Research on the Development of characteristic Agriculture based on Block chain Technology

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Abstract. By analyzing the problems and market situation of the development of characteristic agriculture, this paper puts forward the research on the development of characteristic agriculture based on block chain technology. This paper points out that there are some problems in China's agricultural production, such as the lack of specialization and scale. In order to solve these problems, this paper proposes to adjust measures to local conditions and develop characteristic agriculture according to the natural environment and development situation of different regions. In addition, this paper also puts forward some specific business, including product selection, Internet to help farmers, innovative marketing methods and singing characteristic brands and so on.

Keywords: Characteristic agriculture, block chain technology, Internet helping agriculture.

1. Introduction

Agriculture is a basic industry with the longest history for human survival. According to the data of the Food and Agriculture Organization of the United Nations, in 2019, the global agricultural land is about 71.282 billion mu, and the arable land area is about 20.75 billion mu; in 2020, the global population is about 7.753 billion, and it is expected to increase to about 10.2 billion in 2050[1-5].

However, there is another very important point, that is, measures should be taken in accordance with local conditions. For example, agriculture should be considered in the context of large-scale agriculture, that is, from the perspective of agriculture, forestry, animal husbandry and fishing, agricultural production is a whole and complement each other. There are many kinds of natural environment in our country, so it is difficult to find a unified agricultural development model[6]. The northeast has a large land area and can develop large-scale agriculture as in the United States; in the southwest mountainous area, there is little land, so small-scale agricultural operations should be developed according to specific conditions.

The key to characteristic agriculture lies in "special". At present, the market is rich in supply, consumers have not paid attention to the brand to recognize the brand purchase, the brand has become a pass for products to enter the market. To get out of the predicament, agriculture needs to challenge traditional agriculture, run agriculture like the development of industry, and vigorously implement the famous brand strategy, which is to create famous brands, protect famous brands, strengthen famous brands, and form unique famous brands[7-10].

Farm will be closely combined with the current hot spots of the times, using Internet +, big data and other technologies to integrate cultural elements and tourism elements into characteristic agriculture. While carrying out business model innovation, it is committed to promoting the regional and professional development of characteristic agriculture, and finally achieve something new, strong points, learning, pleasure and success in farming. To achieve the dual development of agriculture and farmers, a common bumper harvest, and help local farmers to build characteristic agricultural brands, including but not limited to brand design, media marketing, technical guidance on the cultivation of agricultural products and other services (Figure 1).

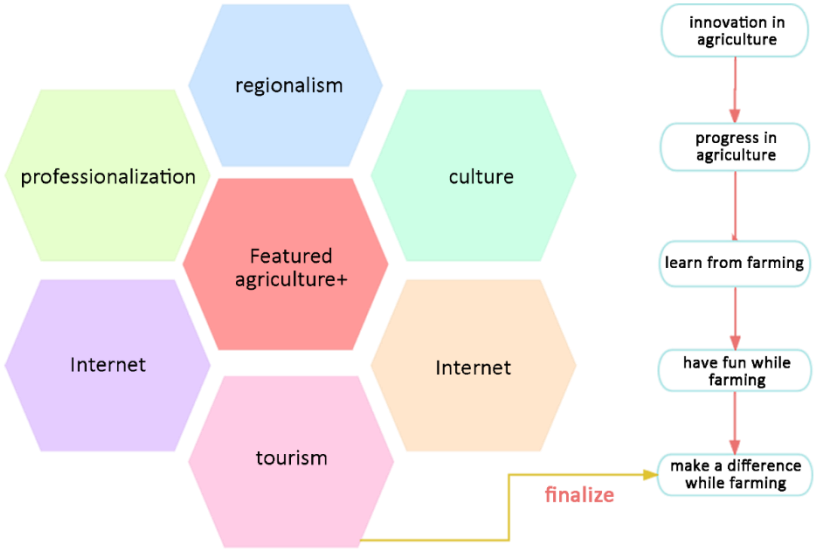


Figure 1. Product management model and end goal

2. Research methods.

2.1. Project background.

The research methods of this paper are shown in figures 2 and 3.

