

DEMAND FACTORS OF THE CHINESE AGRI-FOOD INDUSTRY DEVELOPMENT

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Abstract

The aim of the article is to present the demand factors for the development of the Chinese agri-food industry and to outline the directions of this sector's development in accordance with the assumptions of government policy implemented under the 13th Five Year Plan of Economic Development of China.

The starting point for the undertaken analyzes is the assessment of the current state of the economy of China and the presentation of the directions of changes in the Chinese consumption model. The focus was put on the development potential of the Chinese agri-food sector, in the face of changes taking place in China. The impact of changes in the demand for agricultural and food products, on the level and structure of production as well as on the directions of the agri-food sector have been analyzed. In particular, the directions of expansion of Chinese enterprises, mainly expressed in the intensification of trade with other countries were presented.

The article is based on the analysis of data obtained from reports of specialist research institutes and consulting agencies, as well as other secondary sources of information.

Key words: agri-food industry, Chinese consumption model, demand for agri-food products.

JEL Code: O13, Q1

Introduction

Over the past decades, China's development has been primarily based on infrastructure investments, industrial production growth and exports. The underinvestment of rural areas, which was directly caused by this, and the predominance of production over consumption gave rise to the need to stimulate domestic consumption and provoked government intervention.

The People's Republic of China is a market of a huge development potential for agri – food products from all around the world. However a restructurization in the area of agriculture is absolutely necessary in the face of current changes in economy and consumption, socio –

economic challenges and the need to implement sustainable economic development. (Schwoob, 2018)

The aim of the article is to present the demand factors for the development of the Chinese agri – food industry and to outline the directions of this sector's development in accordance with the assumptions of government policy implemented under the 13th Five Year Plan of Economic Development of China.

The article is based on the analysis of data obtained from reports of specialist research institutes and consulting agencies, as well as other secondary sources of information.

1 Directions of economic development in China in the modern era

Currently, in the face of the Thirteenth Five-Year Development Plan's provisions' implementation, the consumer market has become the center of socio – economic policy in China. It is predicted that even if the annual real GDP growth decreases to 5.5% below the officially adopted target, the Chinese consumer economy will still grow by about half, reaching USD 6.5 trillion by 2020. On the other hand, generating an increase of USD 2.3 trillion in the next five years would be comparable to the increase in the country's consumer market 1.3 times compared to the market of today's Great Britain or Germany.

Among the main incentives stimulating transformation on the consumer market the following can be indicated:

- the formation of the middle class and an increase of the wealthy households role as an important consumption growth factors;
- the emergence of a new generation of consumers, spending their income more freely;
- and the growing role of e-commerce (Kuo, 2016).

The manpower resources that have been used up till recently have started to shrink rapidly as a result of the aging of the population following the one child's policy implementation in the country. The threat of falling into a trap of average economic growth became real.

In response to the situation occurred, in the currently implemented Thirteenth Five-Year Plan of Economic Development of China, meant for the years 2016-2020, the role of the quality of economic growth was emphasized, thus departing from the model based on rapid economic growth that has been implemented up till recently. This points to the growing awareness among Chinese elites of the need to direct economic growth on more balanced

path. This increase is also to promote greater social involvement and to solve the problem of growing income disparities. Most importantly the adopted plan is a response to the fact that the country's development model implemented so far, does not work anymore. Due to lower economic growth, it is visible that the role of investment and exports as a factor driving the Chinese economy is decreasing, while the role of private consumption in stimulating economic growth is growing (Xi, 2017).

The aim of the plan is to build a middle class in China by 2020 and to achieve a moderate level of social well-being. Until then, the government also assumes a doubling of GDP and income per capita in comparison to the results achieved in these areas in 2010 as well as maintaining the pace of economic growth at a level of at least 6.5%. These objectives are to be achieved by basing the economy on innovation and developing its own innovativeness of the country, as well as increasing the share of consumption in China's GDP. This is to lead to an improvement of the general standard of living of the population.

