9
2018	274	10,835	6.6
2019	303	8,421	5.6
2020	314	6,971	5.6
2021	372	6,671	6.0
2022	299	2,691	4.5
2023	329	1,129	3.4

an AIY of 28.8, highlighting its high relevance and visibility. Other think tanks with a high AIY include the Center for Energy and Environmental Policy Research (10.9) and the Global Green Growth Institute (9.4). This result indicates that the publications of these think tanks have been incredibly influential and have had a sustained impact over time.

In the second period (P2), some notable additions of think tanks did not fund publications in the first period (P1) but actively contributed in P2, offering evidence of the adoption of active strategies of academic influence. A representative case of this trend is Chatham House, which entered with the funding of 6 articles and obtained an AIY of 3.6, highlighting its focus on research with a moderate but constant impact. Another relevant new entrant is the Environmental Law Institute, which, with only six funded articles, achieved an extremely high AIY of 47.2, indicating that its research had an exceptionally significant impact in the academic context.

In addition, think tanks such as the Danish Institute for International Studies and the International Institute for Environment and Development contributed 13 and 11 publications, respectively, with an AIY ranging from 2.2 to 3.7, indicating a moderate but influential presence in the environmental and sustainable development field. Although with only four publications, the African Centre for Technology Studies achieved an AIY of 3.3, highlighting its specific focus on technology and sustainability on the African continent.

These new emerging strategies for funding scientific production show that after the start of the 2030 Agenda, the actors that funded research based on environmental and international governance issues diversified. This expanded the network of influences in the academic field and strengthened the dialogue around global sustainability. This evidence shows that the academic influence strategy became widespread among environmental policy think tanks, taking advantage of the momentum of the 2030 Agenda.

During the second period (P2), Earth Institute and UNEP continued to lead in the number of articles funded, with 183 and 154,

respectively. This demonstrates the consistency of these institutions in supporting environmental academic production. Also noteworthy are the CGIAR, with 155 publications, and the Chinese Research Academy of Environmental Sciences, which significantly increased its production with 304 articles, positioning itself as a critical player in this period.

Regarding the impact measured in citations, the strategy followed by Earth Institute obtains 7,106 citations, while UNEP reaches 6,115, both remaining the most influential in the academic community. However, the World Resources Institute showed a notable increase in its scientific impact strategy, with 4,737 citations, reflecting the effectiveness of its research in the period.

In terms of average annual normalized impact, the leaders are the World Resources Institute (AIY = 12.5), Basque Centre for Climate Change (AIY = 12.4), and Global Green Growth Institute (AIY = 11.7). This increase in AIY for these think tanks suggests a strengthening in the relevance of their research, endorsing the success of their academic influence strategies, given that they achieve a greater reach in terms of citations and a sustained influence adjusted to the temporal analysis.

These results underline that, in both periods, some think tanks have managed to position themselves by the number of articles funded and by the impact of their research, consolidating their influence on cutting-edge issues of knowledge in sustainability and environmental policies.

In analyzing disappearances in the second period (P2), some think tanks that funded research in the first period (P1) stopped doing so in P2. A notable case is the Institute of Public Enterprise, which in P1 had funded nine articles with an AIY of 2.2. Its absence in the second period indicates a change in its funding strategy or research priorities, affecting its visibility in the academic field.

Another think tank that did not appear in the second period was Civic Exchange. This institution in P1 had funded four publications, obtaining its influence strategy a high AIY (6.0). Its disappearance in P2 suggests a possible redirection of its strategic focus toward other avenues and decreased resources destined for academic production. Likewise, the Independent Institute and the Sustainable Development Policy Institute stopped funding publications. However, in the first period, they only contributed a limited number of articles, showing a weak commitment to the strategy of academic influence before the 2030 Agenda.

According to the evidence from this exploratory study, the disappearance of these think tanks in the second period suggests changes in their strategies for disseminating ideas, weakening the strategic line of academic influence and affecting their ability to influence the scientific debate.

Between the two periods analyzed, several think tanks experienced a notable growth in the number of articles funded. Earth Institute stands out, as it increased its production from 100 articles in P1 to 183 in P2, consolidating itself as one of the most significant contributors to environmental research. Similarly, the Chinese Research Academy of Environmental Sciences increased its participation from 49 to 304 articles, representing an increase of more than 600% in its strategy of funding scientific research, becoming one of the most active think tanks in P2. Another significant example is the United Nations Environment Programme (UNEP), whose scientific production funded in high-impact journals evolved from 90 articles in P1 to 154 articles in P2. This production growth reinforces the strategy of influencing the academic debate around environmental

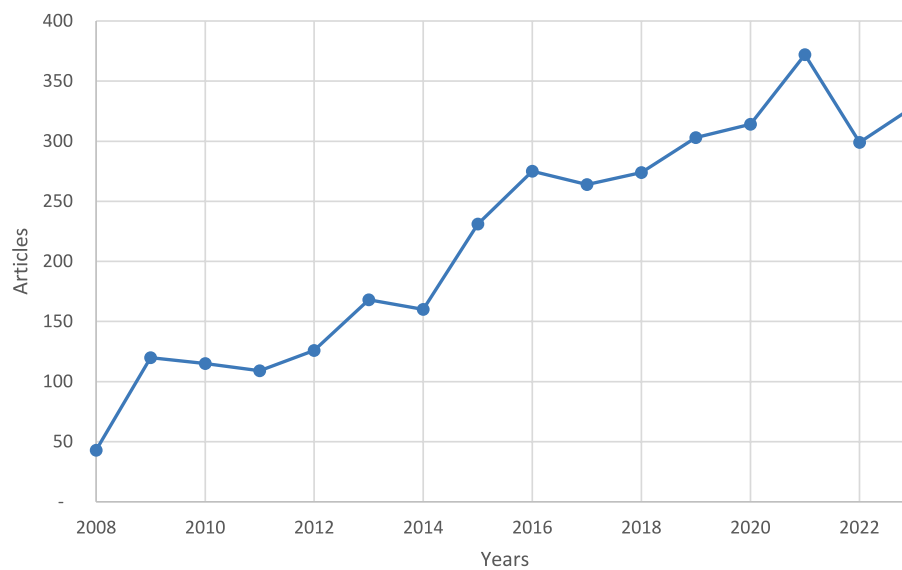


FIGURE 1
Financing tren.

