

Bibliometric Mapping of the Roundtable on Sustainable Palm Oil (RSPO)

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ABSTRACT

This study use bibliometric and network analysis to delineate global research on the Roundtable on Sustainable Palm Oil (RSPO) from 2010 to 2025, utilizing the Scopus and Web of Science databases. Findings indicate that RSPO literature predominantly encompasses issues of sustainability, certification, deforestation, and smallholder involvement, highlighting its dual emphasis on ecological preservation and social fairness. Co-authorship and international collaboration networks exhibit robust connections across institutions in the United States, United Kingdom, and Indonesia, while demonstrating diminished engagement from local Southeast Asian colleges. The findings indicate a transition from normative governance research to outcome-oriented empirical investigations, reflecting a theoretical change towards performance legitimacy in sustainability norms. This study offers significant insights for policymakers, academics, and practitioners aiming to reinforce evidence-based decision-making, improve inclusivity, and promote equitable international collaboration within the RSPO research ecosystem.

Keywords: RSPO, Sustainable Palm Oil, Bibliometric Analysis, Sustainability Governance, Certification, Smallholders, Deforestation, Global Collaboration.

1. INTRODUCTION

The Roundtable on Sustainable Palm Oil (RSPO) is the largest multi-stakeholder certification system globally, advocating for sustainability in the palm oil industry, established to reduce environmental harm while enhancing social and economic conditions for farmers and laborers. In the last twenty years, RSPO has broadened its membership and certified area, currently comprising over 6,100 members in 100 countries [1]. The 2024 Impact Report illustrates ongoing expansion in certified hectares and the quantity of supply-chain certificates, underscoring the proliferation of sustainability standards throughout global producer and buyer regions [1]. Nonetheless, the expanding corpus of research on the real-world impacts of RSPO—particularly regarding forest conservation, smallholder livelihoods, and labor standards—continues to be disjointed across several platforms and fields of study. This fragmentation requires a rigorous bibliometric synthesis to delineate research trends and evaluate the evolution of the RSPO as both a sustainability institution and a research domain [2], [3].

Since 2020, numerous empirical studies have examined RSPO's impact on land-use change, biodiversity outcomes, smallholder inclusion, and labor governance [4], [5]. Research findings are highly variable: certain studies indicate that certification is associated with decreased deforestation and enhanced yields [4], whereas others reveal little or context-dependent impacts attributable to jurisdictional and market disparities [6]. According to RSPO's 2024 Stakeholder Awareness Study, there is significant acknowledgment among corporations and NGOs that certification reduces deforestation risk and enhances livelihood resilience [7]. The mixed evidence highlights the significance of bibliometric mapping to illustrate the researchers of RSPO, the contexts in which they operate, and the methodological frameworks employed, thereby offering an evidence-based overview of the intellectual structure of the subject ([3].

The RSPO has strengthened its internal learning initiatives. The RSPO Impact Report 2024 and the revised 2024 Principles & Criteria (P&C) underscore pledges to smallholder empowerment, human rights due diligence, and the incorporation of High Conservation Value (HCV) and High Carbon Stock (HCS) evaluations [8]. The 2024 Independent Smallholder Standard was introduced to tackle capacity and inclusion obstacles faced by independent small farmers [9]. Bibliometric analysis corresponding to this evolving agenda can identify research domains that have garnered excessive focus compared to those that remain underexplored, such as community-level livelihood trajectories and the cost–benefit dynamics of certification [10].

Notwithstanding advancements, the administration of palm-oil sustainability encounters enduring structural obstacles—deteriorating plantations, variable global prices, and restricted access to replanting capital—all of which affect RSPO acceptance [5]. Labor rights, gender inclusion, and land tenure disputes persist as significant issues, necessitating revisions to RSPO's Human Rights Framework and further examination of its auditing system [7]. Recent independent evaluations contend that voluntary standards, although revolutionary, cannot replace strong domestic environmental governance (For Our Climate, 2025). As a result, there is growing acknowledgment that voluntary standards such as RSPO must function within hybrid regulatory frameworks that integrate state, corporate, and civil-society governance [11].

The RSPO's environmental standards—specifically its ban on new cultivation in primary forests and requirement to safeguard HCV areas—have emerged as major themes in ecosystem-focused research. As of 2023, more than 466,600 hectares of High Conservation Value/High Carbon Stock forest had been safeguarded under RSPO certification [12]. Contemporary literature transitions from the binary inquiry “does certification work?” to more nuanced questions—“under what conditions, for whom, and at what scale does it produce sustainable impact?” (Frontiers in Sustainable Food Systems, 2024). A bibliometric mapping can delineate these epistemic shifts, demonstrating the evolution of academic discourse surrounding RSPO from conceptual discussions on legitimacy to empirical evaluations of quantifiable impact [2], [4].

