land

MDPI

Article

Driving Mechanism of Comprehensive Land Consolidation on Urban–Rural Development Elements Integration

Yuyao Zuo [1], Chaoxian Yang [1,*], Guixin Xin [2], Ya Wu [1] and Rongrong Chen [1]

[1] College of Resources and Environment, Southwest University, Chongqing 400715, China; zyyyyy@email.swu.edu.cn (Y.Z.); mswuya@swu.edu.cn (Y.W.); chenrr@swu.edu.cn (R.C.)
[2] Collaborative Innovation Center for Green Development of Wuling Mountain Area, Yangtze Normal University, Chongqing 408100, China; xgx@yznu.edu.cn
* Correspondence: yangcx@swu.edu.cn; Tel.: +86-13883856005

Abstract: Identifying the driving mechanism of comprehensive land consolidation (CLC) on urban–rural development elements integration (URDEI) is of great significance for promoting the coordinated development of urban and rural areas. Based on the composition of urban and rural element systems, this study establishes the theoretical framework of the influence of CLC on URDEI and verifies the framework through empirical cases in Chongqing, China. The results show that (1) CLC promotes URDEI and realizes the rational allocation of urban and rural resources by improving the quality of urban and rural elements and opening up two-way flow channels. (2) The case analysis demonstrates that CLC can improve the quality of rural elements and increase the added value of the flow to the city, which in turn drives urban elements such as talents, technology, and capital to pour into the countryside, therefore forming a realistic path for the URDEI. This study helps understand the role of CLC in the transformation of URDEI and provides a reference for the scientific implementation of land consolidation.

Keywords: comprehensive land consolidation; urban–rural element integration; element flow; driving mechanism

Citation: Zuo, Y.; Yang, C.; Xin, G.; Wu, Y.; Chen, R. Driving Mechanism of Comprehensive Land Consolidation on Urban–Rural Development Elements Integration. *Land* **2023**, *12*, 2037. https://doi.org/10.3390/land12112037

Academic Editors: Xueru Zhang, Yaqun Liu and Xingyuan Xiao

Received: 1 October 2023
Revised: 27 October 2023
Accepted: 6 November 2023
Published: 9 November 2023

1. Introduction

The imbalance between urban and rural development is a global issue, prevalent in multiple countries and regions, including China, India, Brazil, and Latin America [1,2]. This imbalanced development leads to the widening wealth gap, exacerbates rural poverty, and poses challenges to the sustainable development of societies [3]. Promoting integrated urban–rural development has become a pressing concern in global development that urgently needs to be addressed [4]. China's urbanization has experienced sustained take-off, with its urbanization rate increasing from 17.9% in 1978 to 65.2% in 2022. Although this rapid urbanization has promoted economic and social development, it also brings several problems of uncoordinated urban and rural development [5–7]. On the one hand, rural labor and land resources are flowing into cities in large quantities, which results in a lack of endogenous power for rural development [8]. On the other hand, urban capital and technology cannot flow smoothly to rural areas, leading to a widening gap between urban and rural areas. For example, the proportion of migrant workers in the rural population has increased from 36.09% in 2010 to 56.02% in 2020, resulting in a large amount of abandoned cultivated land and hollow villages. To coordinate urban and rural development, the Chinese government has put forward a series of policies. For example, both the "Opinions of the Central Committee of the Communist Party of China and the State Council on Establishing and Improving the Institutional Mechanism and Policy System for Urban–Rural Integration Development" and the "14th Five-Year Plan for Promoting Agricultural and Rural Modernization" have stressed the importance of promoting the free flow and equal exchange of urban–rural elements and establishing the policy system

of equal exchange and the two-way flow of urban–rural elements such as people, land, and money. Therefore, it is urgent to break through the barriers of traditional urban–rural element flow and establish a new development pattern of urban–rural integration [9].

To promote rural development and narrow the gap between urban and rural areas, land consolidation has been recognized as one of the most effective tools [10,11]. Internationally, researchers are also widely concerned with how land consolidation can improve urban planning, affect agricultural production, and promote harmonious community development. For example, modern land consolidation in Western Europe has been shown to improve the agricultural structure by reducing land fragmentation and increasing the scale of agricultural production. In East Asia, land consolidation has been widely used to supplement cultivated land, reduce land fragmentation, and ensure food security [12,13]. However, the effectiveness of land consolidation is also limited by practical conditions such as unclear land tenure, negative environmental impacts on land, and a lack of a land market, which leads to the fact that the effect of solving land use problems and improving agricultural development is not obvious in South Asian countries such as Nepal and Pakistan [14,15]. In this regard, China has adopted a new model of land consolidation, namely CLC. Different from traditional land consolidation, CLC is not a simple superposition of agricultural land consolidation, construction land consolidation, and ecological protection and restoration projects but further optimizes resource allocation between urban and rural areas through the 'Urban–Rural Link' policy. CLC takes rural elements, such as the consolidation object, and optimizes the land space through measures such as agricultural land consolidation, construction land consolidation, ecological protection and restoration, and historical and cultural protection, which is regarded as a platform and tool for the flow and exchange of urban–rural elements [16,17]. Therefore, it is of great theoretical and practical significance to clarify the driving mechanism of CLC on URDEI.

The impact of urban–rural elements integration on urban–rural development can be comprehensively analyzed in terms of promoting rural development and coordinating urban–rural development. Previous studies have paid great attention to coordinated urban–rural development from the perspective of URDEI, and most researchers believe that the connotation of urban–rural integration and development includes the free flow and rational allocation of urban and rural elements. How to break the bottleneck of urban–rural element mismatch is an inevitable choice to reshape the relationship between urban and rural areas in the new era. In this regard, element mismatch under the urban–rural dual structure [18], the current situation and optimization strategy of element flow regions [19], and the mechanism of factor flow on rural revitalization have attracted extensive attention from scholars [20]. Most studies on urban–rural factor integration focus only on the core elements of development, such as "people, land, and industry", and seldom take into account elements such as culture, ecology, and public services. For example, some scholars have explored the impact of the flow of specific elements such as people, goods, and funds on the development of urban–rural integration by establishing the evaluation system of urban–rural integration levels [21,22]. Others have proposed that it is necessary to give full play to the government's macro-control role for the two-way flow of urban and rural elements [23,24] to promote the integration of urban and rural economies, societies, and the environment. Li Qian et al. explored the differences in factor flows of labor, technology, and capital on the convergence of urban–rural integration development, which not only provides a reference for further urban–rural integration projects but also provides theoretical support for guiding the free and orderly flow of elements [21].

Some scholars have pointed out that land consolidation can effectively promote URDEI. Do, M.H and He, Q.S. suggested that farmland consolidation has attracted investment of urban capital, technology, talents, and other elements in agricultural production, and effectively promotes the development of modern agricultural production, using the man-using land fragmentation, the construction of farmland infrastructure, and the improvement in farmland ecological environment governance [25,26]. Liu, Y.S and Long, H.L also revealed that land consolidation measures, such as the 'increase and decrease linkage'

of urban and rural construction land, rural land reclamation, and urban renewal, can effectively pull the rational flow and optimal allocation of urban–rural elements [27,28]. In addition, the implementation of 'increase and decrease linkage' of urban and rural construction land can also realize the conversion of rural construction land space into urban construction land space, to alleviate the extensive use of rural construction land space and the tension of urban construction land space.

Although the existing relevant research has laid the theoretical foundation for promoting URDEI, how and to what extent CLC drives URDEI to promote the coordinated development of urban and rural areas remains to be addressed [29]. There are two main challenges in the current state of research. First, the examination of the relationship between these two aspects remains at the qualitative analysis stage of theoretical exploration [30], while in-depth study through the quantitative method remains limited to the enabling role of land consolidation in the integration of urban and rural elements. Second, relevant case studies are scant, and empirical research on the mechanisms at the village and town scale. This may lead to an ineffective resolution of the imbalance between land use and urban–rural development. In addition, the lack of research and planning may increase environmental risks, such as land pollution and ecological degradation. To fill in the research gap, this research focuses on the key elements of urban–rural development, such as land, capital, and labor, and establishes an analytical driving mechanism framework for CLC on the flow and integration of urban–rural elements. This paper employs case studies and comparative analysis methods to investigate the approach to integrating urban–rural factors during the CLC process across the entire region. This will establish a model demonstration for the application of urban–rural integration in similarly mountainous and hilly areas.

