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Adjustment of Land Use Structure Based on County-wide Economic Development: A Case Study of Changfeng County

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Abstract On the basis of survey of current land use situation in Changfeng County, this paper analyzed land use structure, trend and environment of structural adjustment. Besides, it explored county-wide land use structure mode, namely, "division + indicator + policy". Through reasonable distribution, it is expected to build proper land use structure framework, avoid passive situation of relying on policies simply, and bring into play stability keeping function of land use structure, so as to promote county-wide economic development, and bring into play county-wide lever function of rural transition areas.

Key words County-wide economy, Land use structure, Adjustment, Changfeng County

1 Introduction

Unbalance of urban and rural development is a longstanding problem in China. Urban and rural game should not be settled in brutal manner or in the manner with one party compromise or concession, but should be settled in harmonious and sustainable development manner to manifest superiority of socialist society. At present, solution to three issues concerning agriculture, farmers, and rural areas needs promotion of urban industry, and also needs development of rural areas. County government links urban and rural areas. How to mediate between urban and rural areas, and satisfy urban development requirement, and promote rural economic development at the same time become key points of county-wide economic development and also major forces for realizing harmonious development of urban and rural areas.

Any economic activity can not be realized without land, the basic material instrument of production. Whether economic development is sustainable largely depends on whether land use is scientific and reasonable. According to System Theory, structure determines functions. Land use structure determines land use functions. Only when land use structure is reasonable, may it be able to keep benign cycle of land use system, realize maximum land use efficiency, optimize land use structure, improve functions, and obtain higher benefits with less consumption or input^[1].

As central content of land planning, land use structure plays a considerably important role in promoting county-wide economic development. Designing scientific and reasonable medium and long-term land use structure should consider current situations of the county, division, indicator, and policy environment of the county, to realize the double objectives of safeguarding overall benefits and consolidating self development.

2 Study area

We selected Changfeng County of Anhui Province as the study area. Changfeng County is a large agricultural county with superior natural conditions. Relying on superior location condition, Changfeng County has become a national commodity grain base and lean meat pig production county, one of the top 100 counties of oil seed production, an agricultural comprehensive development zone of Huang-huai-hai Plain (North China Plain), key county of provincial cotton production, and one of top 10 strawberry production base. Agriculture has basically formed four pillar sectors, animal husbandry and aquatic product industry, vegetable, fruit and forest, and high quality grain oil. It is base of vegetable basket of Hefei people.

Total land area of Changfeng County is 1922 km². According to current land use situation of Changfeng County in 2010, the farming land is 161347.09 hectare, accounting for 84% of total land area, the construction land is 27597.49 hectare accounting for 14% of total land area, and the unused land is 3279.41 hectare, accounting for 2% of the total land area. These indicate farming land and unused land are decreasing, while the construction land is increasing. According to changes of 12 types of land use, the decrease of capital farmland and garden land in unused land and farming land is major source for increase of construction land^[2].

From Table 1, Table 2, and Table 3, we can see land area changes of farming land, construction land and unused land in Changfeng County.

3 Trend and environment analysis of adjustment of land use structure in Changfeng County

3.1 Trend analysis of adjustment of land use structure in Changfeng County In recent years, output value of three main industries increases steadily, and the proportion of secondary and tertiary industries rises year by year. According to data of the

Sixth Population Census, the local population growth rate of Changfeng County is negative, while population from other places increases and the cultural quality of population significantly gets improved. According to economic development trend and population movement of Changfeng County, it can be affirmed that future land demand of Changfeng County will still be urban construction land for production of secondary and tertiary industries and living

of urban people. Adjustment of land use structure is to consolidate rural homestead resource, increase ratio of construction land, and guarantee area of farmland, and improve quality and intensive use of farming land. Through land consolidation, it is able to vitalize stock land and realize land reserve, keep no reduction of farmland and increase construction land at the same time.

Table 1 Changes of farming land in Changfeng County

Unit: ha

Types	Farming land	Capital farmland	Garden land	Forest land	Grassland	Other agricultural land
2010	161347.09	104057.89	239.10	6992.86	22.64	41932.63
Increase (+)/decrease (-) compared with 2005	-57.9	-775.11	-2.09	129.70	6.67	-192.18
Target in 2020	161086.97	104057.89	237.97	7161.45	15.78	41511.91
Increase (+)/decrease (-) compared with 2010	-260.12	0.00	-1.13	168.59	-6.86	-420.72

Data source: *Outline of Overall Plan for Land Use of Changfeng County in Anhui Province (2006 - 2020)*.

