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## **DEVELOPMENT OF AGRICULTURE IN CHINESE PERIPHERAL RURAL REGIONS**

Du, W., Lishchynskyy, I. (2023). Rozvytok silskoho hospodarstva v peryferiinykh silskykh rehionakh Kytau [Development of Agriculture in Chinese Peripheral Rural Regions]. *Visnyk Ekonomiky – Herald of Economics*, 4, 94–103. DOI: <https://doi.org/10.35774/visnyk2023.04.094>

Ду В., Ліщинський І. Розвиток сільського господарства в периферійних сільських регіонах Китаю. *Вісник економіки*. 2023. Вип. 4. С. 94–103. DOI: <https://doi.org/10.35774/visnyk2023.04.094>

### **Abstract**

**Introduction.** *China has passed a long process on its way to the global leadership in industrial sector and services. Accompanied by rapid growth of the regional prosperity is though not equal among the territory of the country. There are several relative peripheral regions with lower population and agricultural predominance. To maintain territorial cohesion a number of top-down measures and bottom-up initiatives are required.*

**Purpose.** *The main purpose of this paper is to analyse the territorial dimensions of maintaining a steady growth of China's agricultural sector under the condition of the general population increasing and decreasing the share of rural population.*

**Methods.** *The current research was carried out with application of the following methods: analysis and synthesis – to systemize the conceptual mainstream in the field of peripheral development; comparative analysis – to compare the development aspects in different regions of China depending from their urban/rural structure; deductions and inductions – to*

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*elaborate the key issues of agriculture development in Chinese peripheral rural regions; tabular and visual methods – for illustration of the research materials.*

**Results.** *The paper overviews the dynamics of the Chinese population during the last 70 years. The urban-rural structure of the population is analysed in a spatial-temporal perspective. Traditional rural regions in China are determined. General overview of agriculture development in China has been done. From the regional perspective, the development reasons and conditions of the nine relatively typical agricultural areas in China are analysed. The trends of agriculture development in Chinese peripheral rural regions are considered.*

**Discussion.** *Despite the great success of China in the fields of agricultural development and poverty reduction in depressed regions, there are aspects that require additional care: a broad area of issues concerning territorial cohesion, sustainable development, public-private cooperation.*

**Keywords:** *periphery; population pattern; rural population; agricultural market; agricultural zoning; territorial cohesion; international divide.*

**JEL classification:** R11, Q17.

**Formulas:** 0, **fig.:** 3, **tabl.:** 2, **bibl.:** 12.

**Problem setting.** China is a large country in geographical, populational and economic scopes. The country is well known due to highly industrialized urban areas. However, China has also rather advanced agricultural sector. The main areas of agriculture are concentrated in the east and south of the country that not so densely populated. The development of agriculture is traditionally treated as the fundamental background of national economy and people's livelihood, the long-term peace and stability of the country. The Chinese government has always attached great importance to the development of agriculture, paying attention to farmers, supporting agriculture, rural areas and farmers, is the top priority of the national policy, but also the top priority in the national economic development plan. In the sectoral structure of agriculture, the share of crop production prevails – 60%. However, China ranks 1st in the population of most types of livestock and poultry. cattle and pig breeding, poultry farming, sericulture are of the greatest importance, and fishing is among the first place in the world market.

**Analysis of recent research and publications.** The aspects of agricultural development of rural peripheral regions of China are considered in the papers of An X., Liu Y., Long F., Qian H., Shi J., Xu Z., Yang X., Zang Y., Zheng L. Among the main areas of concern are territorial cohesion, sustainable development, poverty overcoming and economic boost of declined territories.

**The main purpose** of this paper is to analyse the territorial dimensions of maintaining a steady growth of China's agricultural market under the condition of the general population increasing and decreasing the share of the agricultural population. From the regional perspective, the development reasons and conditions of the nine relatively typical agricultural areas in China are analysed.

**Presenting main material.** China is a large agricultural country and also the 2nd most populous country in the world. According to the seventh census of 2020, China's population

has exceeded 1.4 billion, accounting for 20 percent of the world’s population and 33 percent of Asia’s population. The dynamics of China’s population is shown in Fig. 1.