2. Composition and Flow Law of Urban and Rural Elements

2.1. Composition of Urban and Rural Elements

Elements are the fundamental units constituting an objective system, and their type and structure significantly influence the system's function. The definition of elements varies across different fields. In economics, elements refer to the essential productive resources for social production and operational activities, encompassing land, capital, labor, information, and technology. Urban–rural elements typically pertain to the primary factors influencing the economic development of urban and rural regions. These factors can be categorized as tangible elements like land, capital, and population, as well as intangible elements such as technology, ecology, and culture [31–33]. With the advancement of the social economy, elements have progressively evolved to include services, information, technology, and other novel value-generating components [33,34]. This study aims to investigate the dynamics of urban–rural elements, considering aspects such as land, population, industry, ecological culture, technology, and public services. Considering that there are differences in the expression and connotation of the same element between the urban areas and rural areas under the urban–rural dual structure, precisely defining the boundaries of urban–rural elements is pivotal for understanding the driving mechanism of URDEI.

Land. Land is the most basic production element and the most potential natural resource in the rural and urban element system. Urban and rural lands play significantly distinct roles in development. Urban land is mainly allocated for infrastructure development, economic growth, and housing. In contrast, rural land is primarily designated for agriculture, residential use, and the preservation of rural traditional cultural landscapes [35]. Rapid urbanization has resulted in a trend of declining rural populations and expanding rural construction land, causing rural housing vacancies and inefficient land utilization. Effective land resource management and planning are essential for fostering the integration of urban and rural development and achieving sustainability. Thus, the Chinese government has implemented land consolidation policies to tackle challenges related to urban spatial limitations and inefficient rural land utilization [33].

Population. Population is a fundamental element in the development of urban–rural integration. The population factor has significantly impacted social, economic, and cultural progress throughout the process of urban and rural evolution. This impact has included promoting economic growth and innovation, preserving and disseminating culture, and maintaining ecological balance, among other effects. Influenced by their respective environments and lifestyles, urban and rural populations exhibit distinct characteristics. As a necessary input element for industrial development, labor mobility between urban and rural areas helps to promote knowledge spillover, information diffusion, and industrial growth. However, the migration of a significant population from rural areas to urban areas has led to great changes in the demographic structure of rural areas, and the problem of "aging" and "hollowing out" in rural areas has intensified, which threatens agricultural and rural development.

Industry. Industry serves as the essential driver of social and economic activity, both in urban and rural areas. Its development relies on conventional production elements like labor and capital, in addition to innovative knowledge production elements such as technology and talent. Therefore, an industry's factors generally affect the mobility of labor, capital, technology, and other elements and the transformation of regional economies, societies, and population structures in the context of urban–rural development. For instance, the growth of secondary and tertiary industries has facilitated the shift of labor from primary industries to non-agricultural sectors, leading to a significant improvement in public services and the standard of living. As a result, this has spurred further labor migration from urban areas to rural areas [36]. Currently, there is intense competition among the elements of urban industrial development, which has hindered the spread of industrialization to rural areas. Furthermore, the development of rural industries encounters issues such as the exclusive promotion of agricultural sectors. These elements exacerbate the challenges of urban–rural integration and coordination.

Capital. Government investments, industrial and commercial capital, social capital, and other capital elements all play a crucial role. Capital is essential to urban–rural economic and social development. However, due to the unbalanced development of urban–rural systems, urban areas possess greater attraction and aggregation capabilities for capital elements than rural areas. To achieve the efficient accumulation of rural capital elements and the sustainable development of rural areas, social capital and industrial and commercial capital are commonly introduced through policy leverage or increased direct investment from the government [37]. Taking into account the attributes of production elements and the scarcity of capital, various types of capital investments are critical for the flow of production elements such as land, technology, and labor. An imbalanced flow of funds impedes the development of rural areas and widens the resource allocation gap between urban and rural areas.

Technology. Technical elements refer to the knowledge, innovation, and skills used in production and economic activities. Existing research indicates that technology can enhance production efficiency, improve product quality, and enhance quality of life, making it a key determinant of urban–rural income disparities. With the support of talents, capital, policies, and other elements, the development level of urban technology far exceeds that of rural areas. The urban area is the highland of technology and equipment research and the center of outward diffusion. For example, urban technology can contribute to the development of rural agricultural industries through various forms, such as biotechnology and equipment technology.

Ecological culture. The distinct geographical patterns and humanistic environments of urban and rural areas create differences between urban and rural ecological elements and cultural elements, affecting the flow of population, capital, and other elements. For example, as the birthplace of farming culture, rural areas possess more abundant ecological resources than urban areas, providing potential drivers for attracting urban development elements to drive rural development. With the improvement of living standards and the growth of consumer demand, urban areas have become important markets for the

consumption of rural agricultural products, and ecological and cultural products, as well as comfortable environmental resources.

Public service. Public services encompass 'hard' services such as infrastructure and cultural and environmental facilities, in addition to 'soft' services like healthcare, education, and social security [38]. Over the past few years, urban areas have witnessed a gradual improvement in the provision of public services and infrastructure, largely funded by government expenditures [39]. However, public services in rural areas have many shortcomings, and their development is relatively slow. Improving rural public services is conducive to narrowing the urban–rural income gap and promoting regional income and consumption equalization [40]. China has emphasized accelerating the completion of rural public service shortcomings and promoting the equalization of basic public services in urban and rural areas. It is crucial to boost infrastructure investment in rural areas and enhance the construction of public services to enhance the quality of rural development.

2.2. The Law of Urban–Rural Elements Flow

Under a market economy, the allocation of land, labor, capital, and other resources follows the market mechanism to optimize efficiency [4]. To address the issue of unbalanced distribution between urban and rural areas, China has implemented macro-control measures, including household registration reform, rural revitalization, and encouraging talent to move to the countryside. There exist asymmetric and uncoordinated characteristics of urban and rural elements in both one-way and two-way movement between the urban and rural areas, as depicted in Figure 1.

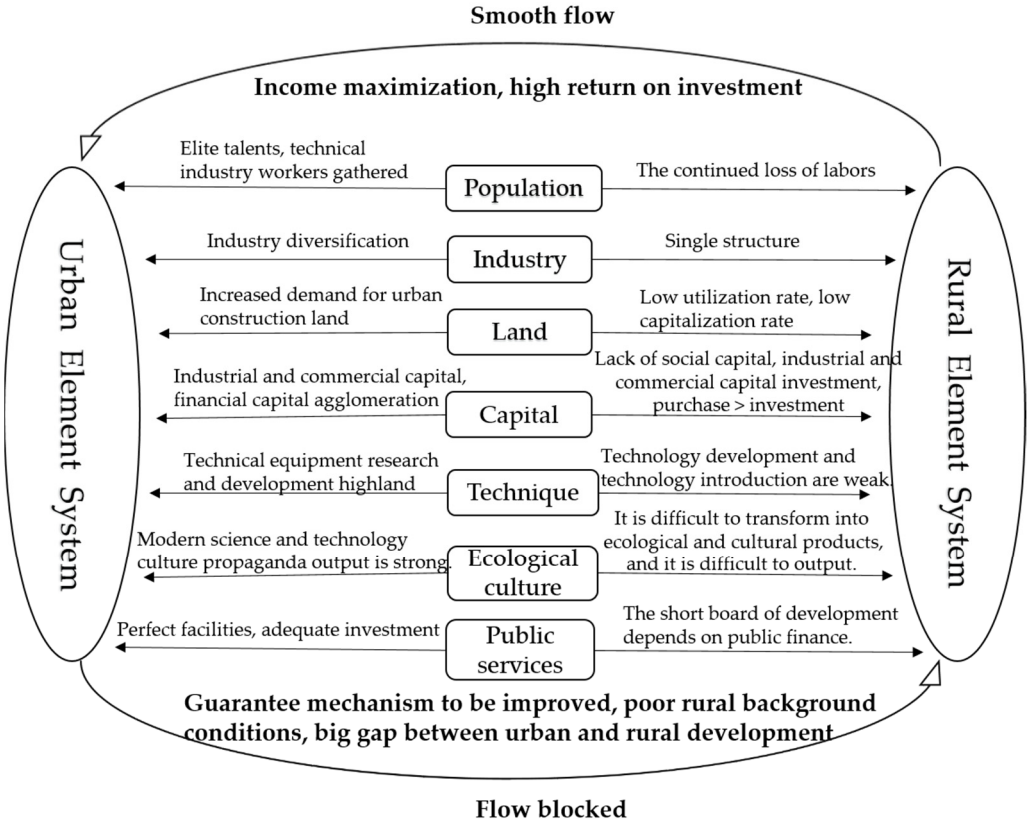

Figure 1. Basic characteristics and flow characteristics of urban and rural elements.