It is also expected that the change of the economic model and introduction of the structural reforms adopted under the provisions of the plan, will be directed at reducing state intervention, while increasing the role of the market. The market is to play a decisive role in the economy, while the Chinese government is to create favorable conditions for the companies, but not directly stimulating the economy. (Gong, 2018) In this way, the authorities want to rebuild trust in the Chinese economy after the slowdown that took place in the year of 2015, while avoiding the so-called "middle income traps". Despite the adoption of such objectives, the authorities intend to continue to steer and support the export activities of Chinese enterprises, as well as to invest in the production sector. This will allow an increase in the involvement of Chinese companies abroad. In this way also, the Chinese government hopes to get closer to the market model of economy, which is necessary to gain recognition from the European Union. Granting China the status of a market economy by the European Union would facilitate the export of surplus production from China to EU countries, which is currently their largest trading partner, while at the same time making it difficult for the EU to apply anti-dumping procedures to state-subsidized Chinese exports.

While attempting to combine market mechanisms with state interventionism, however, there is a fear that without the mechanisms used so far, it will not be possible to achieve the average annual 6.5% of economic growth, which is necessary to build the middle class. One should therefore expect the simultaneous introduction of market reforms and the intervention of the "visible market hand", eg by providing stimulation packages. It is also worth noting that the plan announces the implementation of large infrastructure projects, resembling stimulation

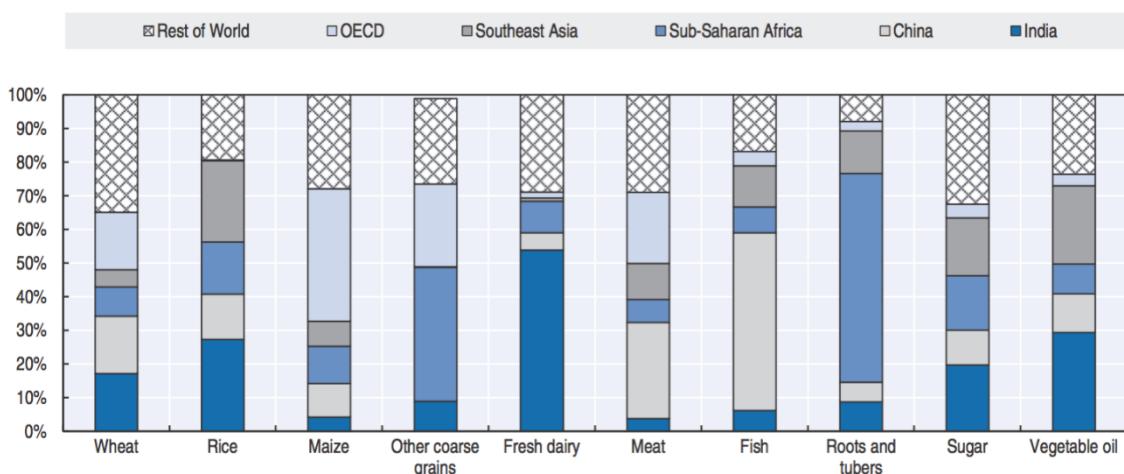
packages. The investments planned for implementation include also, among others: building a thousands of kilometers of roads or rail routes, construction of over 50 new airports, etc. (Luo, 2018; Liu, Wang, & Shi, 2018; National People's Congress Of China, 2016).

2 Changes in the food demand and consumption

In China, the increase in income resulting from the changes in the economic development model caused an increase in demand for food. In particular, the higher demand for meat and the intensification of animal husbandry increased the demand for animal feed. Despite the fact that in developed countries the demand for food has stopped, the support policy for biofuels has strengthened the global demand for maize, sugarcane and vegetable oils.