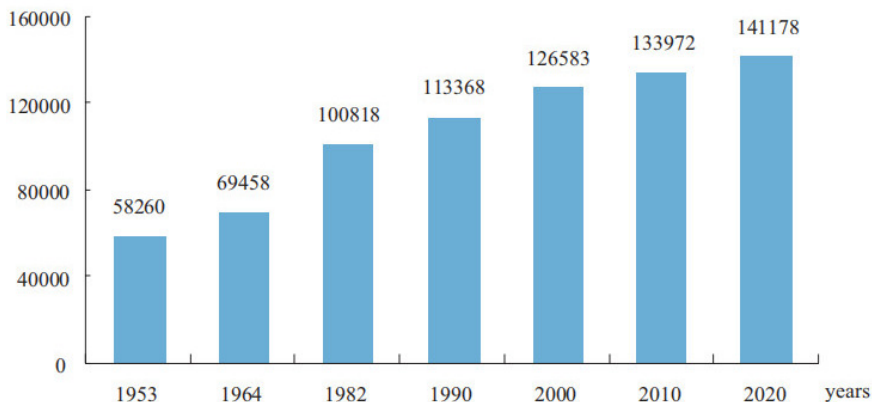


Fig. 1. National population in China according to Population Censuses (1 000 persons)

Source: National Bureau of Statistics of China

The development of China’s population has gone through as a long and tortuous process as the development of Chinese society. China’s population structure is also constantly changing (Tabl. 1).

Table 1

**China’s population structure** (1 000 persons)

Census years	National population	Urban population	Rural population	The proportion of the urban population, %	The proportion of the rural population, %
1953	58260	7726	50534	13.26	86.74
1964	69458	12710	56748	18.30	81.70
1982	100818	21082	79736	20.91	79.09
1990	113368	29971	83397	26.44	73.56
2000	126583	45844	80739	36.22	63.78
2010	133972	66557	67415	49.68	50.32
2020	141178	90199	50979	63.89	36.11

Source: National Bureau of Statistics of China

If the population is roughly divided into urban population and rural, we can see that the proportion of the urban population is increasing, while the proportion of the rural population is decreasing (Fig. 2). The growth rate of the urban population in China is obviously faster than that of rural one, especially the population growth of some big cities even shows an explosive trend.

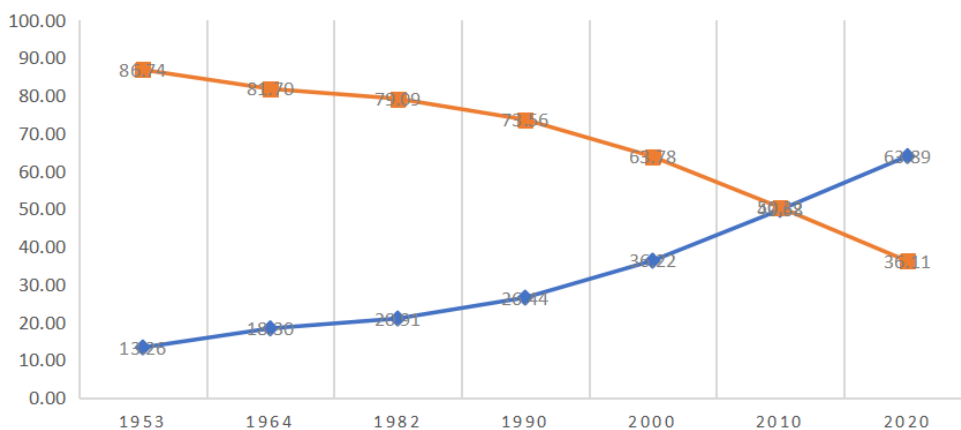


Fig. 2. Proportion of urban and rural population structure in China.

