

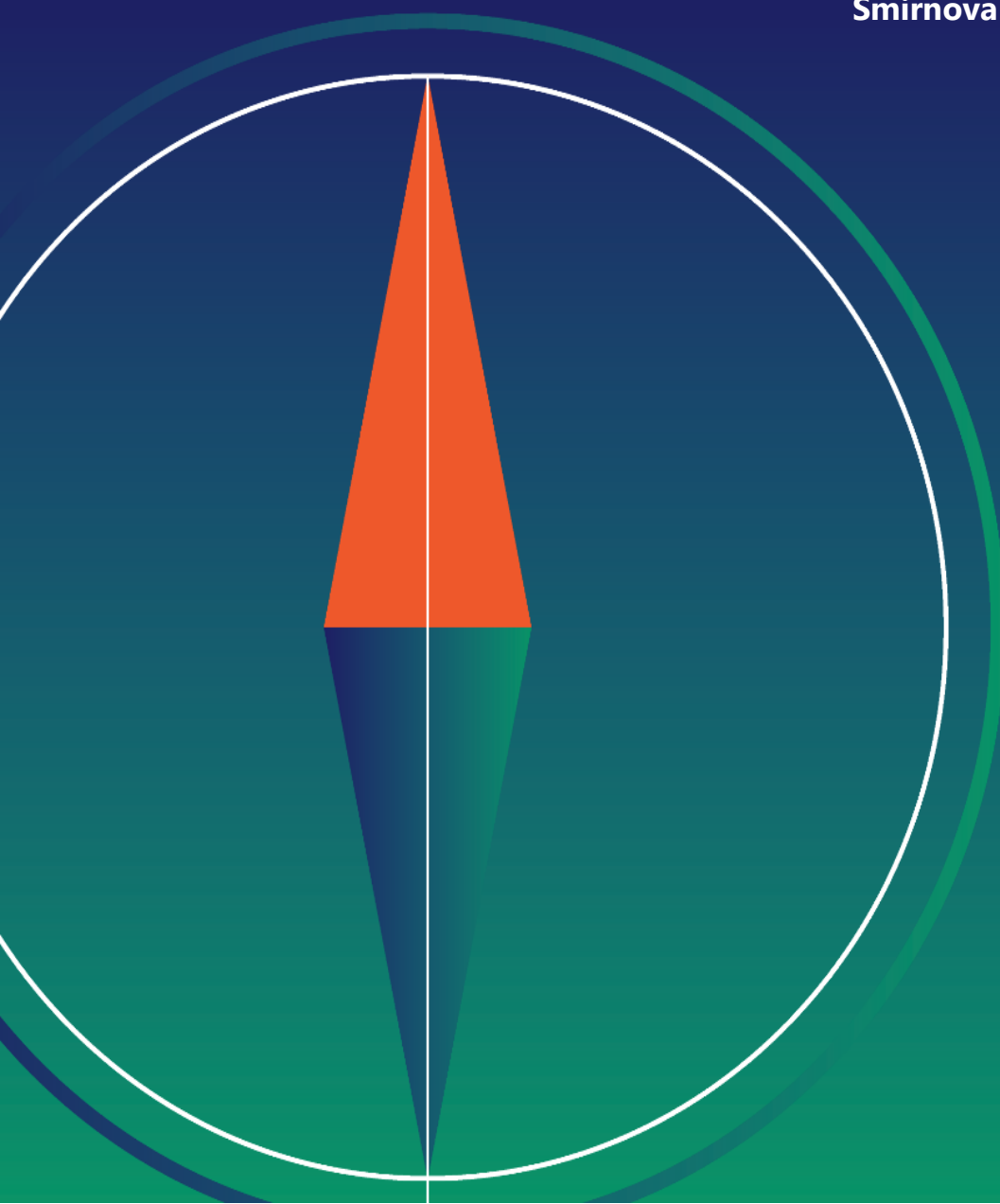
**2020**

**Analytical report  
W1/07/2020**

**CCEIS NRU HSE**

**CHINA: ENSURING FOOD SECURITY  
IN THE LIGHT OF THE PANDEMIC**

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*The analytical report studies relevant issues and trends in China's food security. It evaluates the measures undertaken by the Chinese government to stabilize the situation at both national and provincial levels (in the case of Hubei province). Lastly, the research looks into the situation in the agricultural sector and tendencies, which have emerged during the COVID-19 pandemic.*

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## Introduction

The COVID-19 pandemic has drawn global attention to the issue of China food security. For a long period of time, it has been unclear which impact the pandemic had on agricultural production and the food industry. There were occasional panic waves among the Chinese caused by the uncertainty of food supply and price stability. The situation was catalyzed by Asian agriculture exporting countries (for instance, Vietnam) restricting their exports.

Taking into account the population of 1.4 billion, food security has always been one of the priorities for the Chinese government. News in the press about scandals related to food security drew special attention to the issue as well. For instance, the Customs and Excise Department of Hong Kong (Hong Kong customs) withdrew 2.5 tons of meat illegally imported from the Mainland China in June 2020<sup>1</sup>.

Before the pandemic, there was a positive trend in the field: according to Global Food Security Index by The Economist, China has managed to reach the 35<sup>th</sup> position by 2019, while in 2012 it was the 38<sup>th</sup><sup>2</sup>. In 2019 Chinese authorities also tightened punishments for violating the food quality requirements<sup>3</sup>.

Nevertheless, despite the measures undertaken by the government, ***this year has become a period of challenges for national agriculture. The first challenge is related to the outbreak of African swine fever. The second relates to the pandemic of the novel coronavirus and its consequences.***

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<sup>1</sup> Hong Kong customs seizes 2,500 tonnes of meat bound for mainland China so far this year, more than in previous 11 years combined // South China Morning Post. 19.06.2020. Available at <https://www.scmp.com/news/hong-kong/law-and-crime/article/3089787/hong-kong-customs-seizes-2500-tonnes-meat-bound> (accessed 20.06.2020)

<sup>2</sup> Global Food Security Index // The Economist. 2020. Available at <https://foodsecurityindex.eiu.com/Index> (accessed 13.06.2020)

<sup>3</sup> Amended food safety law in China to effect from December 1, 2019 // SGS Offices & Labs. 15.11.2019. Available at <https://www.sgs.com/en/news/2019/11/safeguards-16119-amended-food-safety-law-in-china-to-effect-from-december-1-2019> (accessed 20.06.2020)

Regular problems, e.g. high-quality food shortage, following health standards and product certification, were aggravated by those caused by the disruption of production and supply chains as well as the higher risks of infected foods imports.

The recent outbreak of the coronavirus in Beijing, which is closely related to sales of food on Chinese markets, has made these issues even more acute. Food availability for low-income citizens may decrease leading to additional health risks and a drop in national living standards.

Furthermore, the risks of food shortage and famine are growing globally, especially in the countries of the Global South. According to the UN data, the number of starving is likely to double in 2020, with Asia and Africa making up the largest contribution due to falling incomes<sup>4</sup>. These factors create extra risks for China, where they increase proportionally with the population.

## **Animal husbandry: African swine fever outbreak and new trends**

In the first quarter of 2020, the outbreak of African swine fever caused 54%<sup>5</sup> decrease in pig meat production, resulting in 86% and 17% increase in prices for pork and beef to 40.19 yuan (5.74 US dollars) per kilogram and 70.74 yuan (10.11) per kilogram respectively<sup>6</sup>.

Major epidemic control instructions were formulated in the form of so-called “*ten bans*” (literary “ten must not” – “十不得”), which are the part of the Announcement №285 of the Ministry of Agriculture and Rural Affairs of the PRC published on 26 March 2020. These require that the manufacturers must not: 1) conceal information about new cases; 2) sell allegedly infected animals; 3) feed pigs with food waste; 4) use the vaccine against African swine fever illegally; 5) use fake certificates; 6) transport animals on non-registered vehicles; 7) change the final delivery destination of live pigs; 8) slaughter uncertified pigs; 9)

<sup>4</sup> Второй всадник: последует ли за эпидемией массовый голод? [Vtoroi vsadnik: posleduet li za epidemieii massovyi golod?; The second horseman: whether the pandemic would followed by the mass famine] // Izvestia. 01.06.2020. Available at <https://iz.ru/1016987/dmitrii-migunov/vtoroi-vsadnik-posleduet-li-za-epidemieii-massovyi-golod> (accessed 13.06.2020)

<sup>5</sup> В мире продолжает распространяться африканская чума свиней [V mire prodolzhaet rasprostraniat'sia afrikanskaia chuma; African swine fever continues to spread around the world] // Agro Investor. 23.04.2020. Available at (accessed 13.06.2020)

<sup>6</sup> 中华人民共和国农业农村部 [Zhonghua renmin gongheguo nongye nongcunbu; Ministry of Agriculture and Rural Affairs of the PRC] [official website]. 2020. Available at <http://zdscxx.moa.gov.cn:8080/nyb/pc/index.jsp> (accessed 13.06.2020)

independently dispose of the bodies of infected pigs; 10) violate the infection control practices<sup>7</sup>. Veterinarians and infectionists identify the centers of contagion and then lock such districts down on quarantine.

