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# Problems and Countermeasures for the Development of Rural Area in Central China

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**Abstract** Agricultural area in central China is a densely populated area with a lot of agricultural population, relatively developed agriculture and relatively backward non-agriculture. Its development status affects the process of rising strategy in central region, restricts the construction of a well-off society and a harmonious society in the central region and even China. Based on this, major problems in the development of agricultural area of central China are analyzed, such as large population of farmers, great development pressure on agricultural area, serious shortage of agricultural inputs, relatively low education level, backward infrastructure in agricultural area, and relatively backward non-agricultural development. In order to accelerate the rising of central area and to promote the rapid development of central agriculture, corresponding countermeasures are put forward, including increasing the financial support for the construction of agricultural areas, vigorously setting up multi-level rural education, strengthening the infrastructure construction of agricultural areas, consolidating the construction of rural organizations, reinforcing the management function of government, and increasing the research and extension of agricultural science and technology.

**Key words** Central China, Agricultural population, Non-agricultural industry

Central China refers to the six provinces in the middle of China, including Henan, Hubei, Hunan, Anhui, Jiangxi and Shanxi. Agricultural area of central China is the agricultural areas in the six provinces, not including the large and medium cities. Central China, as China's major grain producing area, the transportation hub, and the energy and important raw material base, plays an important role in the overall development of China. Rising strategy in central region is another important national and regional economic development strategy after the Opening-up of the Eastern Coast, the Western Development, and Revitalizing Old Industrial Bases of the Northeast. Among them, agricultural area of central China is a densely populated area with a lot of agricultural population, relatively developed agriculture and relatively backward non-agriculture. Its development status affects the process of rising strategy in central region, restricts the construction of a well-off society and a harmonious society in the central region and even China. Therefore, how to make corresponding countermeasures according to the problems in the development of central agricultural area is of great practical significance.

## 1 Major problems in the development of agricultural area of central China

**1.1 Large population of farmers and great development pressure on agricultural area** In the year 2007, total population of central China reaches 319 million. Among them, rural population is about 213 million, accounting for 60.59% of the total population in central area, and is far greater than the proportion of urban population, indicating that the urbanization lev-

el in central China is relatively low. In fact, compared with the average level of China, proportion of rural population of central China is 6.38 percentage points higher than the national level; and the proportion of urban population is 6.38 percentage points lower. Among the six provinces in central China, total population of Henan Province takes the third place in China, those of Hunan, Anhui and Hubei take the seventh, eighth and ninth places, respectively<sup>[1]</sup>. However, rural population of Henan takes the first place in China, and those of Hunan, Anhui and Hubei take the fifth, sixth and ninth places. Except Shanxi Province, most of the provinces in central China are provinces with big agricultural population.

The numerous population, especially the high proportion of agricultural population, has brought great pressure on the development of central agricultural area. Land is the most important resource for the agriculture and agricultural area. But the large population and scarce per capita land resource have led to the shortage of cultivated land. According to statistics, six provinces in central China has only 0.078 hectare of per capita cultivated land, which is lower than the 0.092 hectare of average national level, the 0.082 hectare of average eastern level and the 0.124 hectare of average western level<sup>[1]</sup>. Therefore, central area has the highest population density and the largest population pressure in China. Since cultivated land resource is extremely scarce, large number of rural labor is difficult to achieve higher revenue in the existing land under the continuous improvement of agricultural science and technology level. Meanwhile, the secondary and tertiary industries are relatively backward in central China, so a large amount of rural surplus labor forces have to find jobs in the relatively developed eastern area, making central China become the area having the largest migrant workers. Besides, overpopulation has also brought

prominent problems in education, health, environment, public resources and so on.

