

Problems and Countermeasures in the Transformation and Development of Modern Agriculture in Yangzhou City

Feng Jin

Yangzhou University Business School
Yangzhou, China 225000

Abstract—In recent years, Yangzhou City has achieved remarkable results in the transformation and development of modern agriculture. The distribution of agricultural productivity has been continuously optimized. The industries with distinctive advantages have been growing stronger and stronger. A new type of agricultural business entity has been burgeoning. The integration of primary, secondary and tertiary industries in rural areas has been accelerated, and the comprehensive competitiveness of modern agriculture has been constantly enhanced. According to the study, there are many problems need to be solved in the transformation and development process of modern agriculture in Yangzhou City, such as, the improvement of agricultural infrastructure, the improvement of innovation ability of agricultural science and technology, the barriers to rural land transfer, the integration of primary, secondary and tertiary industries in rural areas, the financing, and the strengthen of agricultural socialized service. We should further tamp the foundation of agricultural development, enhance the innovation capacity of agricultural science and technology, improve the rural land transfer system, promote the integration of rural industries, innovate rural financial services, optimize the agricultural socialized service system, and improve the rural green ecosystem, achieving agricultural efficiency, income increase and rural development.

Keywords—modern agriculture; transformation and development; agricultural science and technology innovation; the integration development of primary, secondary and tertiary industries

I. INTRODUCTION

In recent years, Yangzhou City has achieved remarkable results in the transformation and development of modern agriculture. The distribution of agricultural productivity has been continuously optimized. The industries with distinctive advantages have been growing stronger and stronger. A new type of agricultural business entity has been burgeoning. The integration of primary, secondary and tertiary industries in rural areas has been accelerated, and the external environment for agricultural development has been continuously to be improved, and the comprehensive competitiveness of modern agriculture has been constantly enhanced. At the same time, we must also see that there are still some problems to be solved in the practice of modern agricultural transformation and development in Yangzhou

city. For example, the agricultural industry with superior characteristics needs to be further improved, and the support of agricultural science and technology needs further improvement. New agricultural management still needs to be further cultivated, and the agricultural socialization services needs to be further improved. The depth and breadth of the integration development of primary, secondary and tertiary industries needs to be further expanded.

II. STATUS QUO OF TRANSFORMATION AND DEVELOPMENT OF MODERN AGRICULTURE IN YANGZHOU CITY

A. Constantly Strengthening the Competitiveness of Modern Agricultural Industry

At present, Yangzhou city has formed four regional industrial sectors such as vegetable and flower along Yangtze River, aquatic product, aquatic bird and aquatic vegetables along Lixiahe River, tea, fruits, food, grass and livestock in the hilly areas, and urban agriculture in the suburbs. It has three national varieties of Yangzhou Goose, Gaoyou Duck and Shaobo Chicken. The waterfowl breeding volume ranks first in the province. Aquaculture ranks first among the inland cities of the province. Macrobrachium rosenbergii is the largest breeding base in the country, and river crab breeding area ranks second in the province.

B. New Types of Agricultural Business Entities Are Growing

Up to now, there are 423 leading agricultural enterprises at all levels in Yangzhou city. There are 1,726 farmers' professional cooperatives in the city, and it has 3,053 family farms with a scale of more than 100 mu in the city. The new agricultural business entities in Yangzhou cities have played a significant leading role in accelerating rural land circulation, optimizing agricultural social services, transforming agricultural development methods, and promoting agricultural standardization and scale production.

C. The Technology Integration Application Needs to Be Improved

At present, Yangzhou city has gradually improved the diversified and multi-channel agricultural technology R&D investment system with public finance input as the guide, enterprise R&D investment as the main body and social capital as the supplement. In recent years, Yangzhou city has closely focused on the requirements of modern agricultural transformation and development, and actively encourages leading enterprises to build agricultural technology development centers or research institutions by their own efforts or cooperating with agricultural research institutes, make joint research and technology development, and jointly implement agricultural high-tech industrialization projects, forming a batch of original agricultural science and technology achievements with independent intellectual property rights. Yangzhou city comprehensively applied Internet of Things, cloud computing, mobile communications, high-performance computing, data mining and other technologies to create an agricultural Internet of Things system from farm to table, covering the five major areas of production, processing, logistics, sales and consumption, achieving better economic and social benefits.

III. MAIN PROBLEMS IN THE TRANSFORMATION AND DEVELOPMENT OF MODERN AGRICULTURE IN YANGZHOU CITY

A. Agricultural Infrastructure Needs to Be Improved

First, some infrastructures are aged and backward, unable to meet the requirements of modern agricultural development. Second, the management of farmland water conservancy projects is not strict. The phenomenon of "focusing on the construction and neglecting the management" is more common. Third, the quality of agricultural machinery is not high overall. At the same time, the cooperation of agricultural machinery produced by different agricultural machinery manufacturers is relatively low.