As a result, swine livestock began to recover in May. The number of sows and an overall livestock of pigs increased by 3.9% from April, exceeding an overall livestock at the end of 2019 by 38 million species<sup>8</sup>.

***Due to the outbreak of African swine fever, there was a significant reduction in the livestock of pigs, leading to a record volume of orders from foreign manufacturers in the first 5 months of 2020 alone.*** Vice-President of the Chinese Academy of Agricultural sciences Mei Xurong cites the growth figures of 4 million tons or 57%. China's import of pig meat from the United States, the world's leading manufacturer of this product, was growing especially fast<sup>9</sup>.

China's meat import from Russia increased as well. ***In January 2020, after seven years of negotiations, the Chinese government allowed two Russian companies to export beef.*** In April, 200 tons of meat from Miratorg were delivered to China. This year China plans to import 10000 tons of Russian beef in total<sup>10</sup>. In the first quarter of 2020, China's import of meat from all countries went up by 85% reaching 2.17 million tons (7.13 billion Euro (8.06 billion US dollars). Russia received permission to export chilled beef to China since 1 June 2020<sup>11</sup>, which shows an increasing interest in cooperation from Chinese companies.

Nonetheless, according to experts, the growth in pig meat import will be temporary. The livestock of pigs is expected to recover by more than 80% by the

<sup>7</sup> 中华人民共和国农业农村部公告第 285 号 [Zhonghua renmin gongheguo nongye nongcunbu baogao: di 285 hao; Announcement №285 of the Ministry of Agriculture and Rural Affairs of the PRC] / Ministry of Agriculture and Rural Affairs of the PRC. 26.03.2020. Available at [http://www.moa.gov.cn/gk/tzgg\\_1/gg/202003/t20200326\\_6340015.htm](http://www.moa.gov.cn/gk/tzgg_1/gg/202003/t20200326_6340015.htm) (accessed 13.06.2020)

<sup>8</sup> 5 月份农业农村经济运行向好态势持续巩固 [5 yuefen nongye nongcunbu jingji yunxing xiao hao taishi chixu gonggu; A positive trend of agricultural and rural economic operations continued to be strengthened in May] / Ministry of Agriculture and Rural Affairs of the PRC. 12.06.2020. Available at [http://www.moa.gov.cn/xw/zwdt/202006/t20200612\\_6346447.htm](http://www.moa.gov.cn/xw/zwdt/202006/t20200612_6346447.htm) (accessed 14.05.2020)

<sup>9</sup> «中国农业产业发展报告 2020»出炉今年:全国粮食产量有望达到 6.7 亿吨 [“Zhongguo nongye chanye fazhan baogao 2020” chulu jinnian: quanguo lianshi chanliang youwang dadao 6.7 yi dun; “China's Agricultural Industry Development Report 2020” released this year: national grain output is expected to reach 670 million tons] // CCTV. 03.06.2020. Available at <https://baijiahao.baidu.com/s?id=1668473319429033162&wfr=spider&for=pc> (accessed 14.06.2020)

<sup>10</sup> 俄罗斯牛肉来了, 不惧市场竞争 2020 年计划出口 1 万吨 [Eluosi niurou laile, bu ju shichang jingzheng 2020 nian jihua chukou 1 wan dun; Russian beef is here, not afraid of market competition, it is planned to export 10000 tons in 2020] // Sina. 12.05.2020. Available at <https://finance.sina.cn/2020-05-12/detail-iirczymk1217263.d.html?cre=tianyi&mod=wpage&loc=10&r=32&rfunc=67&tj=none&tr=32> (accessed 14.06.2020)

<sup>11</sup> Россия получила разрешение на поставки охлажденной говядины в Китай [Rossiia poluchila razreshenie na postavki okhlazhdennoi goviadiny v Kitai; Russia received permission to supply chilled beef to China] / Trade Representation of the Russian Federation in the PRC. 08.06.2020. Available at <http://www.russchinatrade.ru/ru/news/2020-06-08> (accessed 19.06.2020)

end of 2020 and production capacity is anticipated to meet the level of 2017 in 2022, reaching 59.72 million tons annually. Against this background, the imports are projected to decline until they reach 1.2 million tons in 2029<sup>12</sup>.

## Horticulture: grains

The pandemic of the novel coronavirus became another challenge of the first half of 2020. However, according to Chinese experts, it had minimal effect on the growth of agricultural production: in the first quarter of 2020 the value of horticulture rose by 3.5%<sup>13</sup>. Minister of Agriculture and Rural Affairs Han Changfu claimed that China would be able to produce enough food the following year<sup>14</sup>. Li Guxiang, a researcher at the Rural Development Institute of the Chinese Academy of Social Sciences, stated that the current amount of national food production was enough to feed the population. According to him, the level of self-sufficiency in food production reached 95%<sup>15</sup>.

Yuan Longjiang, the Director of the Institute of Agricultural Economics and Development of the Chinese Academy of Agricultural Sciences, agrees with the above-mentioned opinion. He thinks that the epidemic situation does not have much influence on the food production. The growth in the value of agricultural output is explained by the measures undertaken by the government to support national manufacturers: increased procurement prices for grains and rice (from 120 to 130 yuan (from 17.5 to 18.58 US dollars) per kilogram depending on the rice variety)<sup>16</sup> and expansion of high-quality arable lands additionally by 80 million mu (approximately 5.3 million hectares)<sup>17</sup>. Vice-director of the Institute of Agricultural Economics and Development Mao Shiping said in the interview

<sup>12</sup> «中国农业展望报告（2020-2029）» 发布：未来十年我国主粮保供能力仍将大幅提升 [“Zhongguo nongye zhanwang baogao (2020-2029)” fabu: weilai shi nian woguo zhuliang bao gong nengli reng jiang dafu tisheng; “China Agricultural Outlook Report (2020-2029)” released: China’s ability to ensure the supply of staple food will continue to increase substantially in the next ten years] // CCTV. 21.04.2020. Available at <https://baijiahao.baidu.com/s?id=1668473319429033162&wfr=spider&for=pc> (accessed 14.06.2020)

<sup>13</sup> Ibid

<sup>14</sup> 2020 中国农业展望大会在京召开 [2020 zhongguo nongye zhanwang dahui zai Beijing zhaokai; 2020 China agriculture outlook conference held in Beijing] // China Agricultural Outlook. 20.04.2020. Available at <https://www.agri-outlook.cn/portal/article/index/id/1364> (accessed 14.06.2020)

<sup>15</sup> 站上高基点，力求新突破 [Zhan shang gao jidian, liqiu xin tupo; To set on a high base point and strive for new breakthroughs] // CCTV. 05.04.2020. Available at [http://news.cnr.cn/native/gd/20200507/t20200507\\_525080270.shtml](http://news.cnr.cn/native/gd/20200507/t20200507_525080270.shtml) (accessed 14.06.2020)

<sup>16</sup> 粮仓更稳固，菜篮更丰富 [Liangqiang geng wengou, cai lan geng fengfu; Granaries are safer, food basket is richer] // CCTV. 07.05.2020. Available at [http://news.cnr.cn/native/gd/20200507/t20200507\\_525080270.shtml](http://news.cnr.cn/native/gd/20200507/t20200507_525080270.shtml) (accessed 14.06.2020)

<sup>17</sup> «中国农业产业发展报告 2020»出炉今年：全国粮食产量有望达到 6.7 亿吨 [“Zhongguo nongye chanye fazhan baogao 2020” chulu jinnian: quanguo lianshi chanliang youwang dadao 6.7 yi dun; “China’s Agricultural Industry Development Report 2020” released this year: national grain output is expected to reach 670 million tons] // CCTV. 03.06.2020. Available at <https://baijiahao.baidu.com/s?id=1668473319429033162&wfr=spider&for=pc> (accessed 14.06.2020)

that the growth of high-quality arable lands would make a great contribution to ensuring China's food security in the future. Currently, 10% of national agricultural lands are cultivated at the world's leading level, 39% are cultivated at the level of developed countries and 51% are on the stage of catch-up development<sup>18</sup>.

