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A systematic literature review and bibliometric analysis of organic and inorganic farming for effective agribusiness management

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Abstract
This study conducts a systematic literature review (SLR) and bibliometric analysis of research on organic and inorganic farming with specific reference to their role in sustainable agribusiness management. Using a dataset of 145 Scopus-indexed publications from 2010 to July 2025, the analysis maps publication trends, influential authors, high-impact journals, and emerging research themes. The findings reveal a notable academic shift toward sustainability after 2015, coinciding with the adoption of the United Nations Sustainable Development Goals (SDGs). Comparative insights indicate that inorganic farming remains essential for meeting immediate food security demands, while organic farming offers long-term benefits for ecological balance, soil health, and consumer-driven markets. Both systems exhibit unique strengths and limitations, suggesting the need for integrated hybrid models that combine productivity with sustainability. Gaps persist in areas such as policy support, economic trade-offs, climate resilience, and regional disparities, underscoring opportunities for further interdisciplinary inquiry. By synthesizing bibliometric patterns with thematic insights, this study contributes to a nuanced understanding of farming practices and their implications for agribusiness strategies. It offers strategic guidance for researchers, policymakers, and practitioners seeking to align agricultural productivity with ecological sustainability and inclusive market growth.

Keywords: Organic farming, inorganic farming, sustainable agriculture, agribusiness management, bibliometric analysis, systematic literature review

1. Introduction
"The greatest threat to our planet is the belief that someone else will save it." - Robert Swan (The Mallorn Project, 2023) [1]
This thought-provoking statement underscores the significance of collective action and shared responsibility in addressing global challenges, particularly in the agricultural sector. As the world faces pressing issues such as climate change, food security, and resource depletion, the methods by which we cultivate our land become increasingly significant.
This paper examines the contrasting practices of organic and inorganic farming, emphasizing the importance of effective agribusiness management that strikes a balance between sustainability and productivity.

1.1 Background and Context
- Agriculture today is central to some of the most complex challenges facing humanity—climate change, food insecurity, declining soil health, and diminishing natural resources. As the global population is projected to increase from 7.7 billion to 9.7 billion by 2050, and further to 10.9 billion by the end of the century, the pressure on agricultural systems is set to intensify (United Nations Department of Economic and Social Affairs, 2017) [2]. This scenario underscores the urgent need to rethink agricultural strategies in a way that ensures both productivity and ecological balance.
- The concept of sustainable development, defined by the World Commission on Environment and Development (1987) [3], emphasizes the importance of meeting the needs of the present generation without compromising the ability of future generations to meet their own. Within agriculture, this means adopting practices that regenerate soil health, conserve biodiversity, and reduce dependency on non-renewable resources while maintaining or improving yields (Sonnino, Faus, & Maggio, 2014) [4].
- However, modern agricultural systems remain heavily reliant on fossil-fuel-derived

energy—used directly for machinery and irrigation and indirectly in the manufacture of agrochemicals like fertilizers and pesticides (Woods *et al*., 2010) [5]. This dependency is increasingly problematic. With fossil fuel production predicted to decline to nearly half of its 2010 levels by 2030, costs of synthetic inputs are expected to rise sharply, making conventional farming economically and environmentally unsustainable (Energy Watch Group, 2007) [6].

- In response to these challenges, the United Nations introduced the 2030 Agenda for Sustainable Development, which includes 17 Sustainable Development Goals (SDGs). Among these, SDG 2 specifically targets the eradication of hunger and the promotion of sustainable agricultural practices (Cheruku & Katekar, 2021) [7]. Organic farming has gained traction as a potential solution to achieve these goals. Scholars such as Puđak and Bokan (2011) [8] argue that organic farming promotes environmental sustainability through reduced chemical input, soil regeneration, and biodiversity conservation.
- Moreover, Soni *et al*. (2022) [9] highlight that for developing countries, organic agriculture offers a viable pathway to sustainable development by being more accessible to smallholder farmers and better aligned with long-term environmental goals.

1.2 Evolution of Organic and Inorganic Farming

- The transformation of agriculture from organic traditions to chemically intensive modern practices reflects both progress and unintended consequences. Historically, Indian agriculture was largely organic, even if the term was not formally used. Farmers commonly relied on compost, animal dung, green manure, and crop residues to enrich the soil. These practices are well-documented in ancient Indian texts like the *Rigveda*, *Mahabharata*, and Kautilya's *Arthashastra*, which emphasize ecological balance and resource recycling (Kingwell-Banham, Petrie, & Fuller, 2015) [10]
- The formal concept of organic agriculture was introduced by Lord Northbourne in his 1940 book *Look to the Land*, where he described farming as a holistic system rather than a mechanical process (Aulakh & Ravisankar, 2017) [11]. International recognition of this movement grew significantly with the formation of the International Federation of Organic Agriculture Movements (IFOAM) in 1972 in France, and later through global events such as the 1981 Atlanta Conference, which expanded awareness of organic systems (Pattanayak, 2018) [12].
- Today, organic agriculture is widely recognized for its ecological contributions. The Food and Agriculture Organization (FAO) defines it as a production system that enhances agro-ecosystem health, including biodiversity and biological cycles, using agronomic, biological, and mechanical methods while avoiding synthetic inputs (Mohler & Johnson, 2009) [13].
- In contrast, the post-Green Revolution era marked the widespread adoption of chemical fertilizers, pesticides, and modern irrigation methods. These inputs made agriculture more efficient and scalable, but at a cost. The environmental impact has been considerable, ranging from groundwater contamination to pesticide residues in food, along with long-term soil degradation (Chahal *et al*., 1999) [14].
- India's modern organic movement gained formal momentum with the National Programme for Organic Production (NPOP) launched in 2001. This was followed by the National Project on Organic Farming and the Network Project on Organic Farming in 2004 (Aulakh & Ravisankar, 2017) [11]. These government initiatives aimed to promote certification, training, and policy support for organic cultivation.
- Philosophically, the ethos of organic farming aligns with Gandhian thought, particularly the idea that 'nature has enough for our need but not for our greed' (Tiwari, 2019) [15]. This principle emphasizes simplicity, ethical consumption, and ecological restraint.
- Studies by Bablad *et al*. (2021) [16] show that organic practices not only preserve soil fertility and reduce erosion but also enhance food quality and the long-term well-being of rural communities, especially in rainfed regions where external inputs are minimal.
- Together, these developments illustrate that organic and inorganic systems have followed different trajectories, each with unique strengths and limitations. Understanding their evolution is essential for designing agricultural policies that balance productivity, sustainability, and agribusiness viability.

