

# Thoughts on Development of Green Agriculture and Green Economy — Based on the Survey of Farms in Qinhuangdao

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**Abstract** Based on the concept and development process of green agriculture and green economy, the field survey and questionnaire investigation were carried out in Jincheng Specialized Planting Cooperative in Xinji Town, Changli County of Qinhuangdao City. The results show that there are still many problems in the development of green economy and the improvement of green farms in Hebei Province. On this basis, it came up with pertinent measures and recommendations, in the hope of providing theoretical basis and reference for establishment and development of green farms in Hebei Province and most of domestic areas.

**Key words** Green economy, Green agriculture, Diversified green farms, Sustainable development

## 1 Introduction

In recent years, terms such as green economy and green farms are very popular. With the development of economy and the improvement of people's living standard, people attach greater and greater importance to the issue of food health, and the demands for comfort and well-being of life have been continuously improved. The development of green agriculture has become a mainstream driving force of society, and the concept of green development is gradually rooted in the hearts of the people. However, in the development process, there are still many problems, such as technical backwardness, simple farm and twists and turns of development of green economy. In order to find out current development situations of green economy, to learn green pollution-free food cultivation technologies, and to vigorously promote the importance of green agriculture in people's daily lives, as well as dealing with domestic agricultural development issue, through the field survey and questionnaire investigation of green farms in Changli County of Qinhuangdao City, we came up with feasible recommendations for developing green economy and improving green farms, in the hope of providing theoretical basis and reference for establishment and development of green farms in Hebei Province and most of domestic areas.

China is a large agricultural country, but China has entered the period of industrialization and urbanization. The contradiction between population, resources, environment and industrialization, urbanization and rapid economic growth has become increasingly prominent, and people have higher health and comfort demands. In order to implement the spirit of the 18th National Congress of the Communist Party of China, the green economy emerged rapidly as if bamboo shoots after a spring rain, and is favored by the whole country and even the whole world. Models such as green farms,

ecological farms and ecological parks have been developing rapidly. However, in the existing green agriculture, only a small number integrates green environment and accommodation, catering, sightseeing, spa health, leisure, entertainment, and business<sup>[1]</sup>. With the rapid economic and social development, the traditional green agriculture has become unable to satisfy demands of the people. Therefore, on the basis of the traditional green economy, green technology and diversified green farms with more innovative concept will have broader market and more persistent development prospects.

## 2 Green agriculture and green economy

The concept of modern agriculture is to emphasize the integrated agricultural production capacity, bring into play its ecological and social functions at the same time of improving the economic functions<sup>[2]</sup>. Green agriculture is a modern agricultural production mode of production of pollution-free, safe, and quality agricultural products relying on natural ecological productivity and ecological system in accordance with principle of ecological economics<sup>[3]</sup>. It is the core part of development of green economy. At present, China's gross agricultural production still accounts for a large portion of GDP, and agriculture plays a vital role in the development of the national economy. Early in June 2012, United Nations Conference on Sustainable Development (RIO + 20) took green economy as theme of the conference<sup>[4]</sup>. In 2011, the United Nations Environment Programme (UNEP) stated that the green economy can not only achieve the growth of wealth, but also can bring higher GDP growth rate<sup>[5]</sup>. Green farm is an essential part of the development of green economy. Green economy leisure farm is a new type of cross industry combining agriculture and tourism. It is a new approach for deeply developing the potential of agricultural resources, adjusting agricultural structure and improving agricultural environment<sup>[6]</sup>.

With the proposal and popularization of the green develop-

ment concept at the 18th National Congress of the Communist Party, China has accelerated the process of urban and rural integration, and green farms and green economy have realized rapid development. Income of both farmers and enterprises is increased and gross domestic product rapidly grows. In this process, the rapid development of green economy makes an enormous contribution. However, in the process of rapid development of green economy, problems also become increasingly prominent. (i) In recent years, the development of green economy falls into the bottleneck period, there is a certain gap in scientific and technological means compared with the developed countries, and using the existing scientific and technological means, it is impossible to improve the quality of green economy. (ii) As an important part of the green economy, single development model of green farm has been unable to meet people's growing spiritual needs, the diversification of green farms need to be popularized. (iii) The regional economic development level is not balanced and the financial and institutional support of government is weak for farmers and enterprises, leading to restriction of the development of green economy. (iv) Green economy should adhere to the principle of suiting measures to local conditions, low-carbon costs, low-carbon production and low-carbon emissions, but blind pursuit of economic development has brought about the problem of benefit first, forming resistance to the development of green and environmental protection economy.