Lai Yinghui, the deputy of China People's Political Consultative Conference, points out that, despite achieved success in the agricultural sector, there still remains a structural grain deficit (it requires amendments to the laws on delivery and storage)<sup>19</sup>.

In 2020 sewing activities were completed as planned. In some districts delays in green vegetable planting took place, but they did not exceed 5-10% of an overall amount. Regions with a low risk of spread of the novel coronavirus did not impose serious restrictions on sewing activities, while in most affected provinces the government recommended to increase social distance between field workers. As a result, spring harvest remained stable making experts anticipate that this trend will remain in the future.

Nevertheless, Hu Xiangdong, a junior researcher at the Institute of Agricultural Economics and Development of the Chinese Academy of Agricultural Sciences, voices concerns about the sustainability of corn production. He predicts that the plague of *Spodoptera frugiperda* (fall armyworm) might lead to a significant decrease in corn harvest. According to him, the deficit may go up from 3.05 to 9.6 million tons. Almost 100 million mu (6.6 million hectares) of agricultural lands may be affected by the fall armyworm<sup>20</sup>.

In the area of other grains production, the situation remains stable. Stock level of rice, wheat and corn reached an unprecedented figure of 280 million tons, which is enough for providing all the Chinese residents with food even in case of

<sup>18</sup> 我国粮食产量连续5年站稳1.3万亿斤台阶,粮食连年丰产背后靠什么支撑? [Woguo liangshi chanliang lianxu 5 nian zhan wen 1.3 wan yi jin taijie, liangshi liannian fengchan beihou kao shenme zhicheng?: China's grain output has stood at a level of 1.3 trillion catties for five consecutive years, what is behind the continuous high yield of grain?] // CCTV. 03.06.2020. Available at [http://news.cnr.cn/native/gd/20200603/t20200603\\_525115217.shtml](http://news.cnr.cn/native/gd/20200603/t20200603_525115217.shtml) (accessed: 14.06.2020)

<sup>19</sup> 全国政协委员赖应辉: 加快粮食立法修规进程 [Quanguo zhengxie weiyuan lai yinghui: jia kuai liangshi lifa xiu gui jincheng; Chinese People's Political Consultative Conference Deputy Lai Yinghui: to speed up the process of food legislation amendment] / China National Association of Grain Sector. 27.05.2020. Available at [http://www.chinagrains.org.cn/wzfcms/html/chinese/hydt\\_1035/20200527/38e8757214b44dc082934d358eba1c8c.html](http://www.chinagrains.org.cn/wzfcms/html/chinese/hydt_1035/20200527/38e8757214b44dc082934d358eba1c8c.html) (accessed 14.06.2020)

<sup>20</sup> «中国农业产业发展报告 2020»出炉今年:全国粮食产量有望达到6.7亿吨 [“Zhongguo nongye chanye fazhan baogao 2020” chulu jinnian: quanguo liangshi chanliang youwang dadao 6.7 yi dun; “China's Agricultural Industry Development Report 2020” released this year: national grain output is expected to reach 670 million tons] // CCTV. 03.06.2020. Available at <https://baijiahao.baidu.com/s?id=1668473319429033162&wfr=spider&for=pc> (accessed 14.06.2020)



a stoppage of import. During the pandemic, 37 major and 4649 minor rice and wheat processing plants did not stop working<sup>21</sup>.

Nonetheless, ensuring the sustainability and stability of grain production still remains a crucial issue for the Chinese government. Prominent agricultural experts emphasize the necessity of raising the sustainability and yield of these crops, which are an important part of the Chinese diet.

In order to speed up this process, 16.4 million kits of agricultural machines will be put into operation by the end of 2020. During spring harvest, more than 650000 wheat combines were used, which exceeded the figure of the previous year by 10 million machines. 96% of wheat and 90% of corn in the Huang-Hui-Hai district were harvested by the combines. An overall level of complex mechanization of the agricultural sector has reached 70%<sup>22</sup>.

For the purpose of maintaining the agricultural output in black soil areas of North-Western China, the authorities started the program on the transition to the careful cultivation of land. This might stop the erosion of soils and maintain the yield. It is planned that more than 70% of agricultural lands will be cultivated with the use of this method<sup>23</sup>.

On May 22, a special plan on food security was announced. Li Keqiang declared that sown areas would be expanded, major wheat-producing nations would receive numerous preferences and procurement prices on rice would be raised. It was also said that, in order to meet the demand, from 28 May grains from reserve fund would be sold on the market<sup>24</sup>.

## Fishery

The fishing industry is projected to go through serious changes. For instance, in May 2020 the reform of the China Fishery Mutual Insurance Association began. It is aimed at creating the same nationwide agency with an

<sup>21</sup> Ibid

<sup>22</sup> 粮仓更稳固, 菜篮更丰富 [Liangqiang geng wengu, cai lan geng fengfu; Granaries are safer, food basket is richer] // CCTV. 07.05.2020. Available at [http://news.cnr.cn/native/gd/20200507/t20200507\\_525080270.shtml](http://news.cnr.cn/native/gd/20200507/t20200507_525080270.shtml) (accessed 14.06.2020)

<sup>23</sup> 农业农村部, 财政部关于印发《东北黑土地保护性耕作行动计划（2020—2025年）》的通知 [Nongye nongcunbu caizheng bu guanyu yinfa “dongbei hei tudi baohu xing gengzuo xingdong jihua (2020—2025 nian)” de tongzhi; Notice of the Ministry of Agriculture and Rural Affairs and the Ministry of Finance on Printing and Distributing the Action Plan on Protective Farming of Black Soil in Northeast China (2020-2025)] / Central People's Government of the PRC. 25.02.2020. Available at [http://news.cnr.cn/native/gd/20200507/t20200507\\_525080270.shtml](http://news.cnr.cn/native/gd/20200507/t20200507_525080270.shtml) (accessed 14.06.2020)

<sup>24</sup> Donley A. China enacting food security measures // World-Grain.com. 22.05.2020. Available at <https://www.world-grain.com/articles/13728-china-enacting-food-security-measures> (accessed 13.06.2020)

independent legal personality. There will be opened new mutual insurance associations with an independent legal personality on the provincial level as well. In the provinces, which do not follow the established criteria, the nationwide agency will create branch offices. As for local mutual insurance associations, they will not be allowed to conduct insurance business anymore<sup>25</sup>. The consolidation of insurance organizations might provide more stability for insurance compensations and decrease the risk of bankruptcy.

Furthermore, this year the inspection of all the fishing vessels with the use of WeChat and other electronic devices will be carried out<sup>26</sup>. This is necessary for updating the databases, improving the quality of service and raising the safety of fishing. In our view, the inspection will help to fight illegal fishing and foster the recovery of water areas.

## Climate and ecological situation

The issue of food security is closely related to national ecological situation. The number of arable lands in China has been decreasing for several years, especially because of the urbanization<sup>27</sup>. In such conditions and due to the novel coronavirus pandemic a demand for vertical farms is constantly growing in all the countries, including China. In 2018 a global market of vertical farms was 2.2 billion US dollars, and now it is projected to grow to 12.8 billion US dollars by 2026<sup>28</sup>.

Despite the pandemic, the Chinese government still prioritizes the issue of ecology. Wan Lianbu, the deputy of the National People's Congress, assumes that 280 million km<sup>3</sup> of 1.5 billion km<sup>3</sup> of saline soils might be used for harvesting

<sup>25</sup> 农业农村部办公厅中国银保监会办公厅关于推进渔业互助保险系统体制改革有关工作的通知 [Nongye nongcunbu bangongting zhongguo yin baojianhui bangongting guanyu tuijin yuye huzhu baoxian xitong tizhi gaige youguan gongzuo de tongzhi; Notice of the General Office of the Ministry of Agriculture and Rural Affairs and of the General Office of the China Banking and Insurance Regulatory Commission on Promoting the Reform of the Fishery Mutual Aid Insurance System] / Ministry of Agriculture and Rural Affairs. 29.05.2020. Available at [http://www.moa.gov.cn/govpublic/YYJ/202005/t20200529\\_6345589.htm](http://www.moa.gov.cn/govpublic/YYJ/202005/t20200529_6345589.htm) (accessed 14.06.2020)

<sup>26</sup> 农业农村部关于开展全国海洋捕捞渔船和沿海渔港核查工作的通知 [Nongye nongcunbu guanyu kaizhan quanguo haiyang bulao yuchuan he yanhai yugang hezha gongzuo de tongzhi; Notice of the Ministry of Agriculture and Rural Affairs on Carrying out the National Inspection of Marine Fishing Vessels and Coastal Fishing Ports] / Ministry of Agriculture and Rural Affairs. 26.05.2020. Available at [http://www.moa.gov.cn/govpublic/YYJ/202005/t20200527\\_6345314.htm](http://www.moa.gov.cn/govpublic/YYJ/202005/t20200527_6345314.htm) (accessed 14.06.2020)

<sup>27</sup> Zhilong Z. "Red line" policy protects China's arable land // CGTN. 13.03.2019. Available at <https://news.cgtn.com/news/3d3d514d316b444f32457a6333566d54/index.html> (accessed 13.06.2020)

<sup>28</sup> Vertical Farming Market to Exhibit Rapid Surge in Consumption in the COVID-19 Crisis // 3w Market News Reports. 20.06.2020. Available at <https://3wnews.org/news/1501756/vertical-farming-market-to-exhibit-rapid-surge-in-consumption-in-the-covid-19-crisis/> (accessed 22.06.2020)

crops. He also says that the need to popularize green farming by the use of eco-friendly fertilizers<sup>29</sup>.