B. The Innovation Ability of Agricultural Science and Technology Need to Be Improved

At present, the innovation ability of agricultural science and technology in Yangzhou city is relatively weak overall. There are some reasons as the following. First, it lacks scientific and technological innovation and promotion impetus. Some leading companies are reluctant to take the risk of scientific and technological innovation, and are unwilling to share the benefits of scientific and technological advancement with other entities. Most cooperatives are not interested in the promotion and application of new technologies. Their main focus is to find a market for agricultural products. Most family farms and professional households have doubts about the application and promotion of new technologies due to reasons such as capital and talents, or they have insufficient strength. Second, the incentive and restraint mechanisms for in-depth cooperation among industry, academia and research are not perfect, which has affected the cooperation among production, education and research, or the development of agricultural

science and technology research. Third, it lacks R & D personnel, and the platform, base and facilities for technological innovation are relatively scarce.

C. There Are Obstacles in Rural Land Transfer

First, the peasants cherish the land, and the social security system is not perfect, making the peasants' willingness to transfer land low. Second, the land transfer mechanism is not sound enough. For the peasants, the benefits of partial land transfer are not large enough to mobilize the enthusiasm and initiative of the peasants. For land tenants, the increasing land transfer price has increased their production and operation costs, which in turn affects the enthusiasm of the operators for land transfer. Third, it is difficult to approve the land for facilities. Almost all new agricultural business entities have encountered this problem during the project construction process. Some agricultural projects have been stranded because they have no access to land.

D. The Integration Development of Primary, Secondary and Tertiary Industries in Rural Areas Is Not Deep Enough

First, the fusion chain is short and the added value is low. The primary processing of agricultural products and the processing of high value-added agricultural products are less. Second, it lacks the development of multiple functions of agriculture. Agricultural production has not been deeply integrated with industries such as education, culture, health care and tourism. The development and construction projects of leisure agriculture and tourism agriculture are mainly based on sightseeing, lacking the development of historical and human resources such as local culture and local customs. Also, the development model is relatively simple. It lacks the characteristics and creativity, and the industrial form is similar. Third, it lacks the talents for rural industry integration. The linkage mechanism between rural business entities and farmers' benefits is relatively loose, and the mode of cooperation is relatively simple.

E. Agricultural Financing Is More Difficult

First of all, the rural land is owned by the collective. The mortgage of the land use right is not very smooth in the actual borrowing. Secondly, many agricultural enterprises have a small scale of operation, low technological content, long production and operation cycle, and relatively slowly capital turnover. These characteristics affect the lending enthusiasm of financial institutions. Most of the family farms and professional breeding families adopt family-based management, and the internal control is not perfect, which is difficult to meet the credit requirements of financial institutions. Most farmers' professional cooperatives are not universally recognized by financial institutions, and they do not have the ability to independently assume loans. Third, according to the principle of matching risks and returns, financial institutions usually require higher interest rates on loans, which in turn increase the lending burden of operators. Fourth, it lacks financial services provided by financial institutions to the countryside. There are fewer banking

outlets in base-level countryside, which also affects formal financial services to rural agriculture.

F. Agricultural Socialization Services Need to Be Strengthened

First, many grassroots public service organizations have weak service capabilities. At present, many rural agricultural technology extension institutions generally have a shortage of first-line agricultural technicians, and non-professional technicians account for a large proportion, and education and training for agricultural technicians is lacking. At the same time, most agricultural technology promotion institutions lack the necessary instrument and equipment, and there are fewer experimental demonstration bases. Second, many operational service organizations are small in scale, low in standardization, and have low technical service capabilities and service levels. Third, viewing from the service content, agricultural socialization services are mainly concentrated in the pre-production and mid-production links, and the services provided are relatively simple. Fourth, viewing from the perspective of funding sources, in terms of public welfare agricultural social services, financial funds can only guarantee the wages of employees and the daily operation expenditure of institutions, and there is a shortage of funds for agricultural socialization services.

