land

MDPI

Review

Exploring the Ecological Effects of Rural Land Use Changes: A Bibliometric Overview

Haojun Xie [1], Quan Sun [1,*] and Wei Song [2,3,*]

[1] School of Agriculture, Ningxia University, Yinchuan 750021, China; 12021131171@stu.nxu.edu.cn
[2] Key Laboratory of Land Surface Pattern and Simulation, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, Beijing 100101, China
[3] Hebei Collaborative Innovation Center for Urban-Rural Integration Development, Shijiazhuang 050061, China
* Correspondence: sqnxu@sina.com (Q.S.); songw@igsnrr.ac.cn (W.S.)

Abstract: Land use change is a significant contributor to global environmental change. The expansion of urban areas has increasingly impacted rural ecological environments, in particular the shift from agro-ecosystems to urban ecosystems, leading to alterations in land use patterns. Rural land use has led to economic, social, and environmental problems, including poor economic efficiency, emissions of pollutants, and increased environmental crises. The research of alterations in rural land use and their consequential environmental ramifications has garnered escalating attention, evolving into an indispensable subject of inquiry within pertinent academic disciplines. This study aims to obtain a comprehensive understanding of the ecological impacts of rural land use change. We examined 1237 literature sources through the Web of Science database and conducted a bibliometric analysis utilizing the Bibliometrix tool. Secondly, based on the results of bibliometric analysis, we conducted a review study on the impact of rural land use changes on the ecological environment, clarified the current research status in this field, and looked forward to future research directions. The study's findings indicate that there has been a steady rise in publication volume from 1982 to 2023 and a significant potential for growth. The top three journals by publication volume are *Sustainability*, *Land Use Policy*, and *Land*. (2) A total of 4768 scholars from 95 countries or regions have contributed publications in this domain, notably led by researchers and institutions predominantly based in China. Developed nations, exemplified by the U.S., exhibit a notable citation frequency and robust research prowess within this field. (3) Land use, urbanization, China, ecosystem services, biodiversity, and remote sensing emerge as keywords of elevated frequency within the field, indicative of the scholarly emphasis on these subjects. (4) Studies in this domain are directed towards evaluating the effects on intrinsic components of the environment, including but not limited to soil quality, atmospheric conditions, water resources, and biodiversity. The implementation of sustainable rural land use strategies is essential for the realization of rural development and environmental protection. In future research efforts, the use of remote sensing technology holds immense potential as a robust technical tool for investigating both land use change and rural ecology, offering viable strategies for addressing environmental challenges in specific, localized regions. The results of this study can assist in comprehending the current state and direction of research in this field.

Keywords: rural land use; land use change; urbanization; ecological environment; bibliometric

Citation: Xie, H.; Sun, Q.; Song, W. Exploring the Ecological Effects of Rural Land Use Changes: A Bibliometric Overview. *Land* **2024**, *13*, 303. https://doi.org/10.3390/land13030303

Academic Editors: Le Yu and Pengyu Hao

Received: 25 January 2024
Revised: 24 February 2024
Accepted: 25 February 2024
Published: 28 February 2024

1. Introduction

Alterations in land use practices are being recognized as a significant contributor to broad-scale environmental changes on a global level [1–3]. These shifts in land utilization carry extensive and enduring consequences for the viability of our planet's ecosystems [4–6]. The ability of land to support diverse functions is paramount to maintaining ecological balance [7]. Furthermore, it is critically important for achieving sustainable living conditions for communities across the globe [8]. Urbanization is reshaping the terrestrial landscape

at a rapid rate with intricate and multifaceted processes that transform rural areas into urban centers and repurpose agricultural land for alternative industrial use [9,10]. The expansion of urban areas is occurring at an unprecedented velocity, encroaching upon previously agricultural terrains, woodlands, and a range of pristine natural habitats [11,12]. Land management decisions and the policies overseeing our natural resources have the potential to have a pronounced direct or indirect impact on ecological phenomena and processes [13]. The interplay between human endeavors and the natural environment clearly results in outcomes that are often permanent, imprinting lasting changes on our environmental systems [14].

The phenomenon of urbanization is seen around the world and is widely accepted as a change that cannot be turned back [15,16]. This movement of people and resources towards urban areas results in a clustering of human populations, a congregation of social networks and assets, and intensified industrial and commercial endeavors [17]. Nonetheless, this same concentration offers up vulnerabilities, making cities and their dense populations more susceptible to a gamut of risks and potential disasters [18]. The swift pace at which urban areas have expanded has brought about profound changes to their natural surroundings, particularly in regions once dominated by farming and agriculture [19]. What were previously landscapes sculpted by agricultural needs are now increasingly becoming part of the urban footprint, transforming into what we know as urban ecosystems [20]. This shift in how rural land is utilized in the wake of development carries with it a set of complex difficulties [21]. These difficulties have both tangible and intangible facets manifesting as lessened economic productivity, particularly in regions transitioning away from agriculture without adequate investment in new industries. Pollution has soared as well, with the prevalence of contaminants rising to levels that are not only harmful to the environment but also to human health [22]. The environmental situation has deteriorated as a result, with damage ranging from the loss of biodiversity to the depletion of natural resources. This degradation further complicates the prospects of sustainable development, as ecological considerations are often sidelined by the pressing need for urban expansion. Overall, the urbanization trend binds both opportunity and adversity. As population centers grow and draw in more human and financial capital, the challenges posed—economic, societal, and environmental—also magnify. These include, but are not limited to, reduced effectiveness in traditional economic sectors, an upsurge in pollution, and acceleration in the decline of environmental health [10,23–25], underscoring an urgent need for policy interventions and sustainable planning.

The study of global change by an increasing number of researchers from various fields has shifted towards analyzing the relationship between land use and ecosystems [26,27]. This research focuses on the ecological consequences that result from changes in land use and how they interact with the ecosystem. The analysis of alterations in rural land use and their ecological repercussions has increasingly gained attention, becoming a crucial topic of investigation in fields like geography, environmental science, landscape ecology, and ecological economics [28,29]. Previous research has thoroughly evaluated many aspects of modifications in rural land use and ecosystems. Laan et al. investigated the ecological consequences of changes in land use associated with agricultural production in the South African region, with a focus on specific amelioration measures [30]. Benoit et al. developed new techniques for assessing the effects of land use on the ecological environment, with the objective of identifying the degree of interdependence among various components [31]. However, many of these investigations focused on isolated aspects within the field without providing a comprehensive overview of the current state of development. Additionally, they did not provide predictions for future trends, thus limiting the progress of the field.

The expanding community of scientists from diverse fields is now concentrating on how the use of land affects the natural environments we live in and depend upon [26]. These experts are honing in on the intricate ways that our decisions about land development, agriculture, and conservation ripple through ecosystems. With each new building, farm, or protected area, there arise important questions about the balance of nature and

the foreseeable effects of our footprint on Earth. This body of work has become pivotal, touching on several disciplines, including geography with its spatial awareness, environmental science with its dedication to holistic health, landscape ecology's understanding of spatial patterns, and ecological economics with its fusion of ecology and financial insights [28,29]. Extensive examinations have shed light on many facets of how altering rural landscapes impacts natural ecosystems. In the South African context, for instance, research conducted by Laan and colleagues peeled away the layers of complexity to reveal how shifts in land dedicated to farming activities are influencing the natural order and what measures could possibly soften these impacts [30]. Similarly, the efforts of Benoit and team shed light on innovative methodologies to quantify the footprint of human land use on the environment, aiming to untangle the web of relationships between diverse components of these ecosystems [31]. Despite the depth of these investigations, many have tunneled into specific niches without stepping back to consider the broader picture of progression within this vital area of study. Furthermore, there is an observable gap in the body of research regarding foresight, as few studies venture to predict where our current path may lead us in terms of environmental integrity. This shortfall highlights a potential stasis in the advancement of knowledge around land use and ecosystem dynamics, marking out a clear path for future research endeavors.

Bibliometric analysis is a method that relies on the adept use of literature data visualization instruments for the purpose of data mining, engaging in thorough network analysis, and effectively mapping to concisely articulate the breadth of knowledge that spans across various related subject areas [32]. In contrast to other methodologies, the strength of bibliometric analysis lies in its provision of a lens that is objective and systematic, essential for the in-depth examination of the prevailing hotspots and the emergent trends within the research field at large [33]. Standing on the cusp of contemporary academic study, the method has seen significant development and has been widely employed to scrutinize and identify the prevailing disciplinary tendencies among scholars and researchers alike. Among the tools commonly harnessed in the pursuit of bibliometric analysis, some stand out due to their high frequency of use and recognized effectiveness, including but not limited to CiteSpace, VOSviewer, and Bibliometrix [34,35]. These tools have gained acclaim and are frequently referenced within academic circles, evidencing their prominent roles in the pursuit of bibliometric study and analysis.

Bibliometrix, an open-source bibliometric analysis tool, was developed in 2017 by Massimo Aria et al. [36]. Unlike other bibliometric software, Bibliometrix can import and convert data from various databases, such as the Web of Science and Scopus. Additionally, it offers a wider range of literature analysis functions and visualization alternatives [36,37]. Currently, many researchers utilize bibliometric analysis in various fields, such as agriculture, ecology, and geography. In their study, Xu et al. conducted data extraction and statistical analysis by searching the Web of Science database for research papers related to land reclamation published between 2000 and 2020. Their research aims to identify future research directions in this field [38]. Li et al. conducted a bibliometric analysis to quantitatively examine the literature on rural settlements in the Web of Science core collection database from 1973 to 2021. Their study identified the current state of research and future trends in the field [39].

There is widespread global interest in rural land use and ecology, but there is still a lack of relevant review studies. Consequently, this study systematically sifts through potentially pertinent literature on the subject of rural land use alteration and ecology, utilizing the Web of Science (WOS) core database. The identified literature is meticulously organized and scrutinized employing the Bibliometrix R language package. This research aims to analyze its research dynamics and development trends more objectively, elucidating the advancements in existing studies and enhancing comprehension of future trends. To achieve the research objectives of this study, the following questions will be addressed:

(1) What are the trends in the production of relevant literature in this field?
(2) How are academic journals, authors, research countries, and institutions in this field of research developing?

(3) How have the research focal points and topics within this field progressed and advanced?
(4) What are the ecological impacts of changing land use in rural areas?
(5) What are the prospects for future directions of research in this field?

2. Data Sources and Methods

2.1. Data Sources

Bibliometrics is an objective technique for efficiently obtaining and analyzing publication data. The Web of Science is a vast and comprehensive academic database that contains a wealth of literature. It is a crucial tool for retrieving global scholarly information and is widely recognized as one of the world's most valuable resources in this field. The data used in this study was obtained from the Web of Science Core Collection database, which is a reliable source for academic research. Literature on the relationship between rural land use and the ecological environment was retrieved using the search term "topic". Through repeated experiments by the authors, the search formula is as follows: (TS = (rural land use) OR TS = (rural land use change)) AND (TS = (ecological environment)). The data were collected in November 2023, and the search criteria were limited to articles and reviews published between 1982 and 2023. Additional search results were obtained by screening entries to ensure search quality. The outcomes were exported to "complete records and cited references" and saved in text format. A total of 1237 articles meeting the specified criteria were retrieved from the search.

2.2. Methods

With reference to the general steps of bibliometric analysis, the steps of bibliometric analysis conducted in this paper include data collection and cleaning, data analysis and visualization, and data interpretation (Figure 1). Data collection and cleaning have been described in Section 2.1.

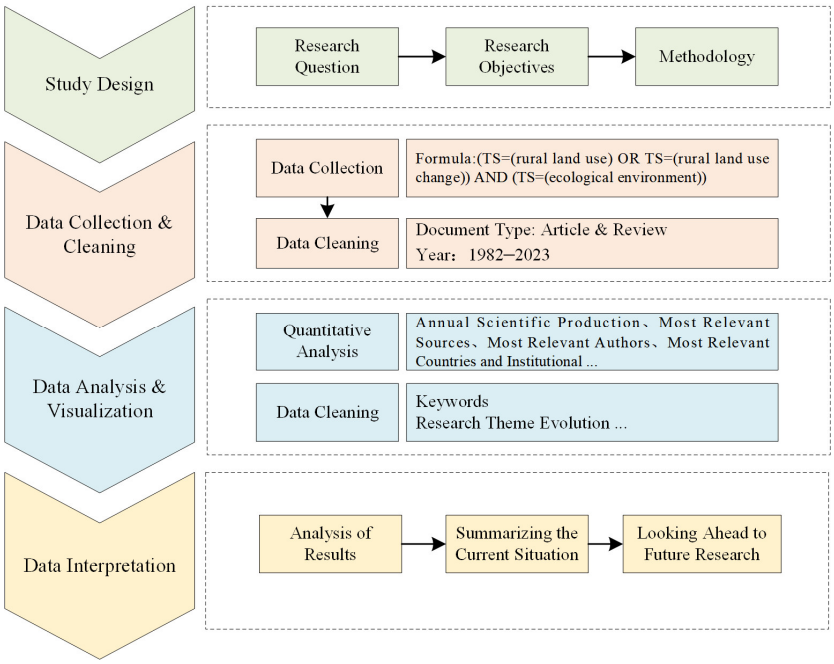

Figure 1. Research design and workflow.