TABLE 3 Articles, citations, and AIY for periods.

Period	Years	Articles	Citations	AIY
Period 1	2008–2015	1,072	64,730	5.2
Period 2	2016–2023	2,430	60,203	5.4

policy. In this way, these think tanks maintain and increase their academic presence and expand their capacity to influence sustainability and environmental development issues. These increases indicate a strategic evolution aimed at increasing the funding available for research that promotes solutions and policies around critical ecological challenges.

Regarding academic impact, several think tanks significantly increased the number of citations received between the two periods. World Resources Institute, for example, went from 564 citations in P1 to 4,737 in P2, which shows a drastic increase in the influence of its publications. Likewise, the Chinese Research Academy of Environmental Sciences registered a remarkable increase in its capacity for scientific influence measured in the citation count of articles funded by the think tank. Citations increased from 1,531 in P1 to 5,779 in P2, which reinforces the relevance of its impact strategy in the field of environmental research in the second period. International Institute for Applied Systems Analysis also had a notable increase, going from 1,574 to 3,895 citations, consolidating itself as an influential player in sustainable research. These increases in citations reflect an improvement in the quality or relevance of their research, allowing them to articulate strategies of influence in the academic debate.

When evaluating the growth in AIY recorded between both periods, some think tanks stand out for their notable boost in normalized influence. World Resources Institute experienced a noteworthy increase in its AIY, going from 5.2 in P1 to 12.5 in P2, suggesting a sustained growth in the relevance of its research after the start of the 2030 Agenda. Another relevant case is the Basque Centre for Climate Change, whose AIY increased from 4.4 in P1 to 12.4 in P2,

evidencing a more significant influence of its publications in the academic field since the establishment of the SDGs. Global Green Growth Institute, for its part, also raised its AIY from 9.4 to 11.7, consolidating itself as a critical player in green growth research. These increases in AIY reflect that its study has gained relevance and has maintained a sustained and competitive impact in the international academic discussion.

Analyzing both periods, clear winners emerge according to their academic influence strategy in each of the three variables studied: funded academic output, scientific impact in citations, and average annual normalized impact (AIY). Regarding academic output, the Chinese Research Academy of Environmental Sciences stands out with an increase of 255 articles, going from 49 in P1 to 304 in P2. This massive growth reflects a strategic effort to expand its influence and generate a greater research volume, possibly driven by the growing relevance of environmental issues in China and worldwide.

In terms of scientific impact, measured in the number of citations, the World Resources Institute stands out with an increase of 4,173 citations, going from 564 in P1 to 4,737 in P2. This notable increase in citations indicates that its recent publications have been more prolific, influential, and relevant in the academic community. Chinese Research Academy of Environmental Sciences also shows a significant increase in citations, with 4,248 more in P2 than in P1, consolidating its position on essential sustainability and environmental policy issues.

In terms of average annual normalized impact (AIY), the World Resources Institute is in first place, with an increase of 7.3 points in AIY (from 5.2 in P1 to 12.5 in P2), closely followed by the Basque Centre for Climate Change, which increased its AIY by 8 points (from 4.4 to 12.4). This increase reflects their research's absolute impact, quality, and sustained influence over time, highlighting them as reference centers in their field. World Resources Institute and Chinese Research Academy of Environmental Sciences stand out as the winners in these indicators due to their ability to increase their publications' volume impact and relevance between both periods.

TABLE 4 Think tanks analyzed.

Think tank	Country	Languages	Year
Ecologic Institute	Germany	English, German	1995
Stockholm Environment Institute	Sweden	English, Swedish	1989
Potsdam Institute for Climate Impact Research	Germany	English, German	1992
Resources for the Future	United States	English	1952
Center for Climate and Energy Solutions	United States	English	2011
Worldwatch Institute	United States	English	1974
Third Generation Environmentalism	United Kingdom	English	2004
World Resources Institute	United States	English	1982
Wuppertal Institute for Climate, Environment and Energy	Germany	English, German	1991
Copenhagen Consensus Center	Denmark	English	2006
Brookings Institution	United States	English	1916
Chatham House	United Kingdom	English	1920
International Institute for Sustainable Development	Canada	English, French	1990
Center for Environmental Research	Germany	English, German	1991
Institute du développement durable et relations internationales	France	French, English	2003
Centre for Science and Environment	India	English, Hindi	1980
Centre for Development and the Environment	Norway	Norwegian, English	1990
United Nations Environment Programme	Kenya	English, French	1972
Centre for Economic and Ecological Studies	Switzerland	German, English	1984
Ashoka Trust for Research in Ecology and the Environment	India	English, Hindi	1996
Centre for European Policy Studies	Belgium	English	1983
Energy and Resources Institute	India	English, Hindi	1974
Earth Institute	United States	English	1995
International Institute for Environment and Development	United Kingdom	English	1973
Chinese Academy for Environmental Planning	China	Chinese	2001
Center for International Forestry Research	Indonesia	English, Indonesian	1993
Forum for the Future	United Kingdom	English	1996
Institute for European Environmental Policy	United Kingdom	English	1976
African Wildlife Foundation	Kenya	English, Swahili	1961
RAND Corporation	United States	English	1948
Centro Brasileiro de Relações Internacionais	Brazil	Portuguese, English	1998
Australia Institute	Australia	English	1994
Fondazione Eni Enrico Mattei	Italy	Italian, English	1989
Centre for Policy Research	India	English, Hindi	1973
CGIAR, FKA Consultative Group on International Agricultural Research	United States	English	1971
Centre for Population and Environmental Development	Nigeria	English	1998
Chinese Research Academy of Environmental Sciences	China	Chinese	1978
Development Alternatives	India	English, Hindi	1983
Institute for Global Environmental Strategies	Japan	English, Japanese	1998
Centre for Sustainable Development	Iran	Persian, English	1996
Property and Environment Research Center	United States	English	1980
Research Institute of Innovative Technology for the Earth	Japan	English, Japanese	1990
New Zealand Climate Change Research Institute	New Zealand	English	2008
Danish Institute for International Studies	Denmark	Danish, English	2003
Competitive Enterprise Institute	United States	English	1984

(Continued)

TABLE 4 (Continued)