Table 2 Changes of construction land in Changfeng County

Unit: ha

Types	Construction land	Urban and rural construction land	Land for traffic and water conservancy	Land for water conservancy projects	Other construction land
2010	27597.49	20103.21	7039.29	/	454.99
Increase (+)/decrease (-) compared with 2005	284.3	134.09	189.5	/	39.29
Target in 2020	28031.16	20290.81	7039.29	5504.31	335.83
Increase (+)/decrease (-) compared with 2010	433.67	187.6	365.23	70.78	-119.16

Data source: *Outline of Overall Plan for Land Use of Changfeng County in Anhui Province (2006 - 2020)*.

Table 3 Changes of unused land in Changfeng County

Unit: ha

Types	Unused land	Water land	Mud flat and swamp	Reserved land
2010	3279.41	2872.53	170.74	236.14
Increase (+)/decrease (-) compared with 2005	-226.40	-198.31	-11.79	-16.3
Target in 2020	3105.86	2720.51	161.71	223.64
Increase (+)/decrease (-) compared with 2010	-173.55	-152.02	-9.03	-12.5

Data source: *Outline of Overall Plan for Land Use of Changfeng County in Anhui Province (2006 - 2020)*.

3.2 Environment analysis of adjustment of land use structure in Changfeng County

Changfeng County has superior location advantage and endowed natural conditions. As a large traditional agricultural county, Changfeng County is an important grain production base of Anhui Province, and also a national crop production base, so its agricultural status should not be shaken. In a period of future, it is required to increase input of agricultural land, make effort to bring into play land productivity of agricultural land through adjustment of land use structure, and to realize steady increase of agricultural output value without increase of area. Changfeng County has convenient traffic and is a powerful economic growth point of Hefei big urban economic circle. On the precondition of not shaking fundamental position of agriculture, it is required to increase input in industry and services, change investment to finance, combine lodging and catering industries to bring into play advantages of agriculture, and also combine transportation, warehousing and postal industries to bring into play advantages of traffic. As a member of Yangtze River Delta "3 + 1" pattern, Anhui Province actively participates in regional development of Pan-Yangtze River Delta, carries out industrial transfer of

coastal regions, and actively develops development areas, builds provincial capital economic circle, urban belt along Yangtze River in Anhui Province, and urban agglomeration of cities in northern Anhui Province, strengthens radiation function of central cities, and promotes development of urban agglomeration of cities and county-wide areas. With accelerated advance of construction of modernized Binhu New Area of Hefei City, the geographical advantage of Changfeng County will become more prominent. Changfeng County, as the north gate of Hefei City and south gate of Huainan City, will become new highlight of development of central Anhui Province. Then, Changfeng County can take full advantage of various preferential policies, actively and steadily promote institutional reform and innovation, actively participate in regional development of Yangtze River Delta and Pan-Yangtze River Delta, and guarantee sound development of county-wide economy through alleviating or solving all problems of unreasonable ownership structure, transformation of government functions not in place, prominent dual urban and rural structure, and imperfect social security system.

4 Determining land use structure in "division + indicator + policy" mode

The overall plan for land use includes state, province (region), prefecture (city), county, and town (township) levels. The county level land use plan belongs to management type plan and focuses on qualitative and quantitative implementation. Therefore, formulation and adjustment of county-wide land use structure should accord with requirements of overall plan for city level land use, reasonably determine various land use indicators through accurate localization, and guide township plan through formulating specific and pertinent policies^[3].

Adjustment of land use structure of Changfeng County should

Table 4 Restrictive indicators for various types of land in Overall Plan for Land Use of Changfeng County in 2006 Unit: ha

Regions	Farmland protection area	Capital farmland protection area	Urban and rural construction land	Scale of newly increased cultivated land for construction purpose	Demand for arranging and reclaiming supplementary cultivated land
Changfeng County	112159.86	104057.89	20372.20	1555.00	2424.16
Shuihu Town of Changfeng County	6914.02	6027.27	1279.85	291.00	148.54

Data source: Reply of Anhui Provincial People's Government to Overall Plan for Land Use in Changfeng and Other Two Counties and Related Towns (2006–2020) in 2012.

Policy background of Changfeng County should be considered from two aspects. China sticks to the principle of integrated economic development and regional coordinated development, to better bring into play the collective to raise the overall national strength. Changfeng County should make active response. However, since order of administrative system is too rigid, county-wide economic activity lacks independence of suiting measures to local conditions. Therefore, adjustment of land use structure must incorporate policy factor into the formulation system, and combine with local realities. At present, there are favorable conditions and unfavorable conditions for development of Changfeng County. Favorable conditions are large funds, entry of many enterprises, so it can rapidly promote county-wide economic development. Unfavorable conditions include rough and rapid increase of demand of construction land, leading to difficult to keep the farmland protection area. As a result, farmland area can not be guaranteed and quality is also declining.

