



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search  
<http://ageconsearch.umn.edu>  
[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

# The Basic Path of Modern Agriculture with Chinese Characteristics-Industry Nurturing Agriculture

ZHANG Feng-yun \*

Social Science Department, Xuchang University, Xuchang 461000, China

**Abstract** Constructing the modern agriculture with Chinese characteristics is the path and direction for solving issues concerning agriculture, countryside and farmers in China, the key to new village construction, the important measure for promoting overall agricultural production capacity, and the prerequisite and guarantee for coordinating urban-rural development. At present, the level of agricultural mechanization in China is promoted steadily; the science and technology are applied to agriculture extensively; the agricultural regionalization layout gradually takes shape; the agricultural industrialization management develops steadily. Be that as it may, the overall quality of farmers is low; the agricultural infrastructure is weak; the agricultural resources are limited; the inputs of agricultural science and technology are short. These hamper the development of modern agriculture. We should implement "industry nurturing agriculture"; through capital support and policy guidance, reform household registration system; connect the fragmented land into parcel; encourage the leading enterprises to develop in rural areas; establish agricultural cooperative organizations; deepen rural financial system reform; quicken the promotion and application of agricultural technology. These measures can effectively promote the development of agriculture, and realize the agricultural modernization in China.

**Key words** Industry nurturing agriculture, Modern agriculture, Path, China

Constructing modern agriculture with Chinese characteristics is the key to addressing issues concerning agriculture, countryside and farmers. Due to historical factors, China's agricultural base is rather weak, and we can not construct modern agriculture merely by relying on agriculture. Since the 16th National Congress of Communist Party of China, the central government has adopted a series of important measures, such as the abolition of agricultural taxes for farmers and implementation of direct production subsidies for farmers. The central finance establishes incentive and compensation mechanism for the major grain-producing counties and impoverished counties and villages. The central government clearly requires the governments at all levels to divert the focus of the infrastructure construction and development of social undertakings to the rural areas, establish, improve and implement various policies and systems in order to protect legitimate rights and interests of migrant workers. All these symbolize the formation of long-term mechanism of "industry nurturing agriculture". As China's industrialization and urbanization continue to develop, the gap between urban and rural areas is further widening, thus effectively implementing the policy of "industry nurturing agriculture" is a priority. We should analyse some important issues, such as the importance of constructing modern agriculture with Chinese characteristics, the status quo and restricting factors of China's modern agricultural development and the problem of "industry nurturing agriculture", which is of great practical significance.

## 1 The importance of constructing the modern agriculture with Chinese characteristics

**1.1 The key to new village construction** The Fifth Plenary Session of the Sixteenth Central Committee of the Communist Party of China proposed the strategic task of building new socialist countryside, and advanced the goal and direction of "the development of production, well-off living, civilized custom of village, neat village appearance, and democratic management" for construction of new socialist countryside. The development of production is the basis, and the material guarantee for construction of new socialist countryside, that is to say, if without the development of production, the goal of construction of new socialist countryside will be like prattle. In order to develop production, it is necessary to develop modern agriculture, and realize the increase of grain yield, increase of farmers' incomes and agricultural multifunctional development.

**1.2 The important measure for promoting overall agricultural production capacity** Agriculture is the foundation of national economy. As China is a country with over one billion large population, agricultural development is of great significance. Over the years, China's agricultural food production realizes continuous harvest in a variety of resource-limited conditions, keeping about 500 billion kg annually, to realize an overall balance and fundamental change of surplus in humper years. Tenure amount of arable land pinned down by The Third Plenary Session of the Seventeenth Central Committee of the Communist Party of China is 1.8 billion mu, but grain yield per unit grows increasingly with a small margin, so ensuring food security is still facing great pressure. Through the development of modern agriculture, improvement of infrastructure, optimization of the structure, changes of modes and so on, we can continuously improve the agricultural production capacity, so as

to keep the stability of the state and society on the basis of increase of grain yield.