1.3 Problem Statement

- The agricultural sector stands at a crossroads, with increasing attention being paid to sustainability, food security, and economic viability. Both organic and inorganic farming systems have been examined extensively in academic literature. However, the majority of existing research tends to explore these models in isolation. Environmental and economic outcomes are often analyzed separately, without integrating the broader strategic lens necessary for agribusiness planning.
- Much of the comparative work between organic and inorganic farming is also geographically skewed, with a heavy emphasis on studies conducted in Western contexts. This limits the applicability of findings in countries like India, where small and marginal farmers face distinct agronomic and market realities. Furthermore, research in this area often lacks continuity. Studies usually span short time frames and do not offer insight into how these systems perform over extended periods, particularly in terms of profitability and livelihood security.
- There is also a gap in methodology. Very few studies use a combined systematic literature review and bibliometric approach to map the intellectual landscape and trace emerging trends. The limited integration of bibliometric tools has resulted in missed opportunities to identify influential contributors, thematic clusters, and underexplored research areas.
- Equally important, many studies do not connect farming systems to larger agribusiness strategies such as marketing, logistics, consumer preferences, and policy frameworks.
- This study aims to bridge these limitations by analyzing 145 peer-reviewed publications from 2001 to 2024 through a systematic literature review integrated with

bibliometric analysis. The objective is to provide a more complete picture of how organic and inorganic farming systems align with sustainability imperatives, economic outcomes, and agribusiness development strategies.

1.4 Research Gaps

- Although the literature on farming systems has grown significantly over the years, several areas remain underexplored and demand closer attention.

1) There is a lack of region-specific comparative studies that focus on developing economies. Most available research tends to highlight global patterns, often overlooking the lived realities of farmers in countries like India, especially those with limited access to capital and institutional support.
2) Many studies assess profitability and yield over a single crop cycle or short time frame. There is limited evidence that examines how farming practices perform economically over multiple seasons or decades, which is crucial for assessing long-term sustainability.
3) Agribusiness strategy remains an under-integrated theme in farming system research. While numerous studies focus on cultivation techniques or input use, few explore how farming practices connect with market strategies, distribution systems, financial models, and consumer dynamics. This results in a disconnect between academic findings and real-world applications in agricultural business planning.
4) There is minimal research evaluating the actual implementation of policies such as the Sustainable Development Goals or India's National Programme for Organic Production. While such frameworks are frequently cited, empirical studies examining their effectiveness and impact on farmers are rare.
5) Little has been written about the transitional phase for farmers shifting from inorganic to organic practices. The absence of detailed analysis on financial risk, technical training, and institutional barriers creates a knowledge vacuum for policymakers and practitioners trying to support this shift.
6) The literature remains heavily influenced by Western publications. Studies from North America and Europe dominate the conversation, while contributions from Asia, Africa, and Latin America remain underrepresented. This geographical bias limits the diversity of perspectives and overlooks regionally relevant practices.
7) There is insufficient attention given to interdisciplinary and technology-enabled approaches. Tools like AI, GIS mapping, and precision agriculture have the potential to transform farming practices, yet they are rarely examined in the context of organic agriculture. Similarly, perspectives from disciplines such as behavioural economics, anthropology, and rural sociology are often missing, which reduces the depth of understanding of farmer behaviour and adoption patterns.

- These research gaps highlight the need for a more inclusive, methodologically diverse, and context-sensitive approach to studying farming systems within the framework of agribusiness management.

1.5 Objectives

This study seeks to critically examine the academic and practical dimensions of organic and inorganic farming systems, with a focus on their relevance to sustainable agribusiness management. The specific objectives are:

a) To perform a bibliometric analysis of Scopus-indexed literature published between 2001 and 2024 on organic and inorganic farming, identifying publication trends, prolific authors, influential journals, and emerging research themes in sustainable agriculture.
b) To synthesize and compare existing scholarly findings on the economic viability of organic and inorganic farming systems, with attention to yield performance, input cost dynamics, and long-term sustainability.
c) To identify underexplored research areas and propose future directions for integrating organic and inorganic practices within comprehensive agribusiness models that align ecological sustainability with market competitiveness.

2. Materials and Methods

This study adopts a hybrid methodological approach that combines a Systematic Literature Review (SLR) and bibliometric analysis to evaluate and synthesize the academic discourse surrounding organic and inorganic farming practices within the domain of agribusiness management. This dual method not only ensures rigorous data collection but also enables a quantitative and qualitative exploration of publication trends, thematic clusters, and knowledge gaps.