According to geographical position and national functional division plan, the advantage of Changfeng County lies in agricultural development. Therefore, from the perspective of functional location, Changfeng County should make effort to build agricultural economic pillar, not only take protection of farmland as target task, but also take protection of farmland as guarantee of future economic development.

Generally, adjustment of land use structure in Changfeng County should take completing targets, conforming to policies and location as requirements. To realize long-term development, Changfeng County should build up its own land use structure according to these requirements. Otherwise, it may lose agricultural advantages and the industrial urban economy will dominate, which is not the due development mode of Changfeng County. Specifically, Changfeng County should implement farmland protection in

closely focus on overall plan of land use in Hefei City, ensure that adjustment of land use structure not exceeding restrictive indicators, and should issue specific indicators to townships in accordance with actual circumstances. Indicator decomposition should be varied according to land use types, issue more construction land use targets to towns near cities, while issue more agricultural land use targets to towns far away from cities. Certainly, this needs adjustment in accordance with actual local situations. For example, fertile land in suburban areas should not be changed to construction land, but may develop sightseeing agriculture through internal structural adjustment^[4].

towns far away from Hefei City, allocate construction land for lodging and catering in area near agricultural land, allocate construction land for finance and real estate in county area, and allocate construction land for industries and transportation in suburbs, and allocate forest and garden land in suburbs to form green belt.

5 Maintenance of county-wide land use structure

5.1 Consolidating leading role of overall plan for land use

Overall plan for land use is prepared by People's Government at all levels, to protect agricultural land, guide orderly expansion of construction land, protect and coordinate ecological environment of land, guarantee harmonious relationship between human and land, finally to effectively promote economic development. The new round outline for national overall plan for land use has already been approved by the State Council. The Ministry of Land and Natural Resources issued notice on April 1, 2012, that land should be used strictly in line with the purposes of land use defined in the general plan for the utilization of the land whether by units or individuals. This further consolidates leading role of overall plan at the level of law. Also, it effectively avoids restriction of administrative system to economic development. County-wide economic development can establish effective land use structure to promote orderly economic development in the plan period^[5].

5.2 Seeking self-maintenance in scientific land use structure

Once the land use structure is formed, it has fixed framework. Just like high buildings, framework must be firstly designed. Farmland protection meets requirement of national policies all the time. In addition to increase of population from other places, Changfeng County should set foot on grain supply of itself, and at the same time it should consider grain supply of Hefei City and other regions. Although Changfeng is not far from Hefei City, urban expansion will not cover its whole county, but be limited to

suburbs. Therefore, Changfeng County should make accurate and long-term orientation and focus on extension and independent innovation of primary industry, to lay solid foundation for taking tertiary industry as future economic growth point. County-wide land is also scarce. Once the proportion of farmland, traffic land and lodging and catering land is determined, it can establish its own land use structure framework, so as to maintain its development.

5.3 Establishing comprehensive supervision system of "seeing from the space, checking on the ground, and managing through network" Science and technology are fully manifested in land use. To guarantee land use structure not damaged or changed at will, we should include science and technology into the land use supervision system. Using 3S technology, it is expected to make overall supervision of any situation in land use structure, save manpower and materials, and also can fully maintain stability of land use structure.

6 Conclusions

Through study and analysis, we can reach the conclusion that sustainable development of county-wide economy needs a benign circular economic system. This needs a proper industrial structure meeting demands of its development trend. Any material production activity can not be separated from material instrument of production, and reasonable industrial structure is based on reasonable land use structure. Thus, designing reasonable land use structure is a fundamental work of county-wide economic development.

Formulation and adjustment of land use structure needs fully considering environment of county-wide economic development, mainly including current land use situation, prediction of land demand, characteristics of county location, and policy background. Firstly, it is required to consider grain and living demands, determine capital farmland and construction land for living, which is fundamental driving force promoting county-wide economic development. Secondly, it should consider location characteristics of Changfeng County, including location responsibility and advan-

tage. In policy background of county region, it is recommended to catch opportunity to realize economic development, and also make effort to assume location responsibility and provide assistance for surrounding areas. For example, Changfeng County has responsibility of vegetable basket for Hefei City, and also has advantage of radiation of capital city of Anhui Province. Finally, when any unreasonable land use is found in current land use situation, it is required to make timely change, and attach great importance to natural environment in the adjustment of land use structure.

Formulation and adjustment of land use structure should stick to the principle of "not shaking the fundamental point", making efforts to adjust internal proportion of construction land, and unused land should take precedence in development for ecological and environmental protection. In the process of land use, it is required to stress intensive and conserved use of farming land, and enhance intensive and conserved use of construction land, so as to realize sustainable development with limited land. County-wide economic development needs constantly adjusting land use structure, while practical land use structure is promoting orderly development of county-wide economy. The complement each other and will make adjustment and renewal to constantly make progress in future development.

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