**1.2 Serious shortage of agricultural inputs** For a long time, there has been a serious shortage of agricultural inputs in agricultural area of central China, which is closely related to the special characteristics of agriculture, the special stage of industrialization in China, the backward agricultural financial service system and so on. Agriculture is a weak industry with low profit, large investment, long period and high risk, which determine that the accumulation of agricultural industry is limited and without the help of outside, regular lack of input usually occurs according to the Value Transfer Law of agricultural products. After the Tax Sharing Reform in the middle of the 1990s, local government has borne great pressure of fiscal expenditure and has to focus on the industrial construction with more tax sources. Driven by the goal of rapid industrialization, increase of agricultural input only aims to offer essential service and protection for the high-speed industrialization. Moreover, affected by various factors, agricultural area in central China has not been able to form a financial service system effectively ensuring the development needs of agriculture, which have further worsened the status of agriculture<sup>[2]</sup>. Any industry with insufficient input and fund will inevitably cause the lack of output. Serious shortage of inputs and lack of funds in agricultural area of central China have greatly restricted the development of agricultural area.

In recent years, with the concern of the central government and the governments at all levels of the six provinces, agricultural input is increasing in agricultural area of central China, but the lack of overall input has not been changed fundamentally. In the year 2007, total agricultural investment in central area is 79 billion yuan, accounting for 2.85% of the total investment, while investments in mining and manufacturing are 143 140 million yuan and 914 360 million yuan, occupying 5.16% and 32.95% of the total investment, respectively. Although, agricultural investment should not be compared with manufacturing investment directly, it is commonly believed that input in agriculture is insufficient. Since the implementation of proactive fiscal policy in the year 1998, China has gradually increased the input in agriculture and water conservancy industry, has strengthened the construction of agricultural and rural infrastructure, and has improved the fragile situation of agricultural ecological environment. Among the state-owned and other investments, investment in animal husbandry and fishery and water conservancy is 47.0 billion yuan in the year 1997, 68.4 billion yuan in 1998, 89.3 billion yuan in the year 2000, and 110.6 billion yuan in 2002, showing an increasing trend<sup>[3]</sup>. In recent years, input in "Three Agriculture" by central finance is 595.5 billion yuan in the year 2008, and about 800.0 billion yuan in the year 2009, which is a record high<sup>[4]</sup>. However, in general, the problem of insufficient investment has not been solved fundamentally, considering the leading position of agriculture, the large agricultural population and the large agricultural areas.

**1.3 Relatively low education level** Due to historical reasons, education level of people in agricultural area of central China is relatively low, and the large agricultural population has

received even lower education level. According to the number of average enrolled students in colleges and universities in every 100 thousand people, only Hubei and Jiangxi Provinces in the six provinces of central China are higher than the national average level; and Anhui and Henan rank the last but seven and the last but eight, respectively. Henan Province is only higher than the remote western provinces, such as Xinjiang, Guangxi, Tibet, Qinghai and Guizhou. Jiangxi Province has relatively higher quality of population in central China, but the illiterate and semi-illiteracy rate reaches 9.55% according to statistics<sup>[5]</sup>. Its average education attainment is 0.19 year less than the national level, having no advantages in human capital. People received education of primary and junior middle schools in Jiangxi Province account for 76.74%, 2.65 percentage points higher than the national level. Labor forces graduated from primary school occupy 41.97%, taking the first place in the central China. Labor force with low and medium education levels is oversized since the proportion of labor forces graduated from above high school only accounts for 16.62% of the total labor forces in Jiangxi Province.

As a typical representative of the central region, both education level and population quality of Henan Province have fairly big gaps with the whole nation. People with relatively high education degree have small proportion; and the average education degree of residents is relatively low and is in a backward position in the country. According to statistics, education degrees of every 10 thousand people in Henan Province are all lower than the national average, except the education degree of junior middle school. Among them, there are 390 people with above university education, less than the average level of 520 people in China, a difference of 130 people. There are 1056 people graduated from high school, less than the average level of 1 159 people in China, a difference of 103 people. There are 4 348 people graduated from middle school, higher than the national average level of 3 590 people, a difference of 758 people. A total of 2 636 people have the education degree of primary school, less than the average level of 3 127 people, a difference of 491 people<sup>[6]</sup>.

