Evaluation System of Sustainable Food Security in China Based on Computer Software Analysis and Ecological Perspective

Li Shang1,*
1Shaanxi Technical College of Finance & economics, College of Economy and Finance, Shaanxi, China, 712000

*Corresponding author e-mail: shangli@sxptife.net

Abstract. We all know that China is the largest developing country, China has the largest population in the world, China is also a large agricultural country, the development of agriculture is very important, China's annual grain production is also very rich, food is the basic situation of our country. The analysis of food security in China by computer software is helpful to solve the problem of food security in China, which is a very good technology and is very beneficial to the food security of our country.

Keywords: Food Security, Agricultural Development, Sustainable Development, Issues

1. Introduction
China is a large population and a large agricultural country. Because of its large population, the demand for food is also very large. At the same time, food security is also a key topic in our country. Many scholars in our country begin to study the problem of food security. Therefore, this paper evaluates the situation of food sustainable security in China, and puts forward new solutions to these problems.

Food can meet the basic needs of human life, human beings can not do without food, food security is crucial, all people have food at any time, food can meet the needs of human life, so, what links does food security include? Grain safety is mainly divided into five aspects.

At present, many scholars have begun to study the problem of food security, many people look at the problem of food from the perspective of agricultural ecological development. One of the famous scientists has analyzed the impact of science and technology, resources, environment and economy on the food security of our country. The environmental impact on food is very great, people often regard ecological sustainability as a module of food security, but it is not the only factor affecting food. Zhang Yuanhong has constructed a food security evaluation index system through continuous research. The system includes many aspects and can be divided into eight aspects. This paper attempts to integrate ecological sustainability into all aspects of food security evaluation and carry out a new systematic evaluation.

So what factors affect food security? Relevant scholars mainly analyze these two aspects:
agricultural development, social economy. Generally speaking, in the rural areas of our country, the attitude of the residents to food security is very important, which directly affects the food security. With the development of society and the progress of economy, the influence of the quantity of agricultural grain supply is decreasing. The structure of grain distribution is the main factor of food security in China.

Through the narration of the above contents, the related research on food security in China is relatively rich, but the discussion on ecological sustainability is relatively few. Therefore, in this article, we evaluate the situation of food sustainable security in China, and use mathematical methods to carry out empirical analysis.

2. Evaluation design of sustainable food security in china from ecological perspective

China's grain production makes people some material life premise, grain can ensure everyone's basic life activities. Grain input is also very important, so what is grain input? Food input is the input link of food security, and the input elements contain many contents, including: land, water resources, labor force, technology and so on. Grain production refers to the production link of grain security, which is the supply link after the production link. The demand for grain is also very large. The grain supply includes the proportion of supply and demand, the pressure of grain consumption population and so on. In this paper, we evaluate and calculate some basic grain data, and analyze the food security of China according to the evaluation results of Chinese grain from the ecological perspective.

3. Current situation and trend of sustainable food security in china from ecological perspective

Since 2000, every stage of our food development has its own characteristics. At the present stage, the development of grain in China is at a high level, but there are also some problems that cannot be ignored [1].

3.1. Analysis on the status of sustainable food security in china from ecological perspective

At present, the level of food security in China has been relatively high. In 2014, the food security index of our country is 3.5. In recent years, the food security index of our country is constantly optimized. In agricultural irrigation, waste water discharge has a downward trend. In agricultural production, the use of pesticides and some chemical products is also gradually reduced, the energy efficiency of agricultural production is increasing, and the proportion of energy consumption is decreasing. At the same time, the sustainability potential of food security in China is also constantly optimized. From the point of view of food security index, the total grain supply and total consumption in China have been obviously improved. The development of agriculture in China has the following trends: the continuous progress of agricultural technology and the increasing utilization rate of agricultural machinery in China provide the impetus for the sustainable development of food security in China [2].

3.2. Problems of sustainable food security in china from ecological perspective

Through the analysis of the relevant data, we can get the following conclusion: although China is a large population, food security is still one of the main problems facing our country. If we want to achieve food security, we must first achieve cultivated land security. The population of our country is still developing. The area of cultivated land restricts the planting area and yield of grain in our country, limits the production of grain in our country, and is not conducive to the sustainable security of grain. At the same time, China's grain prices are still high, food purchase capacity is challenged. Domestic grain prices are rising and the purchasing ability of Chinese residents in grain consumption is declining, which seriously affects the food security of our country.