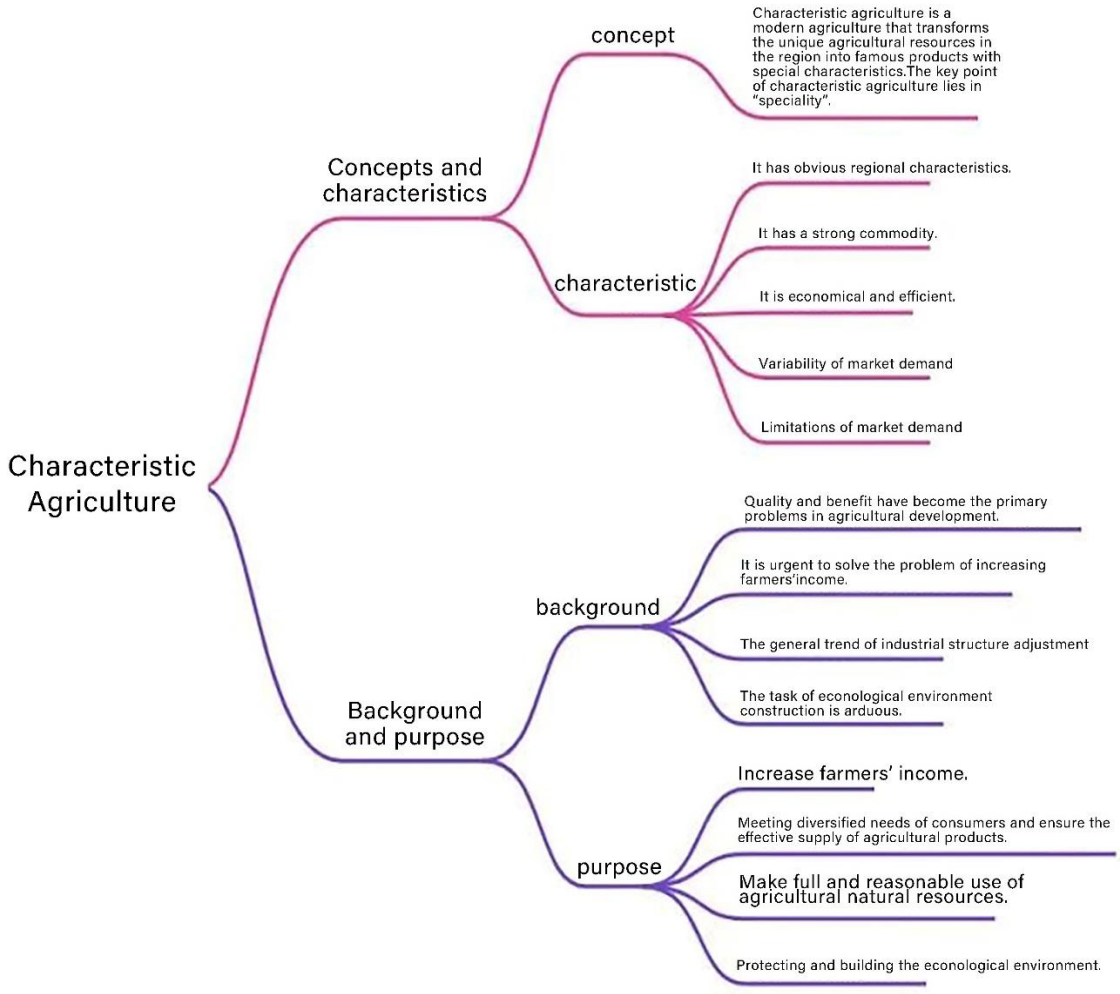


Figure 2. Background overview of Farm - Small Farm Helper project

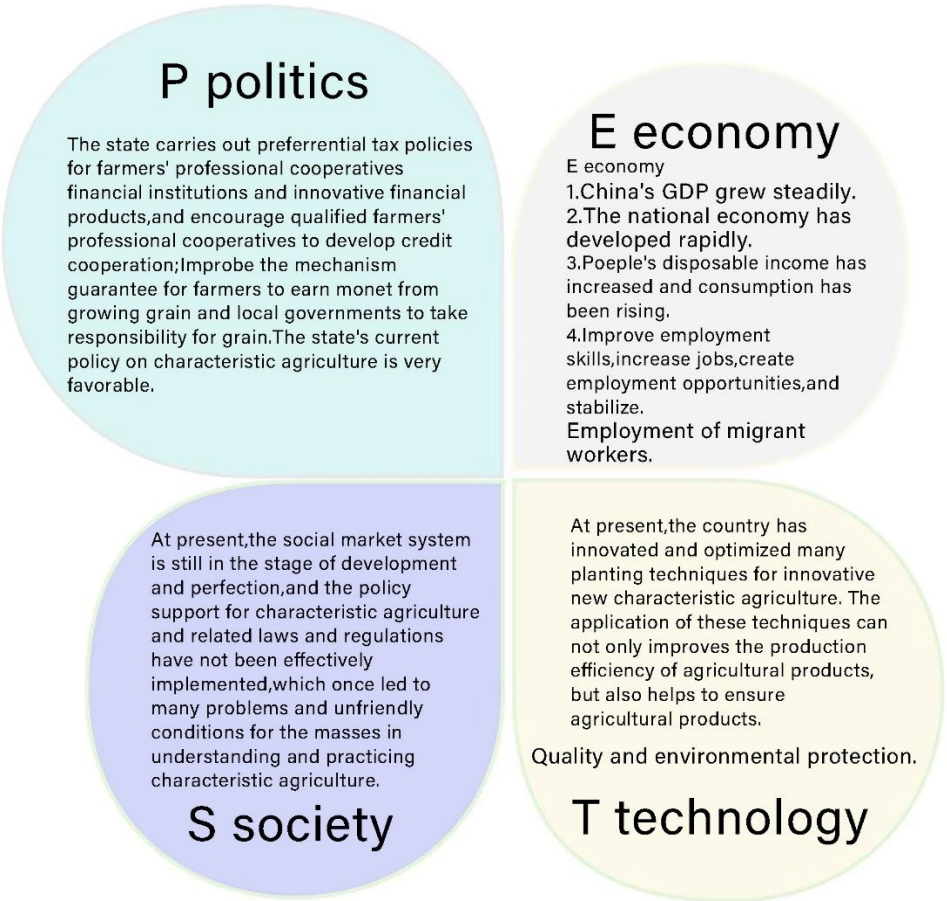


Figure 3. Shows PEST analysis of the project background

2.2. pain points in the industry.

(1) The structure of agricultural personnel is aging.

At present, the main group of agricultural personnel in China is over 60 years old, the actual age structure of agricultural personnel is seriously aging, our project is to solve the problem of aging of agricultural personnel.

A large number of professional and compound talents are needed in intelligent agriculture, who can not only operate all kinds of transmission and analysis systems remotely, but also carry out remote control operation skills of drones and unmanned tractors nearby, but at present, in actual agricultural production, it is extremely difficult to require them to re-learn and update their knowledge in order to upgrade to agricultural intelligent operation.

(2) Lack of professional and intelligent agricultural talents.

The number of employees in intelligent agriculture, especially the shortage of professional and technical personnel, from mechanical support, digital technology to intelligent technology, all need the operation of professionals.

At present, although various colleges and universities in our country have set up intelligent agriculture majors and training courses, and have trained a large number of professionals, there is still a huge gap from the number of talents needed, especially the talents trained are excessively bookish, over-theorized and lack of practical ability. in particular, they know little about the actual situation in agriculture, such as planting, breeding, processing, sales and so on.