However, due to the present circumstances, a series of achievements and trends might reverse backwards. For example, African swine fever made numerous pig farms move back to urban industrial areas, which might have a negative impact on the ecological situation (in 2015-2017, water from the farms in cities got into the soil and then moved to remote districts)<sup>30</sup>.

## Changes in consumer preferences

Apart from the diversification of meat diet mentioned above, changes in consumption of other products also should be noted. For example, after the epidemic there is an increase in the consumption of dairy products<sup>31</sup>, which is atypical for the Chinese and has drawn attention to this industry. This is largely related to the issuing of diet recommendations by the National Health Commission<sup>32</sup>.

Kerry Consulting Group analysts have conducted a survey of Chinese consumers and found out that 69% of them increased spending on cooking at home. In general, the analysts predict that a demand for healthy home-cooked food as well as for frozen vegetables, berries and fish will grow in the future<sup>33</sup>.

Along with this, COVID-19 and fake news encountered during it have undermined Chinese consumers' confidence in meat quality. In this regard, there would be a growing demand for plant-based protein – mushrooms, soy products and rice<sup>34</sup>.

<sup>29</sup> [两会]万连步代表：加快推广生态种植，促农业高质量发展 [[Lianhui] Wan lianbu daibiao: jia kuai tuiguang shengtai zhongzhi, cu nongye gao zhiliang fazhan; [Two sessions] Deputy Wan Lianbu: to speed up the promotion of ecological planting and promote high-quality agricultural development] / China National Association of Grain Sector. 26.05.2020. Available at [http://www.chinagrains.org.cn/wzfcms/html/chinese/hydt\\_1035/20200526/dbfa1bfbc94b468287cdae6ee74f3a8.html](http://www.chinagrains.org.cn/wzfcms/html/chinese/hydt_1035/20200526/dbfa1bfbc94b468287cdae6ee74f3a8.html) (accessed 13.06.2020)

<sup>30</sup> Cheek by jowl: China pork crisis spurs pig farms' return to cities // Reuters. 11.06.2020. Available at <https://www.reuters.com/article/us-china-swinefever-pigfarming-cities/cheek-by-jowl-china-pork-crisis-spurs-pig-farms-return-to-cities-idUSKBN23H3K7> (accessed 13.06.2020)

<sup>31</sup> 央视财经：二季度牛奶销量增长迅速，乳制品企业全力促生产 [Yangshi caijing: er jidu niunai xiaoliang zengzhang xunsu, ru zhipin qiye quan licu shengchan; CCTV Finance: milk sales increased rapidly in the second quarter, dairy products companies make every effort to promote production] / Dairy Association of China. 03.06.2020. Available at <https://www.dac.org.cn/read/newgndt-20060321411549811865.jhtm> (accessed 13.06.2020)

<sup>32</sup> 史玉东代表：完善乳业“蓄水池”推动疫后乳业健康发展 [Shi yudong daibiao: wanshan ruye “xu shui chi” tuidong yi hou ruye jiankang fazhan; Deputy Shi Yudong: to improve the dairy "reservoir" to promote the healthy development of the dairy industry after the epidemic] / Dairy Association of China. 24.05.2020. Available at <https://www.dac.org.cn/read/newgndt-20052321231794211428.jhtm> (accessed 20.06.2020)

<sup>33</sup> 6 Lessons from China's Recovering Food and Beverage Industry after COVID-19 // Kerry. 08.04.2020. Available at <https://www.kerry.com/insights/kerrydigest/2020/china-food-and-beverage-after-covid-19> (accessed 14.06.2020)

<sup>34</sup> 6 Lessons from China's Recovering Food and Beverage Industry after COVID-19 // Kerry. 08.04.2020. Available at <https://www.kerry.com/insights/kerrydigest/2020/china-food-and-beverage-after-covid-19> (accessed 14.06.2020)

According to surveys by Ipsos, **48% of respondents buy meat only from reputable sellers, and 21% intend to replace meat with other sources of protein**<sup>35</sup>. Among the reasons for the growing popularity of meat substitutes are the spread of African swine fever, growing concerns over meat safety and a commitment to healthier lifestyle due to the coronavirus outbreak. **From this perspective, meat substitutes are an optimal option to satisfy the growing consumption of protein in the context of a lack of meat in the market and increasing consumer concerns.**

Along with industry leaders in the face of Beyond Meat and Impossible Food, Chinese startups and large international companies also start to compete for the Chinese market. For example, Chinese startup Starfield has attracted investment from Dao Foods International and New Crop Capital<sup>36</sup>, and the Nestlé Company has announced its decision to invest in factories in China, including those that will produce meat substitutes, more than 100 million Swiss francs (103 million US dollars)<sup>37</sup>.

In order to fully provide people with meat products in the future and to ensure the maximum safety of those products, Yenching scholar and Cellular Agriculture Society fellow Chloe Dempsey proposes to **produce cultivated meat**. According to her, this requires just a small sample of cells from a living animal but an amount of produced meat would eventually be able to satisfy the growing demand. She also notes that China is a bright example of how rising prosperity correlates with an increase in meat consumption, and, in this regard, expresses concerns that China's environmental conditions cannot ensure the growing demand<sup>38</sup>.

<sup>35</sup> 2020 年人造肉趋势最新洞察，它在中国消费者心中“真香”吗？ [2020 nian renzao rou qushi zuixin dongcha, ta zai zhongguo xiaofeizhe xinzhong “zhenxiang” ma?]; The latest insights into the trend of artificial meat in 2020: whether it does win the hearts of Chinese consumers? // Foodaily. 20.04.2020. Available at <http://www.foodaily.com/market/show.php?itemid=21925> (accessed 14.06.2020)

<sup>36</sup> New Crop Capital and Dao Foods Invest in Chinese Alt Meat Startup Starfield // Vegconomist. 13.03.2020. Available at <https://vegconomist.com/companies-and-portraits/new-crop-capital-and-dao-foods-invest-in-chinese-alt-meat-startup-starfield/> (accessed 13.06.2020)

<sup>37</sup> Nestlé contributes to the transformation and upgrading of China's food industry with a CHF 100 million investment in Tianjin / Nestlé. 20.05.2020. Available at <https://www.nestle.com.cn/media/pressreleases/20200520-nestle-contributes-to-the-transformation-and-upgrading-of-china's-food-industry-with-a-chf-100-million-investment-in-tianjin> (accessed 13.06.2020)

<sup>38</sup> Vanderberg L. How Can China Fulfill Its Rising Meat Demand? // The Diplomat. 12.06.2020. Available at <https://thediplomat.com/2020/04/how-can-china-fulfill-its-rising-meat-demand> (accessed 14.06.2020)

## Food quality, healthy diet

*Another significant trend is an increasing demand for fresh and healthy food – 80% of the Chinese want to improve the quality of their diet*<sup>39</sup>. This is a consequence of a rethinking of the attitude towards well-being and the growth of the middle class, which can afford more ecological products. The Ministry of Agriculture and Rural Affairs of the PRC has noted this trend and on 12 June 2020 issued “Notice on Further Strengthening the Construction of Cold Chain Facilities for the Storage and Preservation of Agricultural Products”<sup>40</sup>. This measure would provide more areas with fresh food and also extend the storage time of agricultural products.

Research also shows that a demand for healthy food, to a large extent, rises because of the growing consumption of such products as dried berries, nuts etc. There is a forecast that the volume of this market will reach 3 billion yuan (430 million US dollars) this year and increase by 10% annually over the next five years<sup>41</sup>.

## Introduction of new technologies and digitalization

The pandemic has certainly increased a demand for the introduction of technologies into various sectors of the economy: a number of enterprises even decided on quite radical steps towards robotization. For example, Country Garden Holdings company has opened a fully robotized restaurant in Guangzhou (46 robots work there without the involvement of human personnel)<sup>42</sup> and donated a robot chef to cook food for medical personnel in Hubei province<sup>43</sup>.