**1.3 The prerequisite and guarantee for coordinating urban-rural development** In new century, guided by the eighth "Document NO. 1" issued by the CPC Central Committee, China's agriculture has made considerable progress, the rural areas have undergone great changes, and the living standards of farmers have been greatly improved. In the year 2010, the growth rate of farmers' income, for the first time, was greater than that of urban residents. The net income per capita of farmers reached 5 919 yuan, increasing by 14.9%, the actual increase of 10.9% excluding price factor; the net income per capita of urban residents reached 19 109 yuan, increasing by 11.3%, the actual increase of 7.8% excluding price factor<sup>[1]</sup>. Although the actual growth rate of income of rural residents exceeded the actual growth rate of income of urban residents for the first time since 1998, the income ratio between urban residents and rural residents was 3.23:1. If the agriculture is without modernization, the modernization of China can not be achieved. Through developing modern agriculture, we can rely on mechanization, science and technology, industrialization management and so on, to promote agricultural productivity, to improve the yield of the land per unit, and to increase farmers' income, and then we can gradually improve the rural appearance, narrow the gap between the urban areas and the rural areas, and realize balanced development of urban areas and rural areas<sup>[2]</sup>.

## 2 The overall development of modern agriculture in China

**2.1 The level of agricultural mechanization in China is promoted steadily** In recent years, with the increase of subsidies offered by the state for farmers' purchase of agricultural machinery, the equipment structure of agricultural machinery is improved significantly, and the level of agricultural mechanization is increased steadily. Taking Henan Province as an example, as of the end of 2008, the total power of agricultural machinery in whole province reached 94.292 6 million kilowatts, with 3.833 million tractors, and 0.102 53 million combine harvesters. The level of overall mechanization of farming and harvesting in whole province reaches 63%, and the level of sowing and harvesting the main crop (wheat) by agricultural machinery reaches more than 95% on the average. On the basis of realization of mechanization in former chains of farming, sowing wheat, and harvesting, it further broadens the application domain of agricultural machinery. In 2008, the sowing area of corn by agricultural machinery in whole province reached 23.876 mu; the area of returning straw to farmland through mechanization reached 40.483 million mu; the area of harvesting rice by agricultural machinery reached 4.549 million mu. The mechanization level of rice harvesting exceeds the new highest record of 50% in history<sup>[3]</sup>. "Tilth depending upon cattle" in Henan Province has gradually become history.

**2.2 The science and technology are applied to agriculture extensively** In order to realize the fundamental transformation

of traditional agriculture to modern agriculture, we must rely on scientific and technological progress, and the technological progress of agricultural production must rely on promotion of advanced and applicable technology, implementation of seed project, key science and technology program, farmers' training and other measures. Taking Henan Province as an example, the rate of contribution of scientific and technological progress to the development of agriculture reaches 50%. As for improved variety of seed, cultivation techniques, breeding techniques, soil improvement, plant protection and so on, there are new scientific and technological achievements, and these achievements are applied vigorously, such as intercropping, returning straw to field, water-saving irrigation, mulching, integrated pest control management, cultivation of high-quality wheat and so on. In addition, in term of the application of high technology to improved variety of seed and other aspects, GM technology and embryo transplant technology are used. In 2006, the planting area of high-quality grain in Henan Province reached 80 million mu, accounting for more than 60% of planting area of grain, wherein the harvest area of high-quality wheat reached 46.12 million mu, accounting for 61.4% of the planting area of wheat<sup>[4]</sup>. The application of agricultural science and technology plays an important supporting role in promoting the development of agriculture in Henan Province, increasing yield and benefit of farming, promoting income increase of farmers, and propelling the development of rural economy.

**2.3 The agricultural regionalization layout gradually takes shape** For example, high-quality cotton in Zhoukou and Shangqiu of Henan Province, plants and flowers in Xuchang and Yanling, melons and vegetables in Kaifeng and Zhengzhou, high-quality fruits in Sanmenxia, tobacco in Xuchang and Pingdingshan, high-quality rice in flood plain of Yellow River, tea in Xinyang, mushroom and Chinese herbal medicine in mountainous areas, and other production and processing bases, have taken shape, forming agricultural economic zones with regional characteristic.

