

# General Strategy of Land Consolidation in China

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**Abstract.** China is experiencing a huge change in its social, economic and ecological development. It has entered a transformational period of the “new normal” of its economy. As a result, new ideas and measures are needed to develop land use patterns and policies to adapt to China's strategic transformation. Regarding the land consolidation, this paper explores the strategic adjustment of land use policy in ancient China and land renovation of foreign countries to find solution. Finally, this paper makes suggestions of sustainable policies which are appropriate for Chinese land and economy.

## 1. Introduction

Land is the basis of human existence and the source of means of production data. Land consolidation is a spatial problem-solving technique that attempts to eliminate certain types of land fragmentation through a process of concentration of plots<sup>[1]</sup>. Land consolidation is praised by many planners who believe it promotes land markets and land development. According to Pasakarnis and Maliene<sup>[2]</sup>, the role of land consolidation has extended from mainly focusing on improving agricultural production at the very beginning of the improvement of agricultural production conditions, employments, infrastructure and public facilities etc. In the 16th century, with the development of agricultural technology and the advancement of social productivity, people are no longer satisfied with unilaterally improving land production, thus the development of land remediation stage came into being<sup>[3]</sup>. Mankind began to carry out large-scale land management, merge scattered fields, combine rational land use and land transformation, and established a relatively complete policy of land occupation. The content of land remediation is continuously enriched, and its scale is also gradually expanded<sup>[4]</sup>. After entering the twentieth century, due to the over-exploitation and the rapid growths in industrial production, the problem of land destruction began to be highlighted and the ecosystem was threatened. The original land remediation model could not keep up with the changes of the times. As a result, the comprehensive rectification of the land enters the historical stage. People pay more attention to the ecological protection, and adhere to the concept of sustainable development. They have actively explored and researched land remediation and protection, improved the environmental conditions of land, reduced the damage to the environment caused by land development, and increased the economical benefits, thus forming a set of new land. The comprehensive system of rectification emphasizes the unification of economic, social and environmental benefits.



Throughout the history of human civilization, land consolidation has a long history. In ancient China, far from the primitive society, our ancestors had consciously carried out activities related to land remediation<sup>[5]</sup>. In foreign countries, the term "land consolidation" was first used in continental Europe. In Germany, dating back to 1250, the first land consolidation document was issued in Bavaria<sup>[6]</sup>.

In addition to exploring the history of land consolidation, this paper makes reasonable suggestions for the Chinese land consolidation, basing on the national conditions and current situation. The purpose of this paper is to put forward sustainable policies which are appropriate for Chinese land.

## 2. Research Base

### 2.1. Land consolidation in ancient China

With the emergence of iron and cattle farming, people's productivity has been greatly improved, and land work has been further developed. In 350 BC, Qin Xiaogong practiced the Shangyang Reformation. "Abandoned minefields, open up the crisscross paths, and plough without limit", advocating the development of the land. At this point, the feudal land system of the small peasant economy has entered the stage of history. Liu Bang, a great emperor of Han dynasty, attaches great importance to land development and has repeatedly promulgated the decree of "The task now lies in the benefits of peasants and agriculture", and adopted a series of measures to encourage the peasants to cultivate, reduce tax on land and reclaim more land. During the Qin and Han Dynasties, Emperor Han Wen carried out a special ordinance, that is, migrating the mainland residents to the sparsely populated and desolate border areas, which caused a dramatic increase in the population and a continuous breakthrough in the area of cultivated land<sup>[8]</sup>. Moreover, based on this background, lots of comprehensive method has been created which holds a same idea, utilizing land rationally and transform land in the same time, such as the field method of Zhao Guo, and the regional method of Pan Sheng Zhi. In the early Ming Dynasty, the society was in turmoil. After a long war, large areas of wasteland were left behind, and the agriculture was fell behind. The Ming emperor adopted a series of measures to actively promote land reclamation and cultivation, encourage the refugees to return to their homeland, reclaim wasteland; and at the same time, the army was ordered to cultivate on the border. It is easily see that giving each farmer an equal status and giving great arable land autonomy can enhance the enthusiasm of cultivated land and increase productivity.