Source: National Bureau of Statistics of China

With the acceleration of the urbanization process, the rural population is gradually lost to the cities, and the agricultural production has also undergone great changes. On the one hand, the needs of cities to provide a new market for agricultural production are promoting the development of agricultural industry. On the other hand, the continuous outflow of rural labour force leads to the decline of rural industries. This situation has been paid great attention to by the Chinese government. Every year, the most important document of the central government is on the issue of “Agriculture, Rural Areas and Farmers”, which mainly puts forward the key construction contents of the year from the following aspects:

- to pay special attention to the food and important agricultural products for, strengthening agricultural infrastructure construction;
- strengthening agricultural science and technology and equipment support;
- consolidate expanding of crucial achievements on poverty reduction;
- promoting the development of rural industry high quality;
- broadening the channels of increasing farmers' income;
- promoting liveable appropriate industry and rural construction;
- strengthening the policy guarantee and mechanism of innovation.

In the past few decades, China has become the fastest-urbanized country. The proportion of the agricultural population in all provinces has decreased. Many provincial governments have introduced supportive policies for the agricultural industries to ensure agricultural production. In particular, for the eight provinces where the total agricultural population accounts for more than half of the national agricultural population, namely Henan, Sichuan, Shandong, Guangdong, Hebei, Hunan, Anhui and Yunnan, more priority should be given to improving the overall agricultural production capacity.

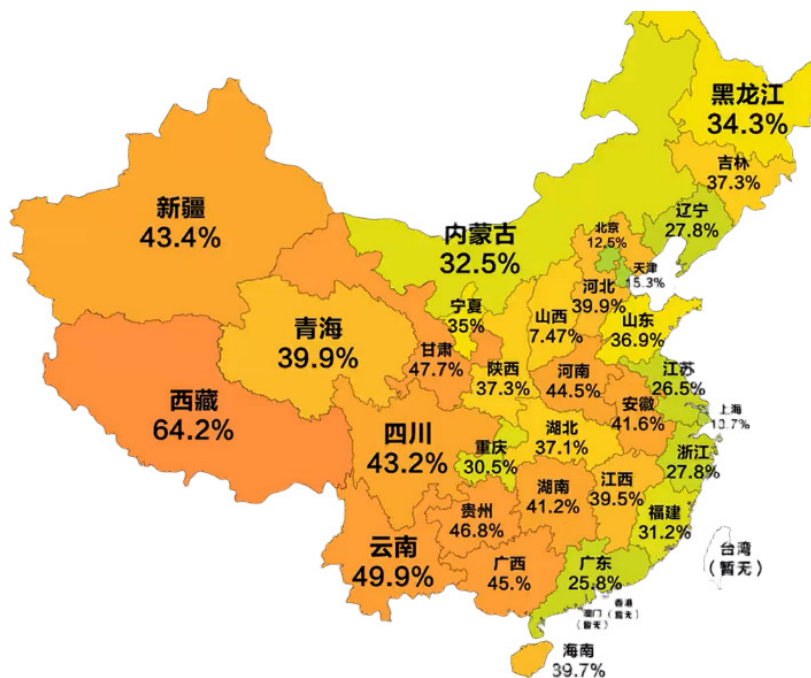


Fig. 3. Rural population proportion in Chinese provinces.

Source: own calculations based on National Bureau of Statistics of China.

In the process of China’s agricultural development, the flow of rural population and the stable development of agriculture are always unavoidable problems. China has less than 9 percent of the world’s arable land and has to feed nearly 20 percent of the world’s population, so the increase in China’s agricultural labour productivity certainly cannot be based on the decline in land productivity. Provinces have formulated a lot of practical policy, such as Jiangsu in the “difference” open agricultural development planning, clearly put forward support in Jiangsu province agricultural enterprises in agricultural products processing, biological breeding, agricultural recycling, modern agricultural equipment and other fields from the European Union, the United States, Canada, Japan and South Korea and other developed areas to carry out technical exchanges and introduction. We will form a hierarchical development pattern with national agricultural parks as the leader and upgrading agricultural parks as the basis.

With the promotion of China’s rural revitalization strategy, the pattern of priority of agricultural and rural development has gradually formed. Infrastructure construction has once again been accelerated, and more government investment and private capital have been invested in agriculture and rural areas, including land, water conservancy, seeds, digitalization, logistics facilities, and especially cold chain construction. The development of cities has driven the integration of urban and rural economy, and the living standards of farmers have also been improved. Infrastructure such as transportation, education and medical care has been improved, and greatly improved the quality of life of farmers.