Based on the principle of maximizing income, the population primarily flows from rural to urban areas. This population flow is based on the satisfaction of material and spiritual needs, which can drive the diffusion and transfer of other urban–rural elements [41]. On the one hand, this migration pattern supplements the urban labor force, accelerates urbanization, and raises rural income levels. Technical term abbreviations are consistently

explained throughout the text. However, increased population flow can result in social instability, wider wealth disparities, and development challenges, including rural labor shortages. The reform of China's household registration system has steadily reduced institutional barriers to population movement between urban and rural regions. As a result, both the scale and speed of population flow have accelerated [42,43]. To promote two-way population flow, the Chinese government has implemented institutional reforms and policy incentives that encourage government officials to work at the local level and urge migrant workers to return to their hometowns and start businesses.

Due to the combined influence of factors such as costs, markets, policies, and labor, the direction of business migration between urban and rural areas is complex. With the urban expansion, the contradictions of the urban population, resources, and environment are becoming increasingly acute, which leads to the migration of some enterprises that produce large quantities of standardized products to rural or township areas around the city. Furthermore, some megacities have also begun to relieve urban non-core functions to promote the upgrading of industrial structures and the optimization of spatial structures. In this regard, low-end industries such as agriculture, forestry, animal husbandry and fishery functions, general manufacturing functions, general wholesale, and retail functions have gradually moved to the suburbs and rural hinterland. In addition to one-way industrial migration, urban and rural areas can establish connections within the city's rural regions through supply chain collaborations. Urban businesses can partner with agricultural cooperatives or small-scale manufacturing enterprises in rural areas, achieving mutually beneficial outcomes.

Driven by industrialization and urbanization, land elements present a one-way flow, which is characterized by urban land expansion and rural land occupation. Land elements are transferred between urban and rural areas through means such as expropriation and transfer. With the increase and decrease in urban–rural construction land and the exploration and implementation of the land ticket system, the flow of land elements is more flexible. It is worth noting that the land transfer system will significantly affect the willingness of rural migrants to stay, and the explicit function of rural land property can effectively reduce the willingness of rural migrants to migrate [44].

The movement of capital elements occurs based on the yield differentials between urban and rural areas. Capital is the most profit-driven and scarce element. Capital flows between urban and rural areas based on the rate of return on income. The huge gap in the rate of return on capital between agriculture and non-agriculture has led to the long-term flow of capital to cities and towns. Most of the capital flowing from cities to rural areas is applied to the purchase of agricultural products and other related service activities, while rural development investment is relatively small. The mobility of labor can also lead to the flow of capital. When people move from rural to urban areas, they may bring their savings with them, which can be used for investment or entrepreneurship in urban areas.

Technical elements are usually combined with capital and gathered in cities; once there is not enough agricultural technology innovation, the dual economic urban–rural structure will inevitably emerge. However, if a city can provide certain technology for rural development, that is, urban and rural technology transfer, the investment in advanced urban technology in rural areas is often restricted by the limited infrastructure and services. At present, the Chinese government supports rural revitalization by innovating investment and financing mechanisms and leveraging and guiding more financial resources.

Culture and ecology flow between urban and rural areas in the form of cultural products, ecological products, and tourism services. Among them, urban culture spreads to rural areas with its inherent superiority and strength. However, the transformation path of rural ecological elements to ecological products and ecological services is relatively weak and is affected by labor, land, capital, and other human activities.

Public service flow refers to the promotion of relatively developed public services in cities to radiate to rural areas, the migration of public service resources to rural areas, and the extension of urban infrastructure to rural areas. Amomg, which promotes the

interconnection of urban and rural public service facilities and infrastructure, is the most direct measure to improve the integration of urban and rural development. At present, the flow of public service elements is mainly in transportation, education, health, medical insurance, water, and other infrastructure and public services, which has promoted urban–rural interconnection and created necessary conditions for the coordinated development of urban and rural areas.

3. Theoretical Framework of the Influence of CLC on URDEI

To promote the integration of urban and rural development, the key is the integration of urban and rural elements, and the difficulty is in establishing a sound mechanism for the flow of URDEI [42]. Whether urban–rural elements can achieve effective flow and organic integration not only affects the allocation efficiency between related elements but also determines the promotion effect of input elements on urban and rural development to some extent. As a systematic project to promote the process of urban–rural integration, the CLC plays an important role in improving the quality of elements, optimizing the structure of elements, promoting the efficient integration and utilization of resources, and promoting the integration of urban and rural development. Based on the rural element system, the CLC in the whole region promotes the inflow of financial funds, social capital, advanced technology, and high-level talents into the countryside. The diving mechanism of CLC for promoting the two-way smooth flow and organic integration of urban and rural elements is shown in Figure 2.

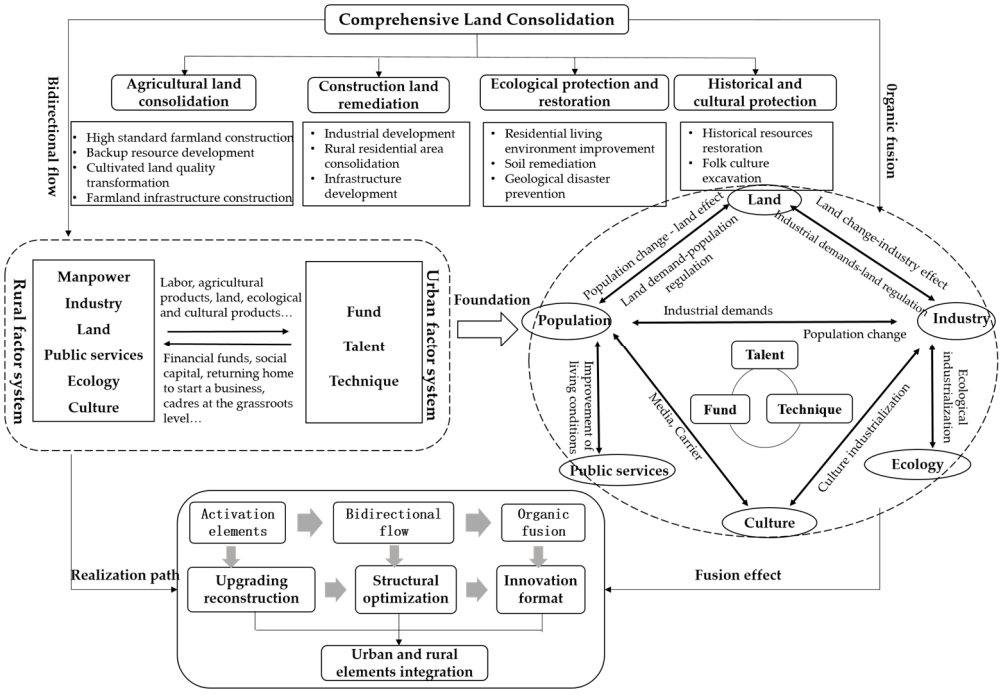

Figure 2. The driving mechanism of CLC on URDEI.

3.1. CLC Promotes the Smooth Flow of Urban and Rural Elements

The CLC helps integrate rural elements into urban areas. CLC promotes the outflow of land resources by facilitating land transfer and linking changes in urban and rural construction land. The implementation of centralized contiguous agricultural land consolidation can increase the effective cultivated land area, improve agricultural production conditions, promote land transfer, and facilitate the large-scale cultivation of cultivated land [45]. This will further save and liberate the rural labor force and smooth its transfer to non-agricultural industries. On the other hand, with the promotion of planting technology and agricultural equipment adapted to large-scale operation, the yield and quality of agricultural products have been effectively guaranteed, thus laying a foundation for improving

the added value and commercialization rate of agricultural products and accelerating the integration of agricultural industry and non-agricultural industry. Regarding construction land consolidation, it can revitalize the use of rural collective construction land [46], which not only helps meet the demand for rural industrial development land but also makes use of surplus construction land indexes, increases the income of rural land indicators, and supports the demand for non-agricultural construction land to promote land saving and intensive use [26]. Through ecological protection and restoration and historical and cultural protection measures, the quality of rural ecological and cultural elements can be improved, so that more high-quality rural ecological and cultural products can meet the leisure tourism needs of urban residents.