IV. SUGGESTIONS ON PROMOTING THE TRANSFORMATION AND DEVELOPMENT OF MODERN AGRICULTURE IN YANGZHOU CITY

A. Tamping the Foundation of Agricultural Development

The first is to promote the construction of high-standard farmland. The focus is on the high-standard farmland construction of main board blocks along the Anda Highway Line and Xinhuaijiang Highway Line. The high-standard farmland in the whole Baoying County will be promoted, and the high-standard farmland in some townships will be promoted. The second is to improve the farmland water conservancy facilities. The government should further increase the transformation and construction of small irrigation and drainage pumping stations, seepage control channels, canal buildings and other infrastructure, and constantly fill the drawbacks in the fields. The third is to tap the potential of the land. The government should continue to improve land output rate and resource utilization rate, improve comprehensive agricultural production capacity, newly develop land reserve resources, and strengthen comprehensive management of land ecology. The fourth is to optimize the structure of agricultural machinery equipment. Yangzhou city should focus on the promotion and application of "smart agricultural machinery". The whole county (cities, districts), and township (town) promote the construction of intelligent information management terminals for agricultural machinery operations, realize the functions of agricultural machinery operation trajectory monitoring, area measurement, quality verification and dispatch management, etc., and construct "Internet + agricultural machinery" service platform. The whole country

should accelerate the promotion and application of agricultural machinery with duplex and integrated functions.

B. Improving the Innovation Ability of Agricultural Science and Technology

The first is to focus on the development of agricultural high technology and construction of export-oriented agriculture. Taking agricultural industrial parks as an important base, Yangzhou city should vigorously promote the construction of high-efficiency agricultural facilities. The second is to promote the construction of national-level agricultural science and technology parks, further accelerate the construction of "one nuclear and four districts", especially the construction of the core area of Gaoyou, strengthen the introduction of major agricultural projects, international and domestic key leading enterprises, and promote the construction of contiguous characteristic agricultural industrial bases. The third is to make full use of the strong scientific research strength of the related agronomy institutes that are headed by "one school and two institutes", deepen innovation in the agricultural science and education system, and comprehensively strengthen the role of agricultural science and technology in supporting and guiding modern agriculture. The government should establish and improve the agricultural science and technology service system, and improve the platform for transforming agricultural scientific and technological achievements. Yangzhou city should actively develop precision agriculture, smart agriculture, and intelligent agriculture. It also should actively create national and provincial agricultural and rural informationization demonstration bases.

C. Improving the Rural Land Transfer System

First, the government can promote and regulate the land management rights by separating land ownership, contracting rights and management rights in an orderly manner. The farmers shall be encouraged to use the forms of subcontracting, transfer, lease, exchange, shareholding, etc. to carry out land circulation. Also, the farmers shall develop moderate scale operation through multiple forms such as joint farming, joint planting and land trusteeship. The second is to improve the rural land transfer service organization system and trading platform of Yangzhou city, and gradually improve the four-level land transfer service system of cities, counties, towns and villages. The third is to set up a special support fund for land scale operation. Taking the form of rewarding instead of subsidy, new types of agricultural management entities with standardized land circulation and obvious scale economies will be rewarded to encourage and guide the land to moderately be concentrated in new agricultural management entities. The fourth is to improve the land transfer access system, supervision system and arbitration institutions, review and supervise the qualifications, business contents, land use and land contracts of relevant industrial and commercial enterprises involved in contracted land, arbitrate land transfer disputes, and maintain the legitimate rights and interests of both parties.

D. Promoting the Integration Development of Rural Industries

First, the government should support family farms and professional large-scale households to develop primary processing and direct sales of agricultural products, encourage them to use idle resources such as vacant rooms to develop rural tourism, and improve the organization and management of family farms. Second, the government should encourage farmers' cooperatives to expand into areas such as processing, logistics, and sales, and support qualified farmers' cooperative organizations to develop into united, multi-functional comprehensive service-oriented agricultural operation organizations. Third, the government should encourage leading enterprises to expand the industrial chain, support their development of intensive processing and marketing of agricultural products, build large-scale raw material production bases, and drive farmers to develop appropriate scale operations, guide them to cooperate and share benefits with farmers, farmers' cooperatives and other entities. And the leading enterprises will play the demonstration role. Fourth, the government should actively explore the functions of leisure and education in agriculture, promote the integration of agriculture, tourism, culture, health and other industries, and vigorously develop new forms of leisure agriculture, rural tourism and creative agriculture, build a group of rural tourism villages and towns with local historical and cultural heritage and folk characteristics of Yangzhou city, and create leisure tourism products with different forms, distinctive features and diverse functions, playing the versatility of agriculture. Fifth, under the premise of improving the regulation of social capital participating in the integration of primary, secondary and tertiary industries in rural areas, the municipal-level relevant support policies will be introduced, and all types of social capital investment projects will be treated equally. For areas that can be commercialized, it is necessary to open to social capital. And the government should actively guide social capital to participate in the integrated development of primary, secondary and tertiary industries in rural areas.