Fig. 1: Commodity consumption growth in years 2016-26

(Southeast Asia includes the following countries: Thailand, Malaysia, Indonesia, the Philippines, Viet Nam, Cambodia, Lao PDR and Myanmar)



Source: (OECD/FAO, 2017)

As can be seen in Figure 1. in the coming years China will continue to contribute to stimulating the demand for several key goods. First of all, they have a significant share in the global consumption of meat (29%) and fish (53%). With regard to cereals, it is anticipated that the total world consumption (including non-food use) will increase by 338 million tonnes in the years 2016-2026. Of which up to 38% will come from China, India and Sub-Saharan Africa. The share of China is also visible in the case of wheat (about 15%) and maize (about 10%) – despite the fact that developed countries play a greater role in the consumption of these products – and in the case of rice (about 13%) – despite the fact that India has the dominant share in this area (27%). In addition to the already mentioned product groups, China's share in the consumption of such products as vegetable oils (about 12% on a global scale), sugar (10%), roots and tubers (5%) and fresh dairy products (4%) is also visible.

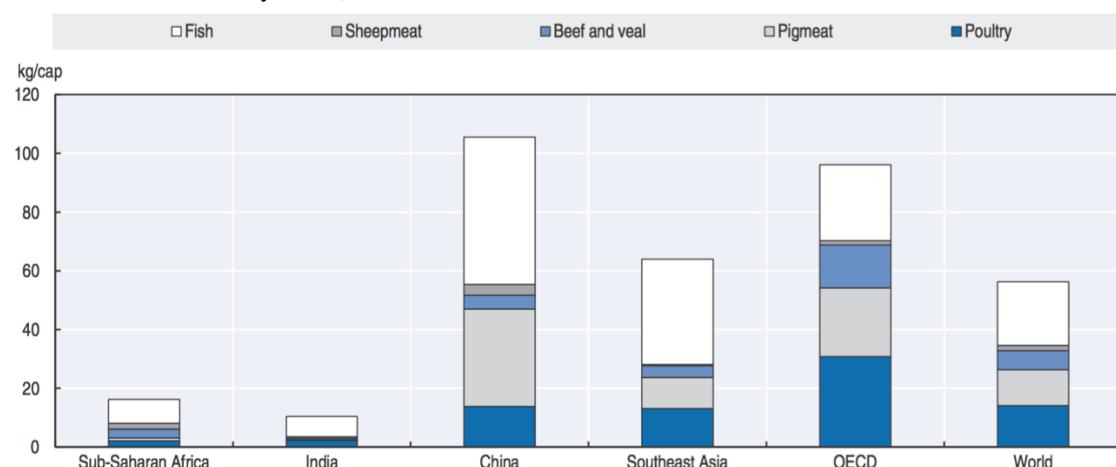
Even though in the coming years China will continue to play an important role in

stimulating the consumption of many goods, compared to the previous decade, the growth in the area of consumption will be much lower, which in turn will be reflected in lower growth at the global level. It is due to the fact that the income rate growth is reaching a more moderate level, and the inclination of households to spend additional income on food gradually decreases (Centrum Współpracy Gospodarczej Polska-Chiny, 2015).

After a strong increase recorded over the last decade, porkmeat consumption per capita in China reached 40 kg in 2016, which is one third above the OECD average (Fig. 2). It should be emphasized that the majority of porkmeat consumed in China is produced domestically, but the changes in meat demand in China also have an indirect impact on other markets through demand for feed. In this way, the changes that take place in China will naturally contribute to the lower growth of global demand for maize and soy, recorded in the following years. Therefore it is visible, that the Chinese increase in demand has been characterized by a strong increase in the consumption of animal protein (mainly from fish and porkmeat) and the related demand for feed. This is due to changes that occurred in the consumption preferences pattern in the Chinese food market.

Fig. 2: Per capita consumption of meat and fish in 2026

(Southeast Asia includes the following countries: Thailand, Malaysia, Indonesia, the Philippines, Viet Nam, Cambodia, Lao PDR and Myanmar)



Note: Southeast Asia includes Indonesia, the Philippines, Malaysia, Thailand, Viet Nam, Lao PDR, Myanmar and Cambodia. Per capita consumption expressed in retail weight for meat; in live weight equivalent for fish.