Think tank	Country	Languages	Year
International Institute for Applied Systems Analysis	Austria	English, German	1972
Civic Exchange	China	English, Chinese	2000
African Centre for Technology Studies	Kenya	English, Swahili	1988
Institute for Sustainable Development	Poland	Polish, English	1990
Öko-Institut	Germany	German	1977
The Centre for Applied Research	Botswana	English	1995
Program on Energy and Sustainable Development	United States	English	2001
Departamento Ecología y Territorio, Facultad de Estudios Ambientales y Rurales	Colombia	Spanish	1980
Arava Institute for Environmental Studies	Israel	English, Hebrew	1996
Environment for Development Initiative	Sweden	English, Swedish	2005
Integrated Research and Action for Development	India	English, Hindi	2001
Heschel Center for Environmental Learning and Leadership	Israel	Hebrew, English	1998
Thailand Environment Institute	Thailand	Thai, English	1993
Global Development Research Center	Japan	English, Japanese	1990
Pembina Institute	Canada	English, French	1985
Natuur en Milieu	Netherlands	Dutch, English	1972
International Center for Climate Governance	Italy	Italian, English	2009
Instituto de Estudios Avanzados en Desarrollo	Bolivia	Spanish, English	2006
Environment and Natural Resources Foundation	Argentina	Spanish	1985
Asociacion Nacional para la Conservación de la Naturaleza	Panama	Spanish	1985
Sustainable Development Policy Institute	Pakistan	English, Urdu	1992
Institute of Water Policy	Singapore	English	2008
Adam Smith Institute	United Kingdom	English	1977
Center for Energy and Environmental Policy Research	United States	English	1973
Heinrich Böll Stiftung	Germany	German, English	1997
Agora Energiewende	Germany	German, English	2012
Basque Centre for Climate Change	Spain	Spanish, Basque	2008
Center for Science of Environment Resources and Energy	Japan	Japanese, English	1990
Central Research Institute of Electric Power Industry	Japan	Japanese, English	1951
Centre for Strategic Research and Analysis	United Kingdom	English	2008
Institute for International Political Studies	Italy	Italian, English	1934
Centro Ecuatoriano de Derecho Ambiental	Ecuador	Spanish	1996
Chinese Environmental Protection Foundation	China	Chinese	1993
Consejo Latinoamericano de Ciencias Sociales	Argentina	Spanish, English	1967
Council on Energy, Environment and Water	India	English, Hindi	2010
Centre for Environmental Economics and Policy in Africa	South Africa	English, Zulu	2000
Centre for International Governance Innovation	Canada	English, French	2001
Frontier Centre for Public Policy	Canada	English	1999
Environment and Development Lab, Brown University	United States	English	2010
Institute of Public Enterprise	India	English, Hindi	1964
Intergovernmental Panel on Climate Change	Switzerland	English, French	1988
Korea Environment Institute	Republic of Korea	Korean, English	1993
LEADS International	Pakistan	English, Urdu	1990
Observer Research Foundation	India	English, Hindi	1990

(Continued)

TABLE 4 (Continued)

Think tank	Country	Languages	Year
Fundación Global Democracia y Desarrollo	Dominican Republic	Spanish	2000
Sasakawa Peace Foundation	Japan	Japanese, English	1986
Global Green Growth Institute	Republic of Korea	Korean, English	2012
Centro Euro-Mediterraneo sui Cambiamenti Climatici	Italy	Italian, English	2005
Institute of Environmental Studies	Zimbabwe	English, Shona	1980
Oxford Institute for Energy Studies	United Kingdom	English	1982
Centro Mexicano de Derecho Ambiental	Mexico	Spanish	1993
Independent Institute	United States	English	1986
Environmental Law Institute	United States	English	1969
Sustainable Development Brazilian Foundation	Brazil	Portuguese, English	1997

3.3 Analysis of thematic clusters of research funded by think tanks

Figures 2, 3 illustrate the thematic clusters for both periods, derived from a co-occurrence analysis based on the author's keywords. The clusters highlight the main themes and interconnections within the body of literature analyzed. The study was conducted by setting minimum thresholds of 5 and 10 keyword occurrences, respectively, to ensure the relevance and robustness of the clusters identified.

In Figure 2, the threshold of five keyword occurrences allowed for a broader exploration of connections, capturing more nuanced relationships among themes, including secondary topics. By contrast, Figure 3, with a stricter threshold of 10 occurrences, focuses on more dominant themes and their centrality within the discourse. This progression reflects the study's exploratory nature, aimed at identifying the most frequent topics and the evolving patterns of thematic relevance across the two periods. The visualized clusters and their interconnections provide insights into how the research landscape around climate change and related topics has shifted.

The colors assigned to the clusters do not have any inherent meaning, as the tool automatically generates them based on its clustering algorithm. Therefore, the same topic (e.g., "climate change") may appear with different colors in the two periods analyzed without implying any difference in its characteristics.

The available evidence reports eight thematic clusters in Period 1. Orange: research on sustainability and energy and studies on Indonesia. Dark blue: studies on institutions and governance and research on Africa and China. Green: studies on climate change adaptation, impact on morality, air quality, and global warming. Yellow: studies on temperature, precipitation, and streams. Light blue: research on coastal, marine animals, fisheries, and protected areas. Purple: articles on bushmeat hunting and Amazon impacts. Red: migration, agriculture, biodiversity, and conservation. Brown: deforestation and remote sensing.

The thematic analysis of Period 2 reports seven clusters: Red: linked-to materials (nitrogen, heavy metals, and phosphorus), water quality, biodiversity, and risk assessment. Yellow: linked to air pollution, sustainable development, and circular economy, policy, China, and COVID-19. Orange: remote sensing. Dark blue: energy, agriculture, gender, and impacts in India and Ghana. Purple:

adaptation and uncertainty in the face of climate change. Brown: Drought. Green: life cycle assessment, climate change mitigation, food security, deforestation, ecosystem services, governance, and studies on Indonesia. Light blue: climate analysis and research of rainfall systems.

The main clusters reflect significant patterns, validated through a manual review of the most representative articles. This approach combines automated analysis with critical interpretation, allowing us to identify predominant trends and contextualize results. The results of the comparative analysis between periods make it possible to observe how some topics, such as governance and adaptation, remain relevant, while others, such as the circular economy and COVID-19, emerge in response to new global contexts. The evolution of the clusters reflects the capacity of the climate research field to adapt to contemporary demands and priorities.