<sup>39</sup> Asian Consumers Are Rethinking How They Eat Post COVID-19 // The Nielsen Company. 27.03.2020. Available at <https://www.nielsen.com/us/en/insights/article/2020/asian-consumers-are-rethinking-how-they-eat-post-covid-19/> (accessed 14.06.2020)

<sup>40</sup> 农业农村部办公厅关于进一步加强农产品仓储保鲜冷链设施建设工作的通知 [Nongye nongcun bu bangong ting guanyu jinyibu jiaqiang nongchanpin cangchu baoxiin leng lian shesi jianshe gongzuo de tongzhi; The Notice of the Ministry of Agriculture and Rural Affairs on Further Strengthening the Construction of Cold Chain Facilities for the Storage and Preservation of Agricultural Products] / Ministry of Agriculture and Rural Affairs of the PRC. 12.06.2020. Available at [http://www.moa.gov.cn/govpublic/SCYJJXXS/202006/t20200612\\_6346434.htm](http://www.moa.gov.cn/govpublic/SCYJJXXS/202006/t20200612_6346434.htm) (accessed 14.06.2020)

<sup>41</sup> How COVID-19 might shape consumer trends in China // Just Food. 20.04.2020. Available at [https://www.just-food.com/comment/how-covid-19-might-shape-consumer-trends-in-china\\_id143515.aspx](https://www.just-food.com/comment/how-covid-19-might-shape-consumer-trends-in-china_id143515.aspx) (accessed 14.06.2020)

<sup>42</sup> Parkins K. Country Garden Opens China's First Fully Robotic Staffed Restaurant // Global Shakers. 27.01.2020. Available at <https://globalshakers.com/country-garden-opens-chinas-first-fully-robotic-staffed-restaurant/> (accessed 20.06.2020)

<sup>43</sup> Ren D., Liu P. Robot chefs and free software among masks, gloves and biohazard gear as China Inc donates to contain coronavirus outbreak // South China Morning Post. 21.01.2020. Available at <https://www.scmp.com/business/companies/article/3051596/robot-chefs-and-free-software-among-masks-gloves-and-biohazard> (accessed 20.06.2020)

In the area of agriculture, a new trend of digitalization and of the use of new technologies has intensified. As early as the beginning of 2020, there was published “Development Plan for Digital Agriculture and Rural Areas (2019–2025)”, which implies the introduction of digital innovations to improve data collection systems, monitor a level of demand and supply in the market and raise the level of education of rural workers<sup>44</sup>.

In the first quarter of 2020, the growth of food sales through the Internet reached 32,7%, and, along with beverages and medicines, this was the only category that demonstrated a positive dynamics<sup>45</sup>. Besides, 89% of surveyed Chinese people said that they would use food delivery services more often in the future<sup>46</sup>. The government also used e-commerce to restore disrupted supply chains: the Ministry of Agriculture and Rural Affairs not only organized the transportation of food and fertilizers between regions but also carried out online sales and purchased products from poverty counties. Special hotlines and online platforms have been established to help suppliers to find customers and vice versa<sup>47</sup>. According to Director-General of the Research Department of Rural Economy of the Development Research Center of the State Council of the PRC Ye Xingqing, the pandemic has revealed shortcomings in the supply chain of agricultural products, and the development of e-commerce would facilitate the reduction of barriers in the process of products supply from rural to urban areas<sup>48</sup>.

A trend to buy online has caused the growth of online consumers, including city dwellers with a low income, people living in rural areas and consumers 45+. During the Chinese New Year celebration, 69,2% of online consumers were from a tier-3 city or lower<sup>49</sup> (in January this figure amounted to

<sup>44</sup> 两部门印发“数字农业农村发展规划（2019—2025年）” [Liang bumen yinfa “shuzi nongye nongcun fazhan guihua (2019-2025 nian)”]; Two ministries issued “Development Plan for Digital Agriculture and Rural Areas (2019–2025)” / Ministry of Agriculture and Rural Affairs of the PRC. 20.01.2020. Available at [http://www.moa.gov.cn/xw/zwdt/202001/t20200120\\_6336380.htm](http://www.moa.gov.cn/xw/zwdt/202001/t20200120_6336380.htm) (accessed 14.06.2020)

<sup>45</sup> 2020年3月份社会消费品零售总额下降15.8% [2020 nian 3 yuefen shehui xiaofeipin lingshou zong'e xiajiang 15.8%]; Total retail sales of consumer goods fell by 15.8% in March 2020 / National Bureau of Statistics of China. 17.04.2020. Available at [http://www.moa.gov.cn/xw/zwdt/202001/t20200120\\_6336380.htm](http://www.moa.gov.cn/xw/zwdt/202001/t20200120_6336380.htm) (accessed 14.06.2020)

<sup>46</sup> Asian Consumers Are Rethinking How They Eat Post COVID-19 // The Nielsen Company. 27.03.2020. Available at <https://www.nielsen.com/us/en/insights/article/2020/asian-consumers-are-rethinking-how-they-eat-post-covid-19/> (accessed 14.06.2020)

<sup>47</sup> Local food systems and COVID-19: A look into China's responses / Food and Agriculture Organization of the United Nations. 08.04.2020. Available at <http://www.fao.org/in-action/food-for-cities-programme/news/detail/en/c/1270350/> (accessed 14.06.2020)

<sup>48</sup> 电商助农，“一时火”还要“一直火” [Dianshang zhu nong, “yishi huo” hai yao “yizhi huo”]; E-commerce to help farmers: a one-time impulse ought to become permanent // Xinhua. 24.04.2020. Available at [http://www.xinhuanet.com/2020-04/24/c\\_1125897702.htm](http://www.xinhuanet.com/2020-04/24/c_1125897702.htm) (accessed 14.06.2020)

<sup>49</sup> In China, cities are unofficially divided into several tiers (more often into 4 or 5 tiers) depending on their development. A methodology for the calculation is worked out by economic media and experts, criteria include such indicators as population, GDP etc. Tier-1 cities are the most developed cities (Beijing, Shanghai, Guangzhou, Shenzhen – 北上广深), lower tier cities are those



57,4%)<sup>50</sup>. The share of consumers 45+ during the period under review increased by 3,2%<sup>51</sup>. According to the McKinsey research, after the epidemic, the population in non-tier-1 cities started to buy more in convenience stores (+9%) and from food specialized retailers (+4%)<sup>52</sup>.

Because of the growth of consumers 60+, platforms have decided to consider the possibility of adding special services. At the moment, the only example is Taobao, which has a simplified interface and family chat, however, they were added before the coronavirus, and now this is being considered by food retailers<sup>53</sup>.

According to Head of the Department of Agriculture and Rural Affairs of Guangdong province Gu Xingwei, the process of agriculture digitalization has a great potential and, coupled with an adequate funding of rural areas, would facilitate a stable development of the rural economy. He also notes that the practice of establishing e-commerce platforms to sell agricultural products has enabled local producers not only to retain links with customers but also to enter the international market – there have been supplied pineapples to Japan and more than 20 tons of lychee to the USA<sup>54</sup>.

FAO's Director-General Qu Dongyu considers that digitalization would become a strong boost for the transformation of rural areas and create new opportunities for farmers. Besides, he assumes that the Chinese experience would be useful for other countries<sup>55</sup>.

