

FOOD SECURITY IN CHINA

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Contents

1. Food Security: One of China's Most Important Topics
 - 1.1 Population pressure
 - 1.2 Resource pressures
 - 1.3 Grain is taken as one of the most important topics in China
 2. Chinese Understanding of Food Security
 - 2.1 Quantity implications
 - 2.2 Quality implications
 - 2.3 Other implications
 3. The "White Paper: The Grain Issues in China"
 - 3.1 The background for publishing the white paper
 - 3.2 The main contents of the paper
 4. Basic Evaluation on China's Food Security
 - 4.1 Five-period development of food production
 - 4.2 Domestic production basically meets consumer demand for food
 - 4.3 Stable domestic food market
 - 4.4 Consumers can easily gain their requested food for consumption
 - 4.5 Identification of organic (green) food
 - 4.6. Regional supply-and-demand equilibrium of grain
 5. China's Main Policies on Food Security
 - 5.1. Policies for protecting cultivated land
 - 5.2. "Governor Grain Responsibility System"
 - 5.3. "Mayor Vegetable Basket Responsibility System" and "Vegetable Green Channel"
 - 5.4. Basic self-sufficiency policy of food
 - 5.5. Appropriate import of food
 - 5.6. Development of commercial bases for food production
 - 5.7. Expansion of state grain reserve capacity
 - 5.8. Inter-regional trade equilibrium
 - 5.9. Grain relief system
 - 5.10. Grain marketing system restructuring
 - 5.11. Food hygiene Glossary
- Bibliography
Biographical Sketches

Summary

China's government and people regard food security as one of the most important issues in economic and social development. Because of the existing population and resource

pressure, increase of living standard, and accelerating urbanization and industrialization, China is facing a severe challenge in food security. As the largest developing country with more than 5000 years of history, China's government has always paid great attention to food problems. Since its founding in 1949, the People's Republic of China has already basically resolved the problem in providing enough food to its people. The main successful experience is summarized as four aspects: decades of efforts. The main experience are to adhere to the principle that agriculture is the foundation of the national economy, giving top priority to agriculture in national economic development; to take grain production as the key point in rural economic work, making all possible efforts to ensure a steady increase in total grain output; to successfully carry out rural economic reform by mobilizing the enthusiasm of farmers for grain production; basic conditions for agricultural production have been continuously improved; land resources have been developed and made full use of in a comprehensive way. China has decided to take basic self-sufficiency and minimum necessary imports as the basic policy for food security for the foreseeable future. Many measures have been adopted by government to ensure food security, including the following: policies for protecting cultivated land have been formulated and implemented, especially for protecting basic farmland with the strictest farmland management system; the governor grain responsibility system and mayor vegetable basket responsibility system have been adopted to ensure production and supplies of grain and other staple foodstuffs; commercial grain bases and vegetable bases have been taken as the most effective measures for ensuring food security; expansion of state grain reserve capacity and grain marketing restructuring have been taken as the main measures for strengthening the government's ability to control the national grain market; and a food quarantine system has been set up and implemented to protect consumer health.

1. Food Security: One of China's Most Important Topics

1.1 Population pressure

China is the most populous country in the whole world, comprising 23% of the world total population. It is predicted that China's population will climb to a peak of 1.6 billion around 2030. Before then the population will have grown steadily for 30 years, resulting in ever-increasing population pressure on economic development and the resource base.

1.2 Resource pressures

The shrinkage of cultivated land has been very serious since the start of the 1980s, when the policies of opening China to the outside world and economic reform were implemented. China is a country with limited and poor agricultural resources. Its total cultivated land area accounts for only 7% of the world total, while the population represents 23% of the world total. The cultivation rate of the whole area in China is only 10%. The area of cultivated land per capita is only 0.086 ha, which is considered dangerously low.