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Against the backdrop of the stable operation of the macro economy, China's agricultural and rural reform and development have achieved remarkable results, and agriculture has played a fundamental role in economic and social development. Agriculture has maintained high-quality and steady development, farmers' living standards have continued to improve, and rural areas have been further improved.

In recent years, the output of China's major crops has increased. In 2022, grain output was 686.528 million tons, rice 208.495 million tons, wheat 137.723 million tons, corn 277.203 million tons, beans 23.51 million tons and potato 29.774 million tons. Total grain output increased by 3.68 million tons (7.4 billion tons) over 2021, an increase of 0.5%, and grain output remained at over 1,30000 tons for the eighth consecutive year.

In recent years, China's fruit output has shown an increasing trend, totalling 32,2129624 million tons, up 4.42%; compared with 2012, it increased by 92.0474 million tons, an increase of about 41.67%.

According to the data of the National Bureau of Statistics, China's total agricultural output value is increasing year by year from 2012 to 2022. In 2022, the total output value of agriculture will reach 51942 billion yuan, the total output value of forestry is 399.15 billion yuan, the total output value of animal husbandry is 2.6709 billion yuan, and the total output value of fishery is 989.62 billion yuan, providing solid support for stabilizing the overall economic and social development.

In the process of agricultural development, although China's grain production is constantly rising, it has not reduced China's dependence on grain imports. In response to this problem, the Chinese government has continued to adjust the planting structure. While accelerating the optimization of the trade structure, we will ensure the supply of major agricultural products with double cycles. We will make full use of both domestic and international markets, diversify China's grain import sources, expand import channels, actively promote the coordinated development of domestic demand and external demand, import and export, and make effective use of the international market to meet domestic grain demand.

Agricultural areas are the product of objective existence and history. The earliest agricultural areas in China are spontaneous natural areas of agriculture, such as agricultural planting habits formed according to the natural environment, regional characteristics and customs. With the development of economy and the "Belt and Road" national policy, decentralization of crops has gradually been intensive planting, digital planting alternative, fertilization, sowing, harvesting, pest control and agriculture has realized standardization, fine management, each agricultural area is a relatively independent agricultural production region, has a certain area and agricultural structure. To study the formation, structure and development of agricultural areas is an important work to guide agricultural production according to local conditions and realize reasonable regional division of labour.

Table 2

**Agricultural specialization of Chinese peripheral rural regions**

China's peripheral region	Agricultural development	Regional distinctiveness
Qinghai-Tibetan Plateau	Develop valley agriculture	(1) High terrain, thin air and sufficient light; (2) large temperature difference between day and night; (3) high cold and low temperature, long growth cycle; (4) more night rain; (5) valley zone with high accumulated temperature, convenient irrigation.
South of the regression line (Hainan Island, etc.)	Develop tropical plantations	(1) Located in tropical, rich in light, heat and water resources; (2) rich in biological resources; (3) rich in water resources; (4) typhoons in summer and autumn.
Northeast China (Sanjiang Plain, Songnen Plain, Northwest State Farm)	The largest commodity grain base	(1) The climate is mild, moderate rainfall, rain and heat are in the same season; (2) abundant light, and large temperature difference between day and night; (3) terrain is flat and open; (4) soil is fertile; (5) irrigation water is abundant; (6) crop growth is susceptible to low temperature and cold damage.
Southern low mountain and hilly area	Develop three-dimensional agriculture	(1) Located in the subtropical humid area with sufficient water and heat conditions; (2) complex terrain, diverse land types; (3) rich in biological resources; (4) rich in water resources; (5) red soil distribution area.
South China	Develop the rice farming industry	(1) It is located in the subtropical humid area with sufficient water and heat conditions (or high temperature and rain suitable for rice growth); (2) is relatively low and flat; (3) is fertile; (4) irrigation water is abundant; (5) drought and waterlogging disasters are frequent.
The North China Plain, the Loess Plateau	Plain agriculture	(1) Temperate monsoon climate area, good heat conditions; (2) flat terrain; (3) fertile soil; (4) insufficient water supply; (5) frequent drought and waterlogging disasters; (6) sandstorm and saline land.
Hetao Plain, Ningxia Plain, Hexi Corridor	Dry farming	(1) Enough heat in summer; (2) has sufficient light and large temperature difference between day and night, which is conducive to the accumulation of crop nutrients; (3) flat terrain; (4) fertile soil; (5) has Yellow River water (or melting water from Qilian Mountains) as irrigation source; (6) with dry climate and insufficient precipitation; (7) sandstorm and saline land.
Northwest arid region	Develop irrigation agriculture	(1) Enough heat in summer; (2) with sufficient light and large temperature difference between day and night, which is conducive to the accumulation of crop nutrients; (3) alpine snow and ice melting water provides irrigation water; (4) flat terrain; (5) fertile soil; (6) dry climate, insufficient precipitation and poor surface water;
Inner Mongolian Plateau	Oasis farming	(1) Mild climate and wide grassland area; (2) arid climate and insufficient water supply. <sup>2</sup> Ecological problems existing in the agricultural production process: land desertification.