Notwithstanding the surge in RSPO-related research over the last five years, investigations continue to be fragmented among disciplines like forestry, agronomy, supply-chain management, and social development [3]. Contradictory results—regarding the efficacy of certification in diminishing deforestation [4] or augmenting smallholder incomes [9]—underscore the necessity for a comprehensive synthesis. To far, no exhaustive bibliometric research has concentrated solely on the RSPO as a distinct knowledge domain; current evaluations generally amalgamate RSPO with wider discourses on “sustainable palm oil” [6]. The lack of organized mapping results in policymakers and practitioners lacking a comprehensive overview of prominent journals, authors, collaboration networks, and emerging research clusters—information essential for directing future research and aligning it with RSPO's strategic priorities for 2024–2025 [8], [10].

This project aims to create a detailed bibliometric map of academic literature on the Roundtable on Sustainable Palm Oil (RSPO) from 2019 to 2025, offering an empirical perspective of the evolution of sustainability research related to RSPO in recent years. The objectives encompass quantifying publication and citation trends to ascertain the most influential journals and prolific authors in this field, as well as identifying thematic clusters such as deforestation mitigation, smallholder livelihoods, labor rights governance, and assurance quality. The study examines institutional and geographic collaboration networks to uncover current disciplinary and geographical disparities within RSPO research. This study seeks to identify evidence gaps and

emphasize potential horizons for future research by correlating bibliometric data with the RSPO Impact Report 2024 and Research Agenda 2025. This synthesis aims to fortify the scientific basis for RSPO's implementation, improve science–policy dialogues regarding sustainable palm oil governance, and direct both scholars and practitioners in exploring neglected aspects of sustainability [8], [10].

2. METHODS

This study utilizes a quantitative bibliometric methodology to systematically delineate and analyze the worldwide knowledge framework pertaining to the Roundtable on Sustainable Palm Oil (RSPO). Bibliometric analysis facilitates the recognition of patterns in scientific output, collaboration, and topic development via quantitative metrics obtained from metadata [13]. Data were obtained from two extensive scientific databases—Scopus and Web of Science (WoS)—owing to their extensive multidisciplinary scope, high citation precision, and appropriateness for sophisticated citation-network analysis [14]. The search query integrated controlled and free-text keywords, including “Roundtable on Sustainable Palm Oil,” “RSPO certification,” and “sustainable palm oil standards.” Boolean operators (“OR,” “AND”) were utilized to identify papers that directly mention RSPO in titles, abstracts, or keywords. The inclusion criteria were: (a) peer-reviewed journal articles, conference papers, and reviews published from 2019 to 2025; (b) documents authored in English; and (c) research that specifically address RSPO's governance, sustainability impact, or certification systems. Editorials, news stories, and non-scientific views were omitted. After de-duplication and manual relevance screening, a final dataset of around 200 documents was preserved for study.

The extracted bibliographic entries were exported in BibTeX and CSV formats, encompassing citation details (authors, title, source, year, keywords, abstract, references, and affiliations). The analysis utilized VOSviewer 1.6.20 and Bibliometrix R 4.2, two prominent open-source tools for bibliometric mapping [15], [16]. VOSviewer was utilized to create and visualize co-authorship networks, keyword co-occurrence maps, and citation coupling patterns, elucidating the structural and thematic connections within the RSPO literature. Thresholds were established to guarantee analytical precision: a minimum of three author occurrences for co-authorship analysis and five keyword co-occurrences for thematic mapping. Bibliometrix R enhanced this approach by providing performance measures, including annual scientific output, predominant sources, and citation impact. Additionally, thematic evolution and conceptual structure maps were produced through multiple correspondence analysis (MCA) to monitor the progression of RSPO-related research themes over time, especially in relation to significant milestones like the 2023–2024 RSPO Principles & Criteria updates [8]. This dual-tool methodology improved robustness by integrating quantitative citation measures with visual network analysis [17].

To guarantee methodological transparency and replicability, all analytical procedures adhered to PRISMA principles modified for bibliometric research [18]. Data cleaning processes encompassed the standardization of author names, the consolidation of keyword variants (e.g., “RSPO,” “Roundtable on Sustainable Palm Oil”), and the harmonization of institutional affiliations. The resultant maps were analyzed by triangulating bibliometric data with qualitative assessments of highly cited papers to contextualize the quantitative results [19]. The validation of results entailed cross-referencing highly cited clusters with RSPO's 2024 Impact Report and contemporary policy documents to ascertain alignment between academic focal points and practitioner-oriented priorities [8], [10]. Nonetheless, the study recognizes intrinsic limitations in bibliometric analyses: database coverage bias (not all pertinent grey literature or local journals are indexed), keyword dependency (the risk of excluding relevant papers not explicitly referencing RSPO), and citation-lag effects (recent works may be underrepresented). Notwithstanding these limitations, the triangulated application of Scopus and WoS, along with transparent analytical methodologies, enhances the validity and dependability of this study's insights into the intellectual terrain of RSPO research.