Data Analysis and Visualization: To ascertain the primary research topics, the current research landscape, and the developmental trajectory of rural land use and the ecological environment, we employed Biblioshiny. Bibliometrix has introduced an online data analysis tool replete with numerous statistical methodologies and a diverse array of visualization charts. This tool is accessible for users, thereby fulfilling the fundamental needs

of researchers [36,40]. For the field of rural land use and ecology, this paper will conduct a quantitative analysis of issuing journals and citations; a quantitative and collaborative network analysis of researchers, institutions, and countries; keyword analysis; and an examination of the evolution of research topics. In addition to utilizing the Biblioshiny software package, this study incorporates Origin software for graphing and charting to enhance data visualization.

Data Interpretation: While bibliometric software streamlines literature review research, it still necessitates comprehensive literature reading. To fully leverage the indispensable role of bibliometric analysis, the literature is meticulously reviewed and analyzed subsequent to the analysis. Consequently, it can offer a more objective, convenient, and accurate synthesis of the field's current state and its intricacies and predict future research directions.

3. Results of the Bibliometric Analysis

3.1. Quantitative Analysis of the Literature

The amount of published research in the fields of rural land use change and ecological environment can be indicative of the level of research focus and progress in the area. Figure 2 illustrates a fluctuating upward trend in the quantity of published papers in this field from 1982 to 2023.

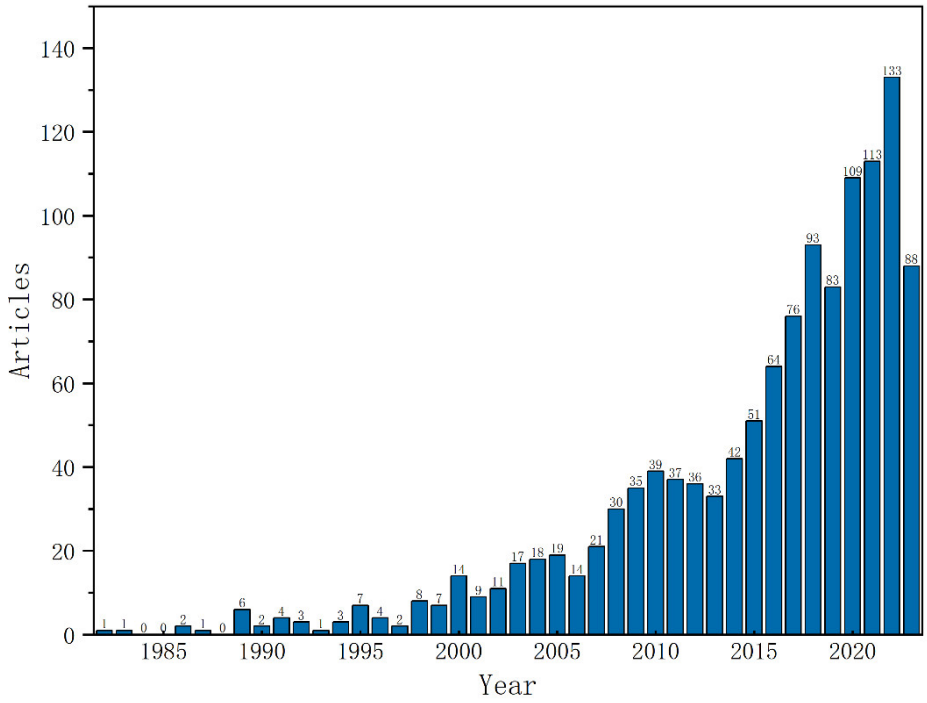

Figure 2. Annual publication trend in the field of rural land use change and ecological environment from 1982 to 2023.

This paper analyzes the trend of change in relevant studies by dividing them into three stages: 1982–2007, 2008–2014, and 2015–2023. During the 1982–2007 stage, there was a slow growth with a limited number of papers published, only amounting to 175, which represented 14.1% of the total number of publications. Conversely, the 2008–2014 stage witnessed significant growth, accompanied by a remarkable surge in the quantity of publications compared to the previous stage. Over the period, a total of 252 papers were produced, which represents 20.4% of the overall number of papers published. On average, 36 papers were published per year. The period from 2015 to present is the rapid growth stage, with a significant increase in the number of papers published reaching 810, representing 65.5% of the total number of papers published. The average number of articles per year in this phase reached 90, and relevant research in this area has entered a different phase.

3.2. Analysis of Journals

Based on the collected data, we tallied the number of articles published in each journal and identified the top ten journals based on the quantity of articles published between 1982 and 2023 (Table 1). According to the statistical information provided by the periodicals, the journals cover several subject areas, such as environmental sciences, environmental studies, ecology, and biodiversity conservation, among others. It is worth noting that the majority of journals publishing articles belong to the field of environmental sciences.

Table 1. Top ten journals with publications about rural land use change and ecological environment in the time period of 1982 to 2023.

Sources	Category	Number of Publications	H-Index
Sustainability	Environmental Sciences	59	12
Land Use Policy	Environmental Studies	47	23
Land	Environmental Studies	46	11
Ecological Indicators	Environmental Sciences	37	22
Science of The Total Environment	Environmental Sciences	32	20
Landscape and Urban Planning	Ecology	28	21
Journal of Environmental Management	Environmental Sciences	24	15
Landscape Ecology	Ecology	23	17
Urban Ecosystems	Biodiversity Conservation	23	10
International Journal of Environmental Research and Public Health	Environmental Sciences	21	7

The included journals each published 20 or more articles. *Sustainability* leads with 59 publications, followed by *Land Use Policy* with 47 papers, and *Land* with 46. The H-index, a quantitative measure developed by American physicist Jorge E. Hirsch, evaluates academic output. A higher H-index implies a more significant impact of the journal in the field. Among the journals listed, *Land Use Policy*, *Ecological Indicators*, *Landscape and Urban Planning*, and *Science of The Total Environment* exhibit a higher H-index, which infers their greater impact in the research field.

A trend analysis of the top five journals, based on the number of publications, indicates that *Science of The Total Environment* has focused the most on the field. It published its first article in 1991, followed by *Ecological Indicators* in 2004 and *Land Use Policy* in 2005 (Figure 3). *Land Use Policy* has been the most productive journal between 2009 and 2021 in terms of the number of publications. *Sustainability* and *Land*, on the other hand, began publishing their first papers in 2014 and 2018, respectively. However, the quantity of published articles has substantially increased over time. All five publications have consistently shown growth in the number of articles published from their inception until 2023. As of November 2023, *Sustainability*, *Land Use Policy*, and *Land* have released 59, 47, and 46 articles, respectively.

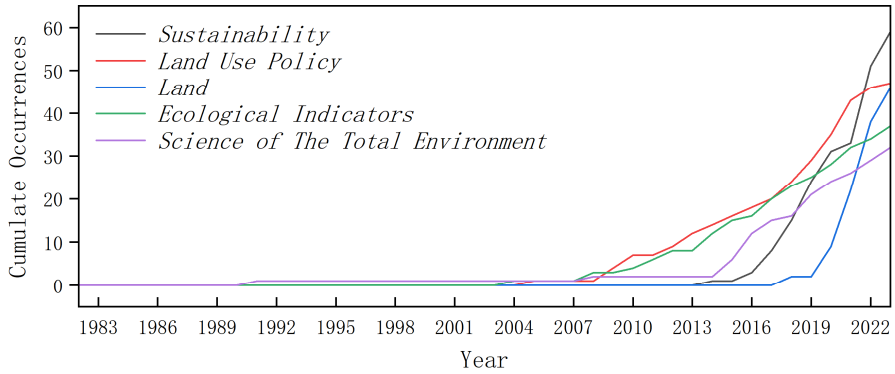

Figure 3. Trend in growth of journal sources in the field of rural land use change and ecological environment from 1982 to 2023.

3.3. Analysis of Key Researchers, Institutions, and Countries

3.3.1. Analysis of Key Researchers

The researchers in the field of rural land use change and ecological environment included 4768 participants. There are only nineteen authors who have published five or more papers. On the other hand, 91.2% of the total number of researchers, a total of 4350 individuals, have only published one paper, according to the study results. The results show that there are fewer researchers who have been working in this field for a long period of time.

In accordance with their contributions to the field in terms of publications (Figure 4), we counted the top ten scholars who had the greatest impact on the field. As of 2021, Liu Yansui, a researcher at the Institute of Geographic Sciences and Resources of the Chinese Academy of Sciences, holds the highest number of publications. Four of them are highly cited. As one of the leading scholars in human-land system science, Liu Yansui has spent a significant amount of time researching rural geography and land use, with his main focus on rural geography and land use as his main research focus. His work has significantly contributed to the academic impact of this field. Following him is Li Yurui of the Chinese Academy of Sciences Institute of Geographic Sciences and Resources. As the earliest author of this paper, Long Hualou, an expert in urban-rural development and land-use transformation at the Institute of Geographic Sciences and Resources of the Chinese Academy of Sciences, is a leading expert in these topics. In addition to researching transformational rural development, he is mainly involved in research on land use change and land-use transformation. Having a high level of academic influence in the field is part of his expertise.

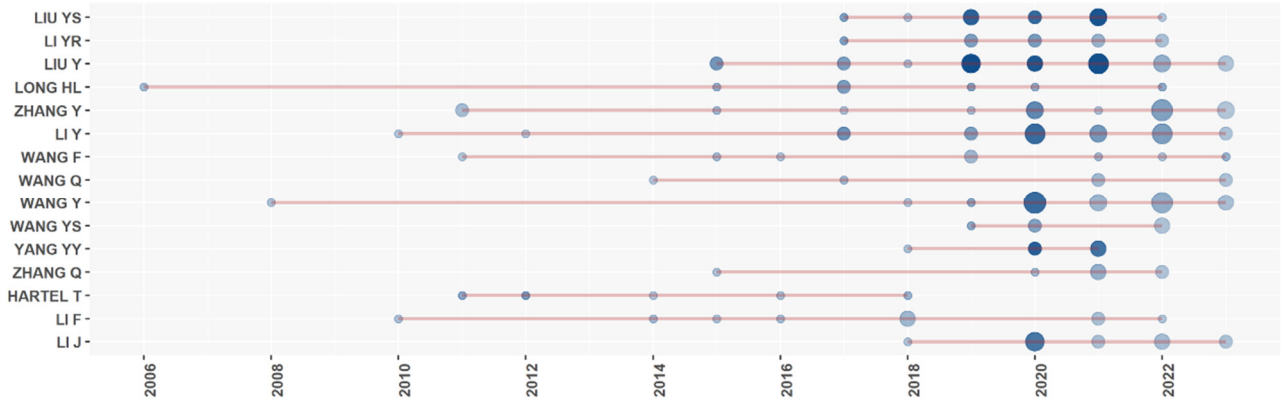

Figure 4. Authors' output of articles in the field of rural land use change and ecological environment over time. Note: The size of each circle indicates the number of publications generated, while the shade of color reflects the number of citations received.

Five clusters of authors were identified in the field of rural land use change and ecological environment (Figure 5). Liu Yansui's research has had a significant impact in this area, exploring topics such as China's transition from urban to rural development, new urbanization, as well as land use and reclamation engineering. Additionally, the research cluster led by E.C. Ellis at the University of Maryland in the United States is relatively robust and focuses primarily on global ecosystems, landscape ecology, and sustainable land management.