3.4 Strategies for co-financing academic production

The evidence shows that 19 think tanks followed co-funding strategies for high-impact scientific articles. Specifically, the International Institute for Sustainable Development (13 co-funded articles), the Center for International Forestry Research (6 co-funded articles), the CGIAR (5 co-funded articles), and Resources for the Future (4 co-funded articles) stand out. In this sense, the co-funding strategy by more than one think tank was applied to 32 articles published in JCR journals. Table 7 shows these articles according to the success of their academic influence strategy measured by the number of citations received. In addition, the NIY of the article, the title, and the think tanks that contributed to its production by providing financial support with the corresponding funding are reported. The following studies stand out for their high impact in relative terms, according to the Normalized Impact per Year (NIY): (1) Falchetta et al. (2019) funded simultaneously by Research Institute of Innovative Technology for the Earth and Central Research Institute of Electric Power Industry (NIY = 12.4); (2) Pegels and Lütkenhorst (2014), funded simultaneously by Thailand Environment Institute and Korea Environment Institute (NIY = 12.2); (3) Jagger and Shively (2014) funded simultaneously by Research Institute of Innovative Technology for the Earth and International Institute for Applied Systems Analysis (NIY = 6.5).

TABLE 5 Sources of funding.

Think tank	National government	Foreign governments	Foundations	Multilateral organizations	Private sector	Individuals	Members
Ecologic Institute		✓	✓				
Stockholm Environment Institute		✓	✓	✓			
Potsdam Institute for Climate Impact Research	✓		✓	✓			
Resources for the Future	✓		✓		✓		
Center for Climate and Energy Solutions			✓		✓		
Worldwatch Institute	✓		✓				
Third Generation Environmentalism			✓		✓		
World Resources Institute		✓	✓	✓	✓		
Wuppertal Institute for Climate, Environment and Energy	✓		✓	✓			
Copenhagen Consensus Center			✓		✓		
Brookings Institution	✓		✓		✓	✓	
Chatham House	✓		✓	✓			
International Institute for Sustainable Development	✓		✓	✓	✓		
Center for Environmental Research	✓		✓	✓			
Institute du développement durable et relations internationales	✓		✓	✓			
Centre for Science and Environment	✓		✓	✓			
Centre for Development and the Environment	✓		✓	✓			
United Nations Environment Programme	✓		✓	✓	✓		
Centre for Economic and Ecological Studies	✓		✓	✓			
Ashoka Trust for Research in Ecology and the Environment	✓		✓	✓	✓		
Centre for European Policy Studies	✓		✓	✓	✓		✓
Energy and Resources Institute	✓		✓	✓	✓		
Earth Institute	✓		✓		✓	✓	
International Institute for Environment and Development	✓		✓	✓	✓		
Chinese Academy for Environmental Planning	✓		✓	✓	✓		
Center for International Forestry Research	✓		✓	✓	✓		
Forum for the Future	✓		✓	✓	✓		
Institute for European Environmental Policy	✓		✓	✓	✓		
African Wildlife Foundation	✓		✓	✓	✓		

(Continued)

TABLE 5 (Continued)

Think tank	National government	Foreign governments	Foundations	Multilateral organizations	Private sector	Individuals	Members
RAND Corporation	✓		✓		✓	✓	
Centro Brasileiro de Relações Internacionais	✓		✓	✓	✓		✓
Australia Institute	✓		✓		✓	✓	
Fondazione Eni Enrico Mattei	✓		✓	✓	✓		
Centre for Policy Research	✓		✓	✓	✓		
CGIAR, FKA Consultative Group on International Agricultural Research	✓		✓	✓	✓		
Centre for Population and Environmental Development	✓		✓	✓	✓		
Chinese Research Academy of Environmental Sciences	✓		✓	✓	✓		
Development Alternatives	✓		✓	✓	✓		
Institute for Global Environmental Strategies	✓		✓	✓	✓		
Centre for Sustainable Development	✓		✓	✓	✓		
Property and Environment Research Center	✓		✓	✓	✓		
Research Institute of Innovative Technology for the Earth	✓		✓	✓	✓		
New Zealand Climate Change Research Institute	✓		✓	✓	✓		
Danish Institute for International Studies	✓		✓	✓	✓		
Competitive Enterprise Institute	✓		✓		✓	✓	
International Institute for Applied Systems Analysis	✓		✓	✓	✓		✓
Civic Exchange	✓		✓	✓	✓		
African Centre for Technology Studies	✓		✓	✓	✓		
Institute for Sustainable Development	✓		✓	✓	✓		
Öko-Institut	✓		✓	✓	✓		
The Centre for Applied Research	✓		✓	✓	✓		
Program on Energy and Sustainable Development	✓		✓		✓	✓	
Departamento Ecología y Territorio, Facultad de Estudios Ambientales y Rurales	✓		✓	✓	✓		
Arava Institute for Environmental Studies	✓		✓	✓	✓		
Environment for Development Initiative	✓		✓	✓	✓		
Integrated Research and Action for Development	✓		✓	✓	✓		

(Continued)

TABLE 5 (Continued)

Think tank	National government	Foreign governments	Foundations	Multilateral organizations	Private sector	Individuals	Members
Heschel Center for Environmental Learning and Leadership	✓		✓	✓	✓		
Thailand Environment Institute	✓		✓	✓	✓		
Global Development Research Center	✓		✓	✓	✓		
Pembina Institute	✓		✓	✓	✓		
Natuur en Milieu	✓		✓	✓	✓		
International Center for Climate Governance	✓		✓	✓	✓		
Instituto de Estudios Avanzados en Desarrollo	✓		✓	✓	✓		
Environment and Natural Resources Foundation	✓		✓	✓	✓		
Asociacion Nacional para la Conservación de la Naturaleza	✓		✓	✓	✓		
Sustainable Development Policy Institute	✓		✓	✓	✓		
Institute of Water Policy	✓		✓	✓	✓		
Adam Smith Institute	✓		✓	✓	✓		
Center for Energy and Environmental Policy Research	✓		✓	✓	✓		
Heinrich Böll Stiftung	✓		✓	✓	✓		
Agora Energiewende	✓		✓	✓	✓		
Basque Centre for Climate Change	✓		✓	✓	✓		
Center for Science of Environment Resources and Energy	✓		✓	✓	✓		
Central Research Institute of Electric Power Industry	✓		✓	✓	✓		
Centre for Strategic Research and Analysis	✓		✓	✓	✓		
Institute for International Political Studies	✓		✓	✓	✓		
Centro Ecuatoriano de Derecho Ambiental	✓		✓	✓	✓		
Chinese Environmental Protection Foundation	✓		✓	✓	✓		
Consejo Latinoamericano de Ciencias Sociales	✓		✓	✓	✓		
Council on Energy, Environment and Water	✓		✓	✓	✓		
Centre for Environmental Economics and Policy in Africa	✓		✓	✓	✓		
Centre for International Governance Innovation	✓		✓	✓	✓		
Frontier Centre for Public Policy	✓		✓	✓	✓		
Environment and Development Lab, Brown University	✓		✓	✓	✓		

