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Research Article

Study on Food Grain Safety and Countermeasures in Gansu Province

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Abstract: Our country is a person much less of the developing countries, guarantee food security is always a priority at all levels of government. Regional food security as constituting the national food security is a very important part of also cannot be ignored. In recent years, Gansu province basically realized the province of grain supply and demand tightness of balance. But by their natural environment is bad, resource shortage, economic development level is low and imperfect system restriction and the influence of such factors as the food security, Gansu province, the grim situation is not optimistic. This study food security in GanSu province research considerations for: From the food safety concept and three evaluation standard (grain production efficiency of its self-sufficiency rate level and grain, grain reserve level) start, the present situation of gansu food security was summarized and analyzed the GanSu food security challenges facing. On this basis, the food security problems on how to solve the GanSu province and puts forward a series of countermeasures.

Keywords: Countermeasures, food grain safety, food production, regional development

INTRODUCTION

Since 1994, the director of the United States World watch Institute, Lester Brown, published entitled ‘who will feed China? ‘on World Watch magazine (Christiansen, 2009). Grain safety problems of China have become topics of interest to scholars at home and abroad, as the total grain output rising gradually, this issue seems to be resolved (Du *et al*., 2011). Since 1999, however, due to the reduction of arable land, farmers' production enthusiasm down, the impact of grain prices and other factors, there is a general downward trend in grain production in China, the grain security situation is very grim, grain safety problem once again become the focus of attention (Chen, 2006). Since 2003, grain prices continued to rise in China's domestic market, wheat, wheat flour, rice, feed and other manufactured products prices rose significantly in grain-producing regions, this phenomenon has aroused more experts and scholars in another round of discussion on food security issues (Peilong and Juan, 2014).

While the majority of scholars are argue that at present China's grain is safe, but we still have to clearly see that the restrictive factors of affecting the food security still exist, some of the deeper structure and mechanism problems still plague us, to ensure grain security remains a top priority for the government at all levels. Since 2004, in the "file first" that the state is published continually, the agricultural issues related with the food security as an important task of the Party and state, in the one hand, it reflects the attention that given to agricultural and rural and in the other hand, China as an agricultural country, the grain security problems cannot be ignored.

Gansu province is located in the northwest inland in China, based on agriculture and animal husbandry and this province’s economy is less developed. In this province, the socio-economic development is relatively backward, agriculture occupies large proportion in the national economy, the natural environment is poor, the foundation of agriculture is weak and the phenomenon of rural poverty is serious. After years of effort, the Gansu province agriculture got rapid progress and has obtained great achievement. Based on total grain output of 5 million tons in 1974, the output was 6 million tons in 1989, 7 million tons in 1993, 8 million in 1996 and got 8.72 million tons in 1998. In the 2009, the production more than 9 million tons. The production will strive to break through 10 million tons in 2011, basically realized the tightness of grain supply and demand balance in the province. But due to the impact and constraints of the low level of socio-economic development, the imperfect system, Inadequacy of mechanisms and other factors, the situation of grain security in the Gansu province which located in food-deficit area in China is still grim and not optimistic. Base on a comprehensive understanding in the connotation of grain security, this study analyze the grain production, reserves, levels of self-sufficiency and

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challenges in Gansu province. And take an empirical analysis of current situation of grain security in Gansu Province, trying to figure out strategies and methods to achieve grain security in the province.

MATERIALS AND METHODS

With the development of social economy and the progress of science and technology, the connotation of the concept of grain security constantly enrich and the denotation is continually expanding (Byun *et al*., 1999). Nearly half a century, people awareness of food security has experienced from phenomenon to essence, from local to comprehensive, from quantity to quality of such a process of constantly enrich and deepen.

Grain safety problem exists in the whole history of human society, but truly become the focus of people's attention and research, was started in the 1970 of the 20th century, originally came from the FAO of the United Nations in order to respond to the food crisis, the definition of the concept at that time is: to ensure that any person at any time can get enough needed food in order to survive and health. The basic requirement is to promote governments to pay attention to world food security issues through a series of measures and take appropriate national policies and measures to implement the food Security to "Global Food Security (Barrett, 2002)".