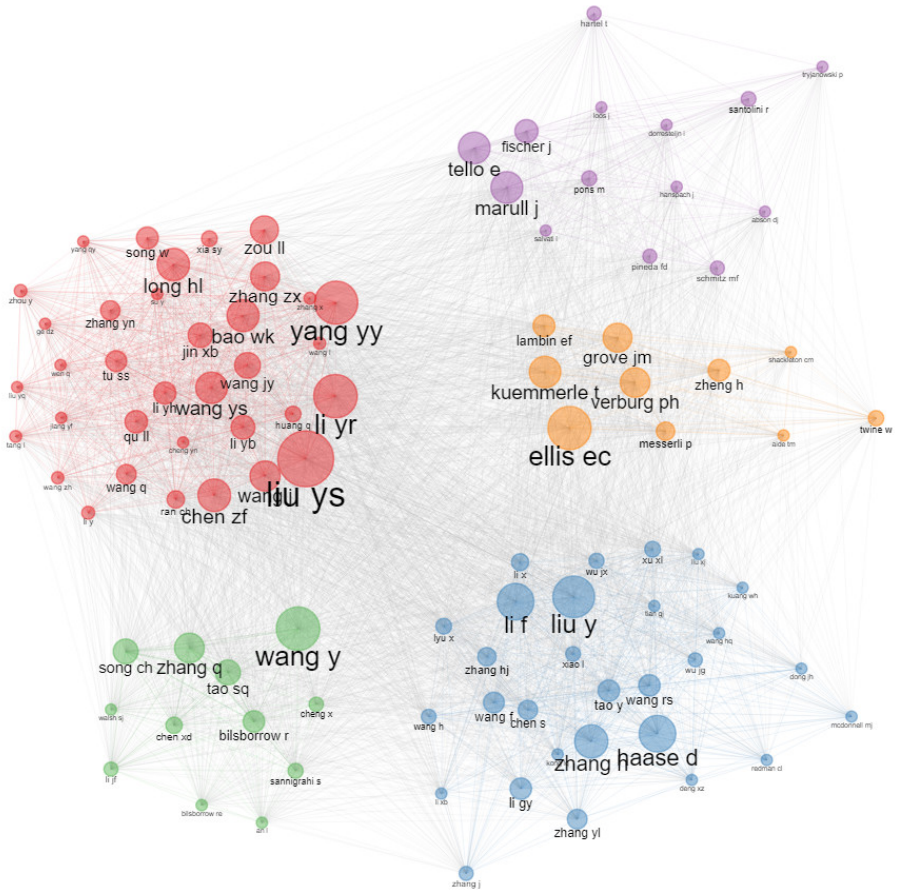

Figure 5. Collaborative network of authors in the fields of rural land use change and ecological environment. Note: The colored circles in the figure represent different cooperative network relationships, and the larger the circle, the more papers published by the scholar.

3.3.2. Analysis of the Main Countries and Institutions

The published papers from different countries enlighten the level of inquiry on rural land use change and its impact on the environment. The significance of these studies can be specific to certain regions. Based on the statistical results, 1691 institutions across 95 countries or regions are currently involved in research on rural land-use change and its ecological consequences. Table 2 presents the top ten publishing countries, with one Asian country (China) and three North American countries (the United States, Brazil, and Canada), along with five European countries (the United Kingdom, Germany, Italy, Spain, and France) and one Oceanian country (Australia).

Table 2. Dissertations published in major countries in the field of rural land use change and ecological environment from 1982 to 2023.

Country	Number of Publications	Total Citations	Average Article Citations
China	345	6393	18.53
USA	175	9783	55.90
United Kingdom	67	4204	62.75
Germany	56	2476	44.21
Brazil	50	796	15.92
Australia	43	2939	68.35
Italy	42	1392	33.14
Spain	37	1160	31.35
France	35	1427	40.77
Canada	30	998	33.27

China published the highest number of papers, with a total of 345, and came in second place after the United States in terms of citations, with 6393. However, the papers had a low average citation frequency of 18.53 times, suggesting that further improvement could increase interest. Australia boasts the highest average citation frequency for papers at 68.35 citations, followed by both the United Kingdom and the United States at 62.75 and 55.90 citations, respectively. Furthermore, the United States is ranked at the top of the list of many countries in terms of total citation frequency, with a staggering 9783 citations. This result suggests that developed countries possess robust research capabilities in rural land-use change and ecological environment research, resulting in highly influential research publications.

Our network analysis of collaborations among the highest yielding countries and regions indicates that research institutions in most countries cooperate with each other (Figure 6) and are grouped into four clusters: China and the United States (represented by red circles), France and Italy (represented by purple circles), Germany and New Zealand (represented by green circles), and the United Kingdom and Australia (represented by blue circles). In the context of changes in rural land use and the ecological environment, China and the United States have a closely intertwined relationship. Additionally, there are significant cooperative relationships between China and Japan, China and Brazil, and also between the United Kingdom and Australia. However, the United States has more extensive cooperative relationships with specific countries.

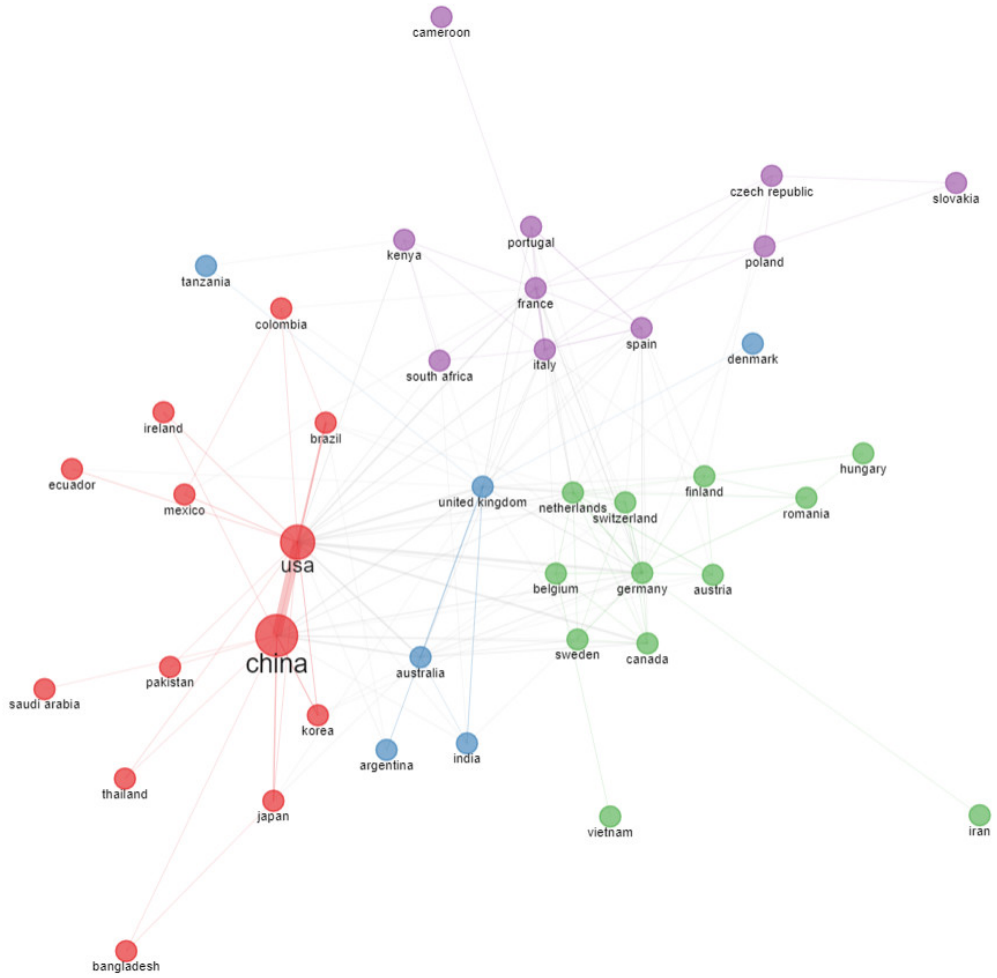

Figure 6. Network of national cooperation in the field of rural land use change and ecological environment from 1982 to 2023. Note: The colored circles in the figure represent different cooperative network relationships, and the larger the circle, the more papers published by the country.

We compiled the top ten academic institutions in the field of rural land use change and ecological environment with the highest number of publications (Table 3). Of these, six institutions are based in China, three in the United States, and one in Brazil. The top four institutions, based on publication numbers, are located in China. They are the Institute of Geographic Sciences and Natural Resources Research, the Chinese Academy of Sciences, Beijing Normal University, and two units of the Chinese Academy of Sciences. Their articles numbered 59, 41, 28, and 28, respectively.

Table 3. Number of published articles by major research institutions in the field of rural land use change and ecological environment from 1982 to 2023.

Affiliation	Number of Publications
Institute of Geographic Sciences and Natural Resources Research, CAS	59
University of Chinese Academy of Sciences	41
Beijing Normal University	28
Chinese Academy of Sciences	28
University of São Paulo	22
Arizona State University	19
Northwest A&F University	19
China University of Geosciences	18
University of Georgia	18
The University of North Carolina at Chapel Hill	16

In the context of cooperation between research institutions (Figure 7), the top four Chinese institutions maintain close relationships (indicated by red circles). The Institute of Geographic Sciences and Natural Resources Research, CAS, has the highest degree of centrality in collaboration, indicating the strongest impact on relationships within the collaborative network. These institutions exhibit significant publishing frequency and centrality and have served as the primary research centers in this field. Nanjing Agricultural University and Nanjing Normal University have established a strong domestic partnership. Additionally, closer international cooperation is underway between the China University of Geosciences and the University of North Carolina at Chapel Hill.

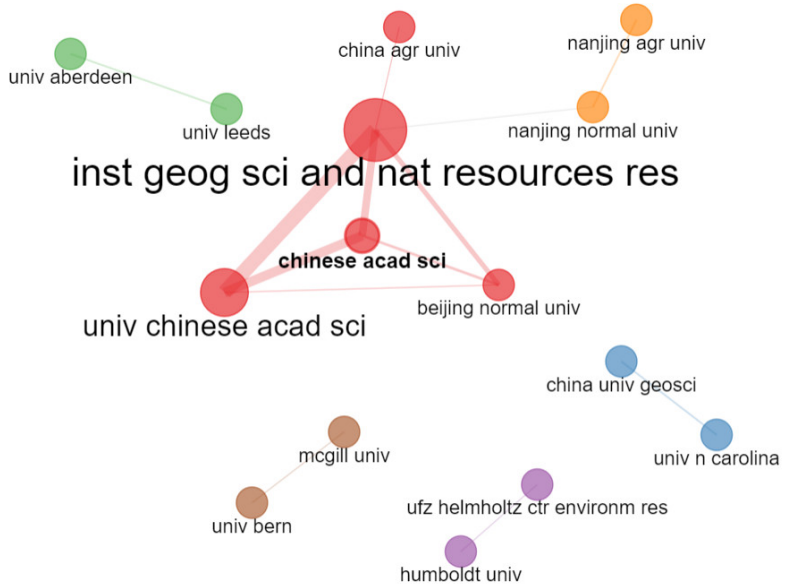

Figure 7. Collaborative network of relevant research institutions in the field of rural land use change and ecological environment from 1982 to 2023. Note: The colored circles in the figure represent different cooperative network relationships, and the larger the circle, the more papers published by the research institution.

3.4. Keyword Analysis

3.4.1. Analysis of High-Frequency Keywords

Keywords can provide an overview of the research topic and content and aid in identifying the knowledge structure of a field [41]. In this study, a word cloud was used to visualize the top 50 high-frequency keywords in this area (Figure 8). The top keywords and their frequency of occurrence in this field are as follows: land use (57), urbanization (49), China (41), ecosystem services (36), biodiversity (34), remote sensing (31), sustainability (28), land-use change (24), urban ecology (23), and climate change (22). Scholars in this field prioritize researching rural land use, urbanization, ecosystem services, biodiversity, sustainable development, and climate change.

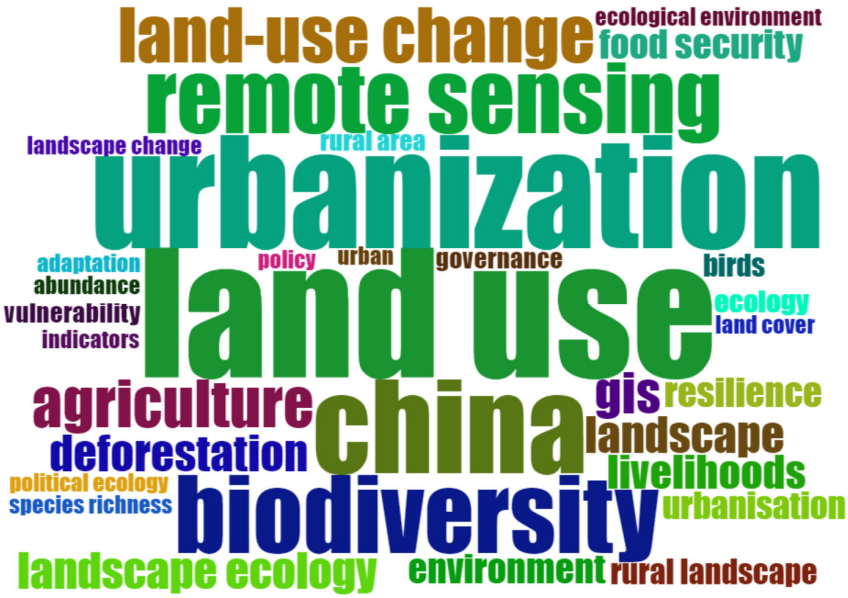

Figure 8. High-frequency keywords in the field of rural land use and ecological environment from 1982 to 2023.