**1.4 Backward infrastructure in agricultural area** Infrastructure in agricultural area is the material basis for peasant household to carry out normal economic activities, having basic and long-term effects on the agricultural production of peasant households, the development of secondary and tertiary industries, and the everyday life. Although infrastructure has improved in agricultural area of central China in recent years, it is still backward compared with the requirements of the growing economy in agricultural area and the increasing living standard of peasant households. In some of the areas, especially in some mountain areas and villages, infrastructure in agricultural area still stays in the level of the 1970s and 1980s. Backward infrastructure has seriously restricted the economic development of rural areas. According to the investigation on a certain county in Anhui Province, 22.1% of the natural villages still use earthen road at present; 55.8% natural villages have rocky road; and only 22.1% have asphalt road, which is actually where the

cross-town road passes. At the same time, due to the lack of management, rocky road is seriously damaged; nearly 90% of the rural road lacks maintenance; and water facilities in 75.2% villages have not been rebuilt for a long time. Because there is no reasonable long-term investment, many schools with only about 1 000 students have debts as high as 1 million yuan. And almost all the villages have no tap water. Among all the natural villages investigated, there are 51.2% villages having no clinic. Even in the villages with clinics, both of the doctor's quality and the medical condition can not meet the needs of the masses<sup>[7]</sup>. According to the investigation on Yingshan County, Hubei Province, China, farmers are extremely dissatisfied with the infrastructure. Most of them think that the infrastructure is general and no one is satisfied with the infrastructure. Many water conservancy projects built up long time ago have the problems of serious aging and benefit attenuation after several years' operation. For instance, 56 reservoirs need to be consolidated in the total of 83 reservoirs in Suzhou City<sup>[8]</sup>. Inadequate infrastructure has affected the farmers' transport, agricultural production, and water utilization, which is very unfavorable to the development of agricultural area.

### 1.5 Relatively backward non-agricultural development

Due to the historical and regional reasons, development of non-

agricultural industry in agricultural area in central China is far behind that of the eastern agricultural areas, and has great difference with the national average level. According statistics, in the year 2008, added values of secondary industry and tertiary industry are 9 077.13 and 6 137.86 yuan, respectively, in the central area, which are 8 157.54 and 7 424.74 yuan lower than those in eastern area. Non-agricultural output per capita is 15 214.99 yuan in central area, which is 15 582.27 yuan smaller than that in eastern area, a difference of 1.02 times. Moreover, there is still great difference between the central area and the national average level. Outputs per capita of secondary industry and tertiary industry in central area are 5 319.07 and 4 763.36 yuan lower than the output of national average, respectively (Table 1). Per capita non-agricultural output in central area is only 60.14% of the national average level, and has even greater difference with that in developed eastern provinces. Due to the backward non-agricultural industry, large number of surplus labor forces in agricultural area in central China have to work in the eastern area. Backward non-agricultural industry affects the further development of agricultural production, restricts the driving effect of urbanization and industrialization on agricultural area, and reduces the funds for supporting agriculture.

**Table 1 Comparison of the development levels of non-agricultural industry in central area, eastern area, western area and the whole China**

Area	Added value per capita of secondary industry//Yuan	Added value per capita of tertiary industry//Yuan	Per capita output of non-agricultural industry//Yuan	Per capita GDP//Yuan
Eastern area	17 234.67	13 562.59	30 797.26	33 453.32
Central area	9 077.13	6 137.86	15 214.99	17 816.70
Western area	17 694.73	10 704.55	28 399.28	32 156.87
China	14 396.20	10 901.21	25 297.41	27 960.68

Note: Data are from the 2009 *China Statistical Yearbook*.

## 2 Countermeasures and suggestions

### 2.1 Increasing the financial support for the construction of agricultural areas

(1) Increasing the financial investment in rural public finance; and improving the transfer payment system of finance. Due to the weakness of agriculture, it is unrealistic to rely on agriculture itself to develop agricultural area. Under the guidance of industry re-feeding agriculture and city leading village, government should enlarge the investment in agriculture and rural areas, improve the growth rate of budget supporting agriculture, increase the scale of financial transfer payment in agricultural area, enhance the supply of public goods to agricultural areas, expand the coverage range of public finance, and raise the input in the education of agricultural area, the new cooperative medical system, and social security.