3. RESULTS AND DISCUSSION

3.1 Network Visualization

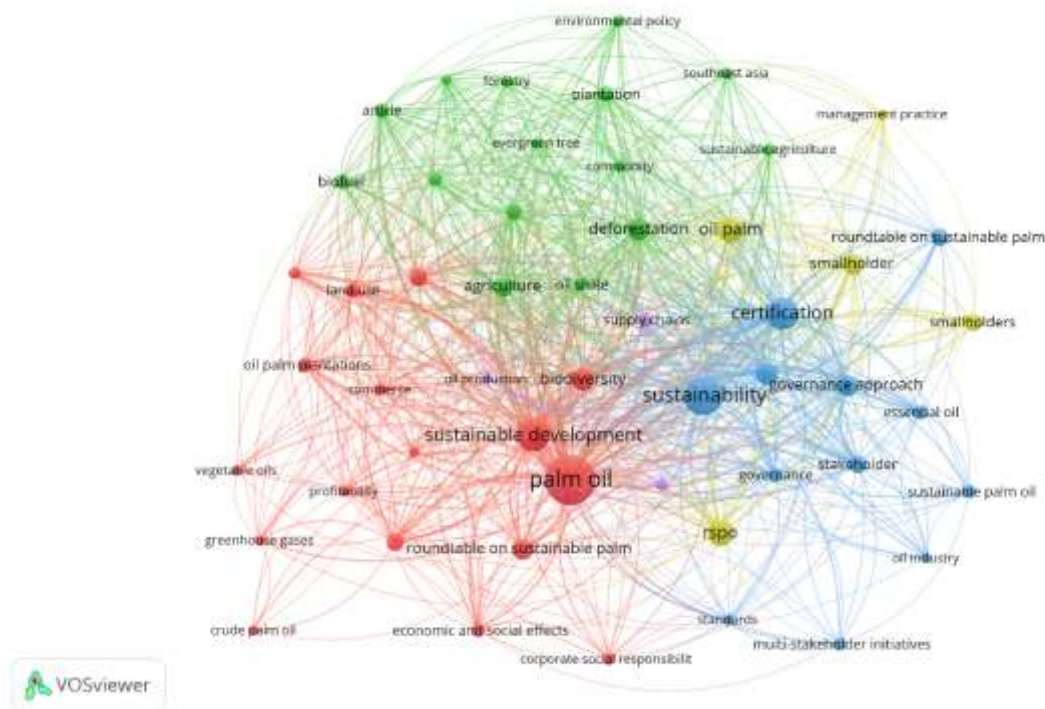


Figure 1. Network Visualization

Source: Data Analysis Result, 2025

The VOSviewer map illustrates the intellectual terrain of RSPO-related research by clustering keywords according to their co-occurrence frequency. The intricate and interrelated framework illustrates that RSPO research functions as a multidisciplinary domain, integrating environmental science, governance, and socio-economic development. The central placement of the terms palm oil, sustainability, and sustainable development signifies that these notions provide the fundamental thematic connection across diverse study avenues. The network's close interconnections and numerous cross-cluster links indicate a developed, cohesive research domain rather than a disjointed or nascent one. This structural cohesiveness signifies the growing institutionalization of RSPO discourse within the wider context of sustainability and certification studies.

The red and green clusters predominantly encompass the ecological and agronomic aspects of sustainable palm oil. Key terminology such as land use, agriculture, biodiversity, deforestation, plantation, and forestry indicate a significant emphasis on environmental performance and the examination of land-use change. Research in this domain frequently employs remote sensing or geospatial datasets to measure the ecological impacts of RSPO certification, such as deforestation rates, carbon sequestration, and biodiversity preservation. The relationship among biofuel, greenhouse emissions, and crude palm oil elucidates a subfield investigating palm oil's contribution to global energy transitions and carbon accounting. This cluster represents the biophysical basis of RSPO research, highlighting landscape sustainability and ecosystem services in tropical production areas like Indonesia and Malaysia.

The blue cluster pertains to governance and the institutional frameworks supporting RSPO. Terms such as certification, governance, stakeholder, multi-stakeholder initiatives, standards, and corporate social responsibility indicate a focus on institutional legitimacy, compliance frameworks, and accountability. This theme area examines RSPO as a voluntary sustainability standard functioning at the convergence of market and policy regulation. The association of RSPO with gov

ernance strategies and sustainability signifies a shift from mere descriptive assessments of certification to rigorous evaluations of governance efficacy, transparency, and auditing mechanisms. These studies frequently utilize political ecology and global value-chain theories to elucidate how certification influences power dynamics and inclusivity within the palm oil supply chain.