3.4.2. Co-Occurrence Network Analysis of High-Frequency Keywords

A co-occurrence network analysis was conducted on commonly used keywords pertaining to rural environmental and land use change (Figure 9). This study's keyword co-occurrence network illustrates seven clusters that are centered around land use, urbanization, climate change, rural areas, biodiversity, urban ecology, and remote sensing as key nodes. These nodes are also more closely linked to each other.

3.5. Analysis of the Evolution of Research Hotspots

This paper presents the development of research themes in three phases, categorized by yearly publication frequency trends (Figure 10). The time period from 1982–2007 demonstrated slow growth, and themes emphasized agriculture, conservation, and land use. The time period from 2008–2014 exhibited steady growth, and research topics continued to expand, with a primary focus on conservation, biodiversity, and ecological restoration. Ecological protection, biodiversity, and ecological restoration are increasingly prominent research topics. The period from 2015 to the present has experienced rapid growth in this field, focusing on keywords such as land use, urbanization, climate change, and remote sensing. These keywords suggest that global changes, specifically urbanization and climate change, have impacted research in this area. Additionally, the utilization of remote sensing technology has made a substantial contribution to the advancement of this research area and has provided technical assistance for associated research endeavors.

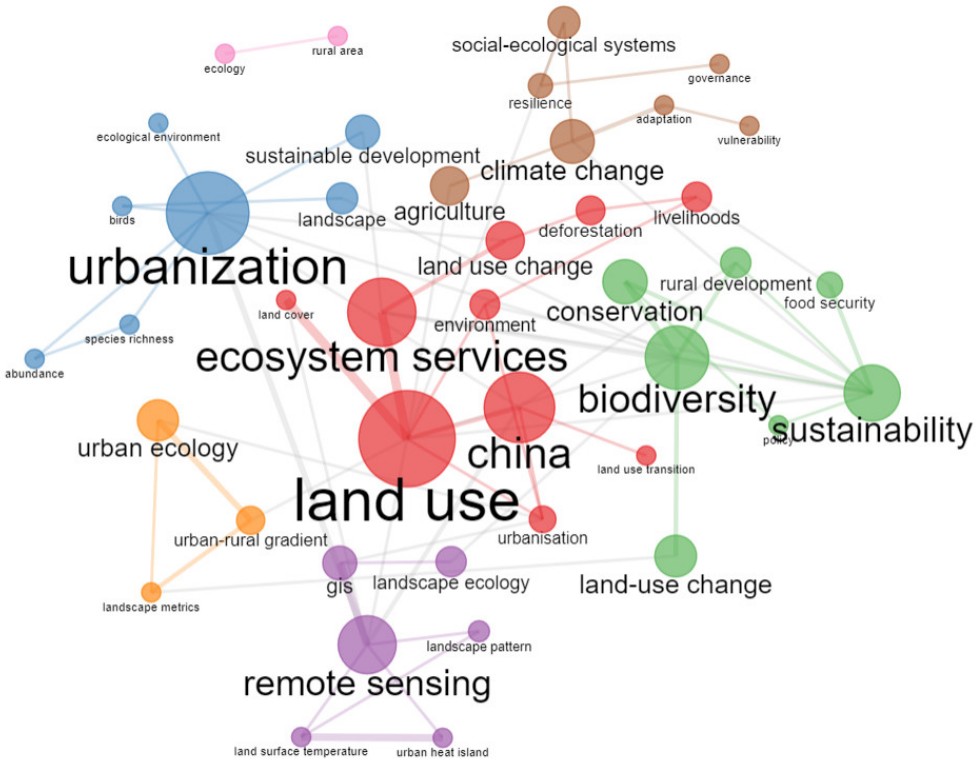

Figure 9. Co-occurrence network analysis of high-frequency keywords in the field of rural land use change and ecological environment from 1982 to 2023. Note: Different colors in the figure represent different clusters.

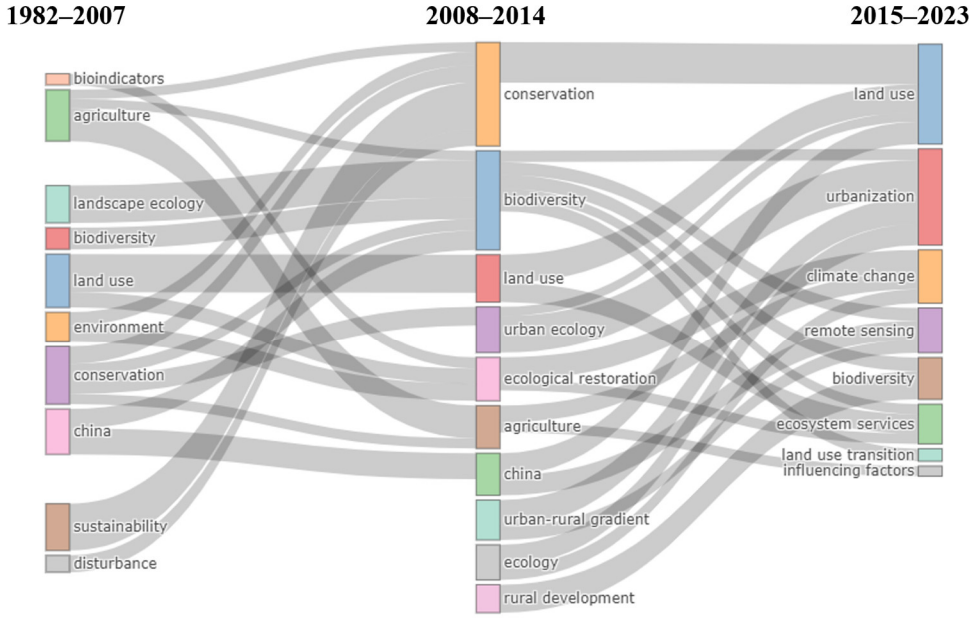

Figure 10. Evolution of research themes in the field of rural land use change and ecological environment from 1982 to 2023.

4. Review of the Ecological Effects of Rural Land Use Changes

Land use change is a core area of global environmental change research. It is of great significance to understand the impact of rural land use changes on the ecological environment. Judging from the results of the bibliometric analysis, land use change, urbanization, climate change, remote sensing technology, biodiversity, ecosystem services, etc. are all high-frequency keywords in this field and are also the subject headings for

topic evolution. How rural land use changes affect the ecological environment deserves an in-depth study. In this section, we will conduct a review study in this field around subject headings and look forward to future research directions.

4.1. Urbanization and Rural Land Use Change

Urbanization is a significant aspect in bibliometric analyses and a prominent research theme in current studies. The concept of urbanization first appeared in the eighteenth century, after the industrial revolution in Europe. With economic development and social progress, urbanization has become a focus of attention and research for many scholars. Due to different starting points of research, different scholars have different interpretations of urbanization. This study considers urbanization from the perspective of territorial space.

4.1.1. Linkages between Urbanization and Rural Land Use Change

Urban development cannot be separated from land, and urbanization is always accompanied by the inevitable result of land expropriation and reduction of cultivated land [42]. Urbanization remains a substantial alteration in land use and land cover that is taking place globally [43]. Urbanization is an inevitable phenomenon and process of economic and social development [44], a transformation in the direction of "rural–urban", bringing about drastic changes in the structure of the rural economy and social relations, and having a broad and profound impact on rural society. The linkage between rural land use change and urbanization is close. In the strong impact of urbanization on rural society, rural land, as the most basic factor of production in rural areas, has borne the brunt of the impact, and the structure, pattern, and manner of its utilization have been affected in a comprehensive manner, which in turn has changed the process of natural, social, and economic development of the rural areas [45]. As land is converted to human use during urbanization, the process is frequently irreversible [46]. On the other hand, the changes in human activities have resulted in positive impacts on land use and the development of associated policies [47]. However, despite the many benefits of urbanization, the world's rapid urbanization faces growing resource scarcity and environmental degradation.

Urbanization refers to the process of changing from a rural society based on agriculture to an industrialized urban society [48]. This shift is typically achieved via the acquisition of arable land for urban development or by encouraging farmers to abandon farming in favor of more lucrative non-agricultural economic opportunities [49]. There are several categories of rural land use, which can be separated into three primary functions: productive land, living land, and ecology land [50]. The majority of research pertaining to rural land use change has concentrated on cropland. Urbanization usually leads to the depletion of cultivable land. During rapid economic development and urbanization construction, there has been a significant loss of arable land resources, particularly high-quality arable land surrounding towns and cities, which has become the primary aspect of arable land changes in recent years [15,51]. Developing nations are currently experiencing rapid urban growth compared to developed nations. China, as the biggest developing nation, is prominent in this area of research. The bibliometric results provide evidence to support this. China's urbanization rate increased from 17.9% in 1978 to 56.1% in 2015 [52]. However, studies indicate that in the first decade of the 21st century, China lost 4.37 million hectares of cultivated land [49], with over 80% of urbanization occurring on arable land issued by first-tier cities [53]. As a basic material for agricultural production, cultivated land plays an important role in natural evolution, human survival, the ecological cycle, resource economy, and other activities and is most widely and profoundly affected by human beings [54]. The loss of cultivated land is a product of direct or indirect human interference [55]. On the one hand, it is the loss of cultivated land use—the transformation of the type of cultivated land utilization [56]. A large amount of cultivated land has been utilized for non-agricultural and non-food purposes, and the resources of cultivated land have undergone great changes. On the other hand, there is the loss of cultivated land reserves—the risk of potential loss of cultivated land reserves. In rapidly urbanizing areas, high-quality cultivated land is

rapidly lost with the outward expansion of urban space, and there is less and less land available for cultivated land reserve resources. Most of the potential cultivated land is usually of poor quality. In addition, problems such as land erosion, heavy metal pollution, and land salinization have led to an increasing decline in the quality of cultivated land, and the contradiction between people and land has become more prominent [57]. The decrease in arable land is primarily attributed to the growing demand for urban development. In the process of rapid urbanization, the demand for urban construction land remains high, while most of the high-quality cultivated land is located in the urban and rural periphery and near major transportation routes. Along with the increasing contradiction between economic growth and cultivated land protection, the risk of cultivated land being occupied has been increasing.

4.1.2. Protection of Cultivated Land in the Process of Urbanization

Urbanization has a strong correlation with economic development and is a process of agglomeration and integration of factors of production and economic activities. The process of urbanization is better promoted through the comprehensive benefits brought about by economic development. Cultivated land, as the basis of agriculture, provides most of the agricultural products for human beings. However, considering the occupation of cultivated land in the process of urbanization and the increasingly serious resource and environmental problems, it is necessary to take certain measures to strengthen the rational development and utilization of cultivated land. Only in this way can we better promote stable economic and social development.

First, land resources should be rationally allocated, and land-use efficiency should be improved. In the current process of urbanization, in order to realize the effective protection of cultivated land, it is necessary to rationally plan land-use zones, scientifically control the scale of urbanized land, and improve the efficiency of land use so as to realize the economical and intensive use of land. Second, it is essential to strengthen the monitoring of hot spots of arable land loss, especially the long-term time series monitoring method that can ensure spatial and temporal continuity [58], in order to strictly control the loss of high-quality arable land. Furthermore, the development of strategies and policies that effectively guide the pattern of urban expansion [59] is crucial for the protection of arable land. Policies aimed at protecting arable land by encouraging urban migration may paradoxically accelerate the occupation of arable land [60]. Therefore, it is important to rationally plan the development pattern of urbanization at the national level and make efforts to reform the land system.

4.2. Ecological Impacts of Rural Land Use Change

With the continuous development of the global economy, ecological and environmental issues have become increasingly important. Therefore, the ecological and environmental impacts of land use have been extensively studied, focusing on natural elements such as soil quality, atmospheric quality, water resources, biodiversity, and others [61,62]. With the application of related theories, techniques, and models in this field, the relevant studies have been gradually deepened, and the reliability has been greatly improved. At the beginning of this century, after the Global Land Project (GLP) was proposed, the focus of land use research gradually shifted to the impact of land use change on the ecological environment [63]. The evolution of research topics shows that, since 2015, research on the relationship between land use and ecosystem services has become more comprehensive and profound.