(2) Deepening rural financial reform; improving financial service system in agricultural areas. On the one hand, improve the existing rural financial service system, adhere to the principle of agricultural bank offering service for agriculture, enlarge the agricultural supporting field of agricultural development bank, expand the agriculture-related service of post saving bank, and fully exert the function of agricultural service of rural credit cooperatives. On the other hand, properly develop the

private small and medium financial institutions in farming areas and the rural non-bank financial institutions, and increase the channels for rural financing and agricultural protection. Financial institutions should pay particularly attention to carry out small loans for farmers and enhance the capacity of self-development of farmers.

(3) Continuing to enforce the agricultural subsidy policies. In addition to the continued implementation of direct subsidies to farmers, government should pay attention to the indirect subsidy to agriculture, increase policy subsidies for technology, rural public goods, education and training, and water conservancy, explore new ways of agricultural subsidy under the framework of the WTO, and make financial subsidy to agriculture more rational and efficient.

(4) Expanding the opening-up of agricultural field; strengthening the exchange and cooperation with agricultural developed regions and countries; actively attracting foreign investment in central agricultural area to develop agricultural processing and distribution companies. When the key areas have introduced foreign leading enterprises which can form an industry chain, government should give precedence to project approval, land use, technology innovation and interest discount for technical transformation. Meanwhile, government should also further strengthen the control on foreign investment in order

to prevent adverse effects on agricultural production.

**2.2 Vigorously setting up multi-level rural education** According to the human capital in rural areas at present, we should continue to focus on basic education, vigorously develop vocational education and adult education, implement the balanced development of basic education, vocational education and adult education, enlarge the education coverage, and realize the objectives of all people learning and all life learning. As for the teaching content, we should combine the education, science and productive labor together, take quality education as the objective of basic education, and pay appropriate attention to the combination of rural economic development. Vocational education should cultivate the vocational skills of students in agricultural areas to enable students to better adapt to social work. Adult education should take productive labor as the main objective, and develop science and technology activities and professional and technical training, in order to turn farmers from the pure physical and pure experience-based workers into the intellectual and technological workers<sup>[9]</sup>. As for the teaching ideology, we should combine agriculture with education, integrate theory with practice, insist that education should aim to improve the quality of farmers and to cultivate various agricultural practical talents, and to make farmers becoming rich. Rural compulsory education should not only pay attention to teach students the scientific and cultural knowledge, but also should teach students how to apply the knowledge, after all, only a few students will study in high school and college. As for the distribution of schools, rural primary and secondary schools should be distributed scientifically according to the principles of accessibility, equity and efficiency, in order to improve the teaching condition, school-running benefit, and education quality. Nine-year compulsory education for children of the right age must be implemented in nearby schools. As for the school-running thought, we should realize that education belongs to quasi-public goods with high purity, that society gains more than the family, that it is the responsibility of government to run education well, and that government should offer adequate input.

**2.3 Strengthening the infrastructure construction of agricultural areas** Due to the long period and large value of the effect of infrastructure, plan must be carried out before construction, so as to guide the construction of infrastructure. Plan should consider both present status and future situation, be carried out with best effort and according to the fact, and fully consider the acceptance of local people. Plan should be all-sided, emphasize the key point, facilitate people's life and strengthen the construction of overall agricultural production capacity. Meanwhile, plan must be scientific, operable and binding. It should also adapt to local conditions and proceed from reality.

Capital is the key to infrastructure construction in agricultural areas. Thus, multi-channel financing should be established and capital source should be expanded for infrastructure construction. Firstly, we should ensure the input of government in infrastructure in agricultural areas, especially under the current background of new countryside construction. China has entered the middle stage of industrialization with the mixture of urban and rural areas. And urban-rural integration is an objec-

tive law and an inevitable trend. Correspondingly, finance, the investment subject, should also change into a public finance covering urban and rural areas. Public welfare, such as rural infrastructure construction, should be included in the scope of public finance input. The central government has clearly pointed out to change the key of infrastructure construction to rural areas<sup>[10]</sup>. Total amount of national debt and budget funds for construction should be increased gradually to directly improve rural production and living conditions. Local government should also enlarge the input in infrastructure construction of agricultural areas from the perspective of the harmonious development of society. Secondly, nongovernmental fund should be attracted actively. As for the rural infrastructure project suitable for market operation, government should encourage unit and individual to attract private capital to invest in rural infrastructure construction and to establish a reasonable price formation mechanism and invest return mechanism according to the principle of investor enjoying the benefit. Meanwhile, we should attract donations of entrepreneurs, social sectors and economic able persons in order to improve the self-financing capacity of rural construction.