### 3 General situations of the survey area and survey methods

#### 3.1 General situations of the survey area

**3.1.1 Natural conditions.** We carried out the survey in Jincheng Specialized Planting Cooperative in Xinji Town, Changli County of Qinhuangdao City, which is a representative agricultural area. In line of development of green farms, we carried out a five-day survey in the farm of Jincheng Specialized Planting Cooperative. Qinhuangdao City is a prefecture-level city of Hebei Province. With excellent environment and beautiful scenery, Qinhuangdao is a famous tourist city. Qinhuangdao City is situated in warm temperate zone, semi-humid area, and belongs to the temperate monsoon climate. Due to the greater impact of the sea, the climate is mild. Qinhuangdao City has diversified agricultural resources and rich fruit resources. In Qinhuangdao City, the grape cultivation and planting has a history of more than 400 years. Changli County has the reputation of "homeland of grape in China" and "City of Dry Grape Wine"; Lulong is called "homeland of sweet potato"; Shanhaiguan area is "the homeland of Chinese cherry", suitable for building diversified green farms<sup>[7-9]</sup>.

**3.1.2 Social conditions.** Qinhuangdao City belongs to Hebei Province which is adjacent to the capital of China and is an important agricultural province. In recent years, the proposal of Economic Circle around the Capital of China has received wide concern. The government stated that it is recommended to make ecological compensation for areas surrounding Beijing, and build green environment, to create favorable social conditions for the de-

velopment of green economy in Qinhuangdao City. In addition, Hebei Province is also facing many problems: large population, relative insufficient resources, weak environmental carrying capacity, and it still remains at the stage of industrialization, urbanization, market development.

**3.2 Survey methods** We interviewed 100 agricultural personnel, surveyed planting farmers, enterprise workers and market merchants, distributed 300 copies of questionnaire, and recovered 297 valid copies. The survey content included situations of agricultural personnel in production, sales and processing; the questionnaire included type of respondents, classification of crops, their recognition of green agriculture and green economy, and treatment methods of livestock manure. The survey objects were farmers, enterprise workers, and market merchants. Through the sorting and analysis of the survey results, we elaborated the progress and drawbacks of the development of the green farm in Jiacheng Specialized Cooperative, and came up with improvement measures and feasible recommendations.

### 4 Results and analyses

**4.1 Insufficient government input** According to statistics, about 64% of the respondents thought that the local government's investment is not sufficient in the development of green agriculture. However, when it came to the type of green agriculture in hometown, only 3% of respondents selected government guidance. There was no big difference between rural cooperatives and individually organized cooperatives, accounting for 25% and 43% of the total samples respectively. The rest respondents chose enterprise guidance or not sure about the question. Zhang Hongyan<sup>[10]</sup> found that, with the support of the party and the government, the farm plan project of Huangjiagou Village has established the urban agricultural project integrating characteristic farming experience, modern facilities agriculture, agricultural tourism, leisure, catering, entertainment, showing the importance of government input in the development of green agriculture. There are three factors why the government departments are not paying enough attention to the development of local green agriculture. (i) The leading departments in many areas have not made full advantage of favorable conditions such as geographical and climatic conditions, to guide local people to develop green agriculture. (ii) The propaganda is not enough, and the formulation and implementation of local standards for agricultural development still stay at the starting stage, and farmers do not have the awareness of green agriculture. (iii) Many policies of assisting and benefiting agriculture and farmers have not been fully implemented<sup>[11]</sup>.

**4.2 Few leading enterprises and green agricultural products not prominent** Questionnaire survey showed that in the development of product sales channels, about 31% of the respondents selected unified purchase by enterprises. This indicated that in cities and towns, enterprises and cooperatives still play a great role. However, because there are few leading enterprises and green products are not prominent, many enterprises do not have well-

established functions, their production, processing, packaging are not reaching the standard of high quality green agricultural products, and there are few deeply processed products, which also forms a model in the heart of ordinary farmers<sup>[12]</sup>. Therefore, it is necessary to strengthen the guidance of enterprises and cooperatives on the overall green agriculture in local areas.

### 4.3 Low economic level and backward scientific means

Farmers are the basic people for agricultural development, and they face many problems. The survey results showed that nearly 72% of the farmers plant vegetables and fruits, while small part of farmers plant rice, oil crops, flowers, and medicinal herbs. Their income mainly came from the planting industry, some relied on migrant work or working in the village, and some farmers feed poultry or get engaged in others<sup>[13]</sup>. Because rural funds are limited, many farmers conduct production relying on manual work. In recent years, the government has been strengthening the new socialist countryside construction, a lot of mechanized operations have also entered the home of common people. About 35% of farmers started using mechanized means of production, but because of the low economic and cultural level, only 6% could apply high-tech to conduct production. This clearly indicated the development of science and technology needs greater popularization effort, so as to help millions of farmers to get to the road of development of agriculture through science and technology. 62% of farmers stated that there were green agricultural products near their home, of which 40% were involved in local agricultural development, and their products were mainly vegetables, fruits, corn and Chinese chestnut. Most of respondents generally believed that the local economic development is slow but stable, this is a conservative answer, agriculture is the fundamental of the development of China, closely related to clothing, food, lodging and transportation-basic necessities of life, and its development should be stable and persistent. Scientific development conforms more to the trend of the times. At present, economic development promotes agricultural innovation, and low economic level has become a great resistance to agricultural development<sup>[14]</sup>. In addition, farmers generally have limited cultural level, they are ill-informed. These factors also increase the difficulty of farmers in income increase. 82% of respondents were optimistic about the prospects for green agriculture, 50% of respondents took positive attitude towards the development of green agriculture, but the development of green agriculture urgently needs solving many problems. 20% respondents hoped that the government should promulgate favorable policies; 32% respondents hoped to have fund input and raise funds; a considerable number of people wanted to receive labor skills training; a small part of people hoped that there will be product development projects.

