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Research Article

Influence of Food Consumption Structure Change on the Development of Agricultural Economical Development in the Accelerated Urbanization of China

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Abstract: This study analyzed the change of food consumption structure of our country from 1990 to 2012, estimated the climbing space for per capita food consumption level and discussed the influence of food consumption structure change on agricultural development in the accelerated urbanization. Finally, relative conclusions were drawn out and policy suggestions were proposed accordingly.

Keywords: Agricultural development, food consumption structure

INTRODUCTION

Food from agricultural production is one of the material basis for maintaining human life. Development history of many countries around the world indicate that, with the improvement of social production development and living level, living style and food consumption structure constantly changes, thereby leading to the transformation of agricultural structure. Since reform and opening up, with the rapid and continuous development of economy in our country, living level of urban and rural residents greatly improve and the food consumption structure gradually changes. Therefore, agricultural development in our country is facing new challenges and opportunities.

So far, theoretical field made many researches on this problem: Wang and Yang (2007) discussed the agricultural development strategy of our country through analyzing food consumption trend of urban residents in our country with measurement model; Liang *et al*. (2013) made dynamic analysis on food consumption of different income groups applying food consumption data of urban residents from 1995 to 2010 by AIDS model. Cao and Geng (2014) studied the influence of food consumption structure on food industry with panel data model and proposed policy measurement for food industry development in central plains economic region accordingly. Sun and Ren (2014) studied the food consumption structure of Chinese urban residents applying per capita disposable income and food consumption expenditures data of residents from 31 provinces in 2012 by ELES model and obtained marginal propensity to consume, income elasticity and own-price elasticity of various food after regression. Based on emergy theory, Cao *et al*. (2012) compared quantitative relation between weight form, energy form and emergy form of animal food and vegetarian food and quantitatively analyzed variation trend and characteristics of food consumption of urban and rural residents.

However, the current researches focus on quantitative analysis of food consumption structure of urban and rural residents of our country, but ignored that food consumption structure change of urban and rural residents is not the single factor for affecting agricultural development. We should analyze food consumption structure change of residents in our country and its influence on agricultural development.

DATA MATERIALS

With the continuous and rapid growth of economy in our country, living level of urban and rural residents greatly improves and food consumption structure also changes.

As shown in Fig. 1, among per capita product from rural family in whole year, grain decreased from 262.08 kg in 1990 to 164.27 kg in 2012; milk and daily product rose from 1.1 kg in 1990 to 5.29 kg in 2012; poultry and product rose from 12.59 kg in 1990 to 20.86 kg in 2012; vegetables decreased from 134 kg in 1990 to 84.72 kg in 2012; egg and product rose from 2.41 kg in 1990 to 5.87 kg in 2012; melons and fruits rose from 5.89 kg in 1990 to 24.12 kg in 2012.

As shown in Fig. 2, among per capita product from urban family in whole year, grain decreased from 130.72 kg in 1990 to 78.76 kg in 2012; milk rose from 4.63 kg in 1990 to 13.95 kg in 2012; pork rose from 18.46 kg in 1990 to 21.23 kg in 2012; vegetable decreased from 138.7 kg in 1990 to 112.33 kg in 2012; pork rose from 18.46 kg in 1990 to 21.23 kg in 2012; red meat rose from 3.28 kg in 1990 to 3.73 kg in 2012.

On the whole, food structure of residents in our country is transforming from vegetable fibre orientation to animal fat and high protein orientation. Consumption quantity of animal food (fish, meat, egg and milk)

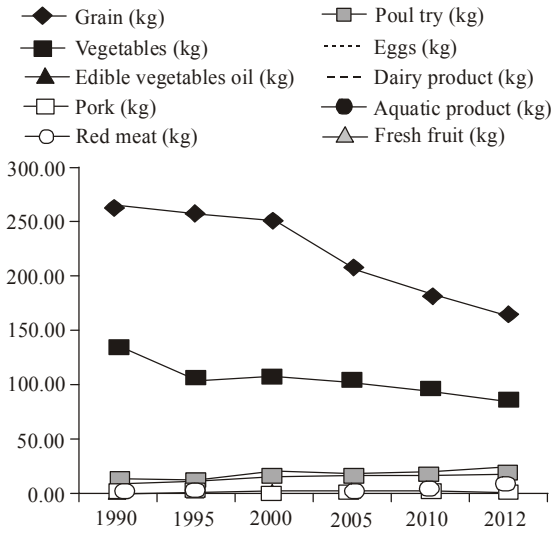

Fig. 1: Consumption structure change of rural residents from 1990 to 2012 (data from China Statistical Yearbook 2013)

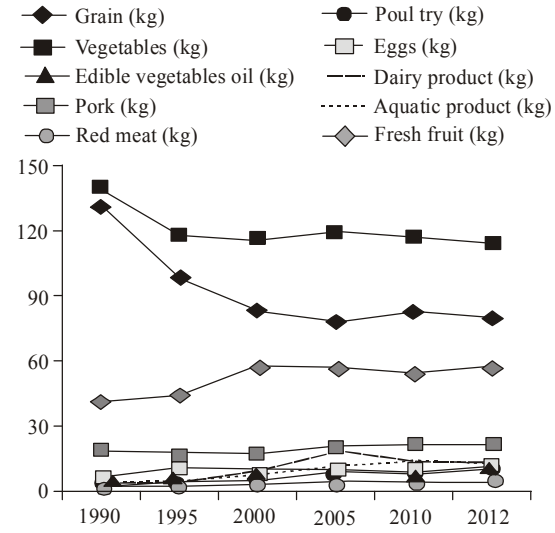

Fig. 2: Consumption structure change of urban residents from 1990 to 2012 (data from China Statistical Yearbook 2013)

increases year by year, especially the consumption of milk and dairy product. In contract, grain consumption decreases significantly, reflecting the replacement function of animal food. Vegetable and fruit consumption are relatively low but in a trend of rising, which is basically consistent with the conclusion of Zhang (2013). According to the statistics on food supply of countries and regions by FAO, per capita nutritional level of Chinese Mainland is close to Japan, Taiwan and Korea, that is 3 kcal each day. But in the perspective of food structure, consumption level of fish, meat, egg and milk are relatively low, but have large upward space.

