

Research on China's Agriculture Policy on Ecological Financial Support

—A Case of Zhuhai City, China

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Abstract—The purpose of this paper is to solve the core question of "where does money come from" from the perspective of policy finance, when developing the ecological agriculture. First of all, the paper starts from analyzing the basic theory of ecological agriculture and policy financial support. Then it introduces the case of Zhuhai's ecological agriculture. Using the empirical investigation and comparative analysis method, the authors try to analysis the restricting factors of developing ecological agriculture in Zhuhai, China. Finally, this paper puts forward the countermeasures and innovation paths for ecological agriculture financial support policy.

Keywords—agriculture; policy finance; ecological financial support; financial innovation

I. INTRODUCTION

In the context of increasingly tightened resource and environmental constraints, transforming the mode of economic development and achieving sustainable development have become general trend. As the foundation of national economy, we must explore new ways for agricultural development, substituting modern ecological agriculture for traditional agriculture. Because agriculture can easily be affected by natural factors and market risks, and it has long-term investment period and low profitability. At the same time, this new model of ecological agriculture is not easily supported by commercial financial institutions. This is the reason why government funding is especially important.

II. IMPORTANCE OF ECOLOGICAL AGRICULTURE POLICY FINANCIAL SUPPORT

Because eco-agriculture belongs to costly modern agriculture, which needs more capital investment and longer cycle of benefits compared with traditional agriculture, the development of eco-agriculture can't be separated from the support of policy-based finance. Because eco-agriculture requires a large amount of knowledge-based labor and new

production technologies and equipment, coupled with the weakness and low rate of return of agriculture itself, commercial finance and private capital, which are based on the principle of maximizing profits, are unwilling to enter the area proactively, resulting in commercial financial outlets shrinking their business from rural areas and developing ecological agriculture. They need the support of financial institutions that can provide low-interest loans and long-term loans to develop ecological agriculture. And financial institutions have non-profit-making policies, which effectively compensate for the shortcomings of commercial financial institutions in supporting ecological agriculture.

III. CHINA'S ECOLOGICAL AGRICULTURE POLICY FINANCIAL SUPPORT

A. Brief introduction

At present, the development of ecological agriculture has been strongly supported by the government. And the establishment of high-tech agriculture parks and ecological agriculture demonstration areas has achieved certain achievements. The new pattern of ecological agriculture is preliminarily formed. As early as 1984, the Eighth Five-Year Plan for National Economic and Social Development proposed the establishment of an eco-agricultural experiment point and demonstration area. According to National Modern Agricultural Development Plan (2010- 2015), the third batch of national modern ecological agriculture demonstration area has been completed decided. There are total 283 existing demonstration areas, among them, the total number of demonstration areas in 13 food production provinces reached 173, accounting for about 60%^[1].

B. China's existing ecological agricultural policy financial support

During "Twelfth five-year" period, with high yield, high quality, high efficiency, ecological green development goal,

our country agriculture constructed of a batch of ecological agriculture demonstration area. The government replaces subsidies with awards, first build and after remedy, uses the government interest and set up industry investment funds to support the development of modern ecological agriculture. Our country expanded our scope of award to fill the modern ecological agriculture demonstration zone. Prize of index number from 25 demonstration zone in 2014 expanded to 100 in 2015, and they implement the 1 billion yuan of "replace subsidies with awards", so the ecological agriculture has received prominent achievements [2].

IV. ANALYSIS ON ZHUHAI'S CURRENT SITUATION OF ECOLOGICAL AGRICULTURAL POLICY FINANCIAL SUPPORT

A. Situation of Zhuhai ecological agriculture development

Zhuhai City has implemented the policy of benefiting farmers to promote the development of ecological agriculture. In recent years ecological agriculture has some construction that a series of modern ecological agriculture park have been established; the comprehensive strength of agriculture is increasing. Agriculture has a new stage to standardize, intensify, specialize and breeding. The modern ecological agriculture system has been constructed initially, based on featured planting, aquaculture, intensive processing of agricultural products and ecological leisure tourism, which forms an ecological industry pattern dominated by fishing, animal husbandry, fruit, vegetable and flower. [4]