The CLC drives urban elements into rural areas. The CLC project itself will bring a lot of government investment to rural areas. Secondly, with the improvement of the rural internal environment caused by CLC, rural areas have a greater chance to attract social capital, urban industrial and commercial capital, and financial capital. Land consolidation in agricultural areas can enhance farmland productivity and sustainability, attracting urban agricultural professionals, modern agricultural technologies, and other resources into rural areas, thereby elevating the level of rural industries. Simultaneously, promoting land transfer can draw urban investors and businesses into rural regions, leading to improved economic efficiency in rural areas. Additionally, land consolidation for construction purposes can enhance the quality of rural life, attracting urban residents and businesses to rural areas. For example, the improvement of production conditions and the development environment not only provides an opportunity for the introduction of urban e-commerce platforms and 'Internet +' technologies into rural primary, secondary, and tertiary industries, but also creates new models, new formats, and new scenarios for local industries. Simultaneously, organized construction land indicators can provide developmental space for incoming industries. The improvement of public service elements not only makes up for the shortcomings of rural development but also further enhances the radiation of cities to rural development, which can further promote the equalization of urban and rural public services and infrastructure interconnection [47,48]. Enhancing the rural ecological environment through ecological protection and restoration efforts can attract urban residents and tourists. Rural ecological tourism and environmental protection industries can become investment and employment opportunities for urban residents. Additionally, in conjunction with land consolidation, ecological compensation policies can draw urban environmental professionals and businesses into rural areas to participate in ecological restoration projects. The preservation of historical and cultural heritage can transform rural areas into cultural tourism destinations, which in turn attracts urban residents and businesses, including cultural and creative industries and professionals in cultural heritage preservation. Through cultural exchange and educational programs, talent elements such as cultural education institutions and artists can flow into rural areas, driving cultural heritage preservation and innovation in rural regions.

3.2. CLC Promotes the Organic Integration of Urban and Rural Elements

To address the widening urban–rural development gap, the government should facilitate the organic integration of urban and rural elements by removing obstacles to the flow of urban–rural elements. This will enhance the effectiveness of factor mobility. The CLC project is an effective way to promote URDEI. CLC directly acts on the land elements by engineering means and can promote the integration of land, industry, labor, talent, capital, technology, and other elements by adjusting the land use structure, optimizing the land use layout, and improving the land quality. In other words, CLC can effectively realize the efficient allocation and optimal combination of relevant elements and promote the new development pattern of urban–rural integration [13,28,49,50].

The effects of CLC driving the organic integration of urban and rural development elements typically manifest as population mobility and settlement, industrial innovation and upgrading, and the enhancement and expansion of infrastructure. Specifically, population,

land, and industry are at the core of the rural element subsystem, which influence each other internally and constantly interact with the external environment, forming a whole with dissipative structure characteristics. The inflow of capital, talent, and technology from urban areas into rural regions facilitates the upgrading of rural industries and assists in the development of competitive sectors, such as modern agriculture, rural tourism, and cultural and creative industries. Modern enterprise management and its various types of processed products and service products have a great impact on traditional rural business forms, which still lack a relatively mature development environment. To adapt to rural transformation development, the implementation of CLC can promote rural land transfer and scale management to change the traditional small-scale farming mode and create conditions for agricultural mechanization and medium-scale management. This, in turn, will improve the comprehensive agricultural production capacity, improve the rural ecological environment, and absorb advanced urban management concepts, industrial and commercial capital, technology, and talents into rural areas, and thereby promote the integration of urban–rural elements [2]. Furthermore, CLC increases the investment in rural public services and infrastructure, which cannot only reduce the imbalance in the distribution of fiscal expenditure between urban and rural areas [51], but also connect the transportation network, logistics network, and information network between rural areas and urban areas, and improve the URDEI [52,53]. The CLC program combines ecological protection and restoration with historical and cultural preservation. It promotes the industrialization of ecological and cultural elements through the restoration of historical resources and the exploration of folk culture. The pilot experience of CLC across the country also shows that CLC promotes the input of financial funds and social capital, advanced technology, high-level talents, and other elements into rural areas, and has become a platform and an effective method for the organic integration of urban and rural elements [54].

4. Empirical Analysis

4.1. Study Area

Chongqing, situated in southwest China, is a mountainous city. On the one hand, significant geographical barriers exist between urban and rural areas, requiring innovative approaches to promote urban–rural interaction and cooperation. On the other hand, Chongqing faces a significant urban–rural development gap, with a wide disparity in per capita disposable income (the per capita disposable income of urban residents is 45,509 yuan, while the per capita disposable income of rural residents is 19,313 yuan). There is an urgent need for urban–rural integration and development. Therefore, Chongqing has been designated as a "pilot area" for comprehensive reform and development of urban–rural coordination and a pioneering demonstration zone for urban–rural integration in the country. To elucidate the impact of CLC on URDEI, this study examines six completed CLC initiatives in the western region of Chongqing as a case study (Figure 3). Before consolidation, the case area faced numerous practical challenges, including a shortage of labor, a monolithic industrial structure, and low land use efficiency. To alleviate these issues, it is imperative to reallocate land use and development elements comprehensively. By consolidating agricultural and construction land, implementing ecological protection and restoration initiatives, and preserving sites of historical and cultural significance, the government and social capital integrate funds to draw skilled professionals and advanced technological advancements back to rural areas. The case area has improved the rural living environment, revived the collective construction land, optimized the industrial layout, and achieved integrated development. This has accelerated the process of urban–rural integration in the community.

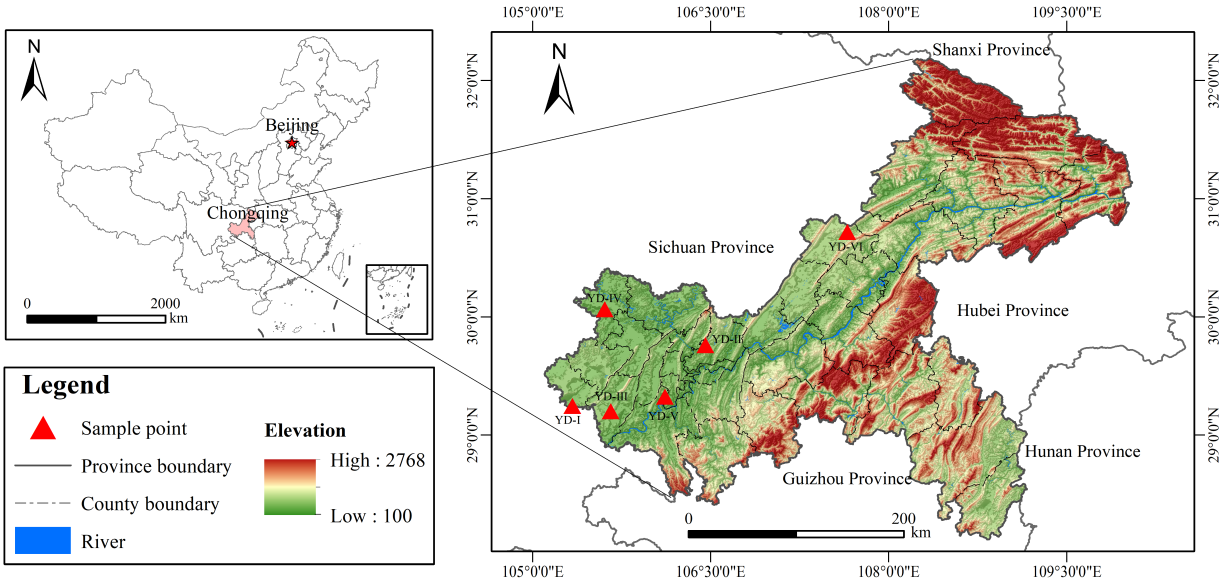

Figure 3. Location map of research case.

4.2. Data Sources and Processing

The data primarily originated from the township governments in the six sampled counties as well as field surveys. The data in this article can be categorized into two types: CLC project data collected from departments related to natural resources, agriculture, and rural affairs, and on-site visits and surveys conducted in selected project areas. Semi-structured interviews were used to engage in conversations with residents to gather micro-level data on factors such as the inflow and outflow of high-end talents, the number of investment enterprises, investment amounts, etc. Missing data were supplemented using county statistical yearbooks.