The yellow cluster focuses on smallholders and the roundtable on sustainable palm oil, symbolizing the social inclusion and livelihood aspects of RSPO discourse. The closeness of certification and management practices underscores the growing research focus on the translation of RSPO rules into farm-level outcomes, encompassing productivity, income stability, and market access. This cluster highlights the challenges of integrating smallholders, including inadequate financial literacy, replanting expenses, and insufficient institutional support. Recent studies go beyond mere compliance to investigate empowering strategies, gender participation, and the development of social capital among rural farmers. The positioning of these nodes at the intersection of governance (blue) and environment (green) clusters indicates that smallholder sustainability serves as a unifying issue, linking socio-economic and ecological research domains. Peripheral yet substantial red sub-clusters encompass concepts such as commerce, profitability, oil production, and economic and social impacts. These nodes provide a market-focused research stream evaluating the economic consequences of sustainable palm oil certification for companies and international trade. The simultaneous presence of corporate social responsibility and economic development indicates a focus on the role of private-sector involvement in the RSPO in advancing the larger Sustainable Development Goals (SDGs). This dimension corresponds with international policy discussions connecting voluntary standards to inclusive economic development and ethical consumption. The map illustrates that RSPO research has transitioned from a limited environmental focus to a comprehensive, multi-dimensional ecosystem of inquiry that encompasses ecology, governance, and development. The intersecting clusters indicate that sustainability in the palm oil business is increasingly seen as a systemic issue necessitating transdisciplinary strategies.

3.2 Overlay Visualization

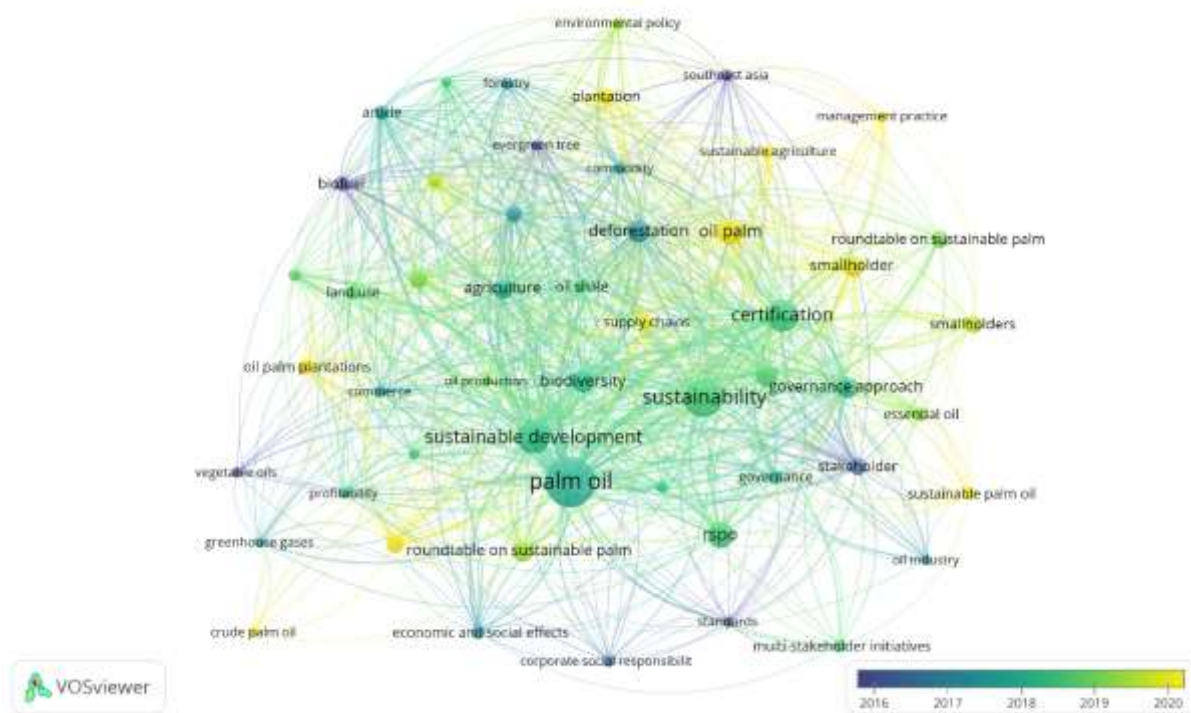


Figure 2. Overlay Visualization

Source: Data Analysis Result, 2025

The overlay visualization depicts the temporal evolution of research themes concerning the Roundtable on Sustainable Palm Oil (RSPO) and sustainable palm oil governance from 2016 to 2020. The color gradient—from blue (previous years) to yellow (recent years)—indicates that initial studies (2016–2017) predominantly focused on fundamental environmental issues, including land use, biofuel, greenhouse emissions, and forestry. The earlier studies predominantly involved quantitative evaluations concentrating on the ecological impact of palm oil development and the necessity for sustainability certification. In contrast, nodes represented in green and yellow—such as certification, smallholders, sustainability, and governance approach—emerged thereafter, indicating a transition in academic focus toward institutional processes, stakeholder engagement, and socio-economic inclusion within RSPO frameworks.