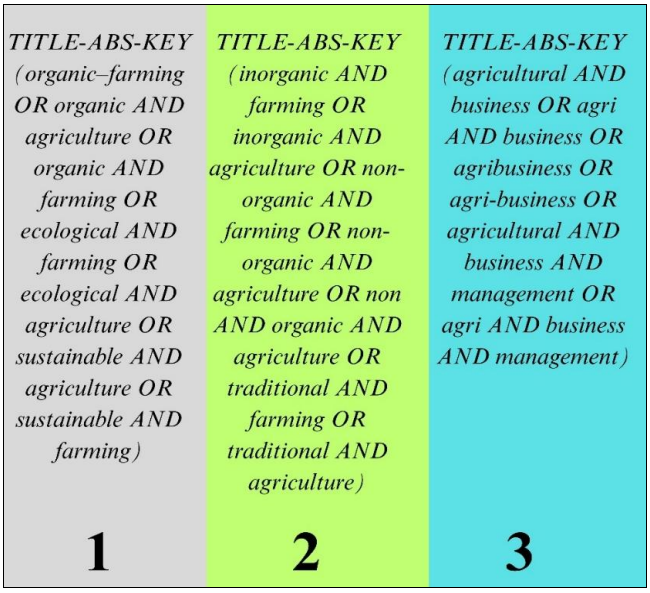
2.1 Research Design and Approach

The literature search was conducted exclusively using the Scopus database due to its wide coverage of peer-reviewed scientific literature and compatibility with bibliometric software tools. A Boolean search strategy was developed to retrieve relevant publications spanning from 2001 to 2024.

PRISMA ensures methodological rigour by minimizing bias and enhancing reproducibility through clearly defined inclusion and exclusion criteria (Page *et al*., 2021) [17]. Its structured reporting system also facilitates compatibility with bibliometric approaches, allowing the integration of techniques such as keyword mapping, citation analysis, and author network visualization in literature reviews of multidisciplinary fields like sustainable agriculture (Donthu *et al*., 2021) [18].

2.2 Data Source and Search Strategy

The literature search was conducted exclusively using the Scopus database due to its wide coverage of peer-reviewed scientific literature and compatibility with bibliometric software tools. A Boolean search strategy was developed to retrieve relevant publications spanning from 2001 to 2024. Keywords were chosen to reflect various dimensions of organic farming, inorganic or conventional agriculture, and agribusiness management.



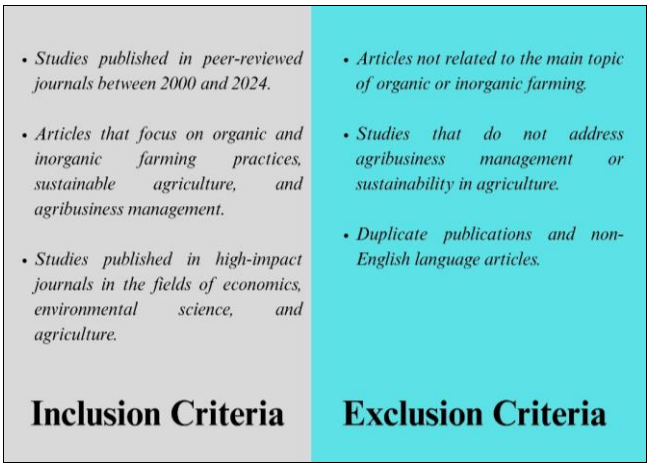
Source: Author's own illustration using Canva

Fig 1: Search query used to find in academic databases

This search strategy yielded a total of **2,873 results**, providing a substantial body of literature for further analysis. The second step in our systematic literature review was the screening process. This crucial phase involved meticulously including and excluding papers based on predetermined criteria to ensure the relevance and quality of the selected studies.

2.3 Inclusion and Exclusion Criteria

- The screening process was conducted in multiple stages. In the first phase, titles and abstracts were reviewed to filter out irrelevant studies. In the second phase, full-text reviews were performed to ensure alignment with the research scope.



Source: Author's own illustration using Canva

Fig 2: Criteria used for the screening process

- After applying these criteria, a final corpus of 145 articles was selected for in-depth analysis.

2.4 Bibliometric Tools and Software

- The bibliometric analysis was performed using Biblioshiny, the web-based interface of the Bibliometrix R package. This platform enabled structured visualization and mapping of academic patterns including co-authorship networks, keyword co-occurrence, citation analysis, and thematic clustering. Biblioshiny's interactive dashboard facilitated trend tracking across publication years, author collaboration, and subject category evolution.

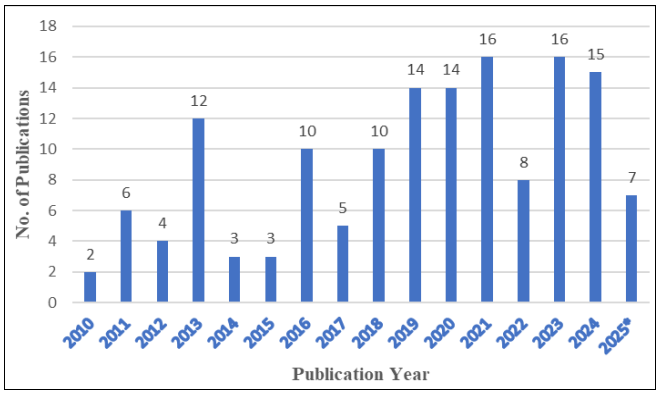
2.5 Data Extraction and Coding Process

- Following the selection of eligible articles, data were manually extracted and recorded in a structured spreadsheet. Key metadata fields included publication year, author name(s), institutional affiliation, journal title, country of origin, document type, keywords, citation count, and thematic classification. Each study was also coded based on its core focus: economic viability, environmental sustainability, policy intervention, agribusiness integration, or market dynamics. This coding process ensured consistent categorization across all articles and served as the foundation for both qualitative synthesis and bibliometric input. To enhance validity, data entries were cross-verified for accuracy by the researcher at multiple stages.

3. Results and Discussion

3.1 Publication Years (153 papers)

It visually maps out the number of research publications per year that focus on the themes of organic and inorganic farming in the context of agribusiness management.



Source: Data extracted from Scopus database by the author

Fig 3: Distribution of Publications by Year (As of July 2025*)

3.1.1. Overall Growth Trend

- Publications grew from 2 (2010) to 16 (2021 and 2023), showing a clear upward trend with fluctuations.
- The peak years were 2021 and 2023 (16 publications each).
- 2024 also remained strong (15 publications).