4.3. Analysis of the Process of CLC on URDEI

Based on the theoretical mechanism of promoting the integration of urban and rural elements through integrated land consolidation, the process of driving the integration of urban and rural elements through integrated land consolidation is divided into three stages: activating rural elements, the bidirectional flow of urban and rural elements, and the organic integration of urban and rural elements. These three stages are manifested in the process of implementing integrated land consolidation through element quality improvement, structural optimization of elements, and innovation in rural business formats. Therefore, the impact of integrated land consolidation on the integration of urban and rural elements in the research area can be demonstrated by examining the consolidation measures in the integrated land consolidation area and comparing the development before and after implementation. The process of URDEI driven by CLC can be divided into three stages, namely, the element quality improvement stage, the element structure optimization stage, and the element integration innovation stage.

In the first stage, the rural elements are upgraded. Given the practical challenges associated with land use and environmental conditions, CLC primarily focused on enhancing the quality of development elements such as land, ecology, culture, and public services through the implementation of engineering measures (Table 1). The optimization of land elements was primarily achieved through farmland reorganization, construction land development, and rural residential land consolidation. Farmland reorganization measures included the terracing of arable land, irrigation facilities, parcel integration, and the upgrading of the farmland road network. For instance, some arable land with slopes greater than 6° but good road conditions were transformed into terraces to meet the needs of medium-sized mechanical farming. After the completion of slope land consolidation

projects, soil fertilization was carried out to ensure the quality of cultivation. On average, the land quality grade increased by 0.33, and the suitability for mechanization improved by an average of 2.38% compared with pre-consolidation conditions. Additionally, protective ponds and farmland drainage channels were newly constructed in all sample areas to meet the irrigation needs of the surrounding farmland. To reduce the fragmentation of the farmland landscape, paddy fields were merged with scattered land parcels, and idle land within parcels was consolidated. Construction land consolidation primarily involved integrating and optimizing scattered land parcels to have a full range of functions, including residential, industrial, infrastructure, and public services. This consolidation also facilitated the adjustment of urban and rural land elements. For example, new village settlements with supporting infrastructure and public service facilities were built to guide the scattered rural land to withdraw from the project. After the implementation of the consolidation project, the area of construction land and the number of scattered construction land plots showed a downward trend.

Table 1. The way to improve the quality of land elements in the study area.

Regulation Content		Realization Path	Main Associated Elements
Optimize land utilization	Settlement space optimization	❖ Construction of new village settlements, supporting infrastructure, and public service facilities to enable farmers to live in concentration; ❖ Construction land (especially scattered rural homesteads) gradually withdrew, forming a concentrated distribution area of cultivated land with good water conservancy and soil and water conservation measures.	Rural homestead
	Revitalization of idle inefficient space	❖ Rural construction land reclamation.	Collective construction land
	Building modern agricultural production space	❖ Comprehensive improvement of the existing cultivated land, terrace transformation, improvement of the field road network, the construction of automatic irrigation system, and improvement of the ecological environment of farmland to achieve suitable cultivation, water and fertilizer integration, and intelligent management of modern mechanized agriculture.	Cultivated land, Technology
	Industrial development space cultivation	❖ Implement modern agricultural technology training in the field of modern agricultural production and agricultural employment research; ❖ To carry out tourism-related skills training for the tourism employment population in the study area, improve the quality of the labor force, and contribute to the revitalization of rural talents [51].	Population, Industry, Capital, Technology

Table 1. *Cont.*

Regulation Content		Realization Path	Main Associated Elements
Improve environmental quality	Ecological environment governance	❖ Install sewage treatment equipment for large and super-large courtyards with a scale of more than 10 households throughout the community; ❖ Support garbage collection, sewage treatment, rest facilities, improving fitness activities area, parking lot, etc.	Ecology
	Improvement of living environment	❖ Extract the characteristics of the roof, wall pillars, roof foundations, verandas, doors and windows, and architectural colors of traditional buildings in Bayu, reflect the local conditions of Bayu; ❖ The residential environment improvement of relatively concentrated residential areas mainly involves large residential areas.	Public services
	To improve the road system	❖ To meet the new village residents' travel and agricultural industry development, the new road connected to the traffic system of the study area, forming a convenient and efficient internal traffic system.	Public services
	Characteristic courtyard building	❖ Establish a colorful courtyard featuring seasonal crops; ❖ Establish a characteristic residential village for tourism visits.	Culture
	Rural Cultural Heritage	❖ Repair and protect the existing cultural attractions, dig deep into the rural farming culture and create a farming culture experience area.	Culture

The improvement of environmental quality in the study area was mainly carried out from hard conditions represented by the ecological environment and life quality and soft conditions represented by the cultural atmosphere. Among them, ecological protection and restoration were used to explore the characteristic resources and guide agricultural green production to upgrade the industry. The study area mainly adopted field ridge restoration, slope water system management, and ecological slope protection to implement ecological protection and restoration. For example, YD-I controlled agricultural non-point source pollution by stripping and reusing coastal topsoil and the construction of slope protection and ridge protection for important water systems such as Jinlong Lake and Qingsheng River. After the renovation, the project area formed large mountain plateau ponds, which created conditions for the development of aquaculture. The protection of historical culture mainly focuses on the display and experience of the farming culture and the improvement of the surrounding environment of the courtyard. After the completion of the rural tourism scenic spot, the project area has increased employment opportunities in catering, accommodation, retail, agricultural trade, and scenic spot management, attracting local migrant workers to return home to start their businesses. The improvement in the quality of urban–rural development elements is shown in Table 2.

Table 2. Changes in the quality of urban–rural development elements before and after CLC.

Element Type	Measurement Index	YD-I	YD-II	YD-III	YD-IV	YD-V	YD-VI
Land	Increasing infield rate (%)	5.01	0.09	0.09	0.08	0.09	9.34
	Cultivated land quality class	1.10	0.20	0.60	1.00	−1.40	0.50
	Appropriate rate of mechanization (%)	0.48	0.65	0.27	0.20	0.11	12.54
Ecology	Green vegetation coverage rate (%)	3.56	2.75	12.71	6.81	13.19	5.83
	Biological abundance index (%)	0.01	0.00	−0.07	0.04	0.01	0.01
Culture	Protection and cultivation of historical attractions (Department)	12	5	17	5	7	7
	Characteristic courtyards (pcs)	200	400	286	45	121	18
Public services	Road network density (m/hm^2)	5.88	14.65	11.00	16.22	4.48	7.80
	New activity room (pcs)	23	13	48	21	6	14

In the second stage, there was an optimization of the factor structure. Building upon the activation of rural development elements, there was a further optimization of land use structure, labor force composition, capital formation, and industrial structure (Table 3). After the land consolidation, the structure of land utilization was improved. Through the consolidation of agricultural land, the area available for land transfer increased, leading to a more concentrated spatial distribution and a more regular shape of arable land. This significantly met the requirements for land transfer and large-scale farming, providing favorable conditions for mechanized production and the introduction of social investments. Through the consolidation of rural construction land, the issues of scattered, disorderly, and vacant villages were significantly improved. Inefficient land use in rural areas was further rejuvenated, and the trend of urban–rural integration became more apparent. CLC promoted the transfer, leasing, and mortgage of land use rights, turning land into capital. Infrastructure improvements increased productivity and living standards in rural areas, attracting more capital into the countryside, including social capital and government investments. This provided more financial support for rural areas and helped improve their capital structure. Through interviews and surveys, it was found that after the consolidation, there was an increase in the number of people returning to their hometowns for entrepreneurship as well as an influx of skilled workers from outside the region. This led to changes in the age structure and education levels of the regional workforce. As agricultural production conditions improved in the sample area, there was a shift in agricultural structure, with large-scale farming households actively adjusting and optimizing their cropping patterns. This was one of the most significant changes in rural industries. After the project's implementation, non-agricultural industries, such as processing manufacturing, and tourism, were able to develop in rural areas. The structure of the primary, secondary, and tertiary industries in rural areas was optimized, and modern agricultural technology services experienced accelerated development.

Table 3. Changes in the structure of urban–rural development elements before and after CLC.