As for the construction content, facilities construction, such as road and water conservancy, should be strengthened, as well as the information infrastructure construction, such as telecommunication and network. This is because the information of peasant households directly affects the adjustment of economic structure and the decision making of migrant workers.

**2.4 Strengthening the construction of rural organizations; reinforcing the management function of government** After the implementation of household contract responsibility system, peasant households have become entities with autonomous decision making and independent operation. Peasant household used to be under strong collective economy and efficient organization and management becomes once again a relatively free individuality of atomic type. Thus, organizational force of social control structure in agricultural areas has declined sharply. At the same time, township government and village government under constant reform shows decreasing organizational capacity due to the reduction of members and the lack of fund. In some villages, village government is lacked because village cadres are ill-paid and they are engaged in their own business and have no time to deal with village affairs. Besides, in the cadre selection of some villages, both family power and bribery at election exist, so that the cadres selected can not represent the interests of the majority village, which affects the images of cadre and government. Because of financial difficulties, many township governments are hard to effectively exert the management function. Particularly, most fundamental government organizations in agricultural areas have a large amount of work to do, such as implementing the decisions and orders of state organs at higher levels, and handling the matters handed over by people's government at higher levels. Therefore, how to strengthen organization and management of peasant households and agricultural areas in the social structure with loose market economy is a problem needed to be solved at present. Adequate financial found must be allocated to township governments in order to ensure its normal operation and to exercise its

function. At the same time, management functions of township government must be changed and three aspects of functions must be strengthened. Firstly, create environment for the development of rural economy, such as stabilizing rural basic management systems, maintaining the dominant position and interests of farmers in the market, strengthening the supervision of rural markets, organizing the construction of rural infrastructure, and improving the agricultural social service system. Secondly, offer more public services for farmers; and stimulate the development of social undertakings, such as rural education, culture, sports and environmental protection. Thirdly, create conditions for the construction of rural harmonious society, strengthen the weak links in social management, develop rural poverty alleviation and social assistance, resolve social conflicts in rural areas, and maintain social stability in rural areas. Promote the construction of rural democracy and villager autonomy, improve the autonomy at basic level, and assign some economic and social affairs that should not be undertaken by governments to the market, intermediary organization and autonomous organization<sup>(11)</sup>. Besides, strengthen the construction of village-level organizations and give village cadres appropriate reward in order to mobilize their enthusiasm. Finally, actively develop the civil organizations in agricultural areas. For instance, farmer cooperative organization can organize the scattered individual households together to cope with the impact of market economy, to decrease the transaction costs of peasant households after joining in the cooperative organization, and to reduce operation risk and increase net income, and to improve the income level of peasant household.

**2.5 Strengthening the research and extension of agricultural science and technology** Science and technology are primary productive forces. The development of agricultural production, the increase of farmers' income, and the coordinated development of agricultural area must rely on science and technology. All the facts have proven that popularization and application of advanced agricultural technology have improve the quality and quantity of agricultural products, have increased the income of farmers, and have promoted the economic development in agricultural areas. Development of modern agriculture must fully exert the functions of science and technology in improving the means of labor, expanding the subject of labor, optimizing the combination of essential factors, and enhancing the quality of worker. Support agriculture by science and technology can be realized by using the advanced agricultural technology to equip agriculture, the advanced science and technology to reform agriculture, and the advanced organizational forms to operate agriculture. Therefore, development of agricultural areas in central China should firstly strengthen the research on agricultural and rural science and technology, develop technologies by relying on research institutes and universities, such as crop variety, fertilizer, pesticide, agricultural machinery, agricultural products processing, and agricultural ecological protection. Secondly, agricultural areas in central China should strengthen the promotion of agricultural technology, and turn scientific and technological achievements into productive forces as soon as possible, which is the key of rural technology development. The agricultural areas should establish the extension