(Continued)

TABLE 5 (Continued)

Think tank	National government	Foreign governments	Foundations	Multilateral organizations	Private sector	Individuals	Members
Institute of Public Enterprise	✓		✓	✓	✓		
Intergovernmental Panel on Climate Change	✓		✓	✓	✓		
Korea Environment Institute	✓		✓	✓	✓		
LEADS International	✓		✓	✓	✓		
Observer Research Foundation	✓		✓	✓	✓		
Fundación Global Democracia y Desarrollo	✓		✓	✓	✓		
Sasakawa Peace Foundation	✓		✓	✓	✓		
Global Green Growth Institute	✓		✓	✓	✓		
Centro Euro-Mediterraneo sui Cambiamenti Climatici	✓		✓	✓	✓		
Institute of Environmental Studies	✓		✓	✓	✓		
Oxford Institute for Energy Studies	✓		✓	✓	✓		
Centro Mexicano de Derecho Ambiental	✓		✓	✓	✓		
Independent Institute	✓		✓	✓	✓		
Environmental Law Institute	✓		✓	✓	✓		
Sustainable Development Brazilian Foundation	✓		✓	✓	✓		

TABLE 6 Results of the influence strategies.

Think tank	P1			P2		
	Articles	Citations	AIY	Articles	Citations	AIY
Ecologic Institute	1	15	1.5			
Stockholm Environment Institute	16	899	4.9	34	562	3.6
Potsdam Institute for Climate Impact Research	11	312	2.4	12	300	4.5
Resources for the Future	31	2,367	5.8	66	1,647	5.0
World Resources Institute	8	564	5.2	76	4,737	12.5
Wuppertal Institute for Climate, Environment and Energy	2	51	2.8	23	459	3.9
Copenhagen Consensus Center	1	31	2.8	7	70	2.1
Brookings Institution	17	948	5.1	28	1,072	5.8
Chatham House				6	71	3.6
International Institute for Sustainable Development	4	232	5.3	9	79	2.1
Center for Environmental Research	26	1,853	5.7	24	382	4.1
Centre for Development and the Environment	1	18	1.5	9	184	9.6
United Nations Environment Programme	90	8,187	8.4	154	6,115	9.3
Ashoka Trust for Research in Ecology and the Environment	8	290	3.1	22	249	3.3
Energy and Resources Institute	4	149	3.8	28	483	5.0
Earth Institute	100	10,022	8.8	183	7,106	8.0
International Institute for Environment and Development				11	133	2.2
Chinese Academy for Environmental Planning	8	373	4.2	7	165	4.3
Center for International Forestry Research	56	2,407	3.9	115	3,215	4.9
Forum for the Future	1	13	1.2	1	19	2.4
African Wildlife Foundation	30	1,333	3.7	36	628	3.5
RAND Corporation	51	4,678	7.9	92	2,205	4.8
Australia Institute	9	285	2.8	15	323	4.3
Fondazione Eni Enrico Mattei	4	104	2.8	14	574	7.8
Centre for Policy Research	1	97	10.8	10	82	1.9
CGIAR, FKA Consultative Group on International Agricultural Research	80	7,548	8.5	155	4,317	5.0
Centre for Population and Environmental Development				1	6	3.0
Chinese Research Academy of Environmental Sciences	49	1,531	3.1	304	5,779	4.9
Development Alternatives				6	114	2.8
Institute for Global Environmental Strategies	2	32	1.3	40	563	5.1
Centre for Sustainable Development	2	121	5.2	25	437	4.8
Property and Environment Research Center	13	453	3.1	14	206	3.0
Research Institute of Innovative Technology for the Earth	32	866	2.1	9	274	5.9
New Zealand Climate Change Research Institute	1	22	1.8	1	16	5.3
Danish Institute for International Studies				13	261	3.7
International Institute for Applied Systems Analysis	31	1,574	4.5	130	3,895	6.4
Civic Exchange	4	300	6.0			
African Centre for Technology Studies				4	84	3.3
Institute for Sustainable Development	14	505	3.2	231	2,415	3.0
Öko-Institut	1	35	3.5	1	24	4.8
The Centre for Applied Research				5	86	3.8
Program on Energy and Sustainable Development	2	24	1.0	3	30	2.2

(Continued)

TABLE 6 (Continued)