Element Type	Measurement Index	YD-I	YD-II	YD-III	YD-IV	YD-V	YD-VI
Labor force	Migrant workers	1440	725	189	93	83	113
	Returning entrepreneurs (unit)	16	13	15	2	9	27
Funds	GDP per capita (yuan)	0.07	2.10	0.20	0.12	0.01	0.42
	Government investment (ten thousand yuan)	1000	6700	2930	4841.75	1193.36	1792
	Social investment (ten thousand yuan)	680	960	75,500	11,028	1183.07	7269.9
	Net income of cultivated land (ten thousand yuan)	82.00	258.00	52.17	207.12	81.4	90.12
Land	Construction land balance (hm^2)	1.58	5.12	2.12	0.00	0.50	0.24
	Transfer land area (hm^2)	26.67	0.00	34.06	−6.33	25.80	1.67
Industry	New business entities	6	30	17	7	1	2
	New jobs (pcs)	800	705	20	40	70	190

In the third stage, there was an innovative transformation of the industrial landscape through the integration of elements. The enhancement in the quality of rural elements and their structural optimization led to the emergence of new business models, technologies, and management methods in the field of rural development, capable of meeting the ever-changing market demands. In the sampled areas, the consolidation of agricultural land improved irrigation facilities and implemented strip field consolidation to create conditions for the development of new agricultural industries. This included the introduction of large-scale rice-fish farmers, which promoted the advancement of modern agriculture. Through the application of modern agricultural technologies, land use efficiency was enhanced, leading to increased agricultural product yields and improved quality. Farmers were guided to develop high-value-added agricultural practices, such as organic farming, green agriculture, and specialty agriculture, to increase their income. Furthermore, the consolidation of construction land resulted in comprehensive planning for idle farmhouses, encouraging the utilization of these vacant structures for rural tourism, homestays, and cultural creative industries. This also provided an opportunity for industrial and commercial capital to enter rural areas. The introduction of professional managers, agricultural technology experts, and other human resources further stimulated the endogenous growth of rural development. The establishment of eco-tourism cooperatives encouraged business participation and facilitated the organized flow of land and capital between urban and rural areas. The exploration of distinctive cultures brought about new economic growth opportunities. Already constructed rural resorts were designed to fulfill functions such as dining, accommodation, leisure, healthcare, and picking activities, which drove the development of industries in the research area and increased the income of rural residents. Tailoring strategies to the specific local context, the sampled areas applied advanced technologies and experiences in non-point source pollution control and eco-friendly agricultural practices, as well as flood and drought resilience technologies. This not only improved but also beautified the living environment.

Overall, the project area has realized the mechanization of grain and oilseed harvesting and the unification of economic fruit planting management. First of all, with the assistance of agricultural horticultural facilities and ecological breeding technology, a 'green, ecological, circular and coordinated' agricultural industrial chain with local characteristics is created; then, through the processing and sales of local fruit, rice, and other characteristic agricultural products, the agricultural production chain is further extended. Based on farming culture, we should give full play to the versatility of land consolidation supporting facilities, meet the needs of tourists for leisure and entertainment, promote the coordinated development of agricultural culture and tourism, and create a new sustainable development format of the three-industry integration.

5. Discussion

With the full implementation of the rural revitalization strategy and the further evolution of urban–rural relations, land consolidation has entered a new stage of CLC [13]. The goal of CLC has been transformed into cultivated land protection, ecological civilization construction, and urban–rural integration [55]. Its essential function is to activate rural idle resources effectively, optimize land layout, improve land use efficiency, and promote rural transformation development to connect cities. CLC can effectively solve the problem of resource shortages in rural development, guide the rational flow of urban and rural resources, and be an important platform for the integration of urban and rural elements.

While many scholars believe that CLC contributes to the integration of urban and rural elements and the development of urban–rural integration [30,56,57], current research on how CLC promotes the integration of urban and rural elements remains unclear. The theoretical framework constructed in this paper indicates that CLC has a positive effect on promoting the integration of urban and rural elements and addressing the issue of urban–rural imbalance. This further underscores how CLC can facilitate the integration of urban and rural elements. The key to its role lies in CLC serving as an interactive platform

for elements, effectively promoting the integration of rural elements into urban areas, the introduction of urban elements into rural areas, and enhancing the interaction between elements in rural and urban areas. Through field surveys and empirical analysis, it has been demonstrated that CLC improves element quality, optimizes element structure, and further develops rural industries. Our findings align with those from some case studies in other regions of China (e.g., Zhejiang Province, Beijing Province) that show the positive role of CLC in exploring rural culture and achieving overall resource allocation between urban and rural areas through the innovative "CLC + urban–rural integration development" model [58].

It is of great international reference value for China to promote the integration of urban and rural elements through CLC to support urban–rural integration development, but its potential shortcomings and negative effects are also worthy of attention in the future. On the one hand, it has brought serious labor losses, and some farmers still maintain self-sufficient living conditions due to the lack of labor. This may be due to the entrepreneurial opportunities provided by the implementation of CLC and the fact that jobs cannot meet the employment needs of rural labor. On the other hand, the lack of scientific engineering design of CLC limits its effectiveness. This is mainly due to the lack of agricultural production theory and technical guidance in the CLC process. The survey at the household level shows that farmers have greater expectations for the construction of irrigation ditches and the consolidation of soil blocks, and some farmers who are not involved in the transfer of village collective land are particularly strong. In addition, the implementation of CLC may have potential ecological risks [59]. Studies have shown that the human disturbance of land consolidation in the natural environment may lead to the degradation of ecosystem services and the decline of landscape diversity. Therefore, it is imperative to strengthen the scientific planning and design of CLC, establish effective monitoring and evaluation mechanisms, and implement continuous supervision for a certain period after project implementation. Deviations should be promptly corrected during project execution to mitigate adverse impacts. It is also important to recognize that CLC is not a universal formula for addressing urban–rural development issues and improving the current urban–rural imbalance. The specific implementation process of CLC needs further refinement to ultimately achieve a referenceable and replicable model for integrated urban–rural development. Its specific implementation process needs to be further improved to finally realize the urban–rural integrated development path model that can be used for reference and promotion. With the progression of globalization, both developed and developing countries are actively exploring various effective measures to promote rural revitalization and balance between urban and rural development, such as the latest European common agricultural policy in the 21st century (2014–2020), Japan's agricultural support policy, research on rural economic development in Italy, etc. [60–62].

The limitation of this paper is that it only analyzes the integration of local urban–rural elements and the driving mechanism of URDEI through a CLC project. In fact, due to the differences in regional background conditions and development plans for the implementation of CLC, the demand for the integration of urban–rural elements in different regions is also different. It is also important to study other types and practices of CLC. Essentially, this study presents an approach to promoting the integration of urban–rural elements and the development of urban–rural integration through CLC measures. While this approach may not be completely applicable to elsewhere, it serves as a valuable reference for other countries and regions facing similar urban–rural development challenges.

6. Conclusions

To achieve the integration of urban and rural development, the promotion of URDEI is crucial. To this end, CLC improves the quality of rural elements, promotes the flow of urban–rural elements, and facilitates their organic integration. The theoretical framework for the impact of CLC on URDEI is established based on the identification of the urban and rural element systems. The core objective of CLC in promoting URDEI is to affect

the reciprocal feedback relationship between rural and urban elements by enhancing the quality grade and spatial arrangement of land elements. CLC optimizes land use through approaches such as agricultural and construction land consolidation, ecological protection and restoration, and historical–cultural preservation. It promotes the integration of land with industries, labor, talents, capital, technology, and other elements and plays an important role in advancing the new model of the agricultural industry. It also facilitates the equalization of basic public services in urban and rural areas.

This case study shows that the path of CLC to promote the UREI can be realized in three steps. Firstly, the improvement of rural elements creates the basic conditions for the two-way flow of urban–rural elements. Through agricultural land consolidation, construction land consolidation, ecological protection and restoration, and historical–cultural protection, the quality of land elements and the living environment in rural areas can be improved, and the development of cultural and tourism industries will be promoted. The second stage is to promote the optimal allocation of urban–rural elements. The scale and mechanization of land elements have gradually increased, the proportion of the output value of the secondary and tertiary industries has improved, and the number of various buildings that can reflect the local ecological and cultural characteristics has increased. Thirdly, CLC will guide the organic integration of urban–rural elements and build a new format of rural development. The renovation project brings new economic growth points, improves the participation of technology, talents, capital, and other elements in rural development, and enhances the ability of rural areas to develop local industries and attract exogenous investment, which will promote the continuous inflow of urban elements through industrial development.