The profit of grain processing enterprises is also very small, so it seriously affects the food supply of our country, and the degree of food supply security decreases. Finally, the problem of food safety in China is very serious, poisoning incidents often occur, and food safety has become an important obstacle to the sustainable development of grain in China. Specific data are shown in Figure 1:
4. Analysis on influencing factors of sustainable food security in China from ecological perspective

4.1. Impact of urbanization
As shown in the figure, there are many factors affecting food security, and urban development also has a very important impact on the development of food in China. In the initial period of development [3], China's rural labor force poured into cities, resulting in a sharp decline in the rural population. Specific data are shown in Table 1:

| Variable | Mean    | Std     | Min     | Max     |
|----------|---------|---------|---------|---------|
| Y        | 2.9978  | 0.4322  | 2.3832  | 3.7134  |
| Y1       | 0.789   | 0.0832  | 0.676   | 1.024   |
| Y2       | 0.618   | 0.183   | 0.413   | 0.918   |
| Y3       | 0.632   | 0.181   | 0.382   | 0.904   |
| Y4       | 0.679   | 0.052   | 0.505   | 0.742   |
| Y5       | 0.617   | 0.0621  | 0.291   | 0.405   |

In the later development, the urban development gradually merged with the city, agriculture and other industries were effectively developed, and all aspects of grain production supply and demand were improved, effectively improving the degree of grain security. The impact of urbanization on grain production and investment is very obvious. The rural labor force resources and land resources are important factors for grain safety production. At the same time, after the development of cities and towns, the transportation is very convenient and convenient for domestic grain scheduling. This increases the ability of urban and rural grain purchase and farmers to profit, and then promotes sustainable food security [3].

4.2. Industrial restructuring
The adjustment of industrial structure also affects the grain production of our country. In the early stage of algae development, the proportion of primary industry is relatively high, which is very unfavorable to the food security of our country. In the later development process, the proportion of primary industry decreased. The level of food security in China has been significantly improved. In the early stage, the agricultural production mode of our country is still extensive, the decline of the proportion of primary industry will reduce the level of agricultural output, which is not conducive to the sustainable security of grain, and in the later stage of continuous development and progress of
technology, the labor force is also significantly improved [4].

Considering the industrial structure of grain, the impact of industrial twinning on grain production and security is very obvious, so we should speed up the transformation of agricultural structure in China, find reasonable structural ways, and improve the ecological nature of grain security through industrial transformation. With the development of our country, environmental pollution and other problems are becoming more and more obvious.

4.3. Effects of ecological environment governance
China's food problems should also pay attention to a very important aspect, that is, ecological sustainable development, ecological environment problems directly affect our country's food problems, seriously restrict the development of food, so the relevant governments of our country should formulate relevant policies and increase ecological environment governance. Because the production and supply of grain is the key area of ecological environment management in China, its influence is relatively significant [5].

5. Impact of the loss of agricultural labour
Through the analysis of the relevant data, we can know that the loss of agricultural labor can strengthen the capital investment of agriculture, which is more conducive to the sustainable security of grain in China. Agricultural labor will have a direct impact on food production, but the impact of labor on food input is not obvious. With the improvement of food sustainable security, the impact of agricultural labor loss on food security will be reduced. Under the condition of high level of sustainable food security, the mode of agricultural production is gradually changing, agriculture is advancing to intensive direction, and the positive impact of agricultural labor loss on food security is relatively small [6].

6. Impact of technological progress
We all know that science and technology is the first productive force, and the level of science and technology also determines the level of agricultural development. Through the study, we found that the positive impact of technology on food sustainable security will also decline.

7. Conclusion
Through the elaboration of this article, we have a deeper understanding of China's grain problems, but also a better understanding of China's food security problems and influencing factors [7]. This method is very helpful to solve the problem of food security and promote the healthy development of food in China.

References
[1] Zhang Yuanhong, Liu Changquan, Guolulu. Evaluation of China's Food Security Situation and Strategic Thinking [J]. and China Rural Watch ,2015(1).
[2] Gao Ying, Tian Weiming, Zhang Ningning. Effects of expanding the opening of agricultural products market on China's agriculture, industrial production and food security [J].1 Rural economy in China ,2013(9).
[3] Star Chen. Food Supply Chain Security: A New Perspective of Food Security -- On the Innovation of Development Ideas in the Core Production Areas of Food Production [J]. and Research World 2011(3).
[4] Gong Maogang. Food Security Policy in developing countries from the Perspective of supply and demand [J] Chongqing Social Sciences 2013(12).
[5] Yang Xueli, Zhang Shaojie. Current Situation of Food Security in China [J]. and Countermeasures Economy ,2010(6).
[6] Zhou Bo, Zhai Yinli, Qian Wei, Yu Zhigang. Analysis of the Influencing Factors of Food Security in China from the Perspective of Sustainable Agricultural Development -- An
Empirical Analysis Based on Structural Equation Model [J]; and Rural economy ,2015(11).

[7] The Coupling Mechanism, International Experience and Enlightenment of Moderate Scale Management and New Professional Peasants in Agriculture from the Perspective.