(3) Lack of agricultural communication and shopping channels to highlight local characteristics.

At present, most of the service content of the agricultural Internet is small, and the coverage area is general, which can not well highlight the local characteristics, the structure of the platform is single, the function is not strong, it is not attractive, and the downloading is small. Farmers can not easily find functions on the platform to meet their needs.

2.3. SWOT analysis.

The Swot analysis method is introduced as shown in figure 4.



Figure 4. Shows the swot analysis of the project itself

2.4. Technical route.

The study is divided into five stages.

In the first stage, make clear the goal, analyze the development prospect of the project, consider the problems that will be encountered, carry out pest analysis, swot analysis and competitor analysis of the project, understand the market situation of product mainline tasks, customer analysis, main business and so on, and begin to prepare data and data analysis. At the same time, we will conduct on-the-spot visits, select several planting bases with distinctive characteristics throughout the country, ask local farmers about the planting situation and the problems encountered, and collect and survey the local planting land. After collecting enough data, we will classify and summarize, at the same time, analyze big data with the help of Internet technology, and classify the planting land, such as soil moisture, air quality, sunshine time and so on.

In the second stage, we will review the policies that have been issued to help farmers in our country, and with the help of the policies, we will further analyze the data collected in the first stage, and

further classify and summarize those with and without policy support. At the same time, we will formulate iconic product brands and product marketing plans according to these policies, and make APP models. Test and develop related functions with team members.

In the third stage, on the basis of the previously collected data and policies, we will build a platform to invite experts from different fields of agriculture, and farmers can conduct online consultation according to the various agricultural problems that arise in the current planting land. and invite agricultural experts to provide remote or offline guidance through the platform. During the trial operation of the product, taking Pinggu District of Beijing as the pilot area, we chose Donggaocun Town of Pinggu District (the national demonstration village of "one village, one product") to find groups that are convenient to collect user feedback and to collect customer information on a regular basis. timely feedback and improvement on the questions raised.

The fourth stage is to create an industrial chain and set up a whole industrial chain of logistics-promotion-sales-after-sale through the cooperation of farmers and enterprises, which provides a development opportunity for the production and sales of agricultural products. The fifth stage, summing-up period. Collect and display the results in the pilot areas, summarize them, such as finding deficiencies, stop losses in time, pay attention to the market situation at any time and make corresponding decisions.

From planting land survey to brand design, from policy support to expert guidance, our project conforms to the trend of "digital economy", grasps the key links, strengthens technological innovation, stimulates industrial vitality, and effectively promotes rural revitalization.

3. Products and services

3.1. Product introduction

(1) Product name.

The name of our product is Farm- Farmer Helper. The word Farm has many meanings, and it was chosen as the prefix of the project because it well reflects the theme of our project-related to agriculture. At the same time, it also contains the meaning of operating farms, farming and commercial planting, as well as the main body and mode of operation of agriculture. The latter part of "helping small helpers for farmers" more clearly expounds our function and purpose.



Figure 5. Project product logo

In the Logo picture in figure 5, there are green plants growing under a sturdy little house, surrounded by people's clenched hands. It is expressed that the small helper of Farm- for farmers is not only a good channel for agricultural personnel to communicate, learn and communicate trade, but also a sanctuary that can bring the characteristics of each region into the platform and prevent them from being lost and nurtured.

At the same time, it also reflects the integrity, science, rigor and service purpose of our brand.

(2) Developing products.

Farm- agricultural helper aims at agricultural support and care across the country. Based on some agricultural projects under the current social environment, an Internet agricultural consultation channel and agricultural product sales channel are constructed for the whole country.