Huang Liandong, the mayor of Leizhou (Guangdong province), generally agrees with them. He considers that, during the epidemic, digitalization demonstrated positive results and in the future would help farmers to gain more

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with lower aggregated indicators. There are no officially published lists, however, the tiers are often mentioned in media. At the moment, the division applies only to cities of the mainland China not including Hong Kong and Macau. For detailed information see, for example, New Comparative Report on Tier-1 Cities in China (2020 年, 中国新一线城市对比报告). Available at [http://pdf.dfcfw.com/pdf/H3\\_AP202002191375245249\\_1.pdf](http://pdf.dfcfw.com/pdf/H3_AP202002191375245249_1.pdf) (accessed 19.06.2020)

<sup>50</sup> Chen S. 5 Charts: The Coronavirus' Impact on the Retail Industry // Chinaskinny. 03.03.2020. Available at <https://www.chinaskinny.com/blog/coronavirus-impact-retail-industry/> (accessed 13.06.2020)

<sup>51</sup> Ibid

<sup>52</sup> How Chinese consumers are changing shopping habits in response to COVID-19 // McKinsey. 06.05.2020. Available at <https://www.mckinsey.com/featured-insights/asia-pacific/how-chinese-consumers-are-changing-shopping-habits-in-response-to-covid-19> (accessed 15.06.2020)

<sup>53</sup> Fan Y. How COVID-19 Sparked a Silver Tech Revolution in China // Sixth Tone. 16.03.2020. Available at <https://www.sixthtone.com/news/1005303/how-covid-19-sparked-a-silver-tech-revolution-in-china> (accessed 15.06.2020)

<sup>54</sup> “数”立信心 | 顾幸伟: “数字农业”让惠农富农更有温度 [“Shu” lixin xin | Gu xingwei: “shuzi nongye” rang huinong funong geng you wendu; “Digit” instills confidence | Gu Xingwei: “digital agriculture” makes farmers more prosperous] // Xinhua. 28.05.2020. Available at [http://m.xinhuanet.com/gd/2020-05/28/c\\_1126046293.htm](http://m.xinhuanet.com/gd/2020-05/28/c_1126046293.htm) (accessed 14.06.2020)

<sup>55</sup> FAO hails first contribution to promoting digital agriculture through knowledge-sharing // Food and Agriculture Organization on the United Nations. 08.04.2020. Available at <http://www.fao.org/e-agriculture/news/fao-hails-first-contribution-promoting-digital-agriculture-through-knowledge-sharing> (accessed 14.06.2020)

independence, optimize supply chains and raise the quality of services. Moreover, he, referring to the successful experience of mango production in the Puqian town, suggests the possibility of the use of special QR-codes to track the whole production cycle. However, according to him, digitalization is impossible without training courses of raising a qualification of rural workers<sup>56</sup>.

The shortcomings of the existing e-commerce system have been noted by expert in logistics Yang Daqing. In his view, a demand for logistics services has been decentralized, which does not allow companies to provide a centralized transportation of various categories of goods. In this regard, he recommends that local governments establish multi-layered storage systems so logistics companies could transport goods ordered online in a centralized way<sup>57</sup>.

### Initiatives relevant to the Chinese market on the example of Bits x Bites<sup>58,59</sup>

Name	Product	Total investment value, million dollars
Alchemy Foodtech	Lowering the glycemic index in products	1,8
Alesca Life	Weatherproof, cloud-connected farms	16,9
Gastrograph	Predicting consumer preferences	4
Chanbala (馋巴拉)	Silkworm-based food products	*60
Future Meat Technologies	Production of meat from animal cells	16,2
InnovoPro	Chickpea protein concentrate	20,8
Inspecto	Nanoscale contaminant detection technologies	1,7
Papp's Tea	Tea blends	*61
Tropic Biosciences	Plant gene editing technologies	10
Water.IO	A smart packaging platform for CPG and pharma companies	1

<sup>56</sup> “数”立信心 | 黄廉东：紧跟“数字农业”风口，强化高附加值品牌营销 [“Shu” lixin xin | Huang liandong: jin gen “shuzi nongye” fengkou, qianghua gao fujia zhi pinpai yingxiao; “Digit” instills confidence | Huang Liandong: to follow the trend of “digital agriculture” and strengthen the marketing of high value-added brands] // Xinhua. 28.05.2020. Available at [http://m.xinhuanet.com/gd/2020-05/19/c\\_1126001249.htm](http://m.xinhuanet.com/gd/2020-05/19/c_1126001249.htm) (accessed 14.06.2020)

<sup>57</sup> 专家谈“网红”带货助力电商扶贫：不仅要“送上马”，还要“扶一程” [Zhuanjia tan “wanghong” daihuo zhuli dian shang fupin: bujin yao “song shangma”, hai yao “fu yicheng”]; Experts discussed that Internet celebrities selling products help e-commerce platforms to alleviate poverty: not only to send products but also to control the whole delivery process] // CCTV. 24.04.2020. Available at [http://news.cnr.cn/dj/20200424/t20200424\\_525066982.shtml](http://news.cnr.cn/dj/20200424/t20200424_525066982.shtml) (accessed 14.06.2020)

<sup>58</sup> China's pioneer food tech VC investing in early-stage startups selected from across the world to make an impact on China's food system

<sup>59</sup> Authors' compilation based on Bits x Bites. Available at <http://www.bitsxbites.com/portfolios/> (accessed 16.06.2020); Crunchbase. Available at <https://www.crunchbase.com> (accessed 16.06.2020)

<sup>60</sup> No data

<sup>61</sup> No data



## Logistics

During the pandemic, the organization of supply chains, efficiency and sufficiency of infrastructure acquired particular importance. Among the weaknesses, Chinese experts also name problems with food storage, supply disruptions and harm to the environment. For instance, Yu Xubo, the deputy of the National People's Congress, notes that it is necessary to optimize the emergency management system to ensure food supplies (to adopt the experience of the work of "green channels" during the pandemic, select a group of enterprises in relevant industries to fine-tune the interregional supply system in an emergency)<sup>62</sup>.

For example, there are the following shortcomings in the dairy industry:

- the existence of the system “北奶南运、北奶西运” (dairy production is organized unevenly: Northern provinces' dairy is also sold in the South and West of the country, which creates extra risks and supply disruptions in the period of the epidemic);
- dependency on the import and, therefore, the inability to obtain a sufficient quantity of necessary raw materials during the epidemic;
- a lack of an emergency response system<sup>63</sup>.

A new tendency, observed during the epidemic, appeared to be a growing trend of group buying, which enabled retailers to reduce the number of courier deliveries and customers to pay less. For instance, a number of daily orders of Xingsheng Selected, a popular group buying platform, has exceeded 7 million<sup>64</sup>,

<sup>62</sup> 于旭波代表：建议完善民生物资应急体系，保障特殊时期粮食安全 [Yu Xubo daibiao: jianyi wanshan minsheng wuzi yinji tixi, baozhang teshu shiqi liangshi anquan; Deputy Yu Xubo: it is recommended to improve the emergency system for civilian resources to ensure food security in special periods] / China National Association of Grain Sector. 21.05.2020. Available at [http://www.chinagrains.org.cn/wzfcms/html/chinese/hydt\\_1035/20200521/3689ab8726e24f448ce5625a4d4ab643.html](http://www.chinagrains.org.cn/wzfcms/html/chinese/hydt_1035/20200521/3689ab8726e24f448ce5625a4d4ab643.html) (accessed 20.06.2020)

<sup>63</sup> 史玉东代表：完善乳业“蓄水池”推动疫后乳业健康发展 [Shi yudong daibiao: wanshan ruye “xu shui chi” tuidong yi hou ruye jiankang fazhan; Deputy Shi Yudong: to improve the dairy "reservoir" to promote the healthy development of the dairy industry after the epidemic] / Dairy Association of China. 24.05.2020. Available at <https://www.dac.org.cn/read/newgndt-20052321231794211428.jhtm> (accessed 20.06.2020)

<sup>64</sup> 刚刚，兴盛优选日均订单破 700 万了！[Ganggang, xingsheng youxuan ri jun dingdan po 700 wanle!; Xingsheng Selected daily orders just exceeded 7 million!] // Nong Shijie. 21.04.2020. Available at <http://nongshijie.com/a/202004/23980.html> (accessed 20.06.2020)

Hema used an option of group buying to deliver food by trucks to Wuhan during the lockdown<sup>65</sup>, and DouYin added the function of group buying<sup>66</sup>.

Apart from this, it is reported that, in order to reduce the risks of food shortages and supply disruptions, food reserves are established in China<sup>67</sup>.

## Human resources policy

There is a consensus both at expert and governmental levels that the process of the introduction of high technologies into rural areas should be accompanied with raising a qualification of farmers. In this regard, the Ministry of Agriculture and Rural Affairs together with the Publicity Department of the CPC organize activities to popularize reading books, including agronomic ones. Besides, online lectures and trainings with sectoral experts will be promoted<sup>68</sup>, which eventually would help farmers to master new technologies and increase productivity. For 2020, there is a goal to establish more than 5000 multi-functional demonstration bases in the field of agricultural science and technology, where farmers would be able to take training courses and learn how to work with technological innovations<sup>69</sup>. At the provincial level, a policy of reducing tuition fees for people from rural areas and establishing specialized colleges will continue<sup>70</sup>.