3.1.2. Notable Patterns

- **Early phase (2010–2015):** Very low activity (2–6 per year, except 2013 with 12).
- **Mid phase (2016–2019):** Moderate but steady growth, stabilizing around 10–14 publications.
- **High growth phase (2020–2024):** Strong and consistent output, peaking at 16.
- **2025 (Jan–July):** Already 7 publications. If this pace continues, 2025 could close around 12–14 publications, in line with previous peak years.

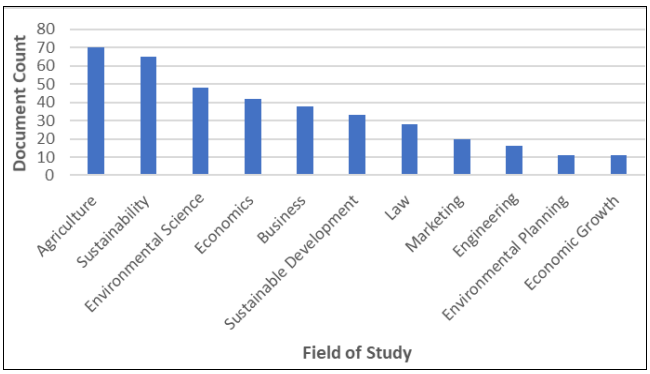
3.1.3. External Influences and Explanations

- The increase in publications after **2015** corresponds with international trends, such as the United Nations Sustainable Development Goals (SDGs) [19], initiated in 2015, and heightened awareness regarding climate change, food security, and sustainable agriculture.
- The decline in 2022 (8 publications) may reflect temporary factors, while the apparent decline in 2025 (7 publications) is due to partial data available only up to July.
- Fluctuations may also be influenced by publication lag or the fact that recent data may not yet be comprehensively indexed.
- These graphs illustrate a broader shift in academic attention toward sustainable practices and agribusiness strategies over time. Key global developments—such as environmental summits, the European Green Deal, and organic policy frameworks—likely catalyzed publication surges.

3.1.4. Summary

Overall, the data show a clear growth trajectory, with research output becoming more stable and peaking in recent years (2021–2024). The partial count for 2025 indicates momentum is continuing, and the year will likely close as another strong period of publication activity.

3.2 Subject Area



Source: Data extracted from Scopus database by the author

Fig 4: Distribution of Publications by Subject Area

The distribution of publications reveals that the predominant focus of research is in agriculture (70 papers) and sustainability (65 papers), indicating that the discourse on organic versus inorganic farming is examined chiefly through the lenses of production systems and sustainable practices. These fields emphasize soil vitality, agroecological balance, fertilizer application, crop yield optimization, water-use efficiency, biodiversity preservation, and pollution mitigation. The growing body of research in these areas reflects a paradigm shift from conventional productivity-driven approaches toward climate-resilient and resource-efficient farming methodologies. This trend strongly aligns with the UN Sustainable Development Goals (SDGs), particularly SDG 2 (Zero Hunger), SDG 12 (Responsible Consumption and Production), and SDG 13 (Climate Action), underscoring the global push towards environmentally and socially responsible farming systems.

Environmental science (48 papers) emerges as the next significant field, underscoring the ecological implications of both organic and inorganic farming practices. Studies in this domain frequently evaluate soil degradation, groundwater contamination, pesticide residues, greenhouse gas emissions, and biodiversity impacts. This emphasis demonstrates the recognition that agricultural management strategies cannot be evaluated solely on yield outcomes but must also consider long-term environmental sustainability and ecosystem services.

In parallel, economics (42 papers) and business (38 papers) represent a substantial research dimension, reflecting the managerial and financial implications of farming practices. Here, scholars have investigated issues such as the profitability of organic versus inorganic systems, cost-benefit analyses, supply chain efficiency, market dynamics, and value addition in agri-business. The growing visibility of environmental economics highlights the importance of internalizing externalities such as carbon emissions, soil erosion, and aquifer depletion. These studies often stress the trade-offs between short-term profitability and long-term ecological and social sustainability, providing critical insights for policy makers and agribusiness managers.

The cluster of research in sustainable development (33 papers) and law/policy & governance (28 papers) indicates the interdisciplinary expansion of the discourse. Sustainability research integrates agriculture with broader socio-economic and environmental agendas, while legal and policy-oriented studies frequently address subsidy frameworks, certification systems, environmental regulations, and trade policies. These dimensions are particularly relevant in developing countries, where state intervention significantly influences farmers' adoption of organic or inorganic practices.

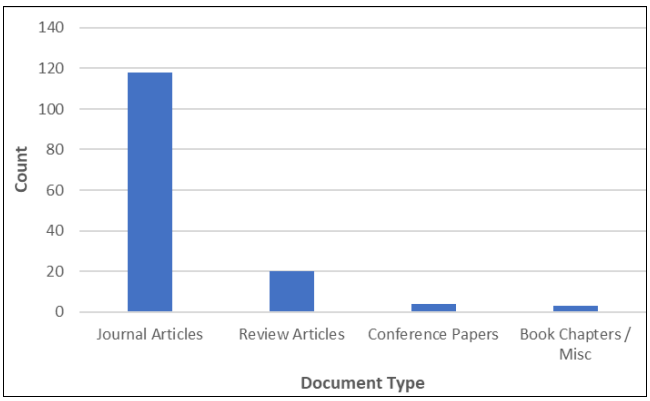
Complementing these are marketing (20 papers), engineering (16 papers), environmental planning (11 papers), and economic growth (11 papers). Marketing studies assess consumer behavior, branding of organic produce, willingness to pay premiums, and certification credibility. Engineering contributions focus on farm mechanization, precision agriculture, irrigation technology, and renewable energy adoption in farming. Environmental planning studies explore land-use management, watershed planning, and rural development strategies, while economic growth research situates farming practices within the broader trajectory of regional and national economic development.