1) Use intelligent facilities and equipment and quality traceability equipment to encourage the use of traceability technology equipment such as "one product one yard", "one bundle one yard" and "one basket one yard", so as to realize the characteristic products "safe to home" and quality assurance. Bring satisfactory shopping experience to buyers.

2) Pay attention to improving the functions of commercialization of online selling agricultural products, quality control and sorting, packaging and distribution, unified distribution, etc., and reach cooperation with current logistics, freight and other companies, and develop logistics and distribution functions suitable for characteristic agriculture as far as possible. Similar to the current Meituan optimal selection, a lot of shopping orders are issued today and arrive the next day.

But the forecast we focus on speed and freshness, to achieve the same day to place the order, the same day to arrive (except in remote areas).

3) In addition to the network consultation and the popularization of agricultural knowledge on other agricultural websites, we focus on characteristic agriculture and analyze what kind of products are suitable for soil, humidity, acid-base, climate and geographical location.

While paying attention to the process of product planting, we will also conduct regular publicity and quality testing of agricultural products around the country, and build product sales channels in advance to avoid the occurrence of unsalable products as far as possible.

3.2. Brand design and promotion.

3.2.1 Brand Design.

(1) Advertisement design.

Understanding customers, products, markets, and media is critical to creating efficient advertising design. We will combine wise strategic thinking with innovative graphic creativity to create efficient and eye-catching designs. While highlighting the products, we should sublimate the significance of them, so that more and more people can understand and even participate in characteristic agriculture.

(2) poster design.

Poster design for farmers' brands, according to the needs of customers, or customers can choose to generate automatically through our platform, as long as select the corresponding elements and bottom, enter the relevant labels can be generated automatically.

(3) album design.

This is also the focus of brand design, from complete literature to detailed annual reports, publicity manuals that reflect the essence of the brand, and increase the shooting of the growth environment of characteristic agricultural products, technical equipment records, records of suitable growth conditions and cumulative changes over time, so that customers can really feel the growth cycle and environment of agricultural products.

3.2.2 Brand promotion.

(1) Promote characteristic agricultural products through short videos, Wechat official accounts, Weibo, Xiaohongshu and other platforms, and hang product purchase links on relevant social accounts.

(2) Establish a functional website to put the concept of this product into practice, so that everyone can experience the convenience brought by this product.

(3) Looking for bloggers in some related fields to advertise their products to let more people know about our platform.

(4) The use of online advertising and search engine promotion way to promote.

(5) Put up some local characteristic agricultural products of high quality and low price in the store, carry on the promotion of the store and collect the evaluation of buyers regularly.

3.3. Operational objectives.

In the early stage, through the understanding of the characteristic agricultural products of various regions and on-the-spot investigation, we will carry out a pilot project in Pinggu District of Beijing,

using the concept marketing method of "Farm" to pilot the local grapes in Pinggu. Taking this pilot as an example, the pilot will be extended to some areas with characteristic agricultural by-products in the later stage to develop the advantages of characteristic agriculture and to retain and dig the value of characteristic agriculture.

At the same time, we regularly invite professional agricultural scholars to popularize relevant agricultural knowledge to the public through live broadcast, shooting small videos, sending tweets and other forms, so that people inside and outside the agricultural field can understand agricultural science. At the same time, agricultural experts can ask questions in the form of text, language and video photos on the platform, so as to realize online agricultural consultation and bring convenience for more farmers. In the "Farm" operation phase, we will continue to pay attention to the sales of agricultural products through the platform data, do a good job in market research, communicate with users, understand their more needs and absorb their valuable suggestions. Then on this basis, the function and structure of the website are constantly optimized.

3.4. Survey programmes and findings.

Investigate the agricultural characteristics of various places, optimize them, promote and publicize high-quality local crops and agricultural and sideline processing products, and carry out official sales on the website, and there will be real-time monitoring of the growth environment and development of the products, while ensuring the quality, it can also prevent and treat the diseases of crops in time.