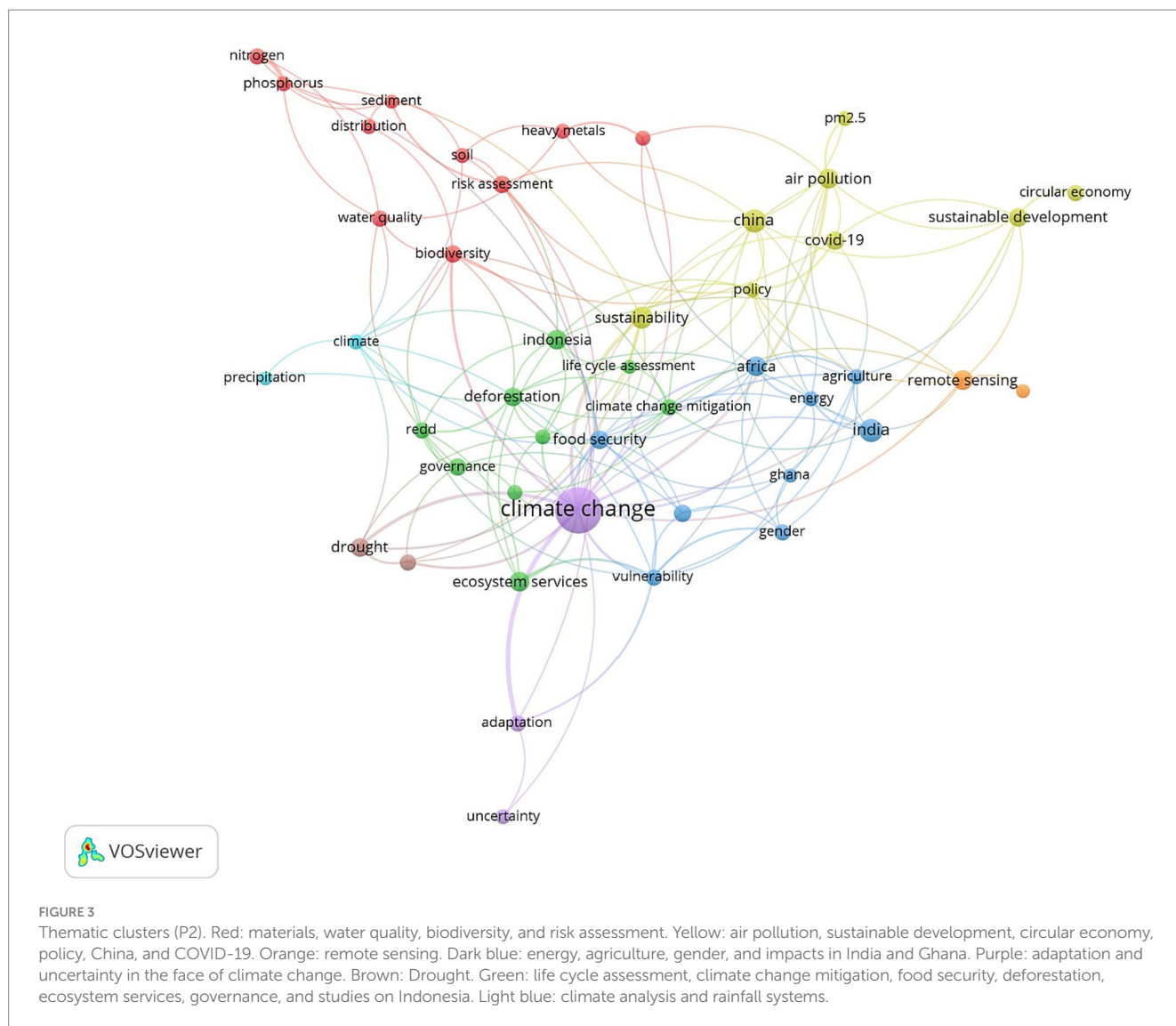
Think tank	P1			P2		
	Articles	Citations	AIY	Articles	Citations	AIY
Departamento Ecología y Territorio, Facultad de Estudios Ambientales y Rurales				1	11	2.2
Arava Institute for Environmental Studies	3	126	3.8	2	16	2.3
Environment for Development Initiative	14	852	6.0	44	907	4.7
Thailand Environment Institute	1	7	0.5			
Global Development Research Center	15	235	1.7	21	279	1.9
Natuur en Milieu	1	74	6.2	1	13	2.2
Environment and Natural Resources Foundation				3	29	3.8
Sustainable Development Policy Institute	2	21	0.9	3	6	0.8
Institute of Water Policy	8	538	6.2	39	872	4.3
Adam Smith Institute				1	3	3.0
Center for Energy and Environmental Policy Research	3	347	10.9	14	452	6.9
Heinrich Böll Stiftung	25	1,037	3.9	109	2,022	4.3
Agora Energiewende	1	54	4.9	4	189	6.3
Basque Centre for Climate Change	1	40	4.4	12	575	12.4
Central Research Institute of Electric Power Industry	40	1,197	2.4	21	111	1.2
Consejo Latinoamericano de Ciencias Sociales				1	0	0.0
Council on Energy, Environment and Water	1	6	0.7	2	29	2.9
Centre for Environmental Economics and Policy in Africa	5	156	2.5	2	7	0.5
Centre for International Governance Innovation	21	661	3.2	51	1,442	5.1
Institute of Public Enterprise	9	284	2.2			
Intergovernmental Panel on Climate Change	1	374	28.8	21	360	3.1
Korea Environment Institute	28	839	2.7	120	1,452	2.8
Fundación Global Democracia y Desarrollo	26	2,094	7.3	120	2,381	4.6
Sasakawa Peace Foundation	2	165	8.3	24	207	1.9
Global Green Growth Institute	4	375	9.4	15	1,222	11.7
Centro Euro-Mediterraneo sui Cambiamenti Climatici	5	347	6.7	15	375	3.7
Institute of Environmental Studies	23	1,353	4.5	9	114	2.0
Oxford Institute for Energy Studies				2	49	3.5
Centro Mexicano de Derecho Ambiental				4	42	2.0
Independent Institute				4	6	0.4
Environmental Law Institute				6	875	47.2

4 Discussion

This exploratory study has confirmed that think tanks deploy different strategies to impact the academic debate and, in this way, achieve greater legitimacy of the knowledge they disseminate. They found that they favor publishing scholarly articles in high-impact scientific journals through their funding. Likewise, by funding research, they contribute to building a knowledge network, maximizing their influence, and increasing their analytical capacity. This finding is in line with Abelson's approach (2024).

Although previous research maintains that obtaining funds from institutions such as think tanks could compromise the

independence of their studies (Slaughter and Rhoades, 2004), the strategies identified in this article are configured around high-impact journals subject to anonymous peer review. Following Chuliá (2018), this form of academic influence manages to unite the legitimization and justification of researchers and the universities they are affiliated with. Additionally, the evidence found shows that both the scholars and the think tanks whose funds financed their research preserve their academic reputation as the high-impact journals where they publish their articles are audited by institutions such as Clarivate to guarantee the quality of the peer review processes by SSCI and SCIE standards. However, this circumstance does not prevent think tanks from prioritizing specific topics and perspectives when financing research that favors their ideological



through the co-financing of research, contributing to the generation of academic alliances that maximize the analytical capacity of scholars and the possibilities of impact and influence of think tanks in the educational debate. Below, the themes of the main articles co-financed by the think tanks under study are highlighted.