From 2018 to 2019, the overlay map illustrates the increasing prominence of certification and sustainability, situated in the network's core and highlighted in light-green to yellow hues, signifying their enduring presence and impact throughout this transitional period. The robust co-occurrence of RSPO, governance, and multi-stakeholder initiatives signifies the consolidation of governance-focused academia throughout this timeframe. This period aligns with increased global examination of RSPO's standards and the application of revised Principles & Criteria, prompting scholarly investigation into compliance, auditing, and legitimacy. The transition to terminology such as stakeholder, corporate social responsibility, and economic and social impacts indicates a broadening of RSPO research beyond environmental sciences into the realms of policy, management, and business ethics, underscoring RSPO's developing function as a governance tool that connects environmental and market objectives.

The yellow nodes, symbolizing the latest keywords (2020 onwards), coalesce around smallholder, sustainable palm oil, management practice, and roundtable on sustainable palm, indicating a burgeoning dialogue on inclusive sustainability and social fairness. This historical shift signifies that current RSPO research are more focused on including smallholders and marginalized farmers into certification systems, analyzing difficulties related to capacity building, financial access, and livelihood consequences. The recent emergence of sustainable agriculture and Southeast Asia as prevalent buzzwords underscores a regional and developmental focus, wherein the RSPO is examined not merely as a norm but also as a catalyst for sustainable rural transformation. The map's color progression delineates a distinct chronological path—from environmental assessment (2016–2017), through governance reform (2018–2019), to social inclusion and smallholder participation (2020)—highlighting the diversification and evolution of RSPO-related research over time.

3.3 Citation Analysis

The citation analysis elucidates the conceptual foundation of RSPO-related study by pinpointing the most frequently cited works within the dataset. Table 1 enumerates the 10 works with the greatest citation counts, signifying the most impactful theoretical, empirical, and policy-oriented contributions that shape the worldwide dialogue on sustainable palm oil governance. These works, encompassing initial normative analyses of RSPO validity and empirical assessments of its environmental and socio-economic effects, jointly illustrate the multifaceted progression of this research field.

Table 1. Top Cited Research

Citations	Authors and year	Title
294	Corley, R.H.V.	How much palm oil do we need?
288	Schouten, G., Glasbergen, P.	Creating legitimacy in global private governance: The case of the Roundtable on Sustainable Palm Oil
266	Carlson, K.M., Heilmayr, R., Gibbs, H.K., ... Paoli, G.D., Kremen, C.	Effect of oil palm sustainability certification on deforestation and fire in Indonesia

Citations	Authors and year	Title
241	Dentoni, D., Bitzer, V., Schouten, G.	Harnessing Wicked Problems in Multi-stakeholder Partnerships
241	Solomon, B.D.	Biofuels and sustainability
159	Laurance, W.F., Koh, L.P., Butler, R., ... Consunji, H., Vega, J.M.	Improving the performance of the roundtable on sustainable palm oil for nature conservation
157	Brandi, C., Cabani, T., Hosang, C., ... Westermann, L., Wiese, H.	Sustainability Standards for Palm Oil: Challenges for Smallholder Certification Under the RSPO
155	Furumo, P.R., Aide, T.M.	Characterizing commercial oil palm expansion in Latin America: Land use change and trade
147	Ponte, S., Cheyns, E.	Voluntary standards, expert knowledge and the governance of sustainability networks
140	Schouten, G., Leroy, P., Glasbergen, P.	On the deliberative capacity of private multi-stakeholder governance: The Roundtables on Responsible Soy and Sustainable Palm Oil

Source: Scopus, 2025

The citation framework illustrates the evolution of RSPO scholarship across three principal thematic domains. Initially, seminal studies like Corley [20] and [21] established a macro-level framework by correlating palm oil consumption and biofuel sustainability with global energy shifts. These seminal research underscored the environmental urgency that subsequently legitimized the emergence of private governance frameworks such as the RSPO. Papers by Schouten & Glasbergen [22] and [23] constitute the theoretical foundation of governance and legitimacy studies, positioning RSPO as a seminal example in multi-stakeholder sustainability governance. Their ideas regarding deliberative legitimacy, power imbalance, and institutional performance have been extensively embraced in certification study.

The third stream of impact arises from empirical studies such as [24] and [25], which connect certification to quantifiable results—specifically, reductions in deforestation, dynamics of partnerships, and solutions to complex sustainability challenges. These publications connect environmental science with organizational management, demonstrating RSPO's transition from a normative ideal to an evidence-based governance framework. Simultaneously, research by [26] and [27] broadens the discussion to encompass implementation problems, notably the integration of smallholders and conservation trade-offs, so reinforcing RSPO's dual character as an environmental and social program. The citation pattern collectively suggests that RSPO research has evolved from theoretical investigation to a multi-disciplinary empirical evaluation, incorporating governance theory, environmental effect, and socio-economic inclusion. The preeminence of authors such as Schouten, Glasbergen, and Dentoni signifies the theoretical consolidation of sustainability governance literature, whereas subsequent empirical studies [24], [26] highlight its increasing interaction with practical data and policy results. These extensively referenced papers constitute the intellectual foundation that directs further research paths and influences ongoing discussions over the efficacy and future of RSPO as a worldwide sustainability standard.