4.2.1. Impact of Rural Land Use Change on the Soil Environment

As the loose material layer on the earth's surface, soil serves as a crucial interface, facilitating the reciprocal exchange of energy between ecosystems and the external environment. Different land uses in this process exert diverse effects on the soil [64]. Reasonable land use can improve soil structure, increase soil resistance to external environmental changes, and

maintain and improve soil quality [65,66]. The land has been transformed by urbanization and added to by human activities, and external intruders may enter the soil, thus causing a certain degree of pollution. For example, when forest lands are converted to agriculture, the soil often undergoes degradation. The removal of the forest canopy exposes soil to direct sunlight and rainfall, leading to increased soil erosion. Moreover, the loss of litterfall and root systems decreases organic matter input and soil cohesion, respectively, further exacerbating soil erosion and loss of fertility [65]. Irrational land use practices can cause problems such as soil ecological deterioration. The alterations in rural land use stemming from urbanization have markedly transformed the physicochemical environment of the soil, soil ecosystem services, and the communities of soil organisms [67].

With the population explosion and the expansion of the scope and intensity of human activities, the contradiction between the scarcity of the economic supply of land resources and the growth of their social demand is becoming increasingly acute [68]. Land use changes in areas of rapid economic development are dramatic, and important processes such as urbanization and industrialization threaten the stability and security of agricultural production. Changes in rural land use have caused many natural phenomena and changes in ecological processes, such as soil nutrients and soil heavy metal content. It has been shown that soil heavy metal accumulation is highly related to urbanization, industrialization, and land use changes, and that soil environmental quality in different areas within the same city may also have great spatial variability due to differences in land use patterns [65].

Soil microorganisms play a pivotal role in the soil environment, undertaking essential functions in ecological processes such as nutrient cycling, carbon sequestration, remediation of contaminated soil, and the decomposition of soil organic matter [69]. Significant variations have been observed in the composition, diversity, and network structure of soil bacteria in urban, peri-urban, and rural areas [70]. Urban peripheries, in particular, have emerged as hotspots of soil microbial diversity due to increased environmental heterogeneity resulting from disturbances, while rural soil bacterial communities exhibit intricate and stable structural networks [70]. The mechanisms influencing soil microbial communities necessitate further investigation to ensure the sustainability and health of soil ecosystems.

4.2.2. Impact of Rural Land Use Change on the Water Environment

Water resources constitute a fundamental component in sustaining the equilibrium of our ecological system. Alterations in land utilization, marked by an escalation in agricultural activities and construction, along with a decrease in forested and grassland areas, have multifaceted impacts on water resources. Such transformations can precipitate increased surface runoff in watershed areas, elevating both the likelihood and intensity of flooding. This escalation, in turn, augments the water volume within these regions. Modifications in the use of rural land further influence the discharge and dispersal of pollutants. Land designated predominantly for agriculture and construction, in conjunction with suboptimal farming practices, can lead to the substantial erosion of soil, water, nitrogen, and phosphorus and the introduction of further contaminants [71]. This degradation not only contaminates our water sources but also undermines aquatic habitats, reduces water storage capabilities, and elevates the expenses associated with water purification due to sedimentation. Additionally, the erosion of topsoil precipitates the depletion of nutrients, which, despite their importance to aquatic ecosystems, can engender excessive nutrient runoff [72]. Consequently, this may induce eutrophication, a phenomenon that depletes oxygen in water bodies, leading to the demise of fish and other aquatic organisms. Moreover, eroded soil can convey other detrimental pollutants, such as pesticides and heavy metals, from agricultural and industrial activities, further compromising water quality and posing risks to aquatic ecosystems and public health.

4.2.3. Impact of Rural Land Use Change on Biodiversity

The global issue of biological species diversity loss has garnered extensive research attention, emphasizing the paramount importance of biodiversity. Biodiversity-related

research is currently a hotspot and focus of ecological research, which directly affects the stability and sustainability of ecosystems. Land use change affecting biodiversity has received great attention [73]. Land use change is the most direct manifestation of the impact of human activities on natural ecosystems on the Earth's surface, and it is the main process leading to species fragmentation and the loss of effective habitats, as well as the main driver threatening biodiversity [74]. The rural environment serves as a pivotal provider of habitats for diverse biological species [75]. The rapid evolution of rural environments has engendered notable transformations in rural land use, agricultural production, and tourism [76]. Consequently, these environmental shifts pose a potential threat to the survival of primitive biological species. Alterations in rural land use and heightened activities have profoundly modified traditional rural environments, resulting in a direct and detrimental impact on biodiversity. At the same time, environmental pollution, the increase in greenhouse gases, and the imbalance in carbon balance caused by land-use change have also indirectly affected biodiversity. Biodiversity is the basis for the harmonious development of mankind and nature, and with the continuous loss of biodiversity and changes in land use, the search for effective strategies and approaches to biodiversity must rely on in-depth research on the relationship between land-use changes and spatial and temporal variations in biodiversity [77] and requires the support of biodiversity conservation technologies [78].

4.2.4. Impact of Rural Land Use Change on Climate Change

The impact of rural land use change on climate change is a significant global phenomenon in the environmental field [79]. Climate change serves as the central theme of research in the current phase of investigation within this field. Changes in land use, such as forestry and cropland conversion, influence the emission of trace gases due to alterations in nutrient cycling and the distribution of organic matter [13]. Rural land use activities, encompassing land reclamation, cultivation, and wetland drainage, exert a substantial impact on carbon and nitrogen cycling. Moreover, in numerous developing countries, land reclamation is frequently associated with biomass burning, which releases substantial amounts of carbon dioxide into the atmosphere, leading to changes in greenhouse gas fluxes from agricultural lands globally [80]. Addressing climate change involves two primary objectives: mitigation and adaptation. Estimates indicate that the agriculture and land use sectors contribute to 30% of total greenhouse gas emissions globally [81]. There are widespread efforts globally to integrate the goals of mitigation and adaptation into regional and national policies.

Nature-based solutions (NbS) have become key in tackling the many challenges brought on by climate change [82]. These solutions bank on the natural abilities of ecosystems to both mitigate and adapt to environmental transformations, offering a sustainable and efficient way to manage rural land [83]. Preserving forests and extending the periods between harvests are standout examples of how NbS can boost carbon capture and storage, which is vital in the fight against climate change [84]. However, deploying NbS is not without its hurdles, such as disputes over land ownership, financial constraints, and the need for detailed planning and supportive policies. For the successful application of strategies like forest preservation and prolonged harvesting cycles, it is necessary to have cooperation between governments, NGOs, landowners, and local communities. Additionally, policies must encourage sustainable land management and the protection of ecosystems, along with financial support for landowners and communities to adopt these sustainable methods [85,86].

4.3. Global Innovations in Sustainable Land Use: Benefiting Rural Areas

Through the examination of scholarly research, we investigate novel approaches to encouraging sustainable practices in rural land use. It underscores four principal domains: green infrastructure integration, green space management, climate change adaptation, and agricultural policy. These strategies are pivotal for achieving equilibrium among rural advancement, environmental conservation, and societal well-being.

4.3.1. Green Infrastructure Integration

The integration of green infrastructure into the planning and development of rural landscapes represents a critical strategy for promoting sustainable land use and ameliorating its environmental repercussions [87]. This strategy adeptly marries the objectives of developmental growth with conservation principles, embedding sustainability within the architectural blueprint of transportation planning [88]. Such cohesion facilitates a symbiotic relationship between rural development aspirations and environmental preservation mandates, crucial for protecting natural habitats, reducing pollutants, and elevating the living standards of rural communities [89]. This holistic methodology is characterized by the sequential development of eco-friendly roads and pathways, the execution of integrative land use and transportation planning, and the advocacy for sustainable tourism and recreation pathways, cumulatively contributing to the edification of resilient rural infrastructure [90,91].

The prioritization of eco-friendly road and pathway designs underscores the need for thoroughfares that minimize ecological disruption [92]. These designs strive to mitigate habitat fragmentation, diminish runoff pollution, and integrate wildlife crossings to ensure animal safety. The deployment of wildlife overpasses and underpasses in Canada's Banff National Park serves as a prime example of initiatives aimed at reducing animal-vehicle collisions and conserving natural migratory paths [93,94]. Moreover, the concept of integrative land use and transportation planning highlights the importance of harmonizing development efforts with ecological sustainability goals and promoting the use of existing public and non-motorized transport infrastructures to safeguard open spaces and curb urban sprawl [95,96]. The urban growth boundary initiative in Portland, Oregon, encapsulates this strategy by constraining urban expansion and enhancing public transit efficacy, thereby supporting sustainable tourism and recreational endeavors [97,98]. Sustainable Tourism and Recreation Pathways advocate for the creation of transport infrastructures that bolster eco-tourism and leisure activities, contributing to both economic development and environmental preservation [99,100].

4.3.2. Green Space Management

Effective management of green spaces in rural areas necessitates a comprehensive approach that harmoniously balances agricultural productivity with the principles of ecological conservation. By adopting strategic measures for the implementation and stewardship of green spaces, rural communities can significantly augment biodiversity, enhance the quality of air and water, and contribute positively to the overall vitality of the ecosystem [101–103]. The three principal modalities through which these objectives can be realized include conservation agriculture, agroforestry systems, and wetland restoration and management.

Conservation agriculture, encompassing no-till farming, crop rotation, and cover crops, aims to minimize soil disturbance, thus preserving soil health, reducing erosion, and enhancing water retention [104]. The adoption of these practices in Brazil highlights their efficacy, demonstrating significant soil health improvements, erosion reduction, and increased crop yields, and underscores the vital role of sustainable practices in agricultural sustainability [105]. Agroforestry, integrating trees and shrubs into agricultural landscapes, fosters a beneficial synergy between agriculture and forestry, enriching biodiversity, soil structure, and carbon sequestration [106]. In Kenya, agroforestry initiatives by smallholder farmers, involving nitrogen-fixing trees, have notably improved soil fertility, agricultural productivity, and wildlife habitats, illustrating the environmental gains from effective green space management [107]. Furthermore, the restoration and judicious management of wetlands are crucial for enhancing water quality, supporting wildlife habitats, and providing natural flood management [108]. These instances highlight an integrated approach to green space management in rural settings, emphasizing the importance of conservation agriculture, agroforestry, and wetland restoration as pillars for sustainable land use and environmental conservation.

4.3.3. Climate Change Adaptation

Climate change adaptation in rural areas involves the implementation of strategies that promote sustainable land use and aim to reduce the negative impacts on the ecological environment [109]. Strategies are designed to enhance the resilience of agricultural systems, conserve biodiversity, manage water resources efficiently, and safeguard livelihoods against the challenges posed by a changing climate.

The advancement of climate-resilient crops plays a pivotal role in counteracting food production deficits caused by climate change by enhancing crop tolerance to extreme weather conditions, including drought and salinity [110]. This strategy improves the resilience of agricultural ecosystems by diversifying the portfolio of drought-resistant crops. For example, in sub-Saharan Africa, the adoption of drought-tolerant maize varieties developed through selective breeding has proven superior under arid conditions, securing food production and offering a solution to areas prone to unpredictable rainfall and drought [111]. Furthermore, the integration of agroforestry and sustainable farming practices boosts soil health, organic matter, and erosion while promoting natural vegetation recovery and carbon sequestration, essential for climate change mitigation [112]. Specifically, in the Sahel region, such as Niger, farmer-managed natural regeneration (FMNR) has gained traction. FMNR involves the regeneration and management of trees and shrubs from existing stumps, roots, and seeds, leading to enhancements in soil fertility, increased agricultural yields, and landscape restoration, marking it as an effective climate adaptation and sustainable land use strategy [113]. Additionally, managing rural water resources strengthens resilience to climate extremes like floods and droughts [114]. In Rajasthan, India, the resurgence of traditional rainwater harvesting techniques, through the construction of johads (small earthen check dams), has improved aquifer recharge and water availability for irrigation and domestic use, thereby securing water resources amidst the growing unpredictability of monsoon rains due to climate change [115].

4.3.4. Agricultural Policy

Agricultural policies serve an essential function in fostering sustainable land use within rural domains while concurrently mitigating adverse environmental impacts [116]. These policies are strategically structured to stimulate land use efficiency, conservation of natural resources, and maintenance of ecological equilibrium.

Offering subsidies and financial incentives encourages farmers to adopt sustainable practices by making them more affordable. These practices include enhancing soil health, reducing chemical use, and protecting biodiversity. An example is the European Union's Common Agricultural Policy, which supports eco-friendly farming to lower environmental damage and increase biodiversity [117]. Setting environmental protection standards forces farmers to follow certain practices, preventing deforestation and overuse of resources. Brazil's Forest Code, for instance, requires farmers in the Amazon to keep part of their land forested to reduce deforestation [118]. Land Use Planning and Zoning helps protect natural habitats and manage land use by setting restrictions in sensitive areas, like China's Ecological Red Lines Policy, which limits development in crucial ecological zones [119]. These policies balance economic growth with environmental preservation, ensuring sustainable land use in rural areas.