In April 1983, FAO developed this concept, pointing out that the essence of food security is "everyone at any time can buy and afford basic foodstuffs." This definition, which focuses on food demand and stresses the production of enough food and the maximum stable food supply, to ensuring that all people in need can get enough food (Ahn *et al*., 2002). In November 1996, the Rome Declaration on world food security and World Food Summit Plan of action discusses the meaning of food security again, that "only when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and preferences for active and healthy lives, the food security would be able to achieve." This phrase, put forward higher requirements, not only clarified the requirements of the economy, but also increases the meaning of poverty and not only get enough food in quantity but also guarantee safe and nutritious in terms of quality. On the food security objectives, the phrase improve food nutrition and security to a new hierarchy.

In September 4-6th, 2001, the World Food Security Conference hold in Bonn, Germany also mentioned the concept of sustainable food security, introduced sustainable development strategies to the concept of food security. It requires no pollution, pollution-free, to provide consumers with enhanced health, ensuring longevity of grain and other foods.

The economics of food production: Food security should be obtained at a reasonable cost. That is on the basis of the right to be able to protect people's basic survival and the social stability, as much as possible to improve the efficiency of resource utilization, reduce energy consumption and reduce external costs. The economics of food production can be studied from the perspective of resource optimal allocation. With this simple assessment tool, can not only make an initial judgment on the efficiency of food supply, also improve the proportion of investment and quality of production factors under equilibrium conditions. Gansu major grain production cost is not conducive to increasing farmers' income, the main grain of wheat in Gansu unit production cost is 1.12 Yuan/kg, slightly lower than the national average, but compared to the country of high grain production, unit production costs was 2.5 times than Canada. The unit production costs does not have a comparative advantage at all. Further analysis found that the restriction of Gansu grain production costs remain high is mainly due to a large surplus of rural labor force and low level of agricultural modernization. In the composition of the wheat production costs in Gansu province, labor force is 4 times than Canada and mechanical inputs is Canada's 32%. Compared with the mechanized mass production, Dispersed small-scale peasant economy was at a disadvantage obviously.

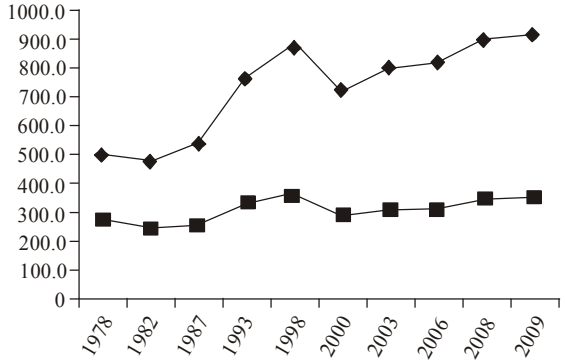

Fig. 1: Grain production of Gansu (1978-2009)

Longitudinal analysis of the overall grain production in Gansu province: Statistics show that food production in Gansu province in 1978 was 4.91 million tons, in 2009 rose to 9.06 million tons (Fig. 1). As can be seen from Fig. 1, food production in Gansu Province showed undulating upward trend in general. From 1978 to 2009 can be divided into several phases: the first phase (1978 to 1982), the downward phase of small amplitude. Grain production was 4.91 million tons in 1978, the production reached 4.69 million tons in 1982, in 1980 and production was a large increase in amplitude, reaching 4.925 million tons. The second phase (1982 to 1987), yields stability. Grain output stable at around 5.3 million tons. The third phase (1987 to 1993), food production increased, this period consists of two small stages, first is 1987 to 1990 and the other is 1991 to 1993. 1987 grain production was 5.294 million tons, increased to 6.907 million tons in 1990 and reached 7.583 million tons in 1993. The fourth

phase (1993 to 2000) and renewed steep drop in food production stage. From 7.583 million tons in 1993, down to 6.442 million tons in 1995 and increased to 8.206 million tons in 1996, in 1998 grain production got to the maximum, at 8.72 million tons. Subsequently, because of the state returning farmland to forest (grassland) policy implications, grain production fell sharply, production was 7.135 million tons in 2000, with the level of 1990, 1994. Fifth stage (2000-2009), continued growth in food production, apart from the decline in 2006, grain production in other years are increased compared with the previous years.