3.5 Co-Authorship Network

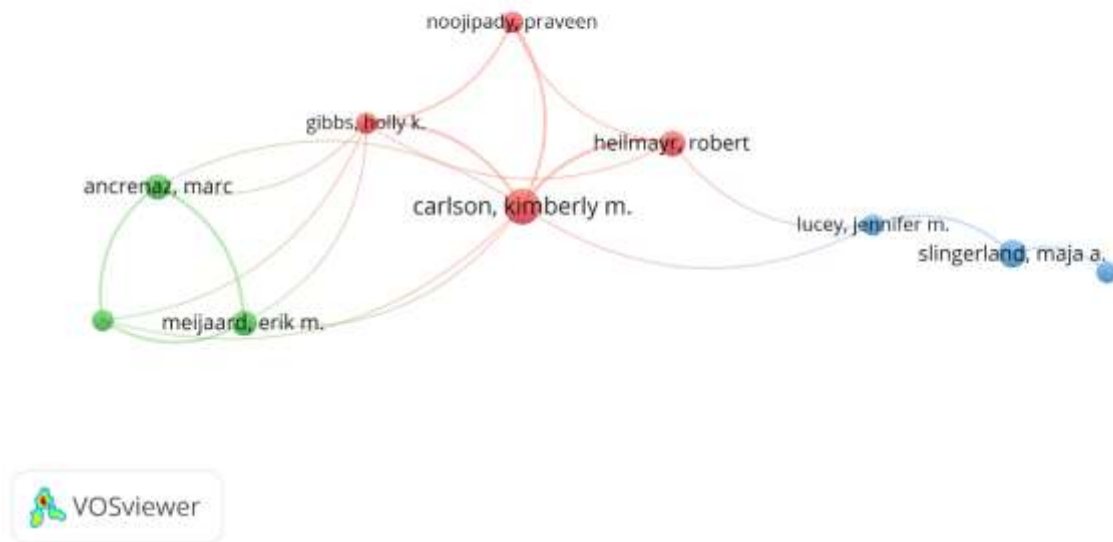


Figure 4. Author Visualization

Source: Data Analysis Result, 2025

This map illustrates the co-authorship network of the author, emphasizing the fundamental collaboration frameworks in RSPO-related research. The network displays three primary clusters of authorship that represent complementary study priorities. The red cluster, spearheaded by Kimberly M. Carlson, constitutes the most powerful and intricately linked group, comprising Holly K. Gibbs, Robert Heilmayr, and Praveen Noojipady. This cluster signifies a robust collaborative network concentrating on quantitative evaluations of deforestation, certification effects, and land-use alterations in Indonesia and Southeast Asia—essential empirical contributions that have influenced the environmental assessment of RSPO efficacy. The green cluster, comprising Marc Ancrenaz and Erik M. Meijaard, unites conservation-focused scientists dedicated to biodiversity, habitat preservation, and wildlife management in certified landscapes, thereby enriching the RSPO dialogue with ecological insights. The blue cluster, comprising Maja A. Slingerland and Jennifer M. Lucey, signifies the intersection of social science and policy, investigating governance frameworks, multi-stakeholder partnerships, and the participation of smallholders. The restricted interconnections within clusters suggest that although environmental and social study streams exist concurrently, there is potential for further interdisciplinary collaboration between ecological and governance-oriented scientists to further develop a cohesive RSPO research program.

