



# Discussion on the Current Agricultural Problems and Rural E-Business in Digital Era

Liqin Tan<sup>1\*</sup> Xueqin Liao<sup>1</sup> Peng Du<sup>1</sup> Yan Rao<sup>2</sup>

<sup>1</sup>Business School, Chengdu University of Technology, Chengdu, 610059, China

<sup>2</sup>Economics Department, Henan University of Economics and Law, Zhengzhou, 450046, China

\*Corresponding author. Email: Liqin Tan, tlqtlq@vip.sina.com

## Abstract

Since agricultural problems are always the most important problems in our national economic affairs, the central government has been working hard to solve these problems. In 2015, national government and local governments at all levels began to support the development of rural e-commerce from a policy perspective strongly. In 2020 our total agricultural output value, agricultural e-commerce sales, and per capita disposable income of farmers have reached 7.17 trillion, 610.7 billion and 17,131 yuan respectively, compared to 5.42 trillion, 137 billion, and 11422 yuan in 2015 respectively. Rural E-business played a great role in the development of the rural economy. So in the digital era, we should make better use of digital technology to develop rural E-business energetically. Thus we can accelerate the development of the rural economy and increase farmers' income more quickly.

**Keywords:** rural areas, E-business, big data, agriculture digitization.

## 1. INTRODUCTION

Agriculture is the fundamental industry in our country since the establishment of the People's Republic of China. From 1982 to 1986, the first documents of the Central Committee of the Communist Party of China (CPC) were all about agriculture. In these documents, our government made specific plans for rural reform and agricultural development. From 2004 to 2022, the first documents of our central government every year were also about the "three rural problems" (agriculture, rural areas, and farmers) in nineteen years consistently, emphasizing the status of the "three rural problems" as the top priority in the socialist modernization. National and local governments at all levels began to support the development of rural e-commerce strongly from a policy perspective in 2015. In February 2015, the first document of our central government focused on the development of agricultural products e-business, agricultural e-commerce platform construction, and e-business in rural areas. Since May 2015, the national policy documents on rural e-commerce have been released successively. From the cultivation of rural e-commerce supply chain, promotion of production and

marketing matchmaking to carrying out "comprehensive demonstration work of e-commerce into rural areas", to agricultural products out of the village into the city by "Internet +". The measures for developing rural e-commerce are becoming more and more clear. In the documents, our government has put forward corresponding requirements for the development of rural e-commerce in China. Although the involvement of the Internet in agriculture and rural areas just started, there was also a steady upward trend. The reason why rural e-commerce is "favored" by our government is that it can provide new impetus to solve the problems of "agriculture, rural areas, and farmers". After years of development of rural e-business, our total agricultural output value, the sales volume of agricultural products e-commerce, and per capita disposable income of farmers have increased to 7.17 trillion yuan, 610.7 billion yuan, and 17,131 yuan in 2020, while in 2015 the total agricultural output, sales volume of agricultural products and per capita disposable income of farmers were 5.42 trillion yuan, while the through e-commerce was only 137 billion and 11422 yuan respectively (table 1).

**Table1.** Statistic Data of Agriculture Development from 2015 to 2020

year	Gross agricultural output value (100 million yuan)	year-on-year growth rate(%)	Agricultural e-commerce sales ( 100 million yuan)	Year-on-year growth rate(%)	Per capita disposable income of farmers ( 100 million yuan )	Year-on-year growth rate(%)
2015	54205.3	4.54	1370	37	11422	8.9
2016	55659.9	2.68	1567	14.4	12363	8.2
2017	58059.8	4.31	1728	10.3	13432	8.6
2018	61452.6	5.84	2305	33.4	14617	8.8
2019	66066.5	7.51	3975	72.5	16021	9.6
2020	71748.2	8.6	6107	53.6	17131	6.9