4.4. Future Research Directions

In the research on the impact of rural land use change on the ecological environment, various factors have led to research in this field. The object of the study is mostly focused on the larger macro-scale regional research, while the small-scale research is less focused, ignoring its importance in the process of urbanization. Choosing a typical small-scale area as the object of study is an effective way to analyze rural land use changes in depth, and it can also provide a basis for comprehensive large-scale research. The process of urbanization has led to a number of ecological and environmental problems in rural areas of developing countries. Strategies and measures to deal with these problems have not

been studied in sufficient depth. For illustration, consider the application of scenario analysis in examining the ecological consequences of alterations in land use within rural regions. This methodology allows for the construction of a conceptual framework to envision potential future scenarios. It serves as an invaluable instrument for policymakers, urban planners, and researchers, facilitating the prediction and evaluation of ecological outcomes resulting from various land use and management strategies. The objective is to enhance our comprehension of potential environmental repercussions. In the preparation of a scenario analysis, forthcoming studies may investigate alternatives such as the Business-as-Usual scenario, wherein agricultural and urban expansion proceeds uninhibited, and the Governmental Intervention scenario, which concentrates on initiatives like sustainable land management, green infrastructure, reforestation programs, and a shift towards a low-carbon economy. Each scenario presents a distinct trajectory regarding the utilization of rural land and its ecological ramifications. The Business-as-Usual scenario underscores the grave dangers of inaction, highlighting the necessity for policy modifications. Conversely, the Governmental Intervention scenarios illustrate how targeted policies can facilitate sustainable land use and mitigate environmental degradation. Through the examination of these scenarios, we can discern proactive measures that can be adopted to preserve rural landscapes and ecosystem integrity over the long term, steering us towards more sustainable practices and investments.

In addition, with the wide application of GIS and remote sensing technologies in the fields of land use and ecosystems, strong technical support has been provided to the research in this field. Thus, remote sensing as a research topic in the current research phase can also show the importance of these technologies in conducting the research work. Future research should aim to improve the practical implementation of remote sensing and other technological advances while promoting the integration of different data sets, such as remote sensing, ecological, environmental, meteorological, and socio-economic data. In addition, it is imperative to improve our predictive and analytical capabilities and to move from environmental monitoring to comprehensive capabilities.

4.5. Limitations of the Research

This study has some limitations, which should be recognized. The results of the bibliometric analysis are highly dependent on the type of database chosen. Only the Web of Science Core Collection database was used as the data source for this study. The Web of Science database is one of the most influential databases, but it may not include all relevant publications in the field. The inclusion of other databases, such as the Scopus database and the China National Knowledge Infrastructure (CNKI) database, can provide a more comprehensive global perspective. In a follow-up study, we will explore the inclusion of other databases to expand the scope of our study based on the current discussion.

After decades of development of bibliometric analysis, both the theoretical system and the scope of application have been greatly developed and have received extensive attention from the academic community. However, bibliometric methods also have certain limitations. First of all, the measurement index of bibliometrics is only limited to the output of published papers, not the quality of papers. The methodology chosen in the process of bibliometric analysis may be influenced by the publication method of the journal, such as open access or subscription. Secondly, there is a lack of a standard for recognizing the number of published papers, citations, etc. as indicators of quality. This criterion is difficult to accurately quantify. These problems need to be solved by conducting in-depth research on relevant theories and methods.

5. Conclusions

Urbanization induces multiple changes in rural areas and agricultural industries, leading to the emergence of non-agricultural industries and urban sprawls that reshape the global land surface. Land use change has profound implications for the sustainability of the global environment. To comprehensively understand the macroscopic impact of rural

land use change on the ecological environment, this paper uses bibliometric analysis to systematically organize 1237 papers related to this field in the core database of the Web of Science. It elucidates the trend in the number of papers and journals published in this field, analyzes the main researchers, countries, and institutions, and captures the development of high-frequency keywords and research topics. On the basis of the results of the bibliometric analysis, we conducted an overview study of the impact of rural land-use change on the ecological environment and discussed future research directions. The following are the main conclusions:

During the period 1982–2023, there is a general upward trend in the number of publications in the field, which can be divided into three phases: a slow growth phase from 1982–2007, a steady growth phase from 2008–2014, and a rapid growth phase from 2015–2023. *Sustainability*, *Land Use Policy*, and *Land* are the journals with a high number of articles; *Land Use Policy*, *Ecological Indicators*, *Landscape and Urban Planning*, and *Science of The Total Environment* are the journals with a high impact in the field. Moreover, 4768 researchers from 95 countries and regions have published papers in this field, and the main researchers and institutions are from China. Developed countries, such as the United States, have a high citation frequency and strong research strengths in this field. The high-frequency keywords in this field include land use, urbanization, China, ecosystem services, biodiversity, remote sensing, and so on, reflecting the key issues that scholars focus on. Research in this field focuses on the impact on natural elements such as soil quality, atmospheric quality, water resources, and biodiversity. In addition, we reviewed strategies to promote sustainable rural land use, focusing on four main areas: green infrastructure integration, green space management, climate change adaptation, and agricultural policy. These strategies are essential for realizing rural development and environmental protection. In future research, remote sensing technology can provide strong technical support for research on land use change in typical small-scale areas and strategies for rural ecological and environmental problems.

Author Contributions: Conceptualization, methodology, software, and writing—original draft preparation, H.X.; writing—review and editing, Q.S. and W.S. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the Third Comprehensive Scientific Investigation in Xinjiang (grant number 2022xjkk0905) and the research and development fund of the Ningxia Hui Autonomous Region (grant number 2023BCF01023).

Data Availability Statement: All relevant data sets in this study are described in the manuscript.

Conflicts of Interest: The authors declare no conflicts of interest.

References

1. Watson, R.T.; Noble, I.R.; Bolin, B.; Ravindranath, N.H.; Verardo, D.J.; Dokken, D.J. *Land Use, Land-Use Change, and Forestry. Special Report of the Intergovernmental Panel on Climate Change*; Cambridge University Press: Cambridge, UK, 2000.
2. Dale, V.H.; Brown, S.; Haeuber, R.A.; Hobbs, N.T.; Huntly, N.; Naiman, R.J.; Riebsame, W.E.; Turner, M.G.; Valone, T.J. Ecological Principles and Guidelines for Managing the Use of Land. *Ecol. Appl.* **2000**, *10*, 639–670. [CrossRef]
3. Prestele, R.; Alexander, P.; Rounsevell, M.D.A.; Arneth, A.; Calvin, K.; Doelman, J.; Eitelberg, D.A.; Engström, K.; Fujimori, S.; Hasegawa, T.; et al. Hotspots of uncertainty in land-use and land-cover change projections: A global-scale model comparison. *Glob. Change Biol.* **2016**, *22*, 3967–3983. [CrossRef] [PubMed]
4. Pereira, H.M.; Leadley, P.W.; Proença, V.; Alkemade, R.; Scharlemann, J.P.; Fernandez-Manjarrés, J.F.; Araújo, M.B.; Balvanera, P.; Biggs, R.; Cheung, W.W. Scenarios for global biodiversity in the 21st century. *Science* **2010**, *330*, 1496–1501. [CrossRef] [PubMed]
5. Lambin, E.F.; Meyfroidt, P. Global land use change, economic globalization, and the looming land scarcity. *Proc. Natl. Acad. Sci. USA* **2011**, *108*, 3465–3472. [CrossRef] [PubMed]
6. Miao, L.J.; Zhu, F.; Sun, Z.L.; Moore, J.C.; Cui, X.F. China's Land-Use Changes during the Past 300 Years: A Historical Perspective. *Int. J. Environ. Res. Public Health* **2016**, *13*, 847. [CrossRef] [PubMed]
7. Fang, Z.; Ding, T.H.; Chen, J.Y.; Xue, S.; Zhou, Q.; Wang, Y.D.; Wang, Y.X.; Huang, Z.D.; Yang, S.L. Impacts of land use/land cover changes on ecosystem services in ecologically fragile regions. *Sci. Total Environ.* **2022**, *831*, 154967. [CrossRef] [PubMed]
8. Chiarella, C.; Meyfroidt, P.; Abeygunawardane, D.; Conforti, P. Balancing the trade-offs between land productivity, labor productivity and labor intensity. *AMBIO* **2023**, *52*, 1618–1634. [CrossRef] [PubMed]

9. Follmann, A. Geographies of peri-urbanization in the global south. *Geogr. Compass* **2022**, *16*, e12650. [CrossRef]
10. Li, X.; Wang, Y.; Song, Y. Unraveling land system vulnerability to rapid urbanization: An indicator-based vulnerability assessment for Wuhan, China. *Environ. Res.* **2022**, *211*, 112981. [CrossRef]
11. Xuemei, B.; Peijun, S.; Yansui, L. Realizing China's urban dream. *Nature* **2014**, *509*, 158–160.
12. He, C.; Okada, N.; Zhang, Q.; Shi, P.; Li, J. Modelling dynamic urban expansion processes incorporating a potential model with cellular automata. *Landsc. Urban Plan.* **2008**, *86*, 79–91. [CrossRef]
13. Dale, V.; Archer, S.; Chang, M.; Ojima, D. Ecological Impacts and Mitigation Strategies for Rural Land Management. *Ecol. Appl.* **2005**, *15*, 1879–1892. [CrossRef]
14. Tu, S.; Long, H.; Li, T.; Ge, D. The mechanism and models of villages and towns construction and rural development in China. *Econ. Geogr.* **2015**, *35*, 141–147.
15. Liu, Y. Introduction to land use and rural sustainability in China. *Land Use Policy* **2018**, *74*, 1–4. [CrossRef]
16. Yusuf, S.; Nabeshima, K.; Ha, W. Income and Health in Cities: The Messages from Stylized Facts. *J. Urban Health-Bull. New York Acad. Med.* **2007**, *84*, I35–I41. [CrossRef] [PubMed]
17. Sun, H.Z.; Zhao, J.; Liu, X.; Qiu, M.; Shen, H.; Guillas, S.; Giorio, C.; Staniaszek, Z.; Yu, P.; Wan, M.W.L.; et al. Antagonism between ambient ozone increase and urbanization-oriented population migration on Chinese cardiopulmonary mortality. *Innovation* **2023**, *4*, 100517. [CrossRef] [PubMed]
18. Hong, H.; Xie, D.; Liao, H.; Tu, B.; Yang, J. Land Use Efficiency and Total Factor Productivity—Distribution Dynamic Evolution of Rural Living Space in Chongqing, China. *Sustainability* **2017**, *9*, 444. [CrossRef]
19. Li, J.Y.; Chen, H.X.; Zhang, C.; Pan, T. Variations in ecosystem service value in response to land use/land cover changes in Central Asia from 1995–2035. *PeerJ* **2019**, *7*, e7665. [CrossRef]
20. Garden, J.G.; McAlpine, C.A.; Possingham, H.P.; Jones, D.N. Habitat structure is more important than vegetation composition for local-level management of native terrestrial reptile and small mammal species living in urban remnants: A case study from Brisbane, Australia. *Austral. Ecol.* **2007**, *32*, 669–685. [CrossRef]
21. Shan, L.P.; Yu, A.T.W.; Wu, Y.Z. Strategies for risk management in urban-rural conflict: Two case studies of land acquisition in urbanising China. *Habitat Int.* **2017**, *59*, 90–100. [CrossRef]
22. Huang, Y.L. Technology innovation and sustainability: Challenges and research needs. *Clean Technol. Environ. Policy* **2021**, *23*, 1663–1664. [CrossRef] [PubMed]
23. de Groot, R.S.; Alkemade, R.; Braat, L.; Hein, L.; Willemen, L. Challenges in integrating the concept of ecosystem services and values in landscape planning, management and decision making. *Ecol. Complex.* **2010**, *7*, 260–272. [CrossRef]
24. Zhang, H.L.; Zhang, Z.B.; Dong, J.H.; Gao, F.W.; Zhang, W.B.; Gong, W.M. Spatial production or sustainable development? An empirical research on the urbanization of less-developed regions based on the case of Hexi Corridor in China. *PLoS ONE* **2020**, *15*, e0235351. [CrossRef] [PubMed]
25. Ji, Z.X.; Wei, H.J.; Xue, D.; Liu, M.X.; Cai, E.X.; Chen, W.Q.; Feng, X.W.; Li, J.W.; Lu, J.; Guo, Y.L. Trade-Off and Projecting Effects of Land Use Change on Ecosystem Services under Different Policies Scenarios: A Case Study in Central China. *Int. J. Environ. Res. Public Health* **2021**, *18*, 3552. [CrossRef] [PubMed]
26. Allan, E.; Manning, P.; Alt, F.; Binkenstein, J.; Blaser, S.; Bluethgen, N.; Böhm, S.; Grassein, F.; Hölzel, N.; Klaus, V.H.; et al. Land use intensification alters ecosystem multifunctionality via loss of biodiversity and changes to functional composition. *Ecol. Lett.* **2015**, *18*, 834–843. [CrossRef] [PubMed]
27. Zheng, Y.; Yu, G.; Zhong, P.L.; Wang, Y.X. Integrated assessment of coastal ecological security based on land use change and ecosystem services in the Jiaozhou Bay, Shandong Peninsula, China. *J. Appl. Ecol.* **2018**, *29*, 4097–4105. [CrossRef]
28. Gogoi, P.P.; Vinoj, V.; Swain, D.; Roberts, G.; Dash, J.; Tripathy, S. Land use and land cover change effect on surface temperature over Eastern India. *Sci. Rep.* **2019**, *9*, 8859. [CrossRef]
29. López, S.; Wright, C.; Costanza, P. Environmental change in the equatorial Andes: Linking climate, land use, and land cover transformations. *Remote Sens. Appl. Soc. Environ.* **2017**, *8*, 291–303. [CrossRef]
30. Swanepoel, C.M.; van der Laan, M.; Weepener, H.L.; du Preez, C.C.; Annandale, J.G. Review and meta-analysis of organic matter in cultivated soils in southern Africa. *Nutr. Cycl. Agroecosystems* **2016**, *104*, 107–123. [CrossRef]
31. Dumont, B.; Ryschawy, J.; Duru, M.; Benoit, M.; Chatellier, V.; Delaby, L.; Donnars, C.; Dupraz, P.; Lemauviel-Lavenant, S.; Méda, B.; et al. Review: Associations among goods, impacts and ecosystem services provided by livestock farming. *Animal* **2019**, *13*, 1773–1784. [CrossRef]
32. Zhao, X.C.; Li, F.S.; Yan, Y.Z.; Zhang, Q. Biodiversity in Urban Green Space: A Bibliometric Review on the Current Research Field and Its Prospects. *Int. J. Environ. Res. Public Health* **2022**, *19*, 12544. [CrossRef] [PubMed]
33. Goncalves, A.F.A.; dos Santos, J.A.; Franca, L.C.D.; Campoe, O.C.; Altoe, T.F.; Scolforo, J.R.S. Use of the process-based models in forest research: A bibliometric review. *Cerne* **2021**, *27*, e-102769. [CrossRef]
34. Wang, W.; Lu, C. Visualization analysis of big data research based on Citespace. *Soft Comput.* **2020**, *24*, 8173–8186. [CrossRef]
35. Garfield, E. From the science of science to Scientometrics visualizing the history of science with HistCite software. *J. Informetr.* **2009**, *3*, 173–179. [CrossRef]
36. Aria, M.; Cuccurullo, C. bibliometrix: An R-tool for comprehensive science mapping analysis. *J. Informetr.* **2017**, *11*, 959–975. [CrossRef]
37. Gagolewski, M. Bibliometric impact assessment with R and the CITAN package. *J. Informetr.* **2011**, *5*, 678–692. [CrossRef]