E. Innovating Rural Financial Services

The first is to innovate credit support. The government should coordinate various banks to formulate supporting policies and specific measures to support the transformation and development of modern agriculture, innovate financial products, lower the threshold for loans, expand the credit line and issue special loans, actively implement the pilot of mortgage loans for land contractual management rights, and form various forms of mortgage and pledge methods suitable for the characteristics of the agricultural operation as soon as possible. Second is to innovate insurance support methods. Combining with the characteristics of Yangzhou agricultural management entities, insurance institutions should develop targeted insurance products, actively provide various types of insurance services for the production, processing and operation of agricultural products, give priority to loan guarantees for new agricultural business entities, and solve the problem of loan mortgage and guarantee. The third is to innovate financial support methods. The government should integrate all kinds of financial support for agriculture, such

as comprehensive agricultural development, new rural construction, and agricultural industrialization, and give priority to supporting the construction of demonstration agricultural business entities.

F. Optimizing the Agricultural Social Service System

In accordance with the direction of "subject diversification, service specialization, and operational marketization", Yangzhou agricultural socialization service system is constructed and perfected by combining public welfare services with operational services and special services in coordination with comprehensive services. The first is to strengthen public welfare agricultural socialization services. The government should strengthen the construction of grassroots agricultural skills training institutions, properly solve the problems of insufficient personnel and weak professional service capabilities, and earnestly fulfill the public welfare duties of serving agricultural production. The government should vigorously develop operational service organizations, support professional cooperatives of agricultural practitioners to carry out micro-profit specialized social services, and strive to form a social service system that is open, mutual-help and profit-oriented, and integrates and develops coordinated services. The second is to actively develop operational agriculture service organization. From the perspective of access mechanism, financial support, and talent reserve, the support will be increased, and the agricultural socialization service projects will be more abundant. At the same time, the methods will be more diverse, and the operations will be more mature. The third is to strengthen agricultural e-commerce services. We will improve the comprehensive service platform for agricultural product e-commerce, and strengthen the cultivation of agricultural e-commerce skilled talents. The circulation of agricultural products will catch up with the development of e-commerce.

G. Improving Rural Green Ecosystem

The first is to steadily promote the construction of the "Jianghuai Ecological Grand Corridor". In accordance with the layout of "One Belt and One Gallery, Five Major Plates, and Eight Major Projects", the Jianghuai Ecological Grand Corridor will be built into a clear water corridor, a green corridor and a safe corridor. The government should vigorously carry out a project to protect lakes, and "three returning, three conceding" (returning farmland, fishing and breeding areas, and conceding forests, lakes and wetlands to the areas along Baoying lake, Gaoyou lake and Shaobo lake) will be implemented. The government should implement the construction projects of cycle and linking highway of Three Great Lakes, and open up the construction path and framework. First, the government should implement afforestation along the Yangtze River, along the lake and along the road. The government should focus on the construction of the Scenic Belt of fifty hundred meters and the 100-meter landscape ecological forest along Shaobo Lake. The second is to firmly establish the concept that green development, green rich city, benefiting the people, green hills and clear waters can help people make money, and strive to strengthen scientific governance, precise

governance, system governance and coordinated governance, promote ecological and environmental protection work, and achieve significant improvement in environmental quality. The total discharge of major pollutants was greatly reduced, environmental risks were effectively controlled, environmental contradictions were effectively resolved, and the satisfaction of the people was significantly improved. The third is to build an ecological center system with rich types, reasonable structure and diverse functions, and explore a set of ecological center construction models and systems that meet the actual conditions of Yangzhou city.

V. CONCLUSION

In the future, Yangzhou city should take the "village revitalization strategy" as a guide, closely follow the requirements of rural revitalization strategy, further develop agricultural infrastructure, agricultural characteristic industries, agricultural science and technology, and industrial integration, and promote the transformation and development of modern agriculture.

REFERENCES

- [1] Tao Chenli. Reflections on the "Green+Agriculture" transformation promoting agricultural modernization [J]. *Co-cooperative Economy and Science*, 2017(10): 44-45. (in Chinese)
- [2] Li Jun. Vigorously developing ecological recycling agriculture to promote the transformation and upgrading of Hainan agriculture [J]. *Hainan Today Magazine*, 2018 (9): 8-15. (in Chinese)
- [3] Ding Jianjun, Li Xinyang. Investigation and thinking on agricultural transformation and upgrading in Jingmen City [J]. *Chinese Incubator*, 2016(23).7-9. (in Chinese)
- [4] Yang Qunyi. Developing ecological recycling agriculture and leading green agricultural transformation [J]. *Farm Economic Management*, 2018(5): 27-30. (in Chinese)
- [5] Xiao Shulan. Hunan agricultural transformation and upgrading from the perspective of supply-side reform[J]. *Crop Research*, 2016(6): 612-616. (in Chinese)
- [6] Zhou Xiang. Current situation of agricultural development in Hangzhou and countermeasures for sustainable development of transformation and upgrading [J]. *Agriculture & Technology*, 2017(7): 161-162. (in Chinese)