mechanism of agricultural science and technology, fully exert the infectivity of country able person, and popularize the latest agricultural science and technology to producers, reinforce the science and technology extension organization, establish science and technology promotion center at county level and agricultural technology extension station at township level, set agricultural technology attendant in villages and science and technology leader in production group. At the same time, agricultural areas should vigorously carry out the training and popularization of agricultural science and technology, propagandize science and technology through vocational school, radio, television and other agencies and the media, actively establish policy guidance, intermediary service, financial investment and technology market for technology transformation in order to support the extension and transformation of agricultural technology, establish a certain number of science and technology demonstration parks, demonstration enterprises, demonstration village and demonstration farmers to speed up the extension of agricultural technology.

### 3 Conclusion

Rising strategy in central region is an important component of regional development strategy; while development of agricultural area in central China is an important link of the rising strategy. Therefore, it is of great practical significance to research on the problems and countermeasures of the development of agricultural area in central China. At present, major problems in the development of agricultural area of central China are the large population of farmers, great development pressure on agricultural area, serious shortage of agricultural inputs, relatively low education level, backward infrastructure in agricultural area, and relatively backward non-agricultural development. To solve these problems and to promote the development of agricultural area in central China, government should increase the financial support for the construction of agricultural areas, vigorously set up multi-level rural education, strengthen the infrastructure construction of agricultural areas, consolidate the construction of rural organizations; reinforce the management function of government, and strengthen the research and extension of agricultural science and technology. Among them, increasing capital investment in agricultural areas in central China and strengthening the construction of infrastructure are of great significance. For a long time, China has implemented the development policy of developing agricultural by industry. As an important agricultural base, agricultural area in central China has made a lot of contribution to the development of industry, and development of itself has been restricted to a certain extent. However, capital investment and perfect infrastructure are important driving forces for the regional economic development. Thus, the main policy means to promote the development of agricultural area in central China is to increase input, such as enhancing the financial transfer of agricultural areas. Meanwhile, it is also very important to develop rural education. Education is the most important way to improve human capital; and the enhancement of human capital is an important means

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benefits.

**3.3.6 Financial capability system.** The corporate financial capacity means the capacity of the corporate to operate and manage the capital and asset during its production, management and development process, which assures the money needed in the operation and development of the corporate. It involves three sub-systems including the profitability, asset management capacity and anti-risk ability.

**3.3.7 Adaptability.** Adaptability is the ability of the corporate to promptly adjust product structure so as to fit to the occurring changes in market supply and demand, propensity to consume as well as technical innovation and progress. It is the key to success in the complicated competitive environment. Bell and Pavitt have pointed out "adaptability is the ability of the corporate to make conscious reaction to the important events, opportunities and external threats at the right time so as to obtain or maintain competitive advantages"<sup>[6]</sup>. The enterprises should establish early warning system and response mechanisms, and arm themselves with scientific and effective prevention awareness and measures so as to cope with the market crisis and preclude market risk. The adaptability includes two sub-systems—daily response and emergency response.

## 4 Conclusion

In summary, the connotation and essence of the core competence of agricultural high-tech corporate is the unique ability and attribute of the corporate to achieve its sustainable competitive advantages in a particular subsistence and development environment. The core competence of agricultural high-tech corporate consists of seven sub-systems, namely corporate culture system, technological innovation system, human resource system, management capability system, corporate production and marketing system, financial capability system

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to reduce population pressure and to promote regional development, as well as the fundamental measure to turn population burden into human advantage. The key organization and system guarantees for the development of central area are to reinforce the construction of rural organizations, to strengthen management function of government and to consolidate the construction of agricultural technology development and extension institutions.

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and adaptability system. The systems interact and form an organic and multiple complex system. As shown in the empirical analysis of agricultural high-tech enterprises, three systems, including corporate culture system, technological innovation system and human resource system, take precedence over the other four, within each sub-system there are also a number of elements interacting with each other.

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