38. Xu, X.; Chen, Q.; Zhu, Z. Evolutionary Overview of Land Consolidation Based on Bibliometric Analysis in Web of Science from 2000 to 2020. *Int. J. Environ. Res. Public Health* **2022**, *19*, 3218. [CrossRef]
39. Li, J.; Song, W. Review of rural settlement research based on bibliometric analysis. *Front. Environ. Sci.* **2023**, *10*, 1089438. [CrossRef]
40. Liu, L.; Zou, G.; Zuo, Q.; Li, S.; Bao, Z.; Jin, T.; Liu, D.; Du, L. It is still too early to promote biodegradable mulch film on a large scale: A bibliometric analysis. *Environ. Technol. Innov.* **2022**, *27*, 102487. [CrossRef]
41. Su, H.N.; Lee, P.C. Mapping knowledge structure by keyword co-occurrence: A first look at journal papers in Technology Foresight. *Scientometrics* **2010**, *85*, 65–79. [CrossRef]
42. Zhang, P.; Xia, L.; Sun, Z.; Zhang, T. Analysis of spatial and temporal changes and driving forces of arable land in the Weibei dry plateau region in China. *Sci. Rep.* **2023**, *13*, 20618. [CrossRef]
43. Liu, Y.; Yang, Y.; Li, Y.; Li, J. Conversion from rural settlements and arable land under rapid urbanization in Beijing during 1985–2010. *J. Rural. Stud.* **2017**, *51*, 141–150. [CrossRef]
44. Gu, L.; Yan, J.B.; Li, Y.R.; Gong, Z.W. Spatial-temporal evolution and correlation analysis between habitat quality and landscape patterns based on land use change in Shaanxi Province, China. *Ecol. Evol.* **2023**, *13*, e10657. [CrossRef]
45. Zhao, S.X.; Yin, M.M. Change of urban and rural construction land and driving factors of arable land occupation. *PLoS ONE* **2023**, *18*, e0286248. [CrossRef]
46. Deng, X.; Lin, Y.; Seto, K.C. Land-Use Competition between Food Production and Urban Expansion in China. In *Rethinking Global Land Use in an Urban Era*; MIT Press: Cambridge, MA, USA, 2014. [CrossRef]
47. Liu, Y.; Li, Y. Revitalize the world's countryside. *Nature* **2017**, *548*, 275–277. [CrossRef] [PubMed]
48. Yao, R.; Wang, L.; Gui, X.; Zheng, Y.; Zhang, H.; Huang, X. Urbanization Effects on Vegetation and Surface Urban Heat Islands in China's Yangtze River Basin. *Remote Sens.* **2017**, *9*, 540. [CrossRef]
49. Hou, H.; Wang, R.; Murayama, Y. Scenario-based modelling for urban sustainability focusing on changes in cropland under rapid urbanization: A case study of Hangzhou from 1990 to 2035. *Sci. Total Environ.* **2019**, *661*, 422–431. [CrossRef] [PubMed]
50. Pan, F.; Shu, N.; Wan, Q.; Huang, Q. Land Use Function Transition and Associated Ecosystem Service Value Effects Based on Production–Living–Ecological Space: A Case Study in the Three Gorges Reservoir Area. *Land* **2023**, *12*, 391. [CrossRef]
51. Liu, Y.; Liu, Y.; Chen, Y.; Long, H. The process and driving forces of rural hollowing in China under rapid urbanization. *J. Geogr. Sci.* **2010**, *20*, 876–888. [CrossRef]
52. Wu, Y.; Shan, L.; Guo, Z.; Peng, Y. Cultivated land protection policies in China facing 2030: Dynamic balance system versus basic farmland zoning. *Habitat Int.* **2017**, *69*, 126–138. [CrossRef]
53. Qiu, B.; Li, H.; Tang, Z.; Chen, C.; Berry, J. How cropland losses shaped by unbalanced urbanization process? *Land Use Policy* **2020**, *96*, 104715. [CrossRef]
54. Liu, S.S.; Peng, Y.P.; Xia, Z.Q.; Hu, Y.M.; Wang, G.X.; Zhu, A.X.; Liu, Z.H. The GA-BPNN-Based Evaluation of Cultivated Land Quality in the PSR Framework Using Gaofen-1 Satellite Data. *Sensors* **2019**, *19*, 5127. [CrossRef] [PubMed]
55. Ma, Y.; Kalantari, Z.; Destouni, G. Infectious Disease Sensitivity to Climate and Other Driver-Pressure Changes: Research Effort and Gaps for Lyme Disease and Cryptosporidiosis. *GeoHealth* **2023**, *7*, e2022GH000760. [CrossRef] [PubMed]
56. Tang, Y.; Chen, M.H. The Impact Mechanism and Spillover Effect of Digital Rural Construction on the Efficiency of Green Transformation for Cultivated Land Use in China. *Int. J. Environ. Res. Public Health* **2022**, *19*, 16159. [CrossRef]
57. Zhang, Q.; Han, G.L.; Liu, M.; Li, X.Q.; Wang, L.Q.; Liang, B. Distribution and Contamination Assessment of Soil Heavy Metals in the Jiulongjiang River Catchment, Southeast China. *Int. J. Environ. Res. Public Health* **2019**, *16*, 4674. [CrossRef] [PubMed]
58. Qiu, B.; Li, H.; Chen, C.; Tang, Z.; Zhang, K.; Berry, J. Tracking spatial–temporal landscape changes of impervious surface areas, bare lands, and inundation areas in China during 2001–2017. *Land Degrad. Dev.* **2019**, *30*, 1802–1812. [CrossRef]
59. Song, W.; Liu, M. Farmland Conversion Decreases Regional and National Land Quality in China. *Land Degrad. Dev.* **2017**, *28*, 459–471. [CrossRef]
60. Deng, X.; Huang, J.; Rozelle, S.; Zhang, J.; Li, Z. Impact of urbanization on cultivated land changes in China. *Land Use Policy* **2015**, *45*, 1–7. [CrossRef]
61. Lee, E.; Sagong, J.; Lee, Y. Influence of land use change on the waterbird community of Sihwa Lake, Republic of Korea. *Avian Res.* **2020**, *11*, 36. [CrossRef]
62. Bueno, A.S.; Peres, C.A. The role of baseline suitability in assessing the impacts of land-use change on biodiversity. *Biol. Conserv.* **2020**, *243*, 108396. [CrossRef]
63. Pătru-Stupariu, I.; Hossu, C.A.; Grădinaru, S.R.; Nita, A.; Stupariu, M.-S.; Huzui-Stoiculescu, A.; Gavrilidis, A.-A. A Review of Changes in Mountain Land Use and Ecosystem Services: From Theory to Practice. *Land* **2020**, *9*, 336. [CrossRef]
64. Caulfield, M.E.; Fonte, S.J.; Groot, J.C.J.; Vanek, S.J.; Sherwood, S.; Oyarzun, P.; Borja, R.M.; Dumble, S.; Tittonell, P. Agroecosystem patterns and land management co-develop through environment, management, and land-use interactions. *Ecosphere* **2020**, *11*, e03113. [CrossRef]
65. Fu, B.; Ma, K.; Zhou, H.; Chen, L. The effect of land use structure on the distribution of soil nutrients in the hilly area of the Loess Plateau, China. *Chin. Sci. Bull.* **1999**, *44*, 732–736. [CrossRef]
66. Lal, R.; Mokma, D.; Lowery, B. Relation between soil quality and erosion. In *Soil Quality and Soil Erosion*; CRC Press: Boca Raton, FL, USA, 1999; pp. 237–258.