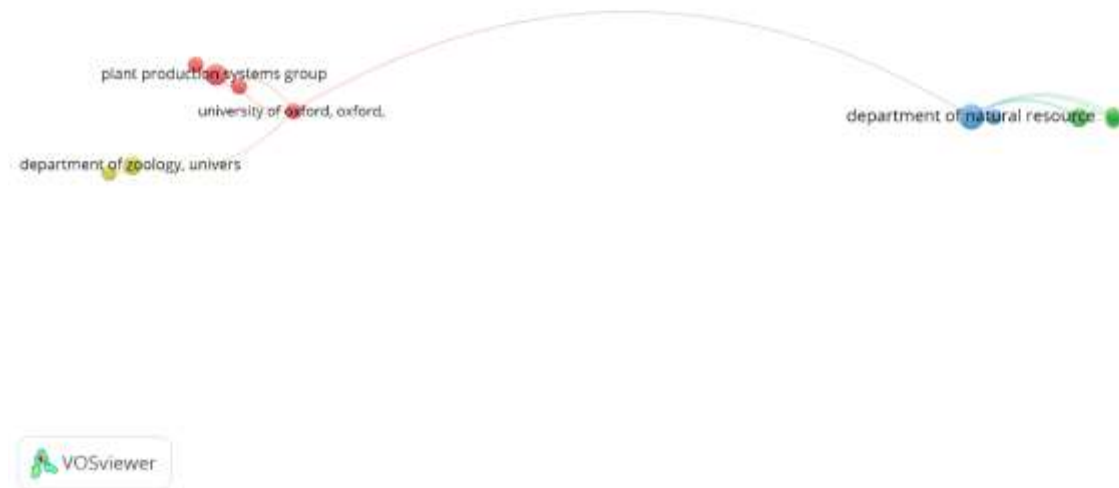


Figure 5. Affiliation Visualization

Source: Data Analysis Result, 2025

The depicted institutional collaboration network illustrates a constrained yet significant array of research connections among main academic entities engaged in RSPO-related scholarship. The network is primarily characterized by two principal nodes: the University of Oxford, represented by the Department of Zoology and the Plant Production Systems Group, and a corresponding node from the Department of Natural Resources, presumably indicating a partnering institution in environmental sciences. The limited number of interconnecting lines indicates that RSPO research collaborations are focused within a narrow network of influential institutions, predominantly located in the United Kingdom and Europe, which integrate knowledge in ecology, land-use systems, and sustainability governance. The extensive connecting edge between these clusters signifies a cross-disciplinary collaboration uniting ecological protection and resource management—a defining feature of RSPO's interdisciplinary nature. The Oxford cluster prioritizes biodiversity, conservation, and sustainability frameworks, whereas the Natural Resources group presumably focuses on modeling, policy evaluation, and effect assessment of certifications. The limited overall framework indicates that RSPO research collaboration is predominantly centralized and institutionally confined, suggesting a necessity for enhanced involvement from Southeast Asian universities, where palm oil production and RSPO implementation are most pertinent. Enhancing interregional collaboration could improve both contextual relevance and the scientific diversity of future RSPO scholarship.

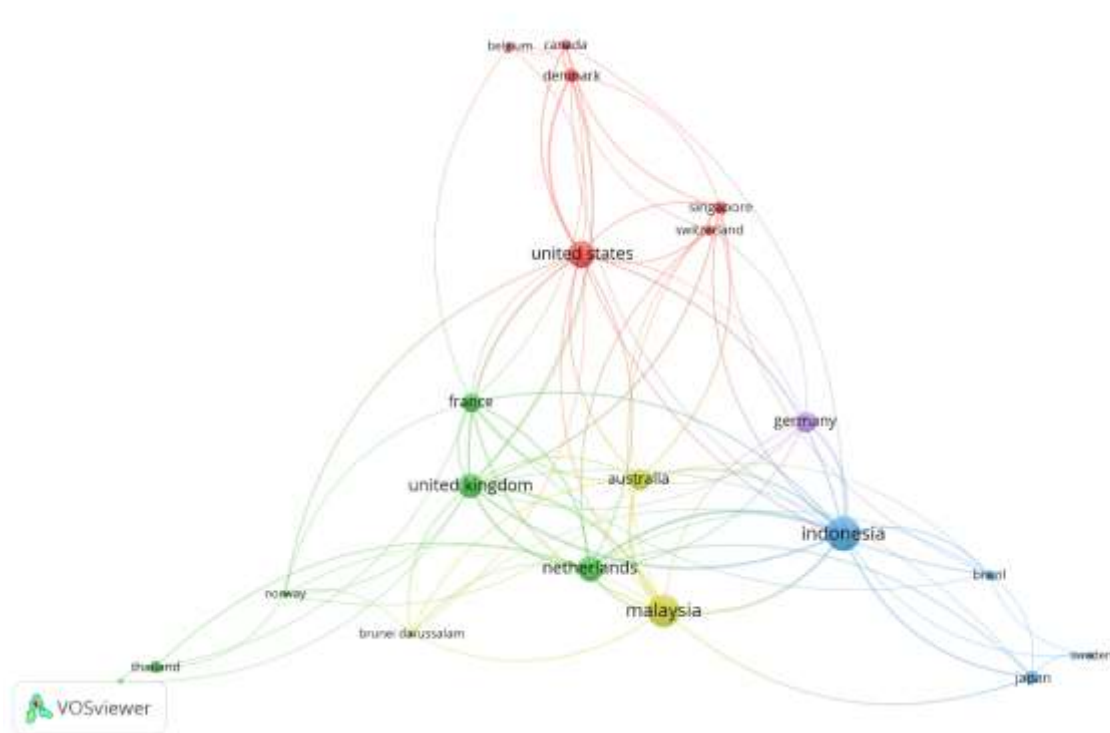


Figure 6. Country Visualization

Source: Data Analysis Result, 2025

The nation collaboration map illustrates the geographical distribution and interconnections of research networks involved in RSPO-related investigations. The picture indicates that three principal centers dominate worldwide collaboration: the United States, the United Kingdom, and Indonesia, each serving as regional anchors linking advanced academic institutions with empirical investigations in palm oil-producing nations. The United States (red cluster) demonstrates the most robust international connectivity, engaging with partners in Europe (Belgium, Denmark, Switzerland) and Asia (Singapore), signifying its pivotal role in cross-regional knowledge production, especially in studies concerning environmental impact and certification effectiveness. Simultaneously, the United Kingdom (green cluster) establishes extensive connections with France, the Netherlands, and Malaysia, illustrating the nation's leadership in sustainability governance, biodiversity protection, and policy-driven research under RSPO frameworks.