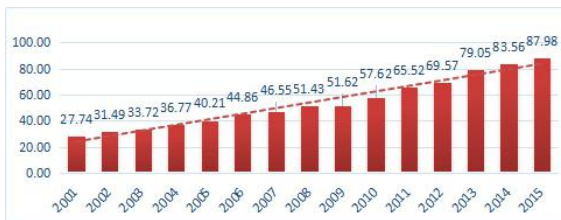


Fig. 1. Total output value of agriculture and forestry in Zhuhai (Source: Zhuhai 2016 statistical yearbook and Zhuhai municipal bureau of statistics)

The gross output value of Farming, Forestry, Animal husbandry and Fishery showed an increasing trend. In 2015, the total output value of Farming, Forestry, Animal husbandry and Fishery reached to 8.798 billion yuan, with year-on-year growth of 2.2 percent, of which the Farming output value was 1.414 billion yuan, which increased 11.2 percent while the Forestry output value was 0.20 billion yuan, which went up 3.1 percent. The output value of Animal husbandry decreased 13.4 percent to 1.169 billion yuan. The output value of fishery reached to 5.383 billion yuan, which raised 3.6 percent. At the same time, the total output value of Farming, Forestry, Animal husbandry and Fishery services reached to 811 million yuan, which up by 4.0% [2].

The majority of those engaged in agricultural cultivation are the elderly, accounting for only 11.79% of those under the age of 30, and only 9.02% of them have high school education or above [3]. These people are lack of skills, whose educational level are generally low and traditions are conservative. Their skills are low. With the advent of an aging era, as well as factors such as attrition and illness, the number of farm laborers decreased year by year. The labor force showed a

rapid downward trend. The number of migrant workers in rural areas increased and the number of agricultural labors was short.

B. Zhuhai development of ecological agriculture mode

Relying on the advantages of regional unique agriculture resources and Marine resources, Zhuhai highlight two main features that it is close to Hong Kong, Macao and Ling nan coast. Zhuhai has combined ecological agriculture with leisure tourism, and developed characteristic agriculture planting as well as experience-based agricultural tourism, which hope to build integrated ecological agriculture Park containing leisure, eco, circulation and agricultural products.

Due to the staggered Doumen district watercourse and dense river creek, the terrain feature can be summarized as "two mountains, three rivers and five fields". Therefore, the agricultural development model of Doumen District is mainly fishery, animal husbandry and planting, among which fishery accounts for 64.91% and is region's agricultural pillar industry [2]. Fishery has important marine resources like flower fish, mud fish, yellow skin fish, pigeon, etc., which has certain regional characteristics; the livestock industry is the main export industry that livestock and poultry products are exported to Hong Kong and Macao from Guangdong.; The main mode of ecological agriculture in planting industry is pond farming and fruit trees and flowers.

TABLE I. ECOLOGICAL AGRICULTURE DEVELOPMENT MODE OF EACH AREA OF ZHUHAI

| Demonstration zone | Focus | Region pattern |
|---|--|--|
| North of Doumen Village | Organic rice, rare flowers, fruits and vegetables | ecological leisure industry |
| Six villages, five mountains animal husbandry | biogas projects, organic fertilizer, and aquaculture technology | Bioenergy regeneration mode |
| White banana pollution-free aquaculture zone | Local farmer culture, e.g. "water marriage" and Shatian folk songs, and fishing. | High-quality production and cultural tourism area |
| Jinwan Taiwan park | High-quality vegetables and fruits from Taiwan. | Taiwan food and sightseeing |
| Fenghuang Mountain | Local sub-tropical plants and animals with antique collection and distribution center | Modern agriculture culture and agricultural exhibition center. |
| Agricultural logistics Area | Leading agricultural product enterprises | Comprehensive business model |
| Baiteng Water Area | Professional distribution center and trading platform for aquatic and agricultural products. | Comprehensive business model of trade and agriculture. |
| Deepsea fishing area | Deep-water cultivation area. | Featured marine economy |

C. Zhuhai's existing ecological agriculture policy support

1) Zhuhai's overall economic and financial constraints on agricultural efficiency