**2.4 The agricultural industrialization management develops steadily** Taking Henan Province as an example, the local areas take fostering leading agricultural enterprises as core, and take extending the industrial chain and increasing the added value of agricultural products as means, to promote agricultural industrialization operation. By 2008, the provincial-level agricultural industrialized leading enterprises reached 3 918. The processing capacity of food, meat, and dairy reached 34.5, 5.78 and 2.55 million tons respectively. The added value of large-scale food industries is 3.6 times that in the year 2002, jumping from NO.5 to NO.2 in China<sup>[5]</sup>. A batch of leading companies and famous brands with national competitiveness emerge, such as Xinyang Tea, Shuanghui Ham, and Sanquan Dumpling. Driven by industrialized management, farmers' specialized cooperative organizations also develop to a certain degree.

## 3 Constraint factors of development of modern agriculture in China

**3.1 The overall quality of farmers is low** As human is the

most active factor in productivity, so developing modern agriculture, building new socialist countryside, must take farmers as the main body. But these farmers are not the farmers engaging in slashing and burning cultivation, and not the farmers living at the mercy of the elements, but the educated new farmers who master skills and know how to conduct management. The overall quality of China's farmers is worrying. By 2008, in the rural labor forces, the illiterate and the semiliterate still account for 5.2%; the farmers with primary education account for 22.5%; the farmers with middle school education account for 60.4%; the farmers with high school education account for 10.7%; the farmers with junior college education and the above account for 1.1%. Although this proportion has made more great progress than before, there is still a large gap, in view of the needs of developing modern agriculture and building new countryside. The low cultural level, results in old-fashioned ideas, poor ability to accept the application of new agricultural technology, weak vocational skills and so on, which thereby affects promotion and application of the agricultural science and technology, and affects the transfer of the agricultural labor forces to urban areas, to the secondary and tertiary industries. That is to say, the low quality of the farmers has become the major obstacle to developing modern agriculture and realizing agricultural modernization<sup>[6]</sup>.

**3.2 The agricultural infrastructure is weak** With the advance of construction of new socialist countryside, China has increased investment in the construction of rural public infrastructure, with 30 billion yuan of fund for the construction of "water, roads, electricity, gas", 6 billion yuan of investment in rural drinking water safety, special fund of 1 billion yuan for subsidizing rural small-scale water conservancy construction. In September 2008, the whole society completed 124.638 billion yuan of investment for rural road construction, and completed construction or reconstruction of 242 000 kilometers of rural roads<sup>[7]</sup>, and rural roads, pipeline, network, water conservancy and other facilities have been improved to some extent. The average length of roads within the village is 9.97 km, of which hardening road is 4.69 km. 77% of the villages have safe drinking water, 55% of villages have centralized water supply pipes, and the percentage of tap-water households in these villages is 68%<sup>[8]</sup>. However, due to poor foundation conditions, the infrastructure conditions needed by the development of modern agriculture, are still poor, becoming important factor restricting the development of modern agriculture.

**3.3 The agricultural resources are limited** At present, the conditions of China's agricultural production are facing increasingly serious challenges. The agricultural development is limited by the natural resources to much extent, such as increasingly dwindling of arable land and shortage of water resources. With the quickened pace of industrialization and urbanization, the amount of cultivated land in China is facing great pressure; agricultural use water is limited and farmland water conservancy facilities is in serious disrepair. In 2006, the effective irrigation area of cultivated land was 56 million hm<sup>2</sup>, accounting for 46.41% of total area, and more than half of the arable land is

still dependent on the weather<sup>[9]</sup>.