We found a farmer in Pinggu area, whose main crops are grapes and auxiliary crops are some vegetables, such as chives and garlic. With the consent of the farmer, we asked several related questions and took a picture of the farmer's planting base (figure 6).



Figure 6. Farmer's greenhouse planting picture

Survey results:

After consulting the data and interviewing some experienced farmers, the following conclusions are drawn:

First of all, at present, various industries of rural revitalization are facing the strategic opportunity of vigorously supporting subdivision development and quality upgrading, but due to the lack of investigation experience in the large-scale development and construction of village areas, at the same time, the ecological production and life of each village has remarkable diversity and non-standardized characteristics, so it is still lack of methodology and mature model in the current development and construction.

Compared with the standardized and professional development and construction of urban areas, rural commercial projects are more restricted by natural, human, technological, economic and other internal and external factors, and have a certain risk exposure in investment and construction.

In addition, the hillsides along the rural mountain roads, and the ridges and slopes with better landscape resources are basically ecologically fragile areas. If the bedrock is shallow and the soil layer is thin, once the original soil is disturbed by two layers, it is difficult to restore vegetation and its roots after periodic destruction, which can easily lead to soil erosion and lead to secondary collapses, landslides and small debris flows and other disasters.

At the same time, attention should be paid to the quality of the background ecological environment, such as the development and construction characterized by planting and breeding projects is not suitable for villages with high content of heavy metals in soil.

3.5. Product competitiveness or technological innovation.

(1) Mode of operation.

The innovation of Farm mainly depends on the characteristics of all-media channels, such as live streaming, short videos, tweets, etc., using these existing platforms to quickly launch our characteristic agricultural products to the vast number of netizens, now the popularity of the live broadcast platform is unimaginable by many friends who have come into contact with agriculture, rural areas and farmers, and the income from live broadcast is also very considerable.

We use the existing live broadcast platforms such as Douyin and Kuaishou to promote and promote characteristic agricultural products, so that the majority of netizens can understand our products online.

At the same time, we will also adopt the sales model of "short video + agricultural products".

Carry on the video promotion to the characteristic agricultural products, in the video, we will grasp the characteristics of the agricultural products for the most authentic explanation, and introduce all the outstanding places such as the taste and taste of the products to the netizens. At the same time, we will also deeply explore the humanistic value behind the characteristic agricultural products, formulate targeted marketing plans according to the communication needs of rural resources, and provide customers with professional and refined brand building plans and contents.

Create characteristic agricultural products with temperature and depth, take China's township and county characteristic agricultural products as the target market, provide professional marketing programs for characteristic agricultural products, carry out brand building of characteristic agricultural products in rural areas, and help the revitalization of rural areas.

(2). Innovation point.

1)We have developed this module according to the current form of "network consultation". In this module, farmers can conduct network consultation according to various agricultural problems in the current planting land, and invite agricultural experts to provide remote or offline guidance through the platform; while other agricultural platforms only have some agricultural knowledge popularization, product publicity and other simple functions, generally only for large market agriculture, the attention and analysis of characteristic agriculture is not detailed enough.

2). We shoot humorous short videos or make some vivid cartoons to promote the characteristic products of each place, promote the popularity of characteristic agricultural products in each region, and increase sales, so as to increase farmers' income. At present, there are few publicity in the agricultural field by shooting eye-catching short videos and cartoon push. at present, most of the publicity videos about agricultural products in the market have the problems of false propaganda, exaggerating reality and so on.

4. Conclusion

Through the study of characteristic agriculture, this paper puts forward the development model of characteristic agriculture based on block chain technology. By means of adjusting measures to local conditions, selecting products, helping farmers on the Internet, innovating marketing methods and singing characteristic brands, this model helps to solve the problems in China's agricultural production and improve the level of specialization and scale of agriculture. At the same time, this model also helps to improve the market competitiveness of characteristic agricultural products and promote the sustainable development of agriculture.

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