The variety of disciplines indicates that organic and inorganic farming have transcended the agricultural sciences, becoming topics of economic, environmental, and social investigation. The information presented in this mapping substantiates that agribusiness management is fundamentally multidisciplinary, necessitating cooperation among agronomists, economists, environmental scientists, engineers, marketers, and policy analysts. Future research will probably further explore climate-smart agriculture, precision farming, digital technology adoption, and policy-effect assessments, all of which are closely connected to resource economics and sustainability science.

Hence, the mapping suggests that research on organic and inorganic farming has moved beyond narrow agronomic concerns and now integrates multidisciplinary perspectives, ranging from ecological sustainability and agronomy to economics, business management, law, and governance. This multidimensional approach highlights the complexity of effective agri-business management, where farming

practices are deeply intertwined with environmental, economic, technological, and regulatory frameworks.

3.3 Document Type



Source: Data extracted from Scopus database by the author

Fig 5: Distribution of Publications by document type

The analysis of document types reveals that journal articles (118 papers) form the predominant category, demonstrating that the research in this field is firmly anchored in peer-reviewed empirical studies. This highlights a data-centric orientation, where agricultural practices, economic outcomes, and sustainability dimensions are examined using methodologically rigorous approaches. Such dominance of journal articles strengthens the credibility of the domain, as these publications undergo stringent scholarly review, making them vital for both academic advancement and practical policy formulation.

The presence of 20 review papers indicates that scholars have actively engaged in synthesising and consolidating dispersed research. Reviews not only provide a critical appraisal of existing literature but also identify gaps and future directions, reflecting a maturing research landscape. Their contribution signifies an effort to move beyond isolated findings toward creating integrated frameworks and theoretical clarity in the study of agricultural and sustainability issues.

In contrast, the low representation of conference papers (4) suggests that preliminary or exploratory research is relatively underreported or less disseminated in this domain. This may point to a tendency among researchers to prioritise fully developed, peer-reviewed outputs over early-stage discussions. While conference papers often serve as incubators for emerging ideas, their limited presence here underscores the discipline's focus on established, validated knowledge.

The small share of book chapters and miscellaneous works (3) further reflects that the primary intellectual contributions are channeled through mainstream scientific journals, ensuring accessibility, credibility, and impact.

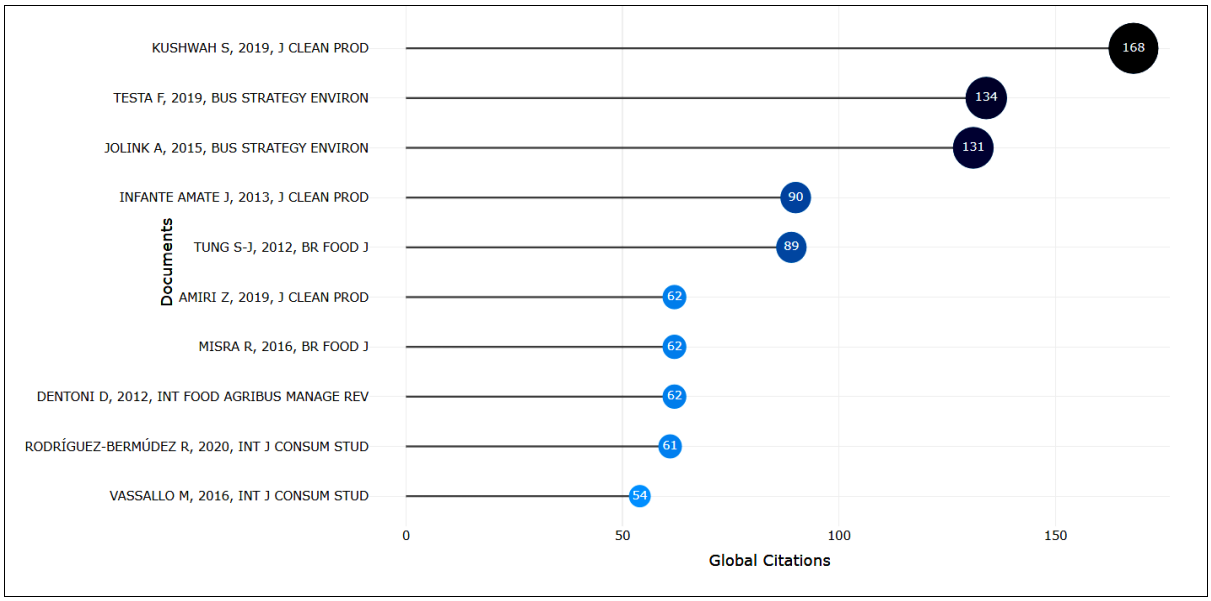
Hence, the document type distribution demonstrates a progressive and consolidated research community. The dominance of journal articles and reviews, alongside the minimal proportion of conference publications, highlights a field that is increasingly empirical, synthesised, and policy-relevant, providing a solid foundation for advancing agribusiness management, sustainability assessment, and comparative farming research.

3.4 Bibliometric analysis

Bibliometric analysis is a powerful method for assessing and quantifying academic research in a specific area. This study employed bibliometric analysis to investigate the impact of organic and inorganic farming practices on agribusiness management. Bibliometric analysis helps explain research trends, prominent works, and new fields of interest by analysing publication frequency, citation patterns, and key authors and journals. This approach provides a comprehensive understanding of the scholarly landscape, identifying prominent themes, research gaps, and the impact of different studies on sustainable agriculture practices.

This analysis employs bibliometric tools and visual representations, such as citation networks, co-authorship patterns, and keyword trends, to demonstrate how agribusiness management addresses food security, sustainability, and economic viability in farming.