Integrating eco-health with watershed management in ecological health is studied to reduce health inequalities and strengthen social-ecological resilience (Bunch et al., 2011). Related to changes in land use, Jagger and Shively (2014) analyze the impact of these on biomass use and respiratory health in Uganda, and Falchetta et al. (2019) assess electrification in sub-Saharan Africa.

In addition, some articles analyze fiscal policies, such as CO₂ taxes in Europe that affect sales of lower-emission vehicles (Klier and Linn, 2015) or occupational exposure to pollution in Kenya, which entails public health risks (Ngo et al., 2015). On carbon capture issues, Shitashima et al. (2013) assess techniques for detecting CO₂ leaks in underwater storage. The impact of deforestation on the use of biomass fuels in Uganda is also studied in terms of air quality and access to energy (Jagger and Kittner, 2017).

Regarding energy efficiency, homeowners' behavior toward insulation in Germany is analyzed using an agent-based model (Friege, 2016). Willingness to pay for electricity service improvements is examined in India, focusing on the role of social trust (Blankenship et al., 2019). On the other hand, adopting electric vehicles is explored, considering socioeconomic and policy factors in various countries (Zimm, 2021). Ethiopian agriculture is analyzed from a general equilibrium model to understand the economic effects of climate change (Gebreegziabher et al., 2016). The Governance Prism model is used in watershed management to understand the intersection between watershed management and public health (Bunch et al., 2014). In the context of ecosystem services, the demand for certification of these services is assessed under the Forest Stewardship Council framework (Jaung et al., 2016). Predator species dynamics in Canada, the impact of wildfires in boreal basins, and the economic costs of traffic restrictions in Beijing represent other research focuses on sustainability (Kennedy et al., 2018; Emmerton et al., 2019; Blackman et al., 2020).

The findings of the reviewed studies reflect the diversity of impacts in the sustainability and environmental policies field. Pegels

TABLE 7 Co-financed articles.

Citations	NIY	Article	Reference	Think tanks
122	12.2	Is Germany's energy transition a case of successful green industrial policy? Contrasting wind and solar PV	Pegels and Lütkenhorst (2014)	- Thailand Environment Institute - Korea Environment Institute
84	6.5	Promoting Health and Well-Being by Managing for Social-Ecological Resilience: the Potential of Integrating Ecohealth and Water Resources Management Approaches	Bunch et al. (2011)	- International Institute for Sustainable Development - Institute for Sustainable Development
66	6.6	Land use change, fuel use and respiratory. Health in Uganda	Jagger and Shively (2014)	- Research Institute of Innovative Technology for the Earth - International Institute for Applied Systems Analysis
62	12.4	A high-resolution gridded dataset to assess electrification in sub-Saharan Africa	Falchetta et al. (2019)	- Research Institute of Innovative Technology for the Earth - Central Research Institute of Electric Power Industry
53	5.9	Using Taxes to Reduce Carbon Dioxide Emissions Rates of New Passenger Vehicles: Evidence from France, Germany, and Sweden	Klier and Linn (2015)	- International Institute for Sustainable Development - Institute for Sustainable Development
46	5.1	Occupational exposure to roadway emissions and inside informal settlements in sub-Saharan Africa: A pilot study in Nairobi, Kenya	Ngo et al. (2015)	- Center for International Forestry Research - CGIAR, FKA Consultative Group on International Agricultural Research
32	2.9	Development of detection and monitoring techniques of CO ₂ leakage from seafloor in sub-seabed CO ₂ storage	Shitashima et al. (2013)	- Resources for the Future - Center for Energy and Environmental Policy Research
28	4.0	Deforestation and biomass fuel dynamics in Uganda	Jagger and Kittner (2017)	- Resources for the Future - Earth Institute
27	3.4	Increasing homeowners' insulation activity in Germany: An empirically grounded agent-based model analysis	Friege (2016)	- International Institute for Sustainable Development - Institute for Sustainable Development - Thailand Environment Institute
24	4.8	Explaining willingness to pay for pricing reforms that improve electricity service in India	Blankenship et al. (2019)	- Wuppertal Institute for Climate, Environment and Energy - Institute for Sustainable Development
24	8.0	Improving the understanding of electric vehicle technology and policy diffusion across countries	Zimm (2021)	- International Institute for Environment and Development - Environment for Development Initiative
21	2.6	Climate change and the Ethiopian economy: a CGE analysis	Gebreegziabher et al. (2016)	- Wuppertal Institute for Climate, Environment and Energy - Heinrich Böll Stiftung
20	2.5	Exploring Homeowners' Insulation Activity	Friege et al. (2016)	- United Nations Environment Programme - Center for International Forestry Research
20	2.0	Watershed Management and Public Health: An Exploration of the Intersection of Two Fields as Reported in the Literature from 2000 to 2010	Bunch et al. (2014)	- International Institute for Sustainable Development - Institute for Sustainable Development
16	2.0	Estimating demand for certification of forest ecosystem services: A choice experiment with Forest Stewardship Council certificate holders	Jaung et al. (2016)	- Center for International Forestry Research - CGIAR, FKA Consultative Group on International Agricultural Research
15	2.5	Offshore Prey Densities Facilitate Similar Life History and Behavioral Patterns in Two Distinct Aquatic Apex Predators, Northern Pike and Lake Trout	Kennedy et al. (2018)	- Center for International Forestry Research - CGIAR, FKA Consultative Group on International Agricultural Research
15	3.0	Long-Term Responses of Nutrient Budgets to Concurrent Climate-Related Stressors in a Boreal Watershed	Emmerton et al. (2019)	- International Institute for Sustainable Development - Institute for Sustainable Development

(Continued)

TABLE 7 (Continued)