**3.4 The inputs of agricultural science and technology are short** The fundamental way to realize continuous and steady development of agriculture is the innovation and application of agricultural technology. In recent years, although the science and technology inputs in agriculture have increased in some places to some extent, and the productivity development created by the technology is reflected, there are still defects in agricultural science and technology promotion system. Agricultural agricultural science and technology promotion system is not perfect; there is a small number of agricultural technicians, with serious draining; the operating system is not flexible, and the innovative momentum of agricultural science and technology personnel is short; the inputs of research and development of agricultural technology are scant, with low conversion rate. At present, China's agricultural science and technology contribution rate is only 48%, and the conversion rate of China's scientific research results is only 30%, 30 percentage points and 40 percentage points lower than that of the developed countries respectively. These not only affect new countryside construction, but also hinder the development of modern agriculture.

## 4 Countermeasures and suggestions of "industry nurturing agriculture"

**4.1 Capital support** There are two aspects of funding sources for developing modern agriculture, and building new socialist countryside as follows: one is non-remunerative financial inputs; the other is remunerative policy-oriented financing. The project, which can not bring returns, relies on the finance. The project, which can bring returns, relies on the policy-oriented financing. China's public financial investment need is mainly rural public infrastructure construction. According to the survey and calculation of Development and Research Center of the State Council, it mainly includes the infrastructure comprising tap-water, gas, road hardening, and so on, which needs 4 trillion yuan<sup>[8]</sup>; the subsidy for farmers' purchase of farming machinery; rural compulsory education, especially the fair education, needing 68.8 billion yuan of financial input<sup>[8]</sup>; the conversion of agricultural science and technology results into investment; the investment for environmental protection in the rural areas; rewarding the farmers who quit agriculture; subsidy for encouraging agricultural production program and improving production conditions.

### 4.2 Policy guidance

(1) Further reform household registration system and loosen the policy of conversion from agricultural census register to non-agricultural census register. In order to develop modern agriculture and address the issues concerning agriculture, countryside and farmers, we must reduce the amount of farmers. China's current total number of farmers accounts for 60% of the total population in China, while the percentage of agricultural population of developed countries in the total population is less than 10%. The percentage of agricultural population of the United States in the total population in the year 2000 was 2.6%; the percentage of agricultural population of France in

the total population in the year 2000 was 1.6%. Only by reducing the amount of farmers can we increase the farmers' effective needs, increase the price of agricultural products, and increase the farmers' income; only when the amount of farmers decreases, can we realize the scale operation of land and the modernization of agriculture. In 2010, the "Central Document No. 1" specially gave indication on the future development trend of the new-generation migrant workers. It required that we should further lower the threshold of becoming urban residents, make sure that urban and rural residences enjoy the same right and welfare in schooling, employment, housing, medical treatment and social security and other aspects, promote the rational flow of the labor and other factors between urban and rural areas, and accelerate the industrialization and urbanization.

(2) Conduct scientific planning on new village and connect the fragmented land into parcel. The realization of the scale operation of land and other means of production is the basis of modern agriculture. According to the survey, the limited contractual land amount of each household has influenced the degree of agricultural mechanization, and has increased the agricultural operation cost of each household. We should conduct scientific planning on the distribution of housing, road, land and so on by the construction of new rural communities, based on stabilizing the family contract operation, and we should realize the circulation of land according to voluntary and paid principles, encourage farmers who have fixed jobs and houses in a city to move their register census out of village, so as to realize the rational planning of new countryside and create condition for the development of modern agriculture.

(3) Encourage the leading enterprises to develop in rural areas. The leading enterprises are the important forces to guide farmers to develop modern agriculture. To promote the development of agriculture by developing industry is the course of each country. Presently, in China, the places where the agricultural economy develops efficiently are all promoted by industry, and this is the mechanism that must be proposed to develop modern agriculture and practise "two trends". As for the development of industry in rural areas, first, it can increase the accumulation of rural capital, which establishes the basis for the new countryside construction; second, it can increase the employment and decrease the amount of farmers gradually; third, it can increase the added value of agricultural products by increasing the deep and fine processing of agricultural products and extend the industry chain. China should provide favorable policies in aspects of land expropriation, credit and taxation to the enterprises which develop in rural areas.