3.4.1 Most Global Cited Document



Source: Author's own illustration using Bibliometrix R-package

Fig 6: Number of global citations

The citation analysis highlights three high-impact publications that have shaped academic discourse in the field. The most influential is the work by Kushwah (2019) [20] in the *Journal of Cleaner Production*, which has accumulated 168 global citations. This paper stands out as a central reference point, reflecting its critical contribution to sustainability and cleaner production strategies in agribusiness and food systems. Its citation volume suggests that it has provided both conceptual and methodological frameworks that subsequent researchers have found indispensable.

The second most cited study, by Testa (2019) [21] in *Business Strategy and the Environment*, with 134 citations, underscores the growing intersection between sustainability and corporate strategy. Its widespread recognition suggests that the paper offered valuable managerial insights into how businesses can integrate sustainable practices within broader environmental and economic contexts.

The third, by Jolink (2015) [22] in the same journal, with 131 citations, reflects the enduring influence of earlier sustainability-focused scholarship. Even though it predates the other two, its sustained citation rate indicates that it has been foundational in shaping subsequent research trajectories, particularly in bridging theory with practice in sustainable business models.

Taken together, the citation distribution reveals that a handful of highly influential papers act as intellectual anchors in the discipline, guiding subsequent research directions. These works not only highlight theoretical advancements but also reinforce the practical implications of sustainable practices in agribusiness, food production, and environmental management. Their prominence in global citation counts signifies both their academic relevance and their broader impact on shaping policy and managerial strategies.

3.4.2 Word Cloud

Source: Author's own illustration using Bibliometrix R-package

Fig 7: Word Cloud

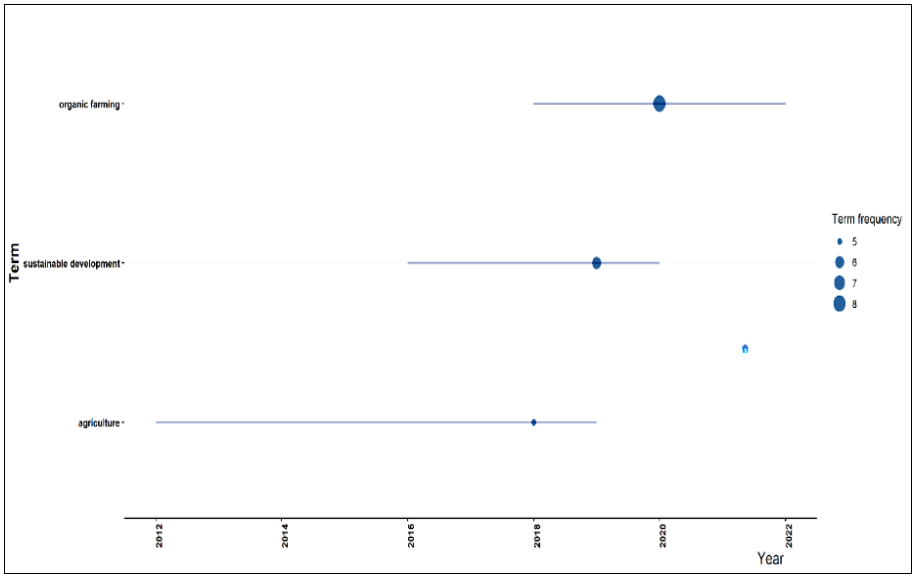
The word cloud visualization illustrates the dominant themes within the research domain. The terms "organic farming," "sustainable development," and "agriculture" are displayed most prominently, emphasizing their centrality and recurrent presence in the literature. These keywords represent the core focus areas, highlighting the intersection of environmental sustainability, farming practices, and agribusiness management.

Surrounding these are moderately sized terms such as "sustainability," "economics," "food industry," "human," "entrepreneur," "agricultural techniques," "farms," and "surveys," which reflect supporting but highly relevant research themes. Their prominence suggests that discussions of farming and sustainability are not confined to agricultural practices alone but extend into economic viability, entrepreneurial strategies, and consumer behavior.

Smaller but still visible terms, including "biogeochemistry," "certification," "consumption values," "ecosystems," and "conservation," indicate more specialized or niche areas of inquiry. Though less dominant, they provide depth by linking broader agricultural debates with ecological, technical, and behavioral dimensions.

Taken together, the word cloud highlights a multidisciplinary orientation, where agriculture, economics, sustainability science, and entrepreneurship converge. This interconnectedness underscores the comprehensive nature of current scholarship and reinforces the idea that sustainable agricultural practices are embedded within a wider socio-economic and environmental framework.

3.4.3 Trend Topics



Source: Author's own illustration using Bibliometrix R-package

Fig 8: Trend Topics

The chart demonstrates a thematic progression in scholarly attention: from broad discussions on agriculture, to global frameworks of sustainable development, and then to the practical application of these ideas in organic farming. This reflects a maturation of research focus, where general concepts have evolved into action-oriented practices within agribusiness and sustainability research.

The trend analysis chart highlights the evolution of key terms—*organic farming*, *sustainable development*, and *agriculture*—across time, based on their frequency in published research.

3.4.3.1 Organic Farming

- This term shows a notable rise in prominence around 2019–2021, with the largest bubble size indicating the highest frequency of occurrence.
- Its sustained presence underscores the growing scholarly and policy interest in alternative farming practices, likely fueled by concerns over environmental impact, soil health, and consumer demand for organic produce.
- The timing coincides with a global shift toward sustainable agricultural systems and increased discussions around food safety and health consciousness.

3.4.3.2 Sustainable Development

- The trend begins around 2016, peaks between 2018–2020, and then slightly tapers off.
- Its significant frequency during this period reflects alignment with the UN Sustainable Development Goals (SDGs) agenda (launched in 2015), which placed sustainability at the center of global development discourse.
- The subsequent decline in frequency may suggest that while the concept remains relevant, it is increasingly being absorbed into more specialized discussions such as climate-smart agriculture, resource economics, and circular economy models.