Shang Jinsuo, the deputy of the National People's Congress, notes that it is necessary to support talent to produce high-quality grains. A priority is the promotion of a "synergy of three chains" (三链协同) including an alignment of

<sup>65</sup> Horvitz J. How Alibaba's Freshippo adapted to keep delivering in virus-hit China // Reuters. 23.03.2020. Available at <https://www.reuters.com/article/us-health-coronavirus-alibaba-freshippo/how-alibabas-freshippo-adapted-to-keep-delivering-in-virus-hit-china-idUSKBN21A0W0> (accessed 20.06.2020)

<sup>66</sup> 抖音上线“团购”功能 [Douyin shangxian “tuangou” gongnengf; DouYin launched the function of “group buying” // eNet. 20.03.2020. Available at <http://www.enet.com.cn/article/2020/0320/A202003201110227.html> (accessed 20.06.2020)

<sup>67</sup> Tan H. China stocks up food and oil supplies as coronavirus spurs fears about shortages // CNBC. 20.05.2020. Available at <https://www.cnbc.com/2020/05/20/china-stocks-up-food-oil-as-coronavirus-spurs-fears-about-shortages.html> (accessed 20.06.2020)

<sup>68</sup> 中央宣传部办公厅:农业农村部办公厅关于开展 2020“新时代乡村阅读季”活动的通知 [Zhongyang xuanchuanbu bangongting; nongye nongcunbu bangongting guanyu kaizhan 2020 “xin shidai xiangcun yuedu ji” huodong de tongzhi; General Office of the Publicity Department: Notice of the General Office of the Ministry of Agriculture and Rural Affairs on launching the 2020 “New Rural Era Reading Season”] / Ministry of Agriculture and Rural Affairs of the PRC. 19.05.2020. Available at [http://www.moa.gov.cn/xw/zxfb/202005/t20200519\\_6344616.htm](http://www.moa.gov.cn/xw/zxfb/202005/t20200519_6344616.htm) (accessed 14.06.2020)

<sup>69</sup> 农业农村部办公厅关于做好 2020 年基层农技推广体系改革与建设任务实施工作的通知 [Nongye nongcunbu bangongting guanyu zuohao 2020 nian jiceng nong ji tuiguang tixi gaige yu jianshe renwu shishi gongzuo de tongzhi; Notice of the General Office of the Ministry of Agriculture and Rural Affairs on Implementing Reform and Construction Tasks on Grassroots Agricultural Technology Extension System in 2020] / Ministry of Agriculture and Rural Affairs of the PRC. 04.06.2020. Available at [http://www.moa.gov.cn/govpublic/SCYJJXXS/202006/t20200612\\_6346434.htm](http://www.moa.gov.cn/govpublic/SCYJJXXS/202006/t20200612_6346434.htm) (accessed 14.06.2020)

<sup>70</sup> 农业农村部办公厅关于做好 2020 年高素质农民培育工作的通知 [Nongye nongcunbu bangongting guanyu zuohao 2020 nian gao sushi nongmin peiyu gongzuo de tongzhi; Notice of the General Office of the Ministry of Agriculture and Rural Affairs on Cultivating Highly Qualified Farmers in 2020] / Ministry of Agriculture and Rural Affairs of the PRC. 04.06.2020. Available at [http://www.moa.gov.cn/govpublic/SCYJJXXS/202006/t20200612\\_6346434.htm](http://www.moa.gov.cn/govpublic/SCYJJXXS/202006/t20200612_6346434.htm) (accessed 14.06.2020)

food production chains, value chains and supply chains. This approach also comprises an emphasis on a “linkage of five advantages” (五优联动 – excellent food production, price, sales, storage and distribution)<sup>71</sup>.

The measures mentioned above would also contribute to the achievement of the strategic goal of poverty alleviation in 2020. Besides, exchanges of experience between prosperous and poor rural areas, the dispatch of teachers and specialists to backward areas and the propaganda of successful farmers’ experiences would be encouraged for this purpose. After all, a policy of building social facilities and strengthening cooperation between urban and rural areas will continue.

## International cooperation

China has traditionally been among global leaders in the field of food import, and, during the pandemic, it was not in an advantageous position. For example, due to the disruption of supply chains, the price of soybeans grew by 5% only for the period from 27 to 30 March 2020. The prices of soybeans and palm oil import have also increased<sup>72</sup>. An increase in the price of soy is related to the disruption of supplies from Brazil – China’s largest partner in this field – as well as to a high dependency on the import of this product, which is estimated at 87% by national experts<sup>73</sup>. In this regard, Reuters analysts predict the rise of soy import from the USA, which is also in accordance with the provisions of the trade deal between Washington and Beijing. According to data from mid-May, the Chinese party has already placed an order for 374 thousand tons of the American soy<sup>74</sup>.

Moreover, Director General of the Department of Market and Informatization of the Ministry of Agriculture and Rural Affairs Tang Ke says

<sup>71</sup> 尚金锁代表：筑牢粮食安全的科技和人才支撑 [Shang jinsuo daibiao: zhu lao lianshi anquan de keji he rencai zhicheng; Deputy Shang Jinsuo: to strengthen the support of technology and talent for food security] / China National Association of Grain Sector. 22.05.2020. Available at [http://www.chinagrains.org.cn/wzfcms/html/chinese/hydt\\_1035/20200522/7f31a95bebbf47dfa545b7fc23dc312b.html](http://www.chinagrains.org.cn/wzfcms/html/chinese/hydt_1035/20200522/7f31a95bebbf47dfa545b7fc23dc312b.html) (accessed 14.06.2020)

<sup>72</sup> COVID-19 and food security in vulnerable countries // UNCTAD. 14.04.2020. Available at <https://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=2331> (accessed 14.06.2020)

<sup>73</sup> «中国农业产业发展报告 2020»出炉今年:全国粮食产量有望达到 6.7 亿吨 [“Zhongguo nongye chanye fazhan baogao 2020” chulu jinnian: quanguo lianshi chanliang youwang dadao 6.7 yi dun; “China’s Agricultural Industry Development Report 2020” released this year: national grain output is expected to reach 670 million tons] // CCTV. 03.06.2020. Available at <https://baijiahao.baidu.com/s?id=1668473319429033162&wfr=spider&for=pc> (accessed 14.06.2020)

<sup>74</sup> China urges food companies to boost supplies on fears of further COVID-19 disruption // Reuters. 17.05.2020. Available at <https://www.reuters.com/article/us-health-coronavirus-china-food/china-urges-food-companies-to-boost-supplies-on-fears-of-further-covid-19-disruption-idUSKBN22T052> (accessed 14.06.2020)

that until 2029, despite the planned growth of inner soy production up to 22.2 million tons, the import dependency will remain high. In order to reduce the risks, the Ministry will conduct a policy of supplies diversification. Along with this, China will remain dependent on the supplies of sugar, demand on which will grow by 0.9% annually, and cotton<sup>75</sup>.

A total import growth of all agricultural products was 8.9% and reached 33.9 billion Euro (37.29 billion US dollars) in the first quarter of 2020<sup>76</sup>. Besides, China's food export demonstrated a negative dynamics decreasing in the first quarter of 2020 by 5.7% to 14.8 billion Euro (16.28 billion US dollars)<sup>77</sup>. This is related both to the closure of ports in other countries and to quarantine measures on the Chinese borders. In particular, one of the most affected regions appears to be the Russian Far East, where there were disrupted supplies of tomatoes, cucumbers and other vegetables, which led to an increase in their prices<sup>78</sup>.

Accordingly, the coronavirus pandemic has caused China's import growth and export decline. The state has put significant efforts to eliminate encountered supply disruptions and offset the meat production decline caused by African swine fever. The main beneficiary of this appears to be the USA but such countries as Russia has also managed to increase meat export to China. The growth of trade deficit is a mixed bag for Beijing. On the one hand, it thus prevents food shortage in the inner market, on the other, becomes more dependent on foreign supplies, which, in the current unstable situation, is not conducive to the strengthening of food security. Moreover, the ongoing coronavirus outbreak in the Beijing market in China is directly associated with salmon imported from abroad, which has already caused a consumer boycott of the fish<sup>79</sup> and in the future may have a negative impact on the development of food trade.