(4) Establish agricultural cooperative organizations and promote agricultural overall production capacity. Comparatively high agricultural overall production capacity is the symbol of modern agriculture. It is difficult to increase the overall production capacity simply by individual rural household. It relies on the promotion of leading agricultural enterprises, by the models of "company + base + rural household" or "company + cooperative organization + rural household", forming one continuous line of production, supply, and sale. First, it reduces the pro-

duction cost of agricultural products, raises the economic benefits of the agricultural products, and increases the income of farmers. Second, it promotes the scale and standardization of the agricultural production. Finally, it realizes the agricultural modernization.

(5) Deepen rural financial system reform. Agriculture is a type of weak industry, so the loan for it must obtain the support from the country. We should adjust the deviated financial system and capital supply policy in current cities, establish the financial system which is in line with the stage of "industry nurturing agriculture" and policy arrangement, and improve the situation that the rural financial service supply is not sufficient. Especially, the rural credit union should focus service on the rural areas. Meanwhile, we should define the legal position of rural folk finance by law and rules, and take advantage of the flexibility of the capital to ease the difficulty of farmers' loan problem.

(6) Quicken the promotion and application of agricultural technology. As the basic impetus of promoting modern agricultural development, scientific technology is the main method to realize high yield, high quality, and high efficiency of agricultural products. We can change the material equipment, input structure, output structure, form of labor, and the producers' way of thinking and values by scientific technology. The promotion and application of agricultural technology firstly relies on the market, and secondly relies on the government. The efficiency of the agricultural technology promotion will be low if it just relies on the market, so it mainly relies on the government. The government increases the input of the research and development of the agricultural technology achievements to enhance the construction of the agricultural technology innovation system, to drive agricultural technology to village, to increase the agricultural technology achievements conversion rate. We should guide the agricultural scientific research department to follow the right direction, promote resource-saving agricultural technology with great zing, increase the level of agriculture mechanization, accelerate the agricultural information construction, and promote the intensive production, clean production, safe production and sustainable development of agriculture.

## References

- [1] Urban and rural low-income groups may benefit in 2010[N]. People's Daily, 2011-02-03(01). (in Chinese).
- [2] DENG XP. Deng xiaoping selected works: Vol. 3[M]. Beijing: People's Publishing House, 1993. (in Chinese).
- [3] Henan agricultural mechanization level improved steadily[EB/OL]. (2009-04-06). [http://www.ha.xinhuanet.com/add/touti/2009-04/06/content\\_16166268.htm](http://www.ha.xinhuanet.com/add/touti/2009-04/06/content_16166268.htm). (in Chinese).
- [4] HUANG ZH, ZHANG DP, PAN WG. Quest of the road of modern agriculture with Chinese characteristics[M]. Hangzhou: Zhejiang University Press, 2008. (in Chinese).
- [5] The government work report of Henan Province in 2008[N]. Henan Daily, 2008-02-15. (in Chinese).
- [6] INGLES. Modernization of the people[M]. Translated by YIN LJ. Chengdu: Sichuan People's Publishing House, 1985. (in Chinese).
- [7] WANG LB. Promote the improvement of rural infrastructure and living conditions[N]. Farmers Daily, 2007-12-19. (in Chinese).

(To page 9)

makes the green marketing still in the state of low level, never forming socialized green marketing.

### 3.3 The production characteristic of green products has not yet formed

The important part of implementing green marketing primarily is the production of green products. Only by improving the ecological environment can we bring true green products. Although the international community has long advanced the concept of clean production, and green manufacturing, and pursued the minimization of material consumption and energy consumption. The green production gets the widespread promotion and operation in some developed western countries. However, as China's production technology and production mode lag behind, and there are more inputs and less outputs in industrial production, the waste of resources is serious, generating considerable emission, waste water, and waste residue. According to statistics, the area of polluted China's farmland reaches as high as 80 million hm<sup>2</sup>. This has fully demonstrated that backward production and management mode, will inevitably cause serious harm to the natural environment.