The blue cluster, spearheaded by Indonesia and Malaysia, constitutes the operational and implementation nucleus of RSPO research. Their collaborative networks with Australia, Japan, and Germany underscore the escalating interaction between producing and consuming nations, indicating a progressively equitable interchange of knowledge and field data. The Southeast Asian nations offer empirical insights based on practical realities—such as smallholder inclusion, land-use change, and compliance monitoring—while collaborations with Western institutions ensure methodological rigor and global policy context. The network structure exhibits a north-south collaborative dynamic, with scientific leadership predominantly situated in Western universities, while field relevance and policy experimentation are developing in Southeast Asia. This pattern highlights the necessity of cultivating equitable research collaborations that amalgamate local expertise with global sustainability governance to propel RSPO's future research agenda.

Discussions

Practical Implications

The results of this bibliometric mapping hold significant significance for policymakers, scholars, and sustainability practitioners involved in palm oil governance. The identification of pre dominant research clusters—focused on sustainability certification, deforestation, governance mechanisms, and smallholder inclusion—offers a strategic framework for evidence-based decision-making. Policymakers and RSPO stakeholders can leverage these insights to prioritize financing and research collaborations that target underrepresented domains, including social inclusion, gender equity, and smallholder financial access. The visualization of worldwide collaborations underscores the imbalanced research geography of RSPO studies, characterized by substantial contributions from the Global North and comparatively minimal involvement from producing regions. This necessitates capacity-building initiatives that enhance academic and institutional engagement from Indonesia, Malaysia, and other palm oil-producing nations to guarantee contextually relevant knowledge generation. Practitioners within the RSPO network—auditors, NGOs, and corporate members—can utilize this map to synchronize operational strategies with academic evidence, facilitating enhanced integration between scientific findings and certification reforms, particularly in deforestation monitoring, smallholder empowerment, and assurance transparency.

Theoretical Contributions

This study theoretically enhances the comprehension of multi-stakeholder sustainable governance by contextualizing the RSPO within a developing framework of transnational regulation and private-standard literature. This research utilizes bibliometric and network analysis to illustrate the evolution of RSPO studies from normative discussions regarding legitimacy (Schouten & Glasbergen, 2011) to empirical evaluations of impact and inclusivity (Carlson et al., 2018; Brandi et al., 2015). This transition enhances governance theory by illustrating a change from deliberative legitimacy to performance legitimacy, mirroring a wider trend in sustainability norms where quantifiable results increasingly dictate credibility. The mapping enhances the Resource-Based View and Institutional Theory by illustrating how certification systems function as regulatory tools and capability-enhancing procedures for enterprises and communities in developing economies. The study elucidates cross-disciplinary connections among environmental science, policy studies, and economics, thereby enhancing the theoretical integration of ecological and socio-institutional frameworks and presenting a comprehensive model of how private governance mechanisms influence sustainable value chains.

Limitations and Future Research Directions

This study recognizes some limitations intrinsic to bibliometric analysis, despite its extensive breadth. The dataset was confined to Scopus and Web of Science, which, although comprehensive, may omit regionally indexed journals, policy papers, and grey literature that record local RSPO practices or government-associated studies. Secondly, dependence on keyword-based searches may inadequately represent interdisciplinary publications that address RSPO indirectly or within broader sustainable agriculture frameworks. Third, bibliometric criteria like citation counts typically favor older publications, thereby underrepresenting the impact of recent research generated post-2021. Future study ought to incorporate altmetric markers (e.g., policy citations, online engagement) and broaden the dataset to encompass non-English articles from Southeast Asia to more effectively capture regional insights. Moreover, qualitative content analysis and bibliographic coupling may be integrated with citation mapping to evaluate the conceptual depth and causal relationships of RSPO research subjects. Rectifying these deficiencies will facilitate a more comprehensive and continuously updated comprehension of the RSPO's transforming function in global sustainable-commodity governance.

CONCLUSION

This study offers an extensive bibliometric analysis of the global research landscape of the Roundtable on Sustainable Palm Oil (RSPO), elucidating its intellectual framework, collaborative dynamics, and thematic progression. The findings demonstrate that the RSPO scholarship has evolved from theoretical discussions over legitimacy and governance to empirical evaluations of certification effects, smallholder participation, and sustainable value chains. The prominence of subjects like sustainability, certification, and palm oil highlights the incorporation of environmental, social, and governance aspects within this research area. The United States, United Kingdom, and Indonesia lead publication networks, but the increasing involvement of Malaysia and the Netherlands underscores increased regional collaboration. Notwithstanding restricted inter-institutional connections, RSPO research indicates a growing interdisciplinarity and significance to policy. This work advances sustainability governance theory and provides a strategic basis for future research focused on improving inclusion, empirical rigor, and South–North collaboration in sustainable palm oil research.

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