<sup>75</sup> «中国农业展望报告（2020-2029）» 发布：未来十年我国主粮保供能力仍将大幅提升 [“Zhongguo nongye zhanwang baogao (2020-2029)” fabu: weilai shi nian woguo zhuliang bao gong nengli reng jiang dafu tisheng; “China Agricultural Outlook Report (2020-2029)” released: China's ability to ensure the supply of staple food will continue to increase substantially in the next ten years] // CCTV. 21.04.2020. Available at <https://baijiahao.baidu.com/s?id=1668473319429033162&wfr=spider&for=pc> (accessed 14.06.2020)

<sup>76</sup> Китай наращивает импорт сельхозпродукции [Kitai narashchivaet import sel'khozproduksii; China increases agricultural products import] // Meatinfo. 20.05.2020. Available at <https://meatinfo.ru/news/kitay-narashchivaet-import-selhoz-produktsii-408194> (accessed 14.06.2020)

<sup>77</sup> Ibid

<sup>78</sup> Минсельхоз и Россельхознадзор обсудят с Китаем поставки продуктов [Minsel'khoz i Rossel'khoz nadzor obsudiat s Kitaem postavki produktov; Ministry of Agriculture and Federal Service for Veterinary and Phytosanitary Surveillance to discuss food supplies with China] // RIA Novosti. 14.02.2020. Available at <https://ria.ru/20200214/1564801002.html> (accessed 14.06.2020)

<sup>79</sup> Новая вспышка коронавируса привела к бойкоту лосося в Китае [Novaia vspyshka koronavirusa privela k boikotu lososia v Kitae; A new wave of coronavirus led to salmon boycott in China] // Forbes. 15.06.2020. Available at

## Aid to agriculture at the regional level (the case of Hubei province)

During and after the epidemic, agriculture as one of the most affected and critically important spheres at the same time received a comprehensive support from the government. Within the “Measures to Promote Economic and Social Development”, it has been decided to lower a refinancing rate to 2.5% for agricultural enterprises, extend a credit of up to 3 million yuan (430 thousand US dollars) for new-type agricultural enterprises and that of up to 5 million yuan (720 thousand US dollars) for provincial level agricultural enterprises<sup>80</sup>. Besides, there was highlighted a necessity to facilitate the work resumption of pig farms, the subsidization of enterprises collecting and storing fresh eggs and an extension of credit payments for the more affected poultry farms and to exempt from VAT sales of vegetables, fresh meat and eggs<sup>81</sup>. Within the framework of the targeted assistance, it was decided to take action in the following directions:

- to facilitate the distribution of agricultural products including through the development of online sales, an enhancement of links with other provinces and the promotion of sales growth in poor areas under the campaign on poverty alleviation;
- to ensure uninterrupted supplies, drawing attention to addressing logistics problems in poor areas and improving cold chain systems;
- to develop cooperation with supermarkets to ensure direct supplies from farmers and price reduction on local seasonal products;
- to facilitate the development of convenience stores;
- to expand online distribution channels;
- to increase agricultural products export<sup>82</sup>.

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<https://www.forbes.ru/newsroom/obshchestvo/402971-novaya-vspyshka-koronavirusa-privela-k-boykotu-lososya-v-kitae> (accessed 19.06.2020)

<sup>80</sup> 省人民政府关于印发湖北省促进经济社会加快发展若干政策措施的通知 [Sheng renmin zhengfu guanyu yinfa hubei sheng cujin jingji shehui jiakuai fazhan ruogan zhengce cuoshi de tongzhi; Notice of the People's Government on Issuing Several Measures to Promote Economic and Social Development in Hubei Province] / Development and Reform Commission of Hubei Province. 12.03.2020. Available at [http://fgw.hubei.gov.cn/fbjd/xxgkml/zcwj/202003/t20200322\\_2187541.shtml](http://fgw.hubei.gov.cn/fbjd/xxgkml/zcwj/202003/t20200322_2187541.shtml) (accessed 13.06.2020)

<sup>81</sup> Ibid

<sup>82</sup> 省人民政府办公厅印发关于促进农产品流通若干措施的通知 [Sheng renmin zhengfu bangong ting yinfa guanyu cujin nongchanpin liutong ruogan cuoshi de tongzhi; The General Office of the Provincial People's Government issued a notice on several measures to promote the circulation of agricultural products] / The People's Government of Hubei Province. 07.04.2020. Available at [https://www.hubei.gov.cn/zhuanti/2020/xgfyyqfkzsq/fwzq/zclxx/fghc/202004/t20200416\\_2225366.shtml](https://www.hubei.gov.cn/zhuanti/2020/xgfyyqfkzsq/fwzq/zclxx/fghc/202004/t20200416_2225366.shtml) (accessed 15.06.2020)

Another way to support agriculture appeared to be demand stimulation. For example, an elaborate 30-point program presented by Yang Ying, the Deputy Director of the Development and Reform Commission of Hubei Province, included, among others, such measures as the continuation of issuing consumer vouchers, the stimulation of the development of online supermarkets and restaurants and new models of agricultural products distribution (e.g. fresh food e-commerce platforms + home delivery, a central kitchen + home delivery). The “30 points” also imply that no less than 25% of agricultural products consumption would be ensured through purchasing from poor areas with the purpose of poverty alleviation<sup>83</sup>.

Business has also taken active part in the restoration of agriculture. The largest e-commerce platforms – Alibaba, JD.com and Pinduoduo – proposed their own initiatives on supporting farmers. The assistance was provided through two main channels – the use of streaming platforms to sell local agricultural products directly from farmers to customers and subsidization. On 31 March, Alibaba announced its plan to sell 1.2 million tons of Hubei’s agricultural products both within the framework of an already established campaign “Love to Help Farmers” on Taobao Live and through other channels – Tmall and Hema stores<sup>84</sup>. A priority was given to sales of crayfish, tea, citrus, lotus root and fish<sup>85</sup>. The following day, JD.com also launched the campaign “Buy Hubei Goods”, and Pinduoduo announced its decision to cooperate with the local government to provide subsidies and expert support on promotion and sales organisation for farmers<sup>86</sup>.

Moreover, despite losses in the light of the coronavirus, it is planned to further develop Hubei as a large agricultural center. Thus, on 21 May, the World Bank approved a credit of 150 million dollars for the realization of the project

<sup>83</sup> 湖北省出台提振消费促进经济稳增长“30条” [Hubei sheng chutai ti zhen xiaofei cujin jingji wending cengzhang “30 tiao”; Hubei province presented “30 points” to stimulate demand and ensure stable economic growth] / The People's Government of Hubei Province. 30.05.2020. Available at [http://fgw.hubei.gov.cn/fbjd/dtyw/fgyw/202005/t20200530\\_2372361.shtml](http://fgw.hubei.gov.cn/fbjd/dtyw/fgyw/202005/t20200530_2372361.shtml) (accessed 15.06.2020)

<sup>84</sup> Zhang J. Alibaba, JD.com, Pinduoduo help revive sales of farm goods from Hubei after coronavirus lockdown // South China Morning Post. 03.04.2020. Available at <https://www.scmp.com/tech/e-commerce/article/3078351/alibaba-jdcom-pinduoduo-help-revive-sales-farm-goods-hubei-after> (accessed 13.06.2020)

<sup>85</sup> 湖北联手阿里巴巴：10亿小龙虾借盒马出鄂，100场农货销售上淘宝 [Hubei lianshou alibaba: 10 yi xiao longxia jie hema chu e, 100 chang nong huo xiaoshou shang taobao; Hubei and Alibaba united: 1 billion crayfish sold at Hema stores in Hubei province, 100 items of agricultural products sold on Taobao] // Xinhua. 01.04.2020. Available at [http://www.xinhuanet.com/tech/2020-04/01/c\\_1125800105.htm](http://www.xinhuanet.com/tech/2020-04/01/c_1125800105.htm) (accessed 13.06.2020)

<sup>86</sup> Zhang J. Alibaba, JD.com, Pinduoduo help revive sales of farm goods from Hubei after coronavirus lockdown // South China Morning Post. 03.05.2020. Available at <https://www.scmp.com/tech/e-commerce/article/3078351/alibaba-jdcom-pinduoduo-help-revive-sales-farm-goods-hubei-after> (accessed 13.06.2020)

“Hubei Safe, Sustainable, Smart Agriculture”<sup>87</sup>. The project primarily focuses on the introduction of effective systems of food safety control and quality improvement<sup>88</sup>.

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Accordingly, Chinese experts mainly express a moderate optimism regarding the situation in the field of China’s food security. In general, the production has remained stable and even demonstrated a moderate rate growth in a number of areas. There have been changes in the structure of consumer preferences (meat, dairy etc.), the shortcomings in logistics and production chains have been identified as well as challenges related to ecological risks. The main tendencies, determining the development of agriculture in the short term, according to the experts, would be digitalization and the improvement of food quality.

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<sup>87</sup> China – Hubei Safe, Sustainable, Smart Agriculture Project / World Bank. 21.05.2020. Available at <https://www.worldbank.org/en/news/loans-credits/2020/05/21/china-hubei-safe-sustainable-smart-agriculture-project> (accessed 13.06.2020)

<sup>88</sup> Project appraisal document on a proposed loan in the amount of euro 136.5 million (us\$150.0 million equivalent) to the People’s Republic of China for a Hubei smart and sustainable agriculture project / World Bank. 30.04.2020. Available at <http://documents.shihang.org/curated/zh/155781590372032428/pdf/China-Hubei-Smart-and-Sustainable-Agriculture-Project.pdf> (accessed 13.06.2020)



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