### 2.2. Land consolidation in modern China

Soon after the establishment of People's Republic of China, through studying the land work model of the former Soviet Union, China began to explore the main content of land consolidation, coordinate flower arrangement and enclave between the parcels, so as to manage centrally; properly arrange agriculture, forestry, Pasture land, increase planting area. Through the implementation of the "farmers should have their own fields", government reformed the feudal ownership system as the land ownership of the peasants, and encouraged farmers to open up farmland. In response to Chairman Mao's call for "reclamation and guarding the frontier", tens of thousands of PLA, intellectual youth and revolutionary cadres went to the border area, in the desert, swamp wasteland, actively carried out land development campaigns, building farmland, building water conservancy facilities, greatly improved wasteland, established a number of state-run farms and military farms, changed the "Northern Wilderness" into a "rice granary", and built an "oasis" on the desert. During this period, the land remediation work was further developed and expanded. The main content was the consolidation of agricultural land. In view of the current situation of the arable land area, the increase of the amount of cultivated land and the improvement of the quality of cultivated land were the primary objectives. At the same time, Chinese government began to explore the way of combining agricultural land consolidation with village land consolidation.

### 2.3. Foreign land consolidation

The first stage of land improvement is to improve the productivity of agricultural land: in the middle of the 16th century - at the end of the 19th century, due to the continuous division of land private ownership and inheritance, the agricultural land became more and more fragmented and scattered, which was not conducive to the scale operation and management of agriculture. Therefore, organized land consolidation, adjustment of ownership, and improvement of agricultural production conditions have become the main forms of land consolidation at this stage. In the 16th century, Germany took the lead in carrying out land consolidation work, taking measures such as mergers of blocks, river reconstruction, and village migration. In the time of the Moscow Kingdom, Russia carried out a simple adjustment of power, and carried out land distribution activities between the "housekeeper" with a higher level of social rank. At the same time, the land survey work was carried out for the demarcation of the rights. In 1760s, in order to safeguard the interests of the aristocratic land, Russia launched a nationwide land resource survey.

The second stage (specific purpose land remediation): From the early 20th century to the 1950s, with the rapid development of industrialization, especially the implementation of the European Revival Plan after World War II, land consolidation mainly focused on urban construction and large-scale infrastructure construction. In 1905, after the revolution of Russia, the land renovation policy of Stowy was carried out, by establishing large and small villages in the countryside, government try to completely replace the land possession system of farmers' Village Society with the bourgeois individual possession; from 1946 to 1950, after the Second World War, Land Remediation in Russian focuses on the implementation of grassland rotation. In 1918, Germany issued agricultural land remediation law for the supply of construction land and services. Since the 1930s, road construction and urban development have led to the rise of large-scale projects. For this reason, Germany has adopted land consolidation measures and prepared land for construction.

The third stage (comprehensive multi-objective land rectification): After the 1960s, due to the imbalance of regional economic development and the deteriorating ecological environment and the acceleration of urbanization and industrialization, the focus of land consolidation was to promote regional economic development. To reduce the gap between urban and rural areas, increase income, and protect and improve the ecological environment as the main content of comprehensive land consolidation. In order to improve living conditions and the environment, Germany issued the first land reclamation law "Prussian Mining Law" in April 1950. In 1972, the content of land remediation has extended to rural transformation, environmental improvement and ecological protection, with efforts to achieve economic, social and environmental benefits of the three unification. Since 1970s, due to the huge mining of mineral resources, Australia's land damage is very serious. Therefore, the Australian government has actively carried out institutional exploration and scientific research in order to coordinate the contradiction between land development and ecological protection.

### **3. Advice for the future of China**

The influence of land consolidation is multifaceted, not only affecting the regional environment and economy, it also has an impact on human society. Land consolidation is closely related to the grassroots people in the region, and it acts on the masses and also benefits the masses. In particular, we should pay attention to the evaluation of urban and rural coordination and ecological, economic, social and cultural comprehensive benefits. Specifically, land consolidation in China should be divided into four levels: national level, provincial level, municipal level and county level. Shown in figure 1.