## 4 Countermeasures and suggestions

### 4.1 Pay attention to the propaganda and education of modern marketing concept

As China is in the transitional period of economic system and the market economy system is not perfect, most economic subjects often lack a long-term vision in the implementation of marketing strategy and they tend to seek quick success and instant benefits in decision making. Therefore, the administrative authorities of the government should carry out a variety of forms of education and training on modern marketing concept, conduct guidance in terms of policies and enable enterprises to focus on long-term planning and harmonious development. In addition, they should also advocate and carry out green marketing strategies actively to establish a marketing sense which conforms to the green consumption demand<sup>[2]</sup>.

### 4.2 Regulate the competition in the market of green products

Because the order of the competition in the market is irregular, most enterprises lack professionalism and the sense of social responsibility, thus leading to the phenomenon that fake green products and green marketing appear frequently. As the legal system and market supervision are not perfect, some non-green marketing enterprises attempt to take the "ride" of green marketing. For example, some enterprises produce large numbers of fake, shoddy, low-price, or even harmful products by making use of the immature consumption psychology and consumption attitudes of some consumers. This will threaten not only the health of human beings and environment, but also the survival and development of green marketing enterprises. Therefore, the government should pay attention to strengthening the management of the market, regulate the order of mar-

ket competition and the behavior of marketing company and all kinds of media, promote the industrial self-discipline and cultivate a good professional ethic of enterprise and staff so as to enhance the social sense of responsibility.

### 4.3 Strengthen transparency of green market information

We should intensify the whole society's supervision on the enterprise marketing and business activity, and expose those fake green products and fake green marketing by the supervision of various news media so that consumers will refuse to buy fake green marketing products and keep away from those products, thus making fake green products and fake green marketing lose their market at last.

### 4.4 Reinforce the legislation work of food safety

Because of the inadequate understanding of the knowledge about consumer rights and interests and relevant laws, a majority of consumers lack relevant knowledge of green products and green marketing, and their awareness of fighting for the legitimate rights and interests and self-protection is poor. They can't give effective resistance to the fake green products and fake green marketing of some enterprises. Therefore, we should strengthen environmental protection and food safety legislation. Through different channels, we need to organize various forms of legal education, strengthen the knowledge of green products and the education of green marketing culture in the whole society so that consumers will protect their legal interests consciously and supervise the green marketing activities of enterprises. At the same time, we have to severely punish the fake green products and fake green market to achieve the goal that enterprises can not gain excessive profits through fake green marketing and enterprises can protect the legitimate rights and interests of the green enterprises.

## References

- [1] WANG J, LI J. The analysis of green marketing implementation strategy based on game corporate [J]. *Manager Journal*, 2009 (18): 21. (in Chinese).
- [2] DONG YH. Analysis and countermeasures of green marketing in China [J]. *China Business & Trade*, 2011 (8): 37-38. (in Chinese).
- [3] LI GM. Differential marketing of agriculture products dominated by rural cooperative economic organizations [J]. *Asian Agricultural Research*, 2009, 1(6): 20-23, 33.
- [4] KANG LX. Status and countermeasures for the green marketing of agricultural products processing enterprises in Yinchuan City [J]. *Journal of Anhui Agricultural Sciences*, 2010, 38 (28): 15979-15981. (in Chinese).
- [5] TANG CC, LAN WL. Game analysis of rural collective construction land circulation in rapidly industrialized area of China—A case of Nanhai district of Foshan City [J]. *Asian Agricultural Research*, 2009, 1(3): 36-40.
- [6] LE RF, YAN FX. Research on market and strategy for green food in China [J]. *Journal of Anhui Agricultural Sciences*, 2005, 33(6): 1136-1137, 1142. (in Chinese).
- [9] CHEN XW. Seventeenth report read: take the path of agricultural modernization with Chinese characteristics [M]. Beijing: PLA Publishing House, 2007. (in Chinese).

(From page 4)

- [8] LI JG. China's new rural development survey [M]. Shanghai: Shanghai Far East Publishing House, 2009. (in Chinese).