Source: OECD/FAO (2017), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), <http://dx.doi.org/10.1787/agr-data-en>.
StatLink <http://dx.doi.org/10.1787/888933521066>

Source: (OECD/FAO, 2017)

The Chinese model of food consumption is also characterized by a relatively high share of fish consumption. In the last decade the level of fish consumption in this country amounted for 21 million tons of fish out of 31 million tons of total global consumption. This result was caused by the increase in fish consumption per capita from 30 kg in the year of 2007 to 42 kg per capita in the year of 2016. It is twice as high as the average annual fish

consumption in OECD countries (25 kg per capita) and furthermore forecasts indicate that by 2026 Chinese fish consumption per capita will increase up to 50 kg. Nevertheless this is still a smaller increase rate than it was observed in the previous decade, which at the global level results in a significant reduction in the annual growth of consumption.

As in the case of fish consumption, over the last decade the annual consumption of porkmeat has increased in the world by 18 million tonnes. It needs to be emphasised that 59% of this increase (11 million tonnes), China was responsible for.

Based on the continued growth in the area of consumption per capita, in subsequent years China will remain a strong growth driver also in the global poultry market, at the same time contributing to an increase in demand for sheepmeat (from 2 million tons in the previous decade to 3.2 million tons in subsequent years), for China predicts an increase in sheepmeat consumption from 3.5kg to 4.2kg per capita.

Both the consumption of fresh dairy products and beef per capita in China remains at a much lower level than in the aforementioned product groups (OECD/FAO, 2017).

3 Production of agricultural and food products

Maintaining the upward consumption trends of these basic food products makes the further development of Chinese agri-food sector necessary.

It needs to be emphasised that together with the United States, the European Union and Brazil, China belongs to the group of areas called „the big four". The predictions indicate that by 2026, these four countries will be responsible for roughly 78% of world porkmeat production, of which China will be responsible for as much as 47% of total.

Globally, animal disease outbreaks and trade policy remain among the main drivers of evolution and dynamics in global meat markets. Similar to the implementation of various trade agreements, such as the ratified free trade agreement between China and Australia called ChAFTA.

It is anticipated that after 2017 meat production will increase in China. Growth will be driven mainly by poultry production, which will grow by 13%, from 117 million tonnes to 132 million tonnes and porkmeat production, with planned increase of 10% from 116 million tonnes to 128 million tonnes. It is also planned to increase the production of beef, veal and sheepmeat. In particular, sheepmeat will record a strong, 21% increase, from 14.7 million tonnes in 2017 to 17.5 million tonnes in 2026.

China also has a dominant share in world fish production. According to statistics, by 2026 fish production is to increase to almost 200 million tons. This increase will be driven

solely by the expansion of aquaculture production, for China will maintain its share in this area at over 60% of world fish production.

Furthermore, the growing demand for protein meals, especially in China, was the main driving force behind the expansion of global oilseed production. It also increased soybean consumption due to its higher protein content. However, it is expected that the increase in global soy trade will slow down significantly in the next decade, which is a direct result of the slowdown in soy consumption in China (Kita, 2017; OECD/FAO, 2017).

4 Problems of the agri-food sector development

Among the main problems with which the agri-food sector in China is struggling today, the following should be indicated:

- limited amount of arable land and inefficient structure of farms, which is mostly dominated by small and medium-sized farms;
- low productivity of agriculture, which makes local production unprofitable and relatively expensive;
- differences in prices between Chinese and foreign food products (depending on the product category), up to 30-40%;
- Chinese consumers' preference for foreign food products.

Solving these problems requires deepening institutional cooperation in the agri-food sector of products coming from Central and Eastern Europe, both bilateral and multilateral. This will provide China with a supply of high-quality processed and unprocessed food products, including meat, dairy products, powdered milk for children, jams, vegetable oils, honey, fish products, wine, as well as cereals. It is emphasized that products from the countries of Central and Eastern Europe are compliant with high quality standards adopted by the European Union, but much cheaper than products from Western Europe, currently dominating in the export of food from the EU to China (Han, Li, & Zhao, 2018; Jakóbowski, 2015).