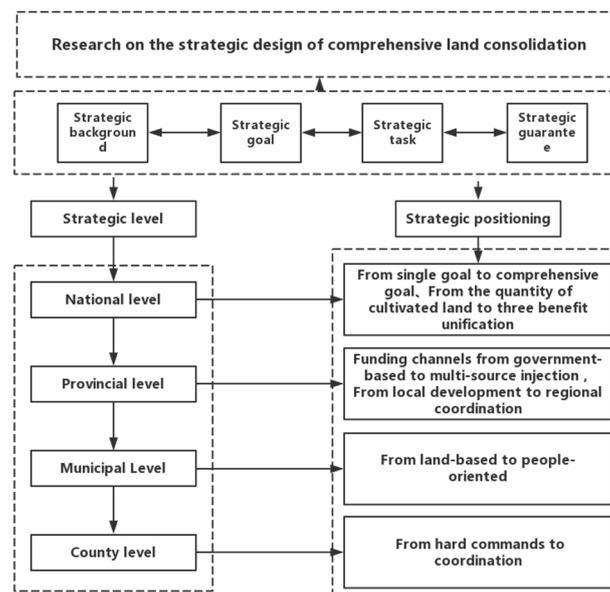


Figure 1. strategic design of land consolidation

### 3.1. From single goal to comprehensive goal

In the new stage, we should not only focus on the remediation of individual agricultural land or unused land, but also comprehensively rectify the various elements of the land. Therefore, it is necessary to rectify the cooperation of various departments such as farmland and water conservancy in the rectification area, so that the agricultural land, mountainous land, water body, road land, residential land and other land types in the rectification area can be simultaneously rectified, thereby realizing the three effect unity of production, life and ecology.

### 3.2. From the quantity of cultivated land to three benefit unification

In the early stage of land consolidation, all the measures are about the problem of arable land reduction. Now, social development has brought new directions, and the quantity of cultivated land is not enough to meet the needs of development. In the new stage of land consolidation, we must achieve the unity of promoting arable land production, maintaining people's livelihood and protecting the ecological environment. In this way, we need to further implement the policy of cultivated land protection in production, increase the area of cultivated land, reduce the destruction and pollution of cultivated land, and promote the large-scale management of agriculture; further optimize the utilization of urban space and construction land, make full use of each piece of land, and protect the environment. We should further promote the strategy of sustainable development, solve the problem of pollution problems and the fragmentation of landscape plots, and learn new technology to carry out land renovation, and finally realize the unification of benefits of the production, life and ecology.

### 3.3. Funding from government to multi-source

The government-based channel is under tremendous pressure and is not conducive to long-term development. Therefore, it is necessary to actively expand financing platforms. In addition to governmental financial aids, the plan of integration of relevant funds should be considered. At the same time, take market-oriented operation, play the role of market mechanism, introduce a large number of social funds and loans, establish a diversified, multi-channel financing system and fund management mechanism for land development. Therefore, sustainable economic support and smooth implementation of land consolidation work can be guaranteed.

### *3.4. From local development to regional coordination*

The strategic orientation of land remediation in the new stage should be changed from partial rectification of individual areas to coordinated rectification of the whole region. It is necessary to comprehensively compare the differences between regions and find out the correlations, learn from others strengths, prevent duplication of construction and especially industrial chain, and promote a rational division of work between regions. So as to realize the rational allocation of resources in the whole region, and keep the direction of economic, political, demographic and industrial development in line with the development of land. Further, this method can broaden the vision of the development of land consolidation, and through emphasizing consolidation of a certain area, thereby achieving the whole coordination in China.

### *3.5. From land-based to people-oriented*

The protection of the personal interests is the foundation for realizing social interests. If land reform need develop healthily, it is necessary to integrate the will of the people, combine public decision-making, and meet the needs of the people in the process of achieving common goals. Therefore, land remediation should be based on the definition of property rights, based on the fundamental interests of stakeholders, fully consider the wishes of citizens, safeguard their rights and interests, improve the system of public participation, ensure the transparency of information, and make the feedback channel of information clear, strive to improve public satisfaction.

### *3.6. From hard commands to coordination*

Land consolidation should change the traditional concept of land renovation as a practical project, technology or task, integrate the opinions of the masses and social decisions, take full consideration of the public will, combine the realistic conditions and market demands of the regulated objects, change the one-way path from the top to bottom, and adjust the land regulation system flexibly. Realize the comprehensive regulation path.

## **4. Conclusion**

By studying the theoretical logic related to land remediation, we summarize the development and evolution of different historical backgrounds along the timeline, and find that the relationship between human and nature changes as a wire, from the initial natural dominance, the human conquest of nature in the development process to the new era. This paper compares the development of land remediation in China and foreign countries, analyzes the commonalities of its evolution. Facing the transformation of the development situation in the new era, the land consolidation will be upgraded from limited effectiveness to strategic deployment, and the concept will be quantitatively oriented to overall planning.

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