In addition to the impact of the novel Coronavirus Epidemic, as the Russia-Ukraine conflict escalated in 2022, many experts predicted that the food supply in the world would reduce significantly. So agricultural problems would be very important in the future. How can we solve this problem? I think digital technology and e-business can help to solve this problem. Rural e-business in the digital era not only means commercial activities via the internet but also means the digitization of the whole life cycle management and monitoring of agricultural production so as to improve the quality of the agricultural products continuously. The deep application of information technology such as IOT, big data and cloud computing in agriculture can make the digitization of agricultural production, marketing and industrial supervision into realization. In another word, rural e-businesses in digital era can not only provide the farmers with the latest information, such as relevant agricultural products 、 agricultural machinery 、 agriculture chemicals 、 horticulture 、 agricultural security and computer software, etc. It can also provide farmers with the very important factor of production——data to help farmers to optimize agricultural production. Furthermore, agricultural e-business in the digital era can promote the process of rural E-government, which can accelerate industrial supervision and rural revitalization. <sup>[1]</sup>

In 2022, the title of the first document of our central government is “to promote the construction of digital villages and strengthen the construction of rural information infrastructure vigorously”. This document emphasized that all local governments should promote the development of smart agriculture and promote the integration and application of information technology and agricultural machinery. In addition to that, the local government should strengthen the farmers’ digital literacy and skills training. Rural public services will be empowered with digital technologies. So we can see our government also emphasizes the application of digital technology. <sup>[2]</sup>

## **2.THE FOUNDATIONS TO IMPLEMENT E-BUSINESS AND AGRICULTURAL DIGITIZATION**

### ***2.1 The current requirement for developing e-business and agricultural digitization***

The contradiction between the increasing population and reducing land resources is getting more and more conspicuous at present. Meanwhile, the urbanization process will also be accelerated. In addition to that, the remarkable improvement in income makes market demand expand rapidly too. All these changes require agricultural economic growth mode to transform intensively from material investing type to knowledge investing type. The development of agriculture will rely on information, people's intelligence, and knowledge more and more. So the rapid development of the traditional industry—the agriculture industry needs more technicalization, industrialization, and marketization. But technicalization, industrialization, and marketization will also face problems such as huge information problems, technological problems, product management problems, etc. Among them, the information problem is the most important one. The last two problems can be solved through the settlement of the information problem. Implementing E-business with digital in the agriculture industry can solve the information problem and improve the efficiency of agricultural production and increase farmers’ income. <sup>[3]</sup>

### ***2.2 Enormous market opportunities for E-business existing in the rural areas in China.***

According to the statistics, in 2018, there are more than 200 million enterprises and 560 million people in the agricultural sector in China. Our country has already become the most important agricultural product production and consumption country in the world. <sup>[4]</sup>All the processes concerning the production, exchanging and consumption of the agricultural food, from the supply of production to the wholesale and retail of consumer goods, from warehousing and transportation

to the corresponding finances will inevitably create enormous trade chances. For example, in 2020 the output value of grain and vegetable & fruit is up to more than 2290 billion Yuan and nearly 4000 billion Yuan (table 2) respectively, So there will be a great need for us to improve efficiency in production and exchange of such agricultural foods. Application of information technology such as IOT, big data, cloud computation in E-business is necessary.

**Table2.** the Domestic Agricultural output in 2020(billion yuan)

Grain	Vegetables	Fruit	Aquatic products
2290	2451	1389	1243

Of course, we can see that agricultural e-business has developed greatly in the last decade. Agricultural products are sold by many online and offline channels such as community platforms, Hema Fresh and Jingdong Seven Fresh, etc. to create an end-to-end digital supply chain to meet the need of online and offline channels of retail in order to keep the balance of production and marketing. While the other end of rural e-business connects the fields and improves the production efficiency of agriculture products by using digital technology appropriately.

### ***2.3 Agricultural website became the platform to develop rural E-business***

Until now almost every province (the district, city) in China has already set up its own agricultural information websites. These provinces (the city, and district) have the infrastructure conditions for the Informatization of the network. The agricultural information centers have been established in most provinces (the city, district). There are already about 3100 agricultural websites in our country, which can be classified into 4 major types<sup>[5]</sup>: government type, comprehensive type, professional agricultural website, and commercially operating type. The completion of these websites can help the market run efficiently and exchange product information and circulate merchandise. All these websites can offer good material foundations for implementing E-business in the countryside.