Source: own survey

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**Conclusions.** Development of agriculture in Chinese peripheral rural regions is expected considering the following trends:

(1) Develop “high-yield, high-quality and high-efficiency” agriculture. High yield is the foundation, high quality is the premise, high efficiency is the goal, high yield is determined by China’s national conditions, China has a large population, and is still growing, to solve the problem of food and clothing, first to the output, to meet the social needs.

(2) Extensive farming to intensive production. Intensive production is the common direction of agricultural development in the world. China’s national conditions are more people, few land, poor resources, and increasing contradictions. This makes it all the more necessary for China to take the road of intensive production, make overall plans, take the road of sustainable development, and meet the needs of the people.

(3) Appropriate scaled operation and develop modern agriculture. The state should establish a new system of intensive, organized, socialized and specialized production and operation in rural areas, use modern industrial technology and information technology and equipment to guide the processes of agriculture, planting, breeding, processing and production, promote diversified and technicalization of the planting structure, and gradually improve and alleviate the contradiction between domestic supply and demand.

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**РОЗВИТОК СІЛЬСЬКОГО ГОСПОДАРСТВА В ПЕРИФЕРІЙНИХ  
СІЛЬСЬКИХ РЕГІОНАХ КИТАЮ**

**Анотація**

**Вступ.** *Китай пройшов тривалий шлях до досягнення світового лідерства в промисловому секторі та сфері послуг. Однак стрімке зростання регіонального добробуту було нерівномірним для різних територій країни. Сформувались відносно периферійні регіони із нижчою щільністю населенням і переважанням сільського господарства. Для збереження територіальної когезії необхідне поєднання централізованих заходів та ініціатив знизу.*

**Мета дослідження** – аналіз територіальних аспектів підтримки стабільного розвитку сільськогосподарського сектору Китаю за умови зростання загальної чисельності населення за зменшення частки сільського населення.

**Методи дослідження.** Дослідження проводилось із застосуванням таких методів: аналізу та синтезу – для систематизації концептуального мейнстріму розвитку периферії; порівняльний аналіз – для порівняння аспектів розвитку в різних регіонах Китаю залежно від їхньої структури міського/сільського населення; дедукції та індукції – для детермінації ключових векторів розвитку сільського господарства периферійних регіонів Китаю; табличний та графічний методи – для ілюстрації матеріалів дослідження.

**Результати.** У статті розглянуто динаміку населення Китаю за останні 70 років. Проаналізовано структуру міського-сільського населення в просторово-часовій перспективі. Визначено традиційні аграрні регіони Китаю. Зроблено загальний огляд розвитку сільського господарства Китаю. З регіональної перспективи проаналізовано фактори та умови розвитку дев'яти відносно типових сільськогосподарських районів Китаю. Розглянуто тенденції розвитку сільського господарства китайських периферійних регіонів.

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**Перспективи.** Незважаючи на значні успіхи Китаю в сфері розвитку сільського господарства та скорочення бідності в депресивних регіонах, є аспекти, які вимагають додаткової уваги: широкий спектр питань, що стосуються територіальної когезії, сталий розвиток, державно-приватне партнерство.

**Ключові слова:** периферія; структура населення; сільське населення; аграрний ринок; сільськогосподарське районування; територіальна когезія; міжнародний розрив.

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