China is currently implementing a reform that changes the existing structure of farms in favor of large farms, while at the same time the cereal production is subsidized and the import of food products is strictly regulated. Some observers also point out that the embargo imposed by China, justified by sanitary reasons, is also motivated by the desire to support local enterprises. However, the domestic food security crisis and growing concerns about the domestic dairy industry, have contributed to the growing need for high-quality dairy products,

especially from foreign markets (EU SME Centre, 2012)

Moreover, it is necessary to emphasize the infrastructural investments carried out in the agri-food sector, which lead to the improvement of efficiency, time invested and distribution costs, stimulating local economies by increasing the demand for higher value products. The distribution network of the cooling chain throughout the country, which is still underdeveloped, also requires intensive development.

However achieving sustainable development of the agri-food sector requires from Chinese enterprises continuous update of knowledge and the use of modern technologies. Along with the rapid economic development and progress of science and technology, the people's need for food goes far beyond the simple satisfaction of basic needs, including nutritional needs. For it is no surprise that the current emphasis in China is on the need to introduce more innovations in the areas of food safety, smarter production and distribution of food, as well as the implementation of new technologies in agricultural areas (Xi, 2017). This led to the creation of a new business term – "agri-food technology", which focuses mainly on promoting the development of agriculture and the food industry using new technologies and includes among others: work on finding or creating food substitutes and new seeds, as well as development of new solutions for technologies used in restaurants, smart kitchens, food safety, product tracking and agrotechnics (Schwoob, 2018).

Although the population of China (1.41 billion) accounts for one fifth of the world's population, the arable land in China represents only 5-7% on a global scale. It was exactly this shortage of arable land, combined with the increase in population, that resulted in making the development of innovation in the field of agriculture the top of the Chinese government's list of priorities (Jinyue, 2018).

The President of the People's Republic of China, Xi Jinping, emphasised during his speech in 2017, the key role of agricultural modernization in the current government policy. This is in turn possible only through the development of research and technological activities of the agri-food sector (Zhang, 2017).

This was also reflected in the Thirteenth Five-Year Plan of Economic Development of the Country. For two main paths of development of Chinese agriculture and natural sciences as well as technological innovations have been adopted under the provisions of the plan.

First of all, in the coming years China will focus on improving the high-tech industry within agriculture. Achieving this purpose will require strengthening of the key areas, i.e. related to: biotechnology, intelligent machines, new agricultural materials, modern food production and agri-environmental protection. Moreover, a construction of science and

technology parks and agricultural incubators is planned to be carried on the regular basis, which is to encourage the use of innovations to improve the quality of processes, business models and customer service as well as the development of innovative high-tech enterprises in the agri-food sector.

Secondly, it is planned to develop and strengthen international cooperation in the field of agricultural science and technology. For this purpose, the flagship strategies of the Chinese government, ie *Go Global* and *One Belt and One Road* will be used. This will create a wider scope for agricultural development and the full use of markets, included in these two initiatives and the resources that they generate. This will in turn improve China's ability to create innovation in key areas of agriculture. In this way, international cooperation of countries in the field of undertaking bilateral and multilateral research and development of agricultural technologies will also be strengthened (National People's Congress Of China, 2016).

Conclusions

Current changes in the socio – economic policy towards increasing the role of food consumption and demand as the main factors stimulating the economic growth and the growing challenges related to the economic reform process in China do not change the dominant position of the country in the global food market. The condition for achieving positive effects in this area is however the implementation of a sustainable development strategy aimed at improving the quality of social and economic development, the quality of the products offered, food security, and modernization of production. However, the success of structural changes in the development of the agri-food sector requires intensification of cooperation in the field of undertaking multilateral research and developing agricultural technologies.