### 4.4 Weak awareness of farmers for environmental protection and sustainable use

In the questionnaire, there were questions about how farmers deal with human and animal manure and sewage. 25% of respondents considered that human and animal manure and sewage can be piled at will; 32% and 22% respon-

ents stated biogas digesters and organic fertilizer production; 21% said other treatment methods. For manure and sewage treatment of breeding plant, most people proposed use of biogas digester and production of organic fertilizer, and 16% agreed random stacking. In view of this, the local farmers had relatively weak awareness for scientific and environmental protection and manure and sewage treatment. Most farmers selected to randomly place fertilizer for later use.

## 5 Policies and recommendations

### 5.1 Government departments strengthening the implementation and supervision of the work

Leaders and policymakers in government departments should actually implement their work, strengthen publicity and guide farmers to actively participate in green construction. It is recommended to encourage farmers to develop green agriculture in accordance with local situations through holding cultural performances with green theme, or issuing notice to towns in written form. Besides, government departments should strengthen the supervision of pesticide, fertilizer and green products, taking minimizing environmental pollution and not influencing human health as the benchmark, to implement the people-oriented basic state policy. Also, it is expected to be good at discovering and putting great attention to new talents, using science and technology to develop agriculture, in order to promote rural economic development, and narrow the gap between urban and rural areas<sup>[15]</sup>.

### 5.2 Strengthening the guidance of small and medium sized enterprises and cooperatives on farmers

Apart from the government, small and medium sized enterprises and cooperatives also play an important role in guiding farmers. Enterprises and cooperatives have advanced science and technology and hardware equipment, and powerful economic strength, and take the lead in the development of green agriculture with the aid of favorable conditions. In the production process, it is required to take strict control over the quality of vegetable and fruit. Green life should keep away from hormone and pesticide. Therefore, we hope enterprises can strengthen the research and development effort, produce fine anti-lodging resistance varieties, expand production and promote the seed in the market, to make ordinary farmers to plant vegetable and fruit naturally without public hazards. Besides, scale management is an important advantage of enterprise development. It complements each other with the positive guidance of enterprises. Scale management also becomes an effective approach for enterprises avoiding the production risks.

### 5.3 Raising the green awareness and production technology level of farmers

Economic benefit is the most important issue for farmers. The ultimate purpose of developing the green economy is to accelerate the pace of poverty alleviation of poor people. The propaganda of preferential policies and effective green awareness better satisfies the demands of farmers for pursuing economic benefits. It is necessary to cultivate the green awareness of the farmers as the subjects of green economy, because they hope to raise the

economic benefits with the green concept. Science and technology constitute the primary productivity. Although the educational level of many farmers is limited, many college students return to homeland and put their professional knowledge and theories into practice, and adopt mechanized means to increase the working efficiency.

**5.4 Pushing forward the complex ecological system integrating the society, economy and nature** To push forward the complex ecological system integrating the society, economy and nature, we need take the principle of ecological economics as the guidance, coordinating economic, social, and resource environment construction as main subjects, to realize comprehensive, healthy, sustainable development, relatively independent and open social, economic, and natural complex ecological system on the basis of benign cycle of certain administrative region<sup>[16, 17]</sup>. It is recommended to take full use of natural advantages, to create favorable conditions for sustainable development, promote overall implementation of integration of social, economic, and natural complex ecological system, strengthen the popularization and implementation of agricultural standard, and gradually promote the market access system of quality and safety of agricultural products.

## 6 Conclusions

Agriculture is a basic industry, it is the foundation of human survival and development, and it constantly develops with the progress of human civilization. After entry into the 21st century, technological transformation, resource shortage, environmental degradation, food safety and economic development face new contradictions and challenges. Green agriculture production and management model is a new approach for solving three rural issues in China, and it is consistent with the implementation of Scientific Outlook on Development, construction of resource-saving and environment-friendly society, and the spirit of the 18th National Congress of the Communist Party of China<sup>[18]</sup>. The development of green economy is the need of market allocation of resources, is the need for optimizing the rural industrial structure, and also the need for increasing the income of farmers<sup>[19]</sup>. Especially, under the situation of increasingly prominent contradiction between economic development and resources and environment, the development of green economy is more realistic and urgent. Green economy can promote energy conservation and reduce emission, and also can take full use of resources, expand market demands and provide new employment opportunities, it is the important combination of environmental protection and economic development<sup>[20]</sup>. Combined the practice of agriculture and forestry professional knowledge, we studied the green economy and green agriculture, to provide reference for development of green economy, which is also an effective action for Chinese dream.

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