67. Liu, R.; Wang, M.; Chen, W. The influence of urbanization on organic carbon sequestration and cycling in soils of Beijing. *Landsc. Urban Plan.* **2018**, *169*, 241–249. [CrossRef]
68. Shan, Y.J.; Wei, S.K.; Yuan, W.L.; Miao, Y. Evaluation and prediction of land ecological security in Shenzhen based on DPSIR-TOPSIS-GM(1,1) model. *PLoS ONE* **2022**, *17*, e0265810. [CrossRef] [PubMed]
69. Hemkemeyer, M.; Schwalb, S.A.; Heinze, S.; Joergensen, R.G.; Wichern, F. Functions of elements in soil microorganisms. *Microbiol. Res.* **2021**, *252*, 126832. [CrossRef] [PubMed]
70. Li, M.; Chen, L.; Zhao, F.; Tang, J.; Bu, Q.; Wang, X.; Yang, L. Effects of Urban–Rural Environmental Gradient on Soil Microbial Community in Rapidly Urbanizing Area. *Ecosyst. Health Sustain.* **2023**, *9*, 0118. [CrossRef]
71. Gao, J.; Wen, Y. Impact of Land Use Change on Runoff of Taihu Basin. *Acta Geogr. Sin.* **2002**, *57*, 194–200.
72. Li, J.; Chen, L.; Guo, X.; Fu, B. Effects of land use structure on non-point source pollution. *Chin. Environ. Sci.* **2000**, *20*, 506.
73. Nunez, S.; Alkemade, R. Exploring interaction effects from mechanisms between climate and land-use changes and the projected consequences on biodiversity. *Biodivers. Conserv.* **2021**, *30*, 3685–3696. [CrossRef]
74. Zhao, G.; Liu, J.; Kuang, W.; Ouyang, Z. Disturbance impacts of land use change on biodiversity conservation priority areas across China during 1990–2010. *Acta Geogr. Sin.* **2014**, *69*, 1640–1650.
75. Horak, J.; Peltanova, A.; Podavkova, A.; Safarova, L.; Bogusch, P.; Romportl, D.; Zasadil, P. Biodiversity responses to land use in traditional fruit orchards of a rural agricultural landscape. *Agric. Ecosyst. Environ.* **2013**, *178*, 71–77. [CrossRef]
76. Li, X. Study on Protection Ways of Biodiversity in Rural Environment Construction. *IOP Conf. Ser. Earth Environ. Sci.* **2019**, *252*, 042020. [CrossRef]
77. Bonthoux, S.; Barnagaud, J.Y.; Goulard, M.; Balent, G. Contrasting spatial and temporal responses of bird communities to landscape changes. *Oecologia* **2013**, *172*, 563–574. [CrossRef] [PubMed]
78. Kati, V.; Kassara, C.; Vrontisi, Z.; Moustakas, A. The biodiversity-wind energy-land use nexus in a global biodiversity hotspot. *Sci. Total Environ.* **2021**, *768*, 144471. [CrossRef]
79. Yan, D.; Schneider, U.A.; Schmid, E.; Huang, H.Q.; Pan, L.; Dilly, O. Interactions between land use change, regional development, and climate change in the Poyang Lake district from 1985 to 2035. *Agric. Syst.* **2013**, *119*, 10–21. [CrossRef]
80. Lindesay, J.A.; Andreae, M.O.; Goldammer, J.G.; Harris, G.; Annegarn, H.J.; Garstang, M.; Scholes, R.J.; van Wilgen, B.W. International geosphere-biosphere programme/international global atmospheric chemistry SAFARI-92 field experiment: Background and overview. *J. Geophys. Res. Atmos.* **1996**, *101*, 23521–23530. [CrossRef]
81. Tzilivakis, J.; Warner, D.J.; Green, A.; Lewis, K.A. Spatial and temporal variability of greenhouse gas emissions from rural development land use operations. *Mitig. Adapt. Strateg. Glob. Change* **2017**, *22*, 447–467. [CrossRef]
82. Seddon, N.; Chausson, A.; Berry, P.; Girardin, C.A.J.; Smith, A.; Turner, B. Understanding the value and limits of nature-based solutions to climate change and other global challenges. *Philos. Trans. R. Soc. B-Biol. Sci.* **2020**, *375*, 20190120. [CrossRef]
83. Alikhanova, S.; Bull, J.W. Review of Nature-based Solutions in Dryland Ecosystems: The Aral Sea Case Study. *Environ. Manag.* **2023**, *72*, 457–472. [CrossRef]
84. Huang, C.; He, H.S.; Liang, Y.; Wu, Z.W. Effects of climate change, fire and harvest on carbon storage of boreal forests in the Great Xing'an Mountains, China. *J. Appl. Ecol.* **2018**, *29*, 2088–2100. [CrossRef]
85. Duveiller, G.; Hooker, J.; Cescatti, A. The mark of vegetation change on Earth's surface energy balance. *Nat. Commun.* **2018**, *9*, 679. [CrossRef] [PubMed]
86. Grilli, E.; Carvalho, S.C.P.; Chiti, T.; Coppola, E.; D'Ascoli, R.; La Mantia, T.; Marzaioli, R.; Mastrocicco, M.; Pulido, F.; Rutigliano, F.A.; et al. Critical range of soil organic carbon in southern Europe lands under desertification risk. *J. Environ. Manag.* **2021**, *287*, 112285. [CrossRef] [PubMed]
87. Teixeira, C.P.; Fernandes, C.O.; Ahern, J.; Honrado, J.P.; Farinha-Marques, P. Urban ecological novelty assessment: Implications for urban green infrastructure planning and management. *Sci. Total Environ.* **2021**, *773*, 145121. [CrossRef] [PubMed]
88. Anderson, V.; Gough, W.A. Enabling Nature-Based Solutions to Build Back Better-An Environmental Regulatory Impact Analysis of Green Infrastructure in Ontario, Canada. *Buildings* **2022**, *12*, 61. [CrossRef] [PubMed]
89. Zhao, S.; Yin, M. Research on Rural Population/Arable Land/Rural Settlements Association Model and Coordinated Development Path: A Case Analysis of the Yellow River Basin (Henan Section). *Int. J. Environ. Res. Public Health* **2023**, *20*, 3833. [CrossRef] [PubMed]
90. Wang, R.B.; Bai, Y.; Alatalo, J.M.; Guo, G.M.; Yang, Z.Q.; Yang, Z.B.; Yang, W. Impacts of urbanization at city cluster scale on ecosystem services along an urban-rural gradient: A case study of Central Yunnan City Cluster, China. *Environ. Sci. Pollut. Res.* **2022**, *29*, 88852–88865. [CrossRef] [PubMed]
91. Peake, L.; Robb, C. Saving the ground beneath our feet: Establishing priorities and criteria for governing soil use and protection. *R. Soc. Open Sci.* **2021**, *8*, 201994. [CrossRef]
92. Snyman, S.; Bricker, K.S. Living on the Edge: Benefit-Sharing from Protected Area Tourism. *J. Sustain. Tour.* **2019**, *27*, 705–719. [CrossRef]
93. Gunson, K.E.; Mountrakis, G.; Quackenbush, L.J. Spatial Wildlife-Vehicle Collision Models: A Review of Current Work and Its Application to Transportation Mitigation Projects. *J. Environ. Manag.* **2011**, *92*, 1074–1082. [CrossRef]
94. Sawaya, M.A.; Kalinowski, S.T.; Clevenger, A.P. Genetic Connectivity for Two Bear Species at Wildlife Crossing Structures in Banff National Park. *Proc. R. Soc. B Biol. Sci.* **2014**, *281*, 20131705. [CrossRef] [PubMed]

95. Zeppel, H. Managing Cultural Values in Sustainable Tourism: Conflicts in Protected Areas. *Tour. Hosp. Res.* **2010**, *10*, 93–115. [CrossRef]
96. Comín, F.A. Planning the Development of Urban and Rural Areas: An Integrative Approach. In *Sustainable Cities and Communities*; Springer: Berlin/Heidelberg, Germany, 2020; pp. 468–478.
97. Jun, M.-J. The Effects of Portland's Urban Growth Boundary on Urban Development Patterns and Commuting. *Urban Stud.* **2004**, *41*, 1333–1348. [CrossRef]
98. Giovannoni, G. Urban Containment Planning: Is It Effective? The Case of Portland, OR. *Sustainability* **2021**, *13*, 12925. [CrossRef]
99. Wani, G.A.; Nagaraj, V. Effect of Sustainable Infrastructure and Service Delivery on Sustainable Tourism: Application of Kruskal Wallis Test (Non-Parametric). *Int. J. Sustain. Transp. Technol.* **2022**, *5*, 38–50. [CrossRef]
100. Marzo-Navarro, M.; Pedraja-Iglesias, M.; Vinzón, L. Sustainability Indicators of Rural Tourism from the Perspective of the Residents. In *Tourism and Sustainable Development Goals*; Routledge: Abingdon-on-Thames, UK, 2020; pp. 148–164.
101. de Pádua Andrade, C.O.; Carvalho, R.d.C.R.; Godinho, R.F.; Magri, R.A.F. Elaboração e aplicação de uma rota de trekking em uma área do Parque Nacional da Serra da Canastra. *Rev. Bras. Ecotur. (RBEcotur)* **2016**, *9*, 285–317. [CrossRef]
102. Fifanou, V.G.; Ousmane, C.; Gauthier, B.; Brice, S. Traditional Agroforestry Systems and Biodiversity Conservation in Benin (West Africa). *Agrofor. Syst.* **2011**, *82*, 1–13. [CrossRef]
103. Hidayat, N.; Sianipar, J. The Potential of Agroforestry in Supporting Food Security for Peatland Community–A Case Study in the Kalampangan Village, Central Kalimantan. *J. Ecol. Eng.* **2021**, *22*, 123–130.
104. Uchino, H.; Iwama, K.; Jitsuyama, Y.; Yudate, T.; Nakamura, S. Yield Losses of Soybean and Maize by Competition with Interseeded Cover Crops and Weeds in Organic-Based Cropping Systems. *Field Crops Res.* **2009**, *113*, 342–351. [CrossRef]
105. Triplett, G.B., Jr.; Dick, W.A. No-Tillage Crop Production: A Revolution in Agriculture! *Agron. J.* **2008**, *100*, S-153. [CrossRef]
106. Torralba, M.; Fagerholm, N.; Burgess, P.J.; Moreno, G.; Plieninger, T. Do European Agroforestry Systems Enhance Biodiversity and Ecosystem Services? *A Meta-Analysis. Agric. Ecosyst. Environ.* **2016**, *230*, 150–161. [CrossRef]
107. Fuchs, L.E.; Orero, L.; Ngoima, S.; Kuyah, S.; Neufeldt, H. Asset-Based Adaptation Project Promotes Tree and Shrub Diversity and above-Ground Carbon Stocks in Smallholder Agroforestry Systems in Western Kenya. *Front. For. Glob. Change* **2022**, *4*, 773170. [CrossRef]
108. Du Toit, M.; Du Preez, C.; Cilliers, S. Plant Diversity and Conservation Value of Wetlands along a Rural–Urban Gradient. *Bothalia-Afr. Biodivers. Conserv.* **2021**, *51*, 1–18. [CrossRef]
109. Dumenu, W.K.; Obeng, E.A. Climate Change and Rural Communities in Ghana: Social Vulnerability, Impacts, Adaptations and Policy Implications. *Environ. Sci. Policy* **2016**, *55*, 208–217. [CrossRef]
110. Beacham, A.M.; Hand, P.; Barker, G.C.; Denby, K.J.; Teakle, G.R.; Walley, P.G.; Monaghan, J.M. Addressing the Threat of Climate Change to Agriculture Requires Improving Crop Resilience to Short-Term Abiotic Stress. *Outlook Agric.* **2018**, *47*, 270–276. [CrossRef]
111. Nkegbe, P.K.; Abu, B.M.; Issahaku, H. Food Security in the Savannah Accelerated Development Authority Zone of Ghana: An Ordered Probit with Household Hunger Scale Approach. *Agric. Food Secur.* **2017**, *6*, 35. [CrossRef]
112. Tang, H.; Liu, Y.; Li, X.; Muhammad, A.; Huang, G. Carbon Sequestration of Cropland and Paddy Soils in China: Potential, Driving Factors, and Mechanisms. *Greenh. Gases Sci. Technol.* **2019**, *9*, 872–885. [CrossRef]
113. Chazdon, R.L.; Uriarte, M. Natural Regeneration in the Context of Large-Scale Forest and Landscape Restoration in the Tropics. *Biotropica* **2016**, *48*, 709–715. [CrossRef]
114. Kohlitz, J.; Chong, J.; Willetts, J. Rural Drinking Water Safety under Climate Change: The Importance of Addressing Physical, Social, and Environmental Dimensions. *Resources* **2020**, *9*, 77. [CrossRef]
115. Glendenning, C.; Vervoort, R. Hydrological Impacts of Rainwater Harvesting (RWH) in a Case Study Catchment: The Arvari River, Rajasthan, India: Part 2. Catchment-Scale Impacts. *Agric. Water Manag.* **2011**, *98*, 715–730. [CrossRef]
116. Dosso, F.; Idrissou, L.; Moussa, I.M. Innovativity in Legislative, Political and Organizational Frameworks of Sustainable Land Management in Benin. *Asian J. Agric. Ext. Econ. Sociol.* **2021**, *39*, 603–615. [CrossRef]
117. Donald, P.F.; Green, R.; Heath, M. Agricultural Intensification and the Collapse of Europe's Farmland Bird Populations. *Proc. R. Soc. London. Ser. B Biol. Sci.* **2001**, *268*, 25–29. [CrossRef]
118. Camara, G.; Simoes, R.; Ruivo, H.M.; Andrade, P.R.; Soterroni, A.C.; Ramos, F.M.; Ramos, R.G.; Scarabello, M.; Almeida, C.; Sanches, I.; et al. Impact of Land Tenure on Deforestation Control and Forest Restoration in Brazilian Amazonia. *Environ. Res. Lett.* **2023**, *18*, 065005. [CrossRef]
119. Hu, T.; Peng, J.; Liu, Y.; Wu, J.; Li, W.; Zhou, B. Evidence of Green Space Sparing to Ecosystem Service Improvement in Urban Regions: A Case Study of China's Ecological Red Line Policy. *J. Clean. Prod.* **2020**, *251*, 119678. [CrossRef]