Water shortage is threatening agricultural production and even human habitation in some areas such as the north and west of China. Average annual per capita available

water resources is 2680 cubic meters—only 10% of the world average. The available agricultural water resource has been shrinking in recent decades because of the increasing demand from non-agricultural sectors and domestic needs. On the other hand, China's irrigation has been developing to a remarkable extent since the founding of the People's Republic of China in 1949, especially since the beginning of the 1980s, when reform of the economic system started. The irrigation rate of cultivated land had increased to 72% by 1998, and irrigation has been playing a great role in increasing agricultural production.

Accelerating industrialization and urbanization will put more pressure on the existing severe resource situation. The urban population has been increasing from 17.92% of the total population in 1978 to 30.89% in 1999. The total number of cities increased from 193 in 1978 to 668 in 1997. Agriculture's share of national gross production has been decreasing from 45% in 1978 to 30% in 1997. Accelerating industrialization and urbanization has been causing heavy pressure on water and land resources, especially in developed regions.

1.3 Grain is taken as one of the most important topics in China

There is an old saying in China that “taking food as the heaven”. This means that the food problem is the most important one, and always will be. Chinese people regard the need to feed the whole family very well as their top responsibility. China has been a traditional agricultural nation for thousands of years, but the food problem has never been solved. As urbanization and industrialization accelerate, the problem of food shortage will become one of the most important and is likely to remain so for a long time in the future.

From the 1990s China's government and farmers have been paying great attention to improving the integrated productivity of the agricultural system.

2. Chinese Understanding of Food Security

2.1 Quantity implications

Chinese think adequacy of food, especially the adequacy of grain, is the most important component in food security. Food security should be looked at from three perspectives. The first one is the concept of per capita food. China views per capita food, especially per capita grain as the main indicator for measuring the food security situation. The second is the concept of national total quantity. As the most populous nation in the world, China should emphasize the importance of total quantity of grain and other foods, and should also pay great attention to the world food market. The remarkable changes in grain and food total output cause continuous adjustment in grain and food production policies. The third one is the concept of regional quantity. There are tremendous differences in food and grain production across China, causing food-deficit regions and food-surplus regions.

2.2 Quality implications

The food quality problem has been attracting more and more attention from rural and urban consumers. The demand for organic (green) food, especially for vegetables free of contaminants, has been growing greatly in recent years.

In general, food consumption in China has improved greatly, both in quantity and quality. Protein foods have been playing an increasing role in total food consumption, resulting in significant improvement in nutrition level. The government has been emphasizing the establishment and implementation of a food quality monitoring system.

2.3 Other implications

2.3.1 Food structure implications

In accordance with the ‘China Dietary Pattern Reform and Development Program in the 1990s’ and the dietary habits of urban and rural residents, a food consumption pattern featuring medium calories, high protein and low fat will be gradually introduced among the Chinese population. On the basis of retaining the traditional food structure, food of animal origin will be added to a proper extent to improve food quality. This gradual change in food consumption pattern will cause staple food consumption to decrease while the supply of grain used for animal feed will gradually increase. Based on this assumption and by making unswerving efforts in grain production, China's per capita share of grain is estimated to reach approximately 400 kg by 2030 when the population is predicted to reach its peak. Over half of this will be used for staple foodstuffs, while the rest will be used for producing food of animal origin, so as to improve living standards and the nutritional level of the people.

2.3.2 Food-relief for poverty-stricken population

Poverty is one of the most important constraints for realizing national food security. It is reported that there is a remarkable correlative relationship between poverty and food shortage. Poverty restricts the ability to buy enough food for consumption, and reduces the quality.

3. The “White Paper: The Grain Issues in China”

3.1 The background for publishing the white paper

In the 1990s, China's grain problem attracted worldwide attention, from politicians and scholars of developed and developing countries, inside China and abroad. The astonishing question “Who Will Feed China?” became well known following the publication of a book with that title by Lester R. Brown of the Worldwatch Institute in 1995. It is very necessary to address these questions and anxieties. So, the State Council published the “White Paper: The Grain Issues in China” on the basis of preparing related ministries and institutions for coordinated action. It was released by the Information Office of the State Council in October 1996.