CLC and URDEI should be mutually reinforcing and complementary, and our findings provide valuable policy recommendations for the implementation of CLC. Firstly, it is important to establish and improve relevant laws and regulations on CLC and integrated urban–rural development, clarify the objectives, tasks, responsibilities, and obligations of CLC, and ensure coordination and integration between urban–rural planning, land use planning, and CLC planning. Secondly, it is important to strengthen the financial investment in land improvement projects and promote technological innovation and application in land improvement. Financial support is an important condition for the scientific implementation of CLC. It is necessary to give full play to the guiding role of government funds to drive the flow of social resources into the countryside and accelerate the pace of rural revitalization construction. Finally, a perfect monitoring and evaluation system for CLC and URDEI should be established to provide timely evaluation and feedback on the remediation work and continuously optimize the remediation strategy. We should establish a long-term CLC mechanism to promote the integrated development of urban and rural elements. Not only should we pay attention to the two-way flow of urban and rural factors, but also promote the improvement and optimization of the quality of local factors in the countryside so that urban factors can flow into and stay in the countryside, and continue to have an impact on the development of the countryside, and so that CLC can become an important starting point for the construction of an integrated urban–rural development pattern.

Author Contributions: Conceptualization: Y.Z. and C.Y.; Methodology: Y.Z., C.Y. and G.X.; Writing—original draft preparation: Y.Z.; Writing—Review and Editing: Y.W. and R.C.; Funding acquisition: C.Y. All authors have read and agreed to the published version of the manuscript.

Funding: This work was supported by the National Natural Science Foundation of China (Grant No. 42171257) and the Natural Science Foundation of Chongqing (cstc2020jcyj-msxmX0843).

Data Availability Statement: The datasets used or analyzed during the current study are available from the corresponding author upon reasonable request.

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

References

1. Chen, K.Z.; Mao, R.; Zhou, Y. Rurbanomics for common prosperity: New approach to integrated urban-rural development. *China Agric. Econ. Rev.* **2023**, *15*, 1–16. [CrossRef]
2. Tu, S.; Long, H. Rural restructuring in China: Theory, approaches and research prospect. *J. Geogr. Sci.* **2017**, *27*, 1169–1184. [CrossRef]
3. Cheng, Y.; Zheng, D. Does the Digital Economy Promote Coordinated Urban–Rural Development? Evidence from China. *Sustainability* **2023**, *15*, 5460. [CrossRef]
4. Chen, K.; Long, H.; Liao, L.; Tu, S.; Li, T. Land use transitions and urban-rural integrated development: Theoretical framework and China's evidence. *Land Use Policy* **2020**, *92*, 104465. [CrossRef]
5. Long, H. Land consolidation: An indispensable way of spatial restructuring in rural China. *J. Geogr. Sci.* **2014**, *24*, 211–225. [CrossRef]
6. Wang, Y.; Liu, Y.; Li, Y.; Li, T. The spatio-temporal patterns of urban–rural development transformation in China since 1990. *Habitat Int.* **2016**, *53*, 178–187. [CrossRef]
7. Bao, C.; Fang, C.-L. Water Resources Flows Related to Urbanization in China: Challenges and Perspectives for Water Management and Urban Development. *Water Resour. Manag.* **2012**, *26*, 531–552. [CrossRef]
8. Li, Z.; Liu, J. Evolution Process and Characteristics of Multifactor Flows in Rural Areas: A Case Study of Licheng Village in Hebei, China. *Sustainability* **2023**, *15*, 3225. [CrossRef]
9. Liu, Y.; Dai, L.; Long, H.; Woods, M.; Fois, F. Rural vitalization promoted by industrial transformation under globalization: The case of Tengtou village in China. *J. Rural Stud.* **2022**, *95*, 241–255. [CrossRef]
10. Jiang, Y.; Long, H.; Ives, C.D.; Deng, W.; Chen, K.; Zhang, Y. Modes and practices of rural vitalization promoted by land consolidation in a rapidly urbanizing China: A perspective of multifunctionality. *Habitat Int. 2022. 121*, 102514.
11. Li, S.; Song, W. Research Progress in Land Consolidation and Rural Revitalization: Current Status, Characteristics, Regional Differences, and Evolution Laws. *Land* **2023**, *12*, 210. [CrossRef]
12. Thapa, G.B.; Niroula, G.S. Alternative options of land consolidation in the mountains of Nepal: An analysis based on stakeholders' opinions. *Land Use Policy* **2008**, *25*, 338–350. [CrossRef]
13. Zhou, Y.; Li, Y.; Xu, C. Land consolidation and rural revitalization in China: Mechanisms and paths. *Land Use Policy* **2020**, *91*, 104379. [CrossRef]
14. Niroula, G.S.; Thapa, G.B. Impacts and causes of land fragmentation, and lessons learned from land consolidation in South Asia. *Land Use Policy* **2005**, *22*, 358–372. [CrossRef]
15. Jia, L.; Petrick, M. How does land fragmentation affect off-farm labor supply: Panel data evidence from China. *Agric. Econ.* **2014**, *45*, 369–380. [CrossRef]
16. Jiang, Y.; Tang, Y.-T.; Long, H.; Deng, W. Land consolidation: A comparative research between Europe and China. *Land Use Policy* **2022**, *112*, 105790. [CrossRef]
17. Guo, Y.; Wang, J. Land Consolidation in Rural China: Historical Stages, Typical Modes, and Improvement Paths. *Land* **2023**, *12*, 491. [CrossRef]
18. Liu, M.; Fei, L. Study on the influence of factor mismatch on urban-rural integration development—Evidence from Chinese Provincial Panel Data. *J. Agrotech. Econ.* **2019**, *2*, 33–46.
19. Xin, T.; Jie, C. A Comparative Study on the Factors Agglomeration Effect and Regional Differences of Urban-rural integration Development—An Empirical Study Based on Provincial Panel Data. *Inq. Econ. Issues* **2021**, *7*, 44–52.
20. Qiang, G.; Zhou, X. Leading Rural Revitalization with County Urban-Rural lntegrated Development: Strategic Measures and Path Selection. *Econ. Rev. J.* **2022**, *12*, 17–24.
21. Qian, L.; Zhang, K.; Song, J.-X.; Tang, W.-Y. Regional Differences and Convergence of Urban-Rural Integration Development from the Perspective of Factor Flow. *J. Environ. Public Health* **2022**, *2022*, 2695366. [CrossRef] [PubMed]
22. Qin, Y.; Xu, J.; Zhang, H.; Ren, W. The Measurement of the Urban–Rural Integration Level of Resource-Exhausted Cities—A Case Study of Zaozhuang City, China. *Sustainability* **2023**, *15*, 418. [CrossRef]
23. Jia, J.; Yin, L.; Yan, C. Urban-Rural Logistics Coupling Coordinated Development and Urban-Rural Integrated Development: Measurement, Influencing Factors, and Countermeasures. *Math. Probl. Eng.* **2022**, *2022*, 2969206. [CrossRef]
24. Rao, C.; Gao, Y. Evaluation Mechanism Design for the Development Level of Urban-Rural Integration Based on an Improved TOPSIS Method. *Mathematics* **2022**, *10*, 380. [CrossRef]
25. Do, M.H.; Nguyen, T.T.; Grote, U. Land consolidation, rice production, and agricultural transformation: Evidence from household panel data for Vietnam. *Econ. Anal. Policy* **2023**, *77*, 157–173. [CrossRef]
26. He, Q.; Tan, S.; Yin, C.; Zhou, M. Collaborative optimization of rural residential land consolidation and urban construction land expansion: A case study of Huangpi in Wuhan, China. *Comput. Environ. Urban Syst.* **2019**, *74*, 218–228. [CrossRef]
27. Liu, Y.; Long, H.; Chen, Y.; Wang, J.; Li, Y.; Li, Y.; Yang, Y.; Zhou, Y. Progress of research on urban-rural transformation and rural development in China in the past decade and future prospects. *J. Geogr. Sci.* **2016**, *26*, 1117–1132. [CrossRef]
28. Long, H.; Zhang, Y.; Tu, S. Rural vitalization in China: A perspective of land consolidation. *J. Geogr. Sci.* **2019**, *29*, 517–530. [CrossRef]
29. Tong, W.; Lo, K.; Zhang, P. Land Consolidation in Rural China: Life Satisfaction among Resettlers and Its Determinants. *Land* **2020**, *9*, 118. [CrossRef]

