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# Current Status and Development Strategy for Community-Supported Agriculture (CSA) in China

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**Abstract:** Community-supported agriculture (CSA) is considered to be a new alternative mode for agricultural development, which has developed rapidly in China and attracted the attention of scholars, because it shows great concern on food safety, environmental protection and sustainable development of agriculture. Based on a comprehensive analysis of a large number of documents at home and abroad, this paper reviews the research on community-supported agriculture from the perspective of its origin, development process, characteristics, modes, functions and problems, aiming at summarizing the experiences and current problems and demonstrating recent research and development status of CSA in China in hope of providing references for its practice and research. The key conclusions in this review are: (1) CSA has a short history in China, but it is developing rapidly; (2) Chain's CSA is characterized by a cooperative network with food safety as the primary development goal, agricultural product distribution as the main operation mode, and trust as the basis; (3) China's CSA lacks of government's support, and develops roughly at a small-scale. (4) With unique modes and functions, China's CSA is facing some problems such as management, funding, talents, markets, technology and consumers' trust. The development of CSA in China needs joint efforts from government, producers and consumers. China's CSA needs to rely on its own advantages, make full use of its economic, social, ecological and cultural functions, combine Internet and ecological agricultural technology and explore the local modes with Chinese characteristics.

**Keywords:** Community-Supported Agriculture (CSA); current status; development strategy; China

## 1. Introduction

At present, modern agriculture has come to be, not only the trend in world agriculture but also the focus of development and construction in all countries of the world. It is also an effective way to improve the resource utilization efficiency, land productivity, agricultural labor productivity and the ability to resist natural risks, which is beneficial for constantly meeting people's growing material and cultural needs and effectively guaranteeing the supply of agricultural products and food security.

However, modern agriculture has also brought profound and lasting negative effects. On the one hand, the long-term unreasonable utilization of a large number of chemical fertilizers, pesticides and other chemicals has led to the contamination and erosion of farmland soils by various toxic and harmful substances, and soil consolidation and degradation problems have become increasingly serious. Soil structure and physical and chemical properties have changed, and the content of organic matter has declined seriously, which affects the increase of yield and improvement of the quality of agricultural products, thus hindering the sustainable development of agriculture. On the other hand, the process of agricultural modernization is also the process of agricultural industrialization.

Industrialized agriculture has strong market attributes. Its development goal is not to satisfy the real needs of consumers, but to maