Competitiveness of Rice Industry in Hunan Province——A Diamond Model

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Abstract. Hunan Province is the main rice producing area in China, in which the rice industry is the pillar agricultural industry. And the promotion of rice industry competitiveness in Hunan Province is the key way to promote the development of rice industry in China, which is beneficial to increase farmers' income and promote social harmony and stability. On the basis of understanding the present situation of rice industry development in Hunan Province, this paper chooses the index of commodity export market share and relative export performance to calculate the rice industry competitiveness in Hunan Province, and combines the Porter Diamond model to analyze the main factors affecting the rice industry competitiveness in Hunan Province, Finally, several policy suggestions are recommended to enhance the competitiveness of rice industry in Hunan Province.

1. Introduction

Hunan Province has a fine natural environment for rice growth because there are rich natural resources such as abundant and simultaneous water, light and heat. For many years, rice planting area and rice production of Hunan Province is in China first. In the 2016, among 31 Provinces, autonomous regions and municipalities (excluding Hong Kong, Macao and Taiwan), Hunan Province has the first rice planting area of the country (a total of 4.0855 million hectares) and the first total production of the country (a total of 26.023 million tons). But the superposition of high rice yield, high acquisition and high stock is increasingly prominent in Hunan Province. There are many difficulties on grain sales, enterprise profiting and stock increasing. Except a few agricultural industrialization leading enterprises such as Jinjian Cereals Industry Co. Ltd, Hunan Grain Group and Tianxiadongting Grain Group, the ability of most enterprises to participate in domestic and foreign market competition is weaker. Therefore, it is exceedingly necessary for Hunan Province to enhance the competitiveness of rice industry.

In view of this, based on the analysis of the development of rice industry in Hunan Province and its competitive status, this paper uses Porter Diamond model theory to further analyse the factors influencing the competitiveness of rice industry in Hunan Province, which may provide some reference for improving the competitiveness of Hunan’s rice industry.

2. Current situation of rice industry in Hunan Province

2.1. Rice production overview
Hunan Province belongs to cultivation regions for double-cropping rice in China. The rice production scale of Hunan Province has obvious size advantages including high cropping, high sown area and high yield. As shown in Figure 1, there is a small fluctuation in rice planting area and total production in Hunan Province in 2007-2016, but the overall growth trend is maintained. The rice growing area in Hunan Province grew by about 5% from 3.8972 million hectares of 2007 to 4.0855 million hectares of 2016. Total paddy output in Hunan Province increased by about 7% from 24.257 million tons of 2007 to 26.023 million tons of 2016. In particular, due to the abnormal climate of 2009, the decline of rice yield in China and the world led to the setback of rice planting in the 2010. In the 2013, late indica rice in Hunan Province suffered from persistent drought during transplanting period, so many farmers replanted other crops in the original middle and late rice fields, which led to that the actual sown area of rice was lower than the planned sown area. In the 2014-2016, the "Double change single" phenomenon back, and comparative effectiveness of grain production became lower, which reduced the Enthusiasm of many farmers growing rice. Accordingly, paddy planting area decreased, and paddy output also decreased.

![Figure 1. Rice planting area and total production in Hunan Province from 2007 to 2016](image)

Data sources: "China Statistical Yearbook"(2008-2017).

In recent years, high-quality rice breeding and production in Hunan Province has made rapid development. And the annual planting area of high-quality rice is 2 million hectares or more, exceeding 50% of the total rice sown areas in Hunan Province [1]. According to ‘Hunan Province ‘Thirteen-Five’ Agricultural Modernization Development Plan’, Hunan Province will realize by 2020 that: more than 95% of the main crop variety coverage, 85% of crop straw resources utilization rate, more than 75% of rice planting and harvesting comprehensive mechanization level, and 25 million tons of rice production. Therefore, it is estimated that in the next three years, Hunan Province, on the basis of stabilizing the total yield of rice and safeguarding national grain security, will concentrate on the structural reform of the rice industry supply side, vigorously develop high-quality rice and ratooning rice, comprehensively utilize the by-product and build the sustainable development system of rice industry in Hunan.

### 2.2. Rice processing and trade status

#### 2.2.1. Processing

There are more than 1000 rice storage and processing enterprises in Hunan Province, but most of them have only small scales and low production capacity. According the main business income, there are one 10-billion-yuan enterprises, one enterprise with 5-10 billion yuan, as well as 8 enterprises with 1-5 billion yuan. In addition, there are 2 listed companies among rice processing enterprises [2].
2.2.2. Market trade. ①The lower price of imported grain has caused a huge impact. According to the monitoring of Development and Reform Commission of Hunan Province in 2015, early indica rice processing cost of rice processing plant in Hunan Province was 1.92 yuan/500g, and late indica rice processing cost was 2.10 yuan/500g. And it appeared "price upside Down" in some areas. However, the price of rice imported from Vietnam by various channels was less than 1.5 yuan/500g. Affected by the low price import grain, small-medium grain processing enterprises made heavy weather in Hunan Province. For example, only in Lanxi Rice City (one of the Ten Grand Rice Cities) of Yiyang City, the amount of rice processing enterprises had reduced from 212 in 2014 to 183 in 2015.②Two problems are coexisting that grain stocking pressure is oversized and external sales channels are not smooth. By the end of 2015, the total amount of grain inventory in Hunan Province was 11.78 million tons, which had reached the highest value over the years. At the same time, it also puts large pressure on current grain storage space in Hunan Province. Moreover, with grain commodities volume 12 million tons per year in the past, the traditional sales areas (Guangdong and Guangxi) and the emerging markets (Shandong, Yunnan, Beijing, Shanghai and other Provinces/municipalities) imported commodity grain in about 4.5 million tons per year. In recent years, however, affected by heavy metal pollution in some areas, consumers have been in the small security shadow while choosing Hunan Rice, which has led that external sales channels are not smooth. Although some recovery of increasing grain sales in 2015, the quantity was only about 2.8 million tons of grain.

3. Analysis of rice industry competitiveness in Hunan Province

3.1. Data sources
Rice (prepared grain) is the main product of rice industry, so this article uses rice product data to assess the competitiveness of rice industry, and the total data is mainly from “China Export Monthly Statistics Report (Rice)” of Ministry of Commerce of the People's Republic of China Department of Foreign Trade, United Nations Commodity Trade Statistics Database (UN COMTRADE) in order to ensure data availability and accuracy.

3.2. Index choices
According to the evaluation indexes of regional industry competitiveness put forward by Porter [3] and Jin Bei [4], this paper chooses two mature indexes, market share of commodity export (MS) and relative export performance (REP), to measure the competitiveness of rice industry in Hunan Province.

(1) Market share of commodity export
The formula is: export market share of Product A in Region Y (MS) = exports of Product A in Region Y/ total exports of Product A in the world. This indicator can reflect the change of international competitiveness or competitive position of certain product. MS increasing shows that the export competitiveness of the product is enhancing in the region, whereas abating.

(2) Relative export performance
The formula is: relative export performance (REP) = (total Product exports of Industry X of a country/ total product exports of Industry X in the world) / (total goods trade exports of a country/total goods trade exports in the World). If REP>1, Industry A of the country will have stronger international competitiveness.

3.3. Result analysis
Facing fierce competition in the international food market, Hunan Province is obviously at a weaker level on international competitiveness, especially compared with grain industry developed countries such as India, Thailand, Vietnam, America and Pakistan. From Table 3 and Figure 2, we can find that from 2012 to 2016, the rice export market share of Hunan Province is extremely low, maintaining between 0.02%-0.07%, but the overall trend is increasing year by year. And Chinese rice export market share fluctuates between 1% and 2%, and REP is totally less than 1, keeping between 0.08-1.14, which appears that the changing trend of rice industry international competitiveness is not
optimistic in China. In the 2016, MS of the top three countries including India, Thailand and Vietnam is 14, 12 and 6 times of China. In recent years, rice product MS of Hunan is basically zero, which cannot be compared with the rice industry developed countries.

Table 1. Rice export in Hunan Province and rice trade countries from 2012 to 2016 (Unit: US Dollar)

| Country/Province | Year   | 2012     | 2013     | 2014     | 2015     | 2016     |
|------------------|--------|----------|----------|----------|----------|----------|
| Hunan Province, China | 5941000 | 10290000 | 12763000 | 16788000 | 14675000 |          |
| China            | 271996537 | 416664794 | 378283385 | 267177158 | 378807115 |          |
| India            | 6127951717 | 8169518971 | 7905650029 | 6380081547 | 5315534717 |          |
| Thailand         | 4632269629 | 4420370445 | 5438804124 | 4544023151 | 4377871019 |          |
| Vietnam          | 3677939167 | 2926254791 | 2936931047 | 2807904187 | 2159977099 |          |
| America          | 2048479573 | 2183584834 | 1992284583 | 1993146720 | 1821499618 |          |
| Pakistan         | 1882126059 | 2110992349 | 2199635955 | 1927200362 | 1703048708 |          |
| World            | 24083507410 | 25691557734 | 26429093540 | 23195681088 | 20751976218 |          |

Data sources: “China Export Monthly Statistics Report (Rice)” of Ministry of Commerce of the People's Republic of China Department of Foreign Trade, UN COMTRADE.

Table 2. Total exports of goods to China and World trade from 2012 to 2016 (Unit: US Dollar)

| Area   | Year   | 2012     | 2013     | 2014     | 2015     | 2016     |
|--------|--------|----------|----------|----------|----------|----------|
| China  | 2048782233084 | 2209007280259 | 2342292696320 | 2273468224113 | 2097637171895 |          |
| World  | 17968791529608 | 18614344938990 | 18511648940438 | 16136669737484 | 15571374329033 |          |

Data sources: UN COMTRADE.

Table 3. Rice export market share in Hunan and rice trade countries from 2012 to 2016 (Unit: %)

| Country/Province | Year   | 2012     | 2013     | 2014     | 2015     | 2016     |
|------------------|--------|----------|----------|----------|----------|----------|
| Hunan Province, China | 0.02 | 0.04 | 0.05 | 0.07 | 0.07 |
| China            | 1.13 | 1.62 | 1.43 | 1.15 | 1.83 |
| India            | 25.44 | 31.80 | 29.91 | 27.51 | 25.61 |
| Thailand         | 19.23 | 17.21 | 20.58 | 19.59 | 21.10 |
| Vietnam          | 15.27 | 11.39 | 11.11 | 12.11 | 10.41 |
| America          | 8.51 | 8.50 | 7.54 | 8.59 | 8.78 |
| Pakistan         | 7.82 | 8.22 | 8.32 | 8.31 | 8.21 |

Note: The calculation results based on the “Export of rice products in Hunan Province and rice trade countries from 2012 to 2016”.

But with the gradual establishment of China's national rice industry technology system and the active implementation of rice industry development plans in Hunan Province, by the "Thirteen-Five" finale year, rice industry competitiveness in Hunan will be comprehensively upgraded in breeding, production, processing, sales and other industrial chain links, especially Hunan Province gradually narrowing the development gap of grain industry with developed countries.
4. Analysis of factors affecting rice industry competitiveness in Hunan Province

Porter considers that opportunities are difficult to grasp, such as war, energy crisis and other events, which make an uncertain impact on industrial competitiveness. So this paper analyses the factors influencing the competitiveness of rice industry in Hunan Province from five aspects, including ① factors of production ② demand conditions ③ related and supporting industries ④ enterprise strategy, structure and peer competition ⑤ government.

4.1. Factors of production

The diamond model divides the factors of production into primary production factors based on natural resources and advanced production factors, which are dominated by historical culture, human resources and technology.

4.1.1. Primary factors of production. (1) Climatic conditions. Hunan Province belongs to subtropical monsoon climate zone, suitable for rice growth. Here, the average annual precipitation is 1200-1800mm, and the average annual temperature is between 16-18 degrees Celsius. Especially, the three sources of precipitation, light, and heat have high values more synchronously. However, due to the uneven spatial and temporal distribution of precipitation in one year, as well as the significant temperature changes sometimes, the frequency of natural disasters in Hunan is high, which has adverse effects on rice planting and harvesting. It is worth noting that drought is the main natural disaster in Hunan Province. In addition, the threat of plant diseases and pests often leads to rice yield reduction in Hunan. (2) Water conditions. Rice production should follow the principle that adequate water resources determine the harvest of rice to some extent. The river network is densely covered in Hunan Province, where there are 5,341 rivers with more than 5 kilometers and the freshwater area reaching 13,500 square kilometers. Xiangjiang, Zijiang, Yuanjiang and Lishui Rivers are the four main tributaries of Yangtze River flowing through Hunan, falling into Dongting Lake, the second largest freshwater lake in China. The natural water resource, the total amount of which is the biggest among the nine provinces of southern China, provides strong support for the irrigation of rice production. (3) Land conditions. Paddy soil is fertile and suitable for arable. The total area of paddy soil in Hunan Province is 2755.9 thousand hectares, which takes up 16.5% of the total soil area in Hunan. But land resources are facing the problem of "quality" and "quantity" falling in Hunan. From the "quantity" view, per capita arable area of Hunan is only 540 square meters, less than 60% of China. More seriously, the area of cultivated land in Hunan is reduced by about 23 thousand hectares per year. By 2020, per capita arable area may be below the 534-square-meter cordon line [5]. From the perspective of "quality", there are rich mineral resources in Hunan Province, but some mineral...
enterprises lack strict harmless treatment mechanism of "three wastes" (waste gas, waste water and waste residues) in some parts of Hunan Province, which causes the soil to suffer from heavy metal pollution in varying degrees, directly affecting the quality and safety of paddy and its by-products. (4) Landform conditions. On the one hand, Hunan landform types are complex and diverse. Specifically, mountainous, hilly, basin, plain, and water area of Hunan Province account of total area for 51.2%, 15.4%, 13.9%, and 6.4% [6]. Most of the plains and valleys are paddy fields, and a large area of terraced fields is formed in water-sufficient and soil-deep gentle slope areas. However, in Xiangxi Tujia&Miao Autonomous Prefecture and other mountainous areas, low land concentration and smoothness is difficult to carry out large-scale and intensive production management of rice. On the other hand, the surface shape is transitional. Hunan is located in the transition zone from the second step to the third step, and the different regional types make the diversity of the rice production conditions and rice germplasm resources in Hunan Province.

4.1.2. Advanced factors of production. (1) Historical and cultural resources. “Huguang ripped the country is enough”. Hunan Province has been a land of plenty since ancient times, but also the important birthplace of rice-growing civilization. In the Chengtoushan Site of Lixian, Changde City, archaeologists found the earliest paddy fields and residual rice. And the discovery indicates that 7,000-4,000 years ago Hunan ancestors successfully mastered the rice cultivation technology, at the same time, rice production forming a certain scale. In 1993, the joint archaeological team of the America and China unearthed the world's first artificially cultivated rice specimen from the Jade Toad Rock Site in Dax County, Hunan Province, which brought the rice history in Hunan to a significant advance to 14,000-18,000 years ago. (2) Human resources and technology. In Hunan Province, there is a group of rice research institutions such as Chinese National Hybrid Rice R&D Center. A lot of rice experts, such as Academician YUAN Long-ping, have been working there. In 2012-2016, an average of about 34 varieties per year in Hunan Province passes the provincial certification (Table 4), among which hybrid rice varieties account for the majority. Rice scientists have achieved fruitful results. From the breeding of dominant rice varieties to the development of high protein feed, from three-line and two-line hybrid rice to super rice, it has made a major breakthrough, and high yield, high quality and high efficiency is developing synchronously. Furthermore, the rice cultivation technology is developed from ridge and hybrid rice "double two" cultivation to high-quality and high-yield cultivation of double cropping rice. Scientific and technological innovation has laid a foundation for the sustainable development of rice industry [7].

| Validation level | Type              | Validation Number(2012-2016) |
|------------------|-------------------|-------------------------------|
|                  |                   | 2012 | 2013 | 2014 | 2015 | 2016 |
| Hunan Province   | Two-line indica hybrid rice | 11   | 13   | 9    | 23   | 9    |
|                  | Three-line indica hybrid rice | 8    | 15   | 9    | 18   | 10   |
|                  | Inbred rice       | 0    | 3    | 3    | 4    | 2    |
|                  | CMS line          | 12   | 2    | 3    | 7    | 8    |
|                  | Total             | 31   | 33   | 24   | 52   | 29   |

Data sources: China Rice Data Center—China rice varieties and their pedigree database (http://www.ricedata.cn/variety/).

4.2. Demand conditions
Demand conditions play an important role in enlarging the scale of agricultural production and improving agricultural production efficiency [8]. In recent years, with the improvement of living
standard and the change of consumption concept, consumers are not just satisfied with the primary demand of grain rice to solve the problem of feeding and subsistence. Several issues have received extensive attention including the use of pesticide fertilizer in rice production process and the pesticide residue of rice. Some consumers make the dependence on certain rice production area. And high-quality and green rice, with fine exterior and taste and reasonable price, is popularly favored. Diverse consumer demand puts higher demands on companies related to rice production in breeding, farming, field management, processing, storage, transportation, packaging, regional brand building and other aspects.

4.3. Related and supporting industries
To strengthen the industrial competitiveness, a certain scale of the upstream and downstream industries is necessary as a supporting foundation. In Hunan Province, there are two main supporting industries for rice industry: (1) Transportation. According to the 2016 data, Hunan’s inland waterway total mileage reaches 11,500 kilometers, the railroad operation mileage 4716 kilometers, the expressway traffic mileage altogether 6080 kilometers. Convenient transportation can reduce the relative cost of the paddy and its processing goods while transporting outward, which may promote the Hunan’s rice industry competitiveness. (2) Agricultural machinery industry. With the rapid development of Hunan’s agricultural machinery industry represented by Shuangfeng’s agricultural machinery industry, a large number of agricultural machinery, suitable for planting, cultivation, harvesting, processing and transportation, has been applied to improve the rice production efficiency in Hunan. By the end of 2014, the comprehensive mechanization level of rice in Hunan Province had been raised to 65.5%, and the growth in 3 consecutive years ranked first in the country.

4.4. Enterprise strategy, structure and peer competition
The 2018 data from Hunan Agricultural Industrialization Association shows that more than 400 grain-processing enterprises in Hunan Province are above the primary level, and 50 grain-type enterprises belong to provincial leading enterprises in agricultural industrialization. Although enterprises enjoy certain state subsidies for grain-purchasing, the insufficiency of self-owned funds of many companies leads to the inability to purchase adequate food for normal production during the grain-purchasing season. In Hunan, The ratio of starting the machine of most grain processing enterprises is less than 70%, which makes enterprises not getting normal profits for reproduction. In addition to a few leading enterprises such as Jinjian Cereals Industry Co. Ltd, other enterprises have weakened brand building and the development of diversified product.

4.5. Government
The government fulfilling the functions of macro-control provides a strong system guarantee for the agricultural industry. Since 2015, Hunan Province has made great efforts to achieve "zero growth" in the use of fertilizers and pesticides, and has carried out whole-process quality control of the brand rice in the market, in order to control the safety and quality of rice industry from the producing source. In 2016, it is mentioned in the 13th Five-Year Plan for the Grain Industry Development of Hunan Province to produce safe grain, grain with rule of law, innovation grain, intelligent grain, benefit grain and high-quality grain, which points out the right direction for healthy and rapid development of rice industry in Hunan Province. Since 2017, Ministry of Finance of the People’s Republic of China and State Administration of Grain has been focusing on the implementation of "High-quality Grain Project" and the promotion of the action plan of "China good grain and oil". Hunan Province set the goal that by 2020 the ratio of high-quality grain and oil is increased by more than 30%, the planting income of high-quality grain and oil for the local regions' farmers more than 20%.
5. Countermeasures and suggestions for promoting the development of rice industry in Hunan Province

The competitiveness of rice industry in Hunan Province is extremely weak through the measurement of MS and REP. However, the results of "diamond model" show that for the competitiveness of rice industry in Hunan Province there is still large room to advance. Therefore, coordinating the benefits of economy, society and environment of rice industry in Hunan Province, the paper puts forward seven suggestions in connection with the weak development links of rice industry in Hunan Province.

5.1. Protecting the basic environment of rice growth and promoting the sustainable development of industry

The Government should pay attention to the construction of farmland irrigation facilities. Under its support, several departments in relative fields such as agriculture, geology, meteorology, network communication can jointly build the dynamic monitoring system about rice growth process and the "four conditions" (nursery, soil humidity, diseases and pests, and disaster). More importantly, a detailed and targeted contingency ought to be formulated. Promote the farming technology of using green manure in idle rice fields especially in winter. And teach farmers how to reuse crop stalks, animal poop, plastic film and other agricultural waste resources. Enjoy excellent experience of heavy metal pollution experiment in the farmland of Chang-Zhu-Tan City Group, carry out the special action of farmland protection and ground force promotion, and quicken the transformation of middle and low yield farmland and standardize farmland construction. Regularly assess and monitor paddy field quality.

5.2. Attaching importance to the training of professional talent

The Government needs to improve the scientific and technological training system contrary to farmers. It is essential to highlight the cultivation of professional rice farmers, young farm operators and agricultural managers in order to improve the overall management level of rice industry. Many colleges in Hunan should establish multidisciplinary disciplines (rice breeding, crop cultivation, industrial park management, rice storage and processing, marketing, etc.) to training the reserve personnel of rice industry [9]. Encourage young adults and young workers to return hometown to develop agricultural careers by formulating preferential policies.

5.3. Cultivation of high-quality rice varieties to improve rice yield and quality potential

Cultivate the middle-grade high-quality edible rice specifically for processing, functional nutrition rice which adapts to the market demand [10], as a breakthrough to strengthen rice industry. Take full advantage of the advantages of local platforms such as Southern Regional Collaborative Innovation Center for Grain and Oil Crops in China to rapidly cultivate a number of new high-quality varieties with high and stable output, strong resistance, high value-added, fine applicability for mechanical operation and efficient use of water and fertilizers.

5.4. Cooperate closely with relevant government departments to promote the application of industrial policy

Industrial policies help to coordinate industrial activities and make up for market failures. Government departments should do the following items. (1) The agricultural sectors are supposed to strengthen the organization and guiding role of rice industry, and strictly implement the national system of policy-related grain purchasing. Secondly, it is necessary for the agricultural sectors to build the “going out” agricultural information service platform, which is aimed at encouraging related enterprises to develop rice industry by using foreign land resources [11]. Learn successful experience of safety and quality control in high-quality rice areas for realizing the whole-process traceability control system of rice production. (2) Economic development departments and financial departments have responsibility to effectively coordinate special funds from central and provincial finance for agriculture, the focus of which is to strengthen the support for major construction projects and technological innovation.
projects relating to rice industry. In addition, improve the agricultural subsidy system and support the rice industry research institutions such as subsidizing the purchase of advanced research equipment. (3) The financial sector should actively implement financial support policies, and realize the innovation of agricultural insurance system, and improve the management and service level in agricultural insurance. (4) For the legal departments, it pays to concentrate on the legislation and judicial protection of intellectual property rights, lawful private property rights and investor rights involved in rice industry system.

5.5. Perfecting the popularization system of rice science and technology achievements and striving for the support and cooperation of production subjects
The popularization of science and technology achievements about rice can be achieved from the following two aspects. (1) Variety promotion. The Government should organize agricultural scientific and technical personnel to promote the economic and environmental benefits of high-quality rice varieties for farmers and agricultural companies by lectures and other forms. We can provide good varieties to farmers at a lower price even freely to improve the coverage of good varieties and ensure the source supply of high-quality rice. And it is able to broaden rice producers’ horizons by guiding them to visit modern seed companies, supermarkets, agricultural products trading markets and high-quality rice cultivation base. (2) Technology popularization. Promote high-efficiency planting techniques such as centrally raising rice seedling, mechanical transplanting and rice-fishery combination. Next, vigorously promote green production techniques such as disease and pest control, fertilizing by testing soil. And accelerate the popularization of standardized operation techniques such as straw field-returning and mechanical and deep plough. Another point is that stacks should also popularize some applied techniques of preventing and mitigating natural disasters such as high temperature, flood and dew. These measures reflect “Grain Storage Technology”.

5.6. Actively develop supporting industry
Hunan Province can do the following several efforts. (1) Rice production and processing enterprises actively corporate with packaging printers to design the practical packaging that can show company culture and be convenient for commodity storage and transportation. (2) Universities and agricultural machinery enterprises should establish long-term cooperative relations to independently research rice quality testing equipment or processing machinery production adapt to different environments, which may make domestic producers get rid of dependence on imported equipment. (3) The Government should increase the financial input to the transportation industry, improve the construction of transportation facilities such as highways and railways, and further improve the traffic and transportation capacity of Hunan Province. (4) Continuously improve the system of grain industry associations, play the role of trade associations in the coordination between enterprises and Governments, which helps to prevent vicious competition in the grain industry and establish a standardized market order.

5.7. Innovation of marketing models and processing utilization system under the leadership of leading enterprises
In the market economy, leading enterprises are the main strength of product branding and improving the overall industry reputation, but also can promote the development of other similar disadvantaged industries [9]. The Government should focus on supporting and training the strong grain leading enterprises, and encourage minor enterprises to adopt to achieve the optimal integration of internal resources by joint or equal cooperation. Enterprises should adopt multiple marketing models including retail outlets and supermarkets distribution on a foundation of brand marketing, leisure agriculture experience marketing, internet marketing in “online-sensation rice” type and so on. Study the successful experience of rice processing in developed countries such as America and Japan. Strictly control the impurity removal, color selection and rice polishing, and adjust the processing
sophistication degree, and establish high-quality, green, ecological and safe system of rice deep processing and comprehensive utilization.

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