### ***2.4 Favorable policies made by the government will help the development of agriculture and agricultural e-commerce.***

As the enacting of the policies of the government to encourage the development of agriculture, the government will provide more support on the labor, material, finance, and policies to help the rural areas to develop E-business. The experiences in the developed country show that the healthy and steady development

of the E-business in a country cannot grow well without the support and participation of the government.

## **3. RECOMMENDATIONS**

Based on the study, we put forward the following recommendations for the development of the digitization of agriculture in China.

### ***3.1 improvement of agricultural E-business infrastructure.***

Although the proportion of administrative villages connected to optical fiber and 4G nationwide exceeded 98% and 5G coverage in rural areas was also accelerated by 2021, some rural areas still have no 5G coverage. such as towns and villages in the western areas We hope our government pays more attention to the construction of agriculture E-business infrastructure in these areas and improve the agriculture digitization penetration in the rural areas.

### ***3.2 Popularization of the E-business and agriculture digitization knowledge***

In the digital era, knowledge and data are important production factors. So Chinese farmers must acquire market information such as food prices, and quality standards in the world market and learn the latest agricultural technology through the Internet as the farmers in developed countries do.

Secondly, we must develop and train qualified people for the application of E-business and digital technology in rural areas. On the other hand, we must popularize the E-business and digital technology knowledge among the farmers.

#### ***3.2.1 Special training***

According to the natures of the enterprises, training programs may be different. The general farming enterprises leaders should pay more attention to the basic knowledge of the Internet, E-business security, databases, digital technology application, etc. But the IT insiders will be more interested in the marketing of the network, supply chain management, etc.

#### ***3.2.2 Tele-education***

Agriculture digitization and E-business courses can be offered through the Internet and people who are interested in learning E-business and agriculture digitization knowledge may take their choices whenever and wherever possible for discussion, exchange of ideas with experts and other students while doing homework and even take part in examinations on the net.

### 3.2.3 Popular education

The popularization of basic knowledge of E-business and agriculture digitization should be conducted through mass media such as TV stations and Internet websites.

### 3.3 Construction of the Agricultural websites

There are numerous agricultural websites in China now, but most of them are located in the big cities and the eastern provinces. There is only a number of websites in the middle and western areas. Because the service objects of agricultural websites are regional, the unbalanced distribution may cause websites to be unable to offer information with regional characteristics to the peasants in different areas in line with the local conditions.

So, on one hand, we must rely on the rural information assistant's team to strengthen the website construction over the whole country. That is to say, we will collect, process, and issue the information according to the superior products and dominant industries in the rural regions. On the other hand, we will strengthen the government's role in the agricultural E-business and rely on the government and relevant professional personnel to build peasants and expert's consultative service system, professional technique database, and dynamic database of market supply and demand of agricultural products, which are facing to the agricultural production and management.

## 4. CONCLUSIONS

In summary, rural areas face unprecedented great opportunities under digital circumstances. Rural E-business includes the visualization of agricultural management and the realization of agricultural affairs

online by using cell phones; it is also the transparency of product traceability and the creation of a whole-chain traceability system to trace the whole process of agricultural products from sowing, growing to restaurants. How to catch the opportunity to accelerate the development of the rural economy is a question that both rural cadres and farmers have to consider seriously. I believe if we use digital technology to develop e-business and address the inherent problems in the agricultural sector effectively, we can not only accelerate the economic development of rural areas but also increase agricultural output and farmers' incomes.

## REFERENCES

- [1] Xiaobo Wu, China on the Cloud. CITIC Publishing Group, 2020, pp.106-118(in Chinese).
- [2] Fan He, Variables, CITIC Press, 2019, pp. 126-132(in Chinese).
- [3] Pengbiyu, Analysis of agricultural e-commerce pattern in China, The southern rural, 2001, pp.37-39,
- [4] Mu yanghong, Wang duchun, Chi fengmin, Rural electronic commerce influence factors analysis based on structural equation model – 15 rural e-commerce demonstration counties in Heilongjiang province as an example. Journal of Agrotechnical Economics, 2016, pp.106-118.
- [5] Henderson J, Dooley F, Akridge J, Internet and E-Commerce Adoption by Agricultural Input Firms, Applied Economic Perspectives and Policy, 2004,pp.505-520.

**Open Access** This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