Citations	NIY	Article	Reference	Think tanks
14	3.5	How costly are driving restrictions? Contingent valuation evidence from Beijing	Blackman et al. (2020)	- Fondazione Eni Enrico Mattei - International Institute for Applied Systems Analysis
14	2.3	Looking for Medium-term Conservation and Development Impacts of Community Management Agreements in Uganda's Rwenzori Mountains National Park	Jagger et al. (2018)	- International Institute for Sustainable Development - Institute for Sustainable Development
11	1.1	Confusion vs. clarity: Property rights and forest use in Uganda	Jagger (2014)	- International Institute for Sustainable Development - Institute for Sustainable Development
9	2.3	Freezing ovarian fluid does not alter how it affects fish sperm swimming performance: creating a cryptic female choice 'spice rack' for use in split-ejaculate experimentation	Purchase and Rooke (2020)	- Resources for the Future - Environment for Development Initiative
8	1.1	Glyphosate (Ab)sorption by Shoots and Rhizomes of Native versus Hybrid Cattail (Typha)	Zheng et al. (2017)	- Center for International Forestry Research - CGIAR, FKA Consultative Group on International Agricultural Research
7	0.5	Some Policy Suggestions for Promoting Organic Agriculture in Asia	Sano and Prabhakar (2009)	- International Institute for Sustainable Development - Institute for Sustainable Development
6	0.7	The big push for renewable energy in India: What will drive it?	Ghosh (2015)	- International Institute for Sustainable Development - Institute for Sustainable Development
6	3.0	Economics of the US National Park System: Values, Funding, and Resource Management Challenges	Walls (2022)	- Research Institute of Innovative Technology for the Earth - International Institute for Applied Systems Analysis
5	0.4	Beyond Rio: Sustainable energy scenarios for the 21st century	McCollum et al. (2012)	- Center for International Forestry Research - CGIAR, FKA Consultative Group on International Agricultural Research
5	1.7	Correlation of publication frequency of newspaper articles with environment and public health issues in fire-prone peatland regions of Riau in Sumatra, Indonesia	Ohashi et al. (2021)	- Earth Institute - Environment for Development Initiative
4	1.0	Trade Impacts of Fossil Fuel Subsidies	Moerenhout (2020)	- Resources for the Future - Property and Environment Research Center
4	1.3	Can we increase the impacts from payments for ecosystem services? Impact rose over time in Costa Rica, yet spatial variation indicates more potential	Robalino et al. (2021)	- International Institute for Sustainable Development - Institute for Sustainable Development
3	3.0	The future of education and training in aquatic science within African Great Lakes	Achieng et al. (2023)	- International Institute for Sustainable Development - Institute for Sustainable Development
1	1.0	Future success and ways forward for scientific approaches on the African Great Lakes	Lawrence et al. (2023)	- International Institute for Sustainable Development - Institute for Sustainable Development
0	0.0	Integrating hydroacoustic and telemetry surveys to estimate fish abundance: a new approach to an old problem	Shuter et al. (2023)	- International Institute for Sustainable Development - Institute for Sustainable Development

and Lütkenhorst (2014) suggest an energy balance for a sustainable transition in a study based in Germany, as they find that wind energy is more efficient than solar energy. Bunch et al. (2011) highlight that participatory and transdisciplinary approaches

improve health equity outcomes in public health. In Uganda, an increase in respiratory infections in children is reported due to the intensive use of low-quality fuels (Jagger and Shively, 2014), and a dataset details the quality and distribution of electricity in

sub-Saharan Africa, guiding infrastructure policies (Falchetta et al., 2019).

Regarding fiscal policy, CO₂ taxes have been shown to reduce sales of polluting vehicles, particularly in France (Klier and Linn, 2015). Exposure to road emissions in Kenya represents a severe public health risk for urban workers (Ngo et al., 2015), while CO₂ leak detection techniques effectively manage carbon capture sites (Shitashima et al., 2013). Furthermore, deforestation in Uganda increases dependence on lower-quality fuels, affecting health and energy access (Jagger and Kittner, 2017).

From an energy efficiency perspective, non-financial incentives and mandatory measures can increase insulation in homes in Germany (Friege, 2016). The study by Blankenship et al. (2019) highlights that social trust is critical to willingness to pay for electricity service reforms. Zimm (2021) observes that international and local policies are essential for adopting electric vehicles. In Ethiopia, climate change is expected to reduce agricultural productivity, requiring adaptation policies (Gebreegziabher et al., 2016).

This exploratory study provides a novelty in the academic literature on think tank influence strategies in the scholarly debate on environmental policy. Specifically, it has studied the promotion of the research agenda through financing articles, according to funds from think tanks.

This research has limitations. First, the data source used. The selection of the University of Pennsylvania ranking (McGann, 2021) determines the think tanks for whose funding sources the articles were searched in the Web of Science. Its recognition in the literature and its adoption in numerous studies on think tanks validate this ranking as a reliable source. In addition, it provides standardized criteria based on a rigorous methodology, which mitigates possible biases in data selection, and its use constitutes a solid and justified starting point for the present study. However, the need to explore additional directories in future research is recognized to help the sample analyzed. This study focuses on environmental policy think tanks, giving rise to a precise selection that, although not generalizable to all think tanks, allows for identifying significant patterns.

Likewise, this study focuses on articles published in journals indexed in the Journal Citation Reports (JCR), as it excludes other indexes (e.g., Emerging Sources Citation Index) or databases (e.g., Scopus or Arxiv). Future research could expand the data sources by also including chapters and books.

This article presents a methodological guide for researchers interested in analyzing the academic debate driven by think tanks, with an emphasis on building frames and counter-frames around issues such as the anthropogenic nature of climate change, economic approaches to ESG (Environmental, Social, and Governance) criteria and socio-technical transitions toward sustainability promoted by the European Union. The proposed methodology allows for a rigorous assessment of the evolution of these debates, providing tools to analyze their impact on academic, political and social narratives.

Regarding the coherence of institutional attitudes, changes in funding strategies and research priorities reflect the diversity and dynamism of these actors, providing a new vision of their trajectories.

In future research, this approach can be applied to explore issues related to the themes on sustainability and climate change promoted by think tanks, as well as their relationship with recent global events that influence the academic and political agenda, such as energy transitions and climate governance strategies. This methodological framework not only allows for identifying key patterns and themes but also provides a solid basis for assessing the impact of think tanks in promoting discursive frames that guide public policies and scientific debates.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

VR-M: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. FC-S: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing.

Funding

The author(s) declare that no financial support was received for the research and/or publication of this article.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Generative AI statement

The authors declare that no Gen AI was used in the creation of this manuscript.

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