30. Rao, J. Comprehensive land consolidation as a development policy for rural vitalisation: Rural In Situ Urbanisation through semi socio-economic restructuring in Huai Town. *J. Rural Stud.* **2022**, *93*, 386–397. [CrossRef]
31. Baffoe, G.; Zhou, X.; Moinuddin, M.; Somanje, A.N.; Kuriyama, A.; Mohan, G.; Saito, O.; Takeuchi, K. Urban–rural linkages: Effective solutions for achieving sustainable development in Ghana from an SDG interlinkage perspective. *Sustain. Sci.* **2021**, *16*, 1341–1362. [CrossRef] [PubMed]
32. Guoming, D.; Mei, L. A factor-based theoretical analysis of urban-rural relationship change. *Prog. Geogr.* **2021**, *40*, 1298–1309.
33. Long, H.; Tu, S.; Ge, D.; Li, T.; Liu, Y. The allocation and management of critical resources in rural China under restructuring: Problems and prospects. *J. Rural Stud.* **2016**, *47*, 392–412. [CrossRef]
34. Sun, Y.; Yang, Q. Study on Spatial–Temporal Evolution Characteristics and Restrictive Factors of Urban–Rural Integration in Northeast China from 2000 to 2019. *Land* **2022**, *11*, 1195. [CrossRef]
35. Zhang, Y.; Long, H.; Ma, L.; Ge, D.; Tu, S.; Qu, Y. Farmland function evolution in the Huang-Huai-Hai Plain: Processes, patterns and mechanisms. *J. Geogr. Sci.* **2018**, *28*, 759–777. [CrossRef]
36. Yang, Y.; Liu, Y.; Li, Y.; Li, J. Measure of urban-rural transformation in Beijing-Tianjin-Hebei region in the new millennium: Population-land-industry perspective. *Land Use Policy* **2018**, *79*, 595–608. [CrossRef]
37. Yu, G.H.; Lu, Z. Rural credit input, labor transfer and urban-rural income gap: Evidence from China. *China Agric. Econ. Rev.* **2021**, *13*, 872–893. [CrossRef]
38. Liu, H.; He, Q. The effect of basic public service on urban-rural income inequality: A sys-GMM approach. *Econ. Res.* **2019**, *32*, 3211–3229. [CrossRef]
39. Wang, Z.; Cao, C.; Chen, J.; Wang, H. Does Land Finance Contraction Accelerate Urban Shrinkage? A Study Based on 84 Key Cities in China. *J. Urban Plan. Dev.* **2020**, *146*, 04020038. [CrossRef]
40. Sun, C.; Tan, G.; Chai, X.; Zhang, H. Analysis on the Satisfaction of Public Cultural Service by Township Residents: A Qualitative Perspective. *Sustainability* **2023**, *15*, 7302. [CrossRef]
41. Cao, Y.; Hua, Z.; Chen, T.; Li, X.; Li, H.; Tao, D. Understanding population movement and the evolution of urban spatial patterns: An empirical study on social network fusion data. *Land Use Policy* **2023**, *125*, 106454. [CrossRef]
42. Chan, K.W. The Household Registration System and Migrant Labor in China: Notes on a Debate. *Popul. Dev. Rev.* **2010**, *36*, 357–364. [CrossRef] [PubMed]
43. Hu, W.; Wang, R. Which Chinese cities are more inclusive and why? *Cities* **2019**, *86*, 51–61. [CrossRef]
44. Yang, D.T. China's land arrangements and rural labor mobility. *China Econ. Rev.* **1997**, *8*, 101–115. [CrossRef]
45. Cay, T.; Uyan, M. Evaluation of reallocation criteria in land consolidation studies using the Analytic Hierarchy Process (AHP). *Land Use Policy* **2013**, *30*, 541–548. [CrossRef]
46. Zeng, S.; Zhu, F.; Chen, F.; Yu, M.; Zhang, S.; Yang, Y. Assessing the Impacts of Land Consolidation on Agricultural Technical Efficiency of Producers: A Survey from Jiangsu Province, China. *Sustainability* **2018**, *10*, 2490. [CrossRef]
47. Pašakarnis, G.; Morley, D.; Malienė, V. Rural development and challenges establishing sustainable land use in Eastern European countries. *Land Use Policy* **2013**, *30*, 703–710. [CrossRef]
48. Shui, W.; Bai, J.; Zhang, S.; Chen, Y. Analysis of the Influencing Factors on Resettled Farmer's Satisfaction under the Policy of the Balance between Urban Construction Land Increasing and Rural Construction Land Decreasing: A Case Study of China's Xinjin County in Chengdu City. *Sustainability* **2014**, *6*, 8522–8535. [CrossRef]
49. Liu, Y.; Wang, Y. Rural land engineering and poverty alleviation: Lessons from typical regions in China. *J. Geogr. Sci.* **2019**, *29*, 643–657. [CrossRef]
50. Zhou, Y.; Guo, L.; Liu, Y. Land consolidation boosting poverty alleviation in China: Theory and practice. *Land Use Policy* **2019**, *82*, 339–348. [CrossRef]
51. He, C.; Peng, L.; Liu, S.; Xu, D.; Xue, P. Factors influencing the efficiency of rural public goods investments in mountainous areas of China—Based on micro panel data from three periods. *J. Rural Stud.* **2016**, *47*, 612–621. [CrossRef]
52. Fang, C. Theoretical analysis on the mechanism and evolution law of urban-rural integration development. *Acta Geogr. Sin.* **2022**, *77*, 759–776.
53. Wang, X.; Tan, J.; Shen, X. Theoretical Framework and Policy Suggestions to the Two-Way Flow of Urban-Rural Elements. *Issues Agric. Econ.* **2020**, *10*, 61–67.
54. Deng, X.; Wang, G.; Song, W.; Chen, M.; Liu, Y.; Sun, Z.; Dong, J.; Yue, T.; Shi, W. An Analytical Framework on Utilizing Natural Resources and Promoting Urban–Rural Development for Increasing Farmers' Income Through Industrial Development in Rural China. *Front. Environ. Sci.* **2022**, *10*, 865883. [CrossRef]
55. Zhu, J.; Ma, S.; Zhou, Q. Industrial Revitalization of Rural Villages via Comprehensive Land Consolidation: Case Studies in Gansu, China. *Land* **2022**, *11*, 1307. [CrossRef]
56. SUN Jing-wen, LU Yu-qi, Mechanism and optimization path of comprehensive land consolidation oriented urban-rural integration. *J. Nat. Resour.* **2023**, *38*, 2201–2216.
57. Zhou, P. Study on the Land Consolidation Pattern of Southern Hilly Areas for Boosting Eco-Friendliness and Urban-Rural Coordinated Development. Master's Thesis, Beijing Normal University, Beijing, China, 2011.
58. Yu, J.; Dong, Y.; Tian, Y.; Hu, Z. Provincial Comprehensive Land Use Reorganization Based on Resource Integration, Zhejiang. *Planners* **2021**, *37*, 17–23.

59. Asiama, K.O.; Bennett, R.M.; Zevenbergen, J.A. Land consolidation on Ghana's rural customary lands: Drawing from The Dutch, Lithuanian and Rwandan experiences. *J. Rural Stud.* **2017**, *56*, 87–99. [CrossRef]
60. Viaggi, D.; Paloma, S.G.Y.; Mishra, A.; Raggi, M. The role of the EU Common Agricultural Policy: Assessing multiple effects in alternative policy scenarios. *Land Use Policy* **2013**, *31*, 99–101. [CrossRef]
61. Ma, L.; Liu, S.; Fang, F.; Che, X.; Chen, M. Evaluation of urban-rural difference and integration based on quality of life. *Sustain. Cities Soc.* **2020**, *54*, 101877. [CrossRef]
62. Terres, J.-M.; Scacchiafichi, L.N.; Wania, A.; Ambar, M.; Anguiano, E.; Buckwell, A.; Coppola, A.; Gocht, A.; Källström, H.N.; Pointereau, P.; et al. Farmland abandonment in Europe: Identification of drivers and indicators, and development of a composite indicator of risk. *Land Use Policy* **2015**, *49*, 20–34. [CrossRef]