3.4.3.3 Agriculture

- The term appears consistently across the timeline, with modest frequencies compared to the other two.
- Its smaller bubble size suggests that while agriculture is a fundamental anchor term, much of the discourse has evolved into more specific sub-themes such as organic farming and sustainable practices, reducing the relative weight of the broader term.

3.6 Justification of the Study

The rapid transformation of global agriculture has brought renewed attention to the debate between organic and inorganic farming systems and their role in shaping effective agribusiness management strategies. A systematic exploration of this area is crucial because farming is no longer confined to food production alone; it is now deeply tied to sustainability, profitability, and long-term resource management.

To successfully combine and analyze the results of existing research, it is necessary to organize the literature into thematic clusters that capture the multidimensional nature of agribusiness. These clusters include:

- **Economic Performance and Profitability:** Studies reveal mixed outcomes regarding the financial viability of farming systems. Organic farming often requires higher start-up costs and specialized knowledge but benefits from premium pricing, growing consumer demand, and niche markets. Inorganic farming, by contrast, relies on economies of scale and often yields higher short-term productivity, but its profitability can be constrained by fluctuating input costs (e.g., fertilizers, pesticides) and long-term resource degradation.
- **Sustainability and Environmental Impact:** Organic farming emphasizes soil health, biodiversity, and ecological balance, making it a long-term strategy for sustainable agriculture. Inorganic farming, while effective in meeting immediate food security needs, is associated with soil degradation, water contamination, and biodiversity loss. Evaluating these trade-offs through frameworks such as Triple Bottom Line (TBL) accounting—which incorporates economic, environmental, and social dimensions—enables a holistic assessment of sustainability.

- **Resource and Risk Management in Agribusiness:** Agribusiness management involves balancing labor, capital, and natural resources against market uncertainties and climate variability. Organic farms, though vulnerable to higher market risks and limited access to inputs, benefit from resilience in resource management and consumer-driven demand. Inorganic farms, meanwhile, often rely on input-intensive practices that increase productivity but pose risks of resource depletion. This dichotomy underscores the need for integrated management strategies that can leverage the strengths of both systems.
- **Adoption, Policy, and Regional Trends:** Organic farming has gained momentum globally, particularly in Europe and North America, where strong consumer demand and policy incentives drive growth. In developing economies, its adoption is influenced by government policies, international trade agreements, and rising environmental awareness, but is often constrained by limited access to organic inputs, higher certification costs, and resistance from traditional farming communities. Mapping these adoption trends helps clarify regional disparities and highlight opportunities for policy-driven transformation.

By synthesizing insights across these clusters, the study not only compares the economic and ecological dimensions of farming systems but also exposes gaps in knowledge and practice. This is especially relevant to agribusiness management, where strategic decisions must balance short-term profitability with long-term sustainability and competitiveness.

3.5 Limitations

- This study is subject to several limitations that arise from the nature of systematic literature review (SLR) and bibliometric analysis. First, the dataset was limited to publications indexed in Scopus between 2010 and July 2025. While Scopus is one of the largest and most reliable databases, restricting the search to a single source may have excluded relevant studies available in other indexing platforms or in journals not indexed in Scopus. Similarly, studies published in non-English languages were not included, which may narrow the global representativeness of the findings.
- Although the study sought to provide a comprehensive overview of organic and inorganic farming within the context of agribusiness management, certain emerging technologies, practices, or region-specific approaches may not have been fully captured. The analysis also relied on the metadata quality and accuracy of the retrieved publications, which may contain inconsistencies due to variations in authors' reporting styles, keywords, or indexing errors.
- The dynamic nature of agricultural research means that newly emerging themes, policy shifts, or technological innovations occurring after July 2025 were not incorporated into the analysis. This underscores the need for ongoing updates and complementary studies to capture the evolving landscape of organic and inorganic farming in agribusiness management.

3.6 Future Scope of Research

Building on the findings of this review, several promising directions for future research can be identified:

- **Development of Hybrid Agribusiness Models:** Future work can focus on designing and testing integrated farming models that combine the ecological ethics of organic systems with the productivity and scalability of inorganic practices. Such models could be particularly valuable for emerging markets, where sustainability goals must be balanced with food security and economic growth.
- **Cross-Country Comparative Policy Studies:** Comparative research on how different governments promote, regulate, and incent*ivize* organic and inorganic farming could provide policy benchmarking insights. This would help identify best practices, barriers, and enablers of adoption in both developed and developing economies.
- **Technology-Enabled Farming Innovations:** Emerging digital tools such as blockchain for traceability, IoT-based soil and crop monitoring, and AI-driven decision support systems present new opportunities to make organic farming more scalable, transparent, and consumer-trusted. Future studies could explore their effectiveness and adoption challenges.
- **Climate Resilience and Adaptation:** As climate volatility intensifies, research must examine how organic and inorganic systems respond to environmental shocks such as droughts, floods, and shifting seasons. A comparative analysis of resilience across different agro-climatic zones would offer valuable insights for long-term agribusiness planning.
- **Dynamic Simulation Models for Transition Economics:** The creation of simulation-based models to project the economic feasibility, productivity impacts, and policy costs of transitioning from inorganic to organic farming over the next 10–20 years would provide evidence-based guidance for policymakers and stakeholders.

4. Conclusion

This study provides a comprehensive analysis of the similarities and differences between organic and inorganic farming systems and their implications for sustainable agribusiness management. Through a systematic literature review and bibliometric analysis of Scopus-indexed publications (2010–July 2025), the research identified publication trends, influential contributors, and emerging themes that shape current academic discourse.

The findings suggest that while inorganic farming remains critical for addressing the immediate food security needs of a growing global population, organic farming contributes significantly to long-term environmental sustainability, resource conservation, and consumer-driven demand for safe, traceable food. Rather than viewing these systems in opposition, the study highlights the potential of integrated and hybrid approaches that strategically combine the strengths of both models to enhance productivity, ecological resilience, and economic viability.