3.2 The main contents of the paper

The paper has 7 parts or episodes. The first episode was “New China has resolved the problem of feeding its people”. The second was on “Prospects for China’s consumption demand for grain”. The third was “China can basically achieve self-sufficiency in grain through self-reliance”. The fourth was “Striving to improve production conditions to increase the comprehensive grain production ability”. The fifth one was “Developing Agriculture by Relying on Science, Technology and Education and Changing the Grain Increase Mode”. The sixth one was “Comprehensively Developing, Utilizing and Protecting Land Resources for the Sustainable Development of Agriculture”. The last episode was “Deepening Structural Reform and Creating a Favorable Policy Environment for Grain Production and Circulation”.

It was pointed out that China’s government had always emphasized the grain problem. China had a population of 1.2 billion, and was a great nation both in terms of grain production and grain consumption. How is the grain situation in China? What was the potential for grain production in China? Can Chinese people feed themselves? How would China develop grain production? All of these were questions asked everywhere. This white paper was to answer these questions.

It was pointed out that China had basically or primarily resolved the grain problem through decades of efforts. The main experiences are:

- China has always stuck to the principle that agriculture is the foundation of the national economy, giving top priority to agriculture in national economic development.
- China has made the increase of grain production the key point in rural economic work, making all possible efforts to ensure a steady increase in total grain output.
- China had carried out the reform of rural relations of production, including implementation of the policy of the household contract responsibility system with remuneration linked to output, the two-layer management system featuring the integration of centralization and decentralization, expanding the scope of market readjustment for grain and the price of grain adjusted rationally so as to mobilize the enthusiasm of the farmers for grain production.
- The basic conditions for agricultural production have been continuously improved by expediting scientific and technological advances in agriculture, improving the quality and quantity of farming equipment, increasing agricultural input and protecting the ecological environment, and by sustainably improving agricultural production conditions, especially through development of irrigation.
- Given the precondition that grain production is never to be compromised, land resources have been developed and made full use of in a comprehensive way while a diversified economy has been vigorously developed to increase farmers' income.

It was pointed out that suitable calories, high protein and low fat would be the basic characteristics of the suggested Chinese food consumption model. Then the paper predicted the future demand for food. It was pointed out that China would take achievement of basic self-sufficiency and utilizing domestic resources as the basic

principle for solving its grain problem. Normally, China would aim at producing 95% of the self-sufficiency rate for grain. So the net import of grain from the world market should be less than 5% of domestic consumption.

It was pointed out that there was still large potential for further grain production in China. This arose from increasing the existing grain yield, developing arable wasteland, applying and extending agricultural technologies, utilizing non-grain food, and reducing losses in grain harvesting, transporting, storing, sale and processing.

Finally, it was pointed out that the main measure for improving China's food security were: to protect cultivated land and control urban sprawl; to develop agricultural infrastructure, especially to develop irrigation; to develop production of agricultural materials; to increase investment in agriculture from financial institutions and banks; to implement the "seed programme" to provide good seeds to farmers; to strengthen skill training of farmers; to develop grass husbandry, and to develop aquaculture in marine and fresh waters.

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Bibliography

Information Office of the State Council of the People's Republic of China (1996). *White Paper: The Grain Issue in China*, published by the State Council.

Information Office of the State Council of the People's Republic of China (1996). *Food Security in China*, published by the State Council.

State Council of the People's Republic of China (1998). *Regulations on the Protection of Basic Farmland*, promulgated by Decree No. 257 of the State Council of the People's Republic of China on December 27, 1998.

Websites providing data on food production in China:

www.fao.org

www.iiasa.ac.at/Research/LUC/ChinaFood

Biographical Sketches

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