Zhuhai's financial support for agriculture investment from 2008 to 2016 has an increasing trend from 420 million yuan in 2008 to 12.74 billion yuan in 2014, which is an increase of 200% and an average annual increase of nearly 29%. The percentage of the local agricultural financial investment to the share of local fiscal revenue also increased from 4.55% in 2008 to 5.68% in 2014 [3]. Although the GDP of the primary industry also increased from 2.86 billion yuan in 2008 to 4.394 billion yuan in 2014, but the proportion of primary industry GDP in Zhuhai's GDP has been declining [2]. This shows that the proportion of agriculture in Zhuhai's national economy is getting lower and lower, as it can be seen from the decline in the number of agricultural practitioners. Of course, the

urbanization and industrialization are inextricably linked over several years. However, the opposite trend that the increase of local fiscal revenue due to the input of agricultural finance and the decrease of the share of primary industry in the entire Zhuhai GDP indicate that Zhuhai's fiscal support for agriculture is less efficient and does not give full play to the best efficiency of the financial support for ecology agricultural development, which allows Zhuhai's ratio of the GDP of the primary industry to that of the entire local economy and the proportion of local financial input from agriculture into the total local fiscal revenue not to emerge synchronization growth.

Although the fiscal expenditure on agriculture of Zhuhai increased, its financial support agriculture is still insufficient. Investment amount can be used as a measure to compare the rate. The rate of investment is the percentage that the investment in agriculture agricultural output value accounted for the proportion of total investment of the whole society and the ratio of the proportion of the total output value of society. According to the law of development of world agriculture, in the middle of the industrialization, the value of the ratio of agricultural investment comparison should be close to or more than 1.

2) *Restriction of the production and operation subject*

There are few farmers' cooperatives and other new type of agricultural management main body quantity with small scale. The largest area of agricultural development Doumen district has 73 farmer professional cooperatives, but their membership is only 1146 people, accounted for 3.15% of agricultural workers, so most of the cultivated land were scattered contracted operation by farmers, which is not conducive to scale operation and allow farmers to participate in rural industrial integration development, to promote agricultural ChanJiaXiao tailgating, and to share chain earnings.

3) *Business mode restriction*

Ecological agriculture development needs larger regional environmental to receive the actual effect. Individual families have strong personal properties for profit. In production, there is much difference among chemical fertilizers, pesticides, the choice of farming and so on, which easily causes the destruction of the ecological environment and make the management of ecological agriculture not be implemented. So we need to develop them as piece and scale, forming an ecological agriculture chain integrated by production, processing, transportation, good sales, eventually we hope realize the intensive management.

4) *Technical constraints*

Technical support of ecological agriculture in Zhuhai is inadequate, mainly in the following three aspects:

Firstly, investment in eco-agricultural technology research and development is insufficient. Secondly, the promotion and application of Ecological agricultural technology is low. Lastly is the lacking of eco-agricultural technology extension staff and the quality constraints of agricultural workers.

To solve the above problems in the perspective of policy financial support, support must be given to the policy finance and commercial finance, and guide the financial institutions

such as Agricultural Development Bank and rural commercial banks to increase the ecological agricultural science and technology loans.

V. POLICY FINANCIAL SUPPORT INNOVATION PATH OF ZHUHAI ECO-AGRICULTURE

A. *Liquidize rural remnant assets*

The government should issue interim measures to guarantee the mortgage of rural property rights and five rights. Moreover, Zhuhai city can learn from Dongguan city to implement "homestead loan", promoting the rural land use right and land contract management mortgage loan pilot work.

B. *Establish a cooperative agricultural loan system on government, bank and insurance*

This system will tie up government support funds, insurance and bank credit funds as an organic whole, which can guarantee and support the funds required for the ecological agriculture.

C. *Increase support for eco-agriculture enterprises and agricultural financial services institutions*

Subsidies ecological agriculture leading enterprise which has loan interest should be increased.

D. *Promote more the construction of rural credit system*

Using Internet platform, farmers household electronic credit archives and credit evaluation system can be established.

E. *Make full advantages of neighboring Hong Kong and Macao*

With the construction of Hong Kong-Zhuhai-Macau Bridge, Zhuhai has advantages to develop ecological agriculture product output and ecological agricultural tourism.

F. *Build ecological agriculture development fund.*

Funds should be mainly focused on guarantee project rather than on premium discount and allowance, etc.

VI. CONCLUSION

The key to the development of ecological agriculture is to aid financial cooperation between the farmers and the rural credit system. Only by figuring out the essential factors of ecological agriculture development, can the policies of ecological financial system be innovated and implemented.

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