Longitudinal analysis of the per capita grain situation in Gansu province: With the improvement of people's income in our country, the residents of food consumption structure will be significant changes, residents' consumption of on rations and vegetable will gradually reduce and consumption of animal foods will gradually rose. This also reflects the dietary quality will improve with the improvement of income level, but food is still as the main material foundation of this improvement. With resources status of intensified, food production whether can meet residents directly consumption of problem will more severe. From 2001 to 2003, the per capita grain production in Gansu province have larger fluctuation. The production was 279.04 kg in 2001, 273.18 kg in 2002 and 301.89 in 2003.

As can be seen from Fig. 1, the change of per capita grain is similar to the grain yield in Gansu province and also has gone through several stages of development. But generally speaking, to achieve the goal of 400 kg of grain per capita in Gansu province, also needs to go through a difficult process. Especially in the case of shortage of agricultural resources to realize food security is difficult. In 1995, there was a serious drought in the province-wide, drought-affected areas reached 262,000 hm^2. Per capita food down to the lowest point in the 1990s, only 269.7 kg. In 1998, the per capita grain had reached historic highs, at 351.1 kg and thereafter, as a result of the national implementation of the Grain for Green Project, the area sown to grain had certain amplitude decreases, thus food production and per capita food production has a certain level of decline. After 2000, Gansu province grain production increased by 9 years in a row, but per capita only reached 343.8 kg, while the 400 kg/capita food production index, just the world average level, which is not a high indicator. Taking into account the population will continue to grow, the acceleration of industrialization, as well as the implementation of converting cropland to forest and grassland project, the shortage of arable land and water resources will become increasingly, therefore, the task is daunting to achieve 400 kg/capita food production. Thus, the per capita food production of 400 kg, is not a high level, but a difficult targets.

DISCUSSION AND CONCLUSION

Food security is relative and restricted by many factors, there is always the potential risks. Gansu Province located in the Inland Northwest, due to the low level of economic development, agricultural production of the natural environment is poor and foundation is weak, coupled with the impact of climate anomalies and other factors, the food safety risks become higher. Therefore, we must strengthen the awareness of food safety, according to the thinking that protection of arable land, increasing inputs, adjusting the structure, relying on science and technology, engage in high-yield, increasing the total amount, responding to the new understanding of domestic and international of the food security, updating the concept of food security, establish the food supply as the core, to ensure market total supply of food and the basic needs of low-income groups, to ensure nutritional security of food supply based on the importance of food security, to form an open, effective and sustainable food security View. On the food supply capacity, not only pay attention to the amount of food safety, but also to the importance of improving the quality and efficiency of configuration resources for food and the development of specialty food. On the supply-demand balance for food, not only to pay attention to regulation of food stocks and reserves, but also to pay attention to the role of the circulation and inter-regional trade. Balance between the food area, not only emphasizes self-seeking balance, but also give full play to the comparative advantages of each region, especially in the areas where grain area, water resources, climate, resources and planting techniques have certain advantages, such as the Hexi area, but also to play the comparative advantages of grain cultivation, increase grain acreage of protection, strict control of food and non-food industry to expand grain production area; Meanwhile, adjusting the structure of varieties of food according to residents' consumption structure change continuously and paying attention to the diverse needs of food safety and food hygiene consumers at different levels, changing from food security to food safety, comprehensive exploitation of food resources, expanding the sources of food.