References

- Centrum Współpracy Gospodarczej Polska-Chiny. (2015). *Jak ugryźć Państwo Środka? Sektor spożywczy w Chinach* (Rep.). Warszawa.
doi:<https://china.trade.gov.pl/pl/aktualnosci/186601,jak-ugryzc-panstwo-srodka-sektor-spozywczy-w-chinach-.html>
- EU SME Centre. (2012). *Rynek artykułów żywnościowych i napojów w Chinach* (Rep.).
doi:http://www.gochina.gov.pl/files/?id_plik=120
- Gong, B. (2018). Agricultural reforms and production in China: Changes in provincial production function and productivity in 1978-2015. *JOURNAL OF DEVELOPMENT*

ECONOMICS, 132, 18-31. doi:10.1016/j.jdeveco.2017.12.005

Han, H., Li, H., & Zhao, L. (2018). Determinants of Factor Misallocation in Agricultural Production and Implications for Agricultural Supply-side Reform in China. *CHINA & WORLD ECONOMY*, 26(3), 22-42. doi:10.1111/cwe.12241

Jakóbowski J. (2015) *Współpraca handlowa w ramach „16+1”: sektorowy sukces eksportu żywności do Chin*. Ośrodek Studiów Wschodnich. Retrieved March 11, 2018, from <https://www.osw.waw.pl/pl/publikacje/komentarze-osw/2015-10-29/wspolpraca-handlowa-w-ramach-161-sektorowy-sukces-eksportu>

Jinyue, F. (2018). Exploring Agri-Food Tech Opportunities in China. Retrieved March 12, 2018, from <https://www.startupbootcamp.org/blog/2018/01/exploring-agri-food-tech-opportunities-china/>

Kita, K. (2017). Sektor rolno-spożywczy Chin w świetle liberalizacji światowego handlu rolnego – wyniki symulacji w warunkach równowagi ogólnej. *Studia Ekonomiczne*, 319. Retrieved April 4, 2018, from <http://yadda.icm.edu.pl/yadda/element/bwmeta1.element.cejsh-4bc7a6da-1fab-4422-b333-1320b6bdfcc0/c/06.pdf>

Kuo, Y. (2016). 3 great forces changing China's consumer market. Retrieved February 5, 2018, from <https://www.weforum.org/agenda/2016/01/3-great-forces-changing-chinas-consumer-market/>

Liu, S., Wang, R., & Shi, G. (2018). Historical Transformation of China's Agriculture: Productivity Changes and Other Key Features. *CHINA & WORLD ECONOMY*, 26(1), 42-65. Retrieved June 05, 2018.

Luo, B. (2018). 40-year reform of farmland institution in China: Target, effort and the future. *CHINA AGRICULTURAL ECONOMIC REVIEW*, 10(1), 16-35. doi:10.1108/CAER-10-2017-0179

National People's Congress Of China. (2016). *China's NPC approves 13th Five-Year Plan*(Rep. Issue 1). China: ThePeople's Congresses Journal. doi:<http://www.npc.gov.cn/npc/zgrdzz/site1/20160429/0021861abd66188d449902.pdf>

OECD/FAO. (2017). OECD-FAO Agricultural Outlook 2017-2026. OECD Publishing. Paris. Retrieved March 12, 2018, from http://dx.doi.org/10.1787/agr_outlook-2017-en

Schwoob, M. (2018). Food Security and the Modernisation Pathway in China Towards Sustainable Agriculture Introduction. *FOOD SECURITY AND THE MODERNISATION PATHWAY IN CHINA: TOWARDS SUSTAINABLE AGRICULTURE*, critical studies of the asia-pacific series, 1-25. doi:10.1007/978-3-319-65702-8_1

Xi, J. (2017). Full text of Xi Jinping's report at 19th CPC National Congress. Retrieved April 4, 2018, from http://www.chinadaily.com.cn/china/19thcpcnationalcongress/2017-11/04/content_34115212.htm

Zhang, Y. (2017). Rural vitalization strategy, timeline unveiled. Retrieved April 3, 2018, from <http://www.chinadaily.com.cn/a/201712/30/WS5a46c34aa31008cf16da44fa.html>

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