Importantly, the research underscores the need for multidisciplinary collaboration between scholars, policymakers, and agribusiness practitioners to address the complex challenges facing the agricultural sector. Gaps remain in understanding policy frameworks, economic trade-offs, and region-specific adoption barriers, signaling opportunities for further investigation.

Hence, this study contributes both practical insights and conceptual foundations for advancing sustainable agribusiness strategies. By mapping existing knowledge and identifying research gaps, it provides a platform for future inquiry into hybrid farming models, policy benchmarking, technological innovations, and climate-resilient agricultural practices that align economic competitiveness with ecological responsibility.

References

1. Mallorn Project. What is the greatest threat to our planet? Mallorn Project Blog. 2023. Accessed September 6, 2023. https://themallornproject.com/blogs/the-mallorn-project-blog/what-is-the-greatest-threat-to-our-planet.
2. United Nations Department of Economic and Social Affairs. World Population Prospects: The 2017 Revision, key findings and advance tables. Working Paper No. ESA/P/WP/248. United Nations; 2017. https://population.un.org/wpp/Publications/.
3. World Commission on Environment and Development. Report of the World Commission on Environment and Development: Our Common Future. United Nations General Assembly; 1987. https://digitallibrary.un.org/record/139811?ln=en.
4. Sonnino R, Faus AM, Maggio A. Sustainable food security: An emerging research and policy agenda. Int J Sociol Agric Food. 2014;21(1):173-188. doi:10.48416/ijsaf.v21i1.161.
5. Woods J, Williams A, Hughes JK, Black M, Murphy R. Energy and the food system. Philos Trans R Soc Lond B Biol Sci. 2010;365(1554):2991-3006. doi:10.1098/rstb.2010.0172.
6. Energy Watch Group. Coal: Resources and future production (EWG-Series No. 1/2007). Ludwig-Bölkow-Systemtechnik GmbH; 2007. https://energywatchgroup.org/wp/wp-content/uploads/2023/12/EWG_Report_Coal_10-07-2007ms1.pdf.
7. Cheruku JK, Katekar V. Harnessing digital agriculture technologies for sustainable agriculture in India: Opportunities and challenges. ResearchGate. 2021. https://www.researchgate.net/publication/355425495_harnessing_digital_agriculture_technologies_for_sustainable_agriculture_in_india_opportunities_and_challenges.
8. Puđak J, Bokan N. Organic agriculture—Indicator of social values. Sociologija I Prostor. 2011;49(2):137-163. doi:10.5673/sip.49.2.2.
9. Soni R, Gupta R, Agarwal P, Mishra R. Organic farming: A sustainable agricultural practice. Vantage J Themat Anal. 2022;3(1):21-44. doi:10.52253/vjta.2022.v03i01.03.
10. Kingwell-Banham E, Petrie CA, Fuller DQ. Early agriculture in South Asia. In: Barker G, Goucher C, editors. The Cambridge World History. Cambridge: Cambridge University Press; 2015:261-288.
11. Aulakh CS, Ravisankar N. Organic farming in Indian context: A perspective. Agric Res J. 2017;54(2):149-164. https://krishi.icar.gov.in/jspui/bitstream/123456789/39382/1/Review%20Paper_2017_ARJ_OF.pdf.
12. Pattanayak SK. Crop management in organic farming. Regional Centre of Organic Farming, Odisha; 2018. https://www.jaivikkheti.in/DMS/TRANSAITION_FROM_CONV_TO_ORGANIC_FARMING.pdf.
13. Mohler CL, Stoner KA. Guidelines for intercropping. In: Mohler CL, Johnson SL, editors. Crop rotation on organic farms. Ithaca, NY: Plant Life Sciences Publishing; Sustainable Agriculture Research and Education (SARE) Program; 2009:95-100.
14. Chahal KK, Singh B, Battu RS, Kang BK. Monitoring of farmgate vegetables for insecticidal residues in Punjab. Indian J Ecol. 1999;26(1):50-55.
15. Tiwari A. Relevance of Gandhian principles in agriculture. In: Mahatma Gandhi's vision of agriculture: Achievements of ICAR. Indian Council of Agricultural Research (ICAR); 2019:14-17. https://icar.org.in/sites/default/files/2022-06/Gandhi-Ji-Book-16-10-2020-m.pdf.
16. Bablad HB, Sailaja A, Manohari PL. Organic farming for sustainable agriculture. Hyderabad: Extension Education Institute and National Institute of Agricultural Extension Management (MANAGE); 2021:6-15. https://www.manage.gov.in/publications/eBooks/organic%20farming.pdf.
17. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD *et al*. The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. BMJ. 2021;372:n71. doi:10.1136/bmj.n71.
18. Donthu N, Kumar S, Mukherjee D, Pandey N, Lim WM. How to conduct a bibliometric analysis: An overview and guidelines. J Bus Res. 2021;133:285-296. doi:10.1016/j.jbusres.2021.04.070.
19. United Nations. The Sustainable Development Goals. https://sdgs.un.org/goals. Accessed August 21, 2025.
20. Kushwah S, Dhir A, Sagar M. Ethical consumption intentions and choice behavior towards organic food: Moderation role of buying and environmental concerns. J Clean Prod. 2019;236:117519. doi:10.1016/j.jclepro.2019.06.350.
21. Testa F, Sarti S, Frey M. Are green consumers really green? Exploring the factors behind the actual consumption of organic food products. Bus Strat Env. 2019;28(2):327-338. doi:10.1002/bse.2234.
22. Jolink A, Niesten E. Sustainable development and business models of entrepreneurs in the organic food industry. Bus Strat Env. 2015;24(6):386-401. doi:10.1002/bse.1826.