METHODS

Estimation of upward space of per capita food consumption level: According to the consumption quantity of average and 40% upper and middle class of urban residents, the upward space of food consumption quantity is estimated with the method of Huang (2010) (Table 1). In 2012, per capita milk product in our country is 9.62 kg; per capita milk product consumption quantity of rural and urban residents are 5.29 kg and 13.95 kg, respectively, which are 31.06 and 99.05% away from upward space of per capita urban resident and 40% urban upper and middle class. In 2012, per capita consumption quantity of melons and fruits in our country is 40.08%; per capita melons and fruits consumption quantity of rural and urban residents are 24.12 and 56.05 kg, respectively, which are 28.49% and 87.85% away from upward space of per capita urban resident and 40% urban upper and middle class. It can be seen that, upward space of per capita consumption level of oil, meat, egg and its product, melons and fruits and dairy product are large, with 99.05% at highest and 7% at lowest.

With the continuous improvement of income level, consumers tend to pursue the improvement of consumption quality. In fact, proportion of grain, meat and vegetables turns from 8:1:1 to 4:3:3, which is an important change easy to be ignored, thereby producing important influence on the demand of agricultural food (Wang, 2011).

DISCUSSION

As analyzed above, national per capita consumption level of oil, meat and egg and its product and dairy product have a large upward space and demand of these agricultural products brings opportunities for the development of agriculture.

Table 1: Estimation of upward space of per capita consumption level (unit: kg)

Project	National/ capita	Rural/ capita	Urban /capita	Urban/capita of 40% upper and middle class	Gap with urban/capita upward space (%)	Gap with/capita upward space of 40% urban upper and middle class (%)
Vegetable	98.53	84.72	112.33	120.13	12.29	21.92
Oil	8.49	7.83	9.14	9.15	7.11	7.77
Red meat	20.66	16.36	24.96	27.92	17.23	35.14
Egg and product	8.2	5.87	10.52	11.57	22.05	41.10
Melons and fruits	40.08	24.12	56.05	75.29	28.49	87.85
Milk and dairy product	9.62	5.29	13.95	19.14	31.06	99.05

Farmers tend to use more agricultural resources in producing more high-value agricultural product. Agriculture in our country gradually transforms from low-value and overstocked production oriented on grain to high-value and overstocked production of fruits, vegetables and fish with double densification of capital and labor (Pang, 2013).

Currently, as urbanization progress of our country accelerates, employment of urban and rural non-agricultural labor rose from 279.10 million in 1990 to 498.26 million in 2011. Rural population decreased from 841.38 million to 648.88 million in 2012. Decreases of agricultural workers and agricultural population leads to two results: one is the improvement of average agricultural income because of decrease of people sharing agricultural income; the other is the increase of industrial and commercial employed population, which leads to improvement of income level of these people and improvement of consumption level of agricultural food. The enhancement of food consumption level will stimulate the development of agricultural development and then improve agricultural income. Therefore, rapid growth of urban and rural non-agricultural workers will further enlarge the change of food consumption structure and bring change of agricultural food demand, thereby further promoting agricultural development in our country.

Second, farmer professional cooperative develops rapidly in recent years. In July 2007, Laws on Farmer Professional Cooperative of country was released and implemented. After that, farmer professional cooperative develops rapidly in the aspects of overall amount, investment amount and member number. According to the statistics of Ministry of Agriculture and State Industrial and Commercial Bureau, there are 670 thousand farmer professional cooperative in 2007, with an increase of 33% compared to 2001 and average annual increase of 5.5%; at the end of March 2011, there are 407.6 thousand farmer professional cooperative, with an increase of 93% compared to 2007 and average annual increase of 23.2%. In the aspect of member amount of farmer professional cooperative, there are more than 28 million families joining the cooperative, accounting for more than 10% of total amount of farmers, with an annual increase of 25.4 million farmers compared to 2001. Rapid development of cooperative organization for farmers, one the one hand, can promote the modern development of agriculture, on the other hand, can make the jointed farmers contend with commercial capital in circulation domain, thereby improving loss of profits of agricultural producers in circulation domain. As a result, agricultural development in our country will be benign.

CONCLUSION

All in all, the content of this study can be concluded as follows:

- With the continuous development of economy, food consumption structure of residents is changing. Per capita consumption level of oil, meat, egg and its product, melons and fruits, milk products has large upward space and the demand of these agricultural foods will bring opportunity for agricultural development of our country.
- Farmers use more agricultural resources on producing more high-value agricultural product; the agriculture in our country gradually transforms from low-value and overstocked production oriented on grain to high-value and overstocked production of fruits, vegetables and fish with double densification of capital and labor.

Policy suggestions are as follows:

- We should encourage high-value and overstocked production of fruits, vegetables and fish with double densification of capital and labor. It not only adapts to the change of market demand, but also improves the income of farmer.
- We should strength agricultural infrastructure and science and technology input. Only the agricultural production ability improves, can we seize the opportunity of agricultural development brought by the change of food consumption structure? Also, we should speed up the development of cooperative, especially improving the developing quality of cooperative. Government should enhance guidance and management so as to prevent pseudo cooperative.

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