Coordinating to solve the rural issues and improve grain production capacity: Food security is not just food production or circulation problems, but closely related to the level of development of the national economy as a whole, industrial structure, institutional arrangements and national policy and the global economy. Although the basis for food security is in agriculture, solve the problem of food security must go beyond agriculture, comprehensively implement the scientific concept of development, promoting the socialist new countryside construction,

comprehensively address associated with food security "three rural" issue, the rural ecological environment has been improved, farmers' income continued to increase and agricultural production capacity increased steadily. To do this, first, we must take all effective measures to develop modern agriculture, transform agriculture with modern science and technology and improve the level of agricultural materials equipment and the level of modernization. Breaking through the limitations of traditional farming as soon as possible and be well versed in food production, food deep processing, logistics, technical support and information services, secondary and tertiary industries, realizing the industrialization of the food business. Secondly, for the fragile ecological environment in Gansu Province, poor natural conditions for agricultural production, agricultural and underdeveloped infrastructure and lack of investment in agriculture and dwindling arable land and other issues. Strengthen water conservancy construction, improve agricultural production conditions and ecological environment, but also implement the most stringent farmland protection system to the existing grain area according the law. At the same time, increasing agricultural input of science and technology and strive to improve grain yield per unit area, improve grain output, promote sustainable development of food production. Third, formulated a series of preferential policies of agriculture for the main problem, doing everything possible to mobilize farmers' enthusiasm for growing grain, so that they really benefit from grain cultivation and eradicate the phenomenon of abandoned land, control of the young migrant workers in the labor force Agricultural production can withstand scale. Finally, increasing farmers' income as the center, continue to advance the adjustment of agricultural and rural economic structure. On the premise of ensuring total food increased, give full play to regional advantages in resources and geographic advantages, suit measures to local conditions, scientific planning and rational distribution, implemented step by step, to speed up grain growing structure, distribution structure and structural optimization and upgrading.

Protection of arable land and gradually establish and perfect the system of the protection of basic farmland: Must implement the strictest arable land protection system and stabilize the country's grain sown area at 16.5 million acres. Protect based wood farmland effectively, strictly prohibited indiscriminate occupation of arable land and implement special protection policy on food production base. National and Gansu provincial government need to take out some money, reclaiming and developing arable land designedly. In order to ensure the stability of grain acreage and gradually increase the grain acreage designedly according to the demand.

Aiming at the pursuit of balance in the province, improve the food security reserve system: Grain reserves is not only the material basis to protect regional food security, but also the primary means of government to regulate and control the grain market. Frequent natural disasters, greater volatility of agricultural production, coupled with relatively poor transport, agricultural financial difficulties and mostly ethnic minorities in the Gansu province. It is significant to establish appropriate size and rational structure of the food security reserve system. According to the food supply and demand situation and development trend of Gansu province, food supply should be dominated by supply in the province, outside the province transferred as supplemented and self-seeking balance as the target.

This will require the establishment of an appropriate scale and rational structure of the food security reserve system, play the role of safety inventory in grain supply and demand balance. According to the State Council on the number of food reserves determined in accordance with "producing 3 months, sales areas 6 months' standards, strengthening the longitudinal grain reserve system and consolidating grain reserve capacity. On the basis of the quality and quantity to complete the task on provincial grain, also according to the local food, the frequency of disasters and so actively promote local reserves and farmers' self-storage mechanism, reasonably determine the per capita grain index and actively carry out scientific grain and promote rural grain storage technology. And gradually increase the level of reserves in rural areas, in order to adapt to the changing of food supply and demand situation. Ensuring the scale and quality of provincial grain reserves and speeding up stale rice rotation job. Meanwhile, strengthen the sense of responsibility and mission of governments at all levels to grain reserves, support and encourage the establishment of grain reserve system in city and county levels, enhance the capacity of local government regulation of the grain market. According to "Grain Circulation Management Regulations" and combined with the actual country, focusing on food enterprises to determine the maximum and minimum inventory standards. Use of state grant preferential policies implementing food reserves, reserve points, reserve costs and standardize management, to take on a range of food control task, for something happens to use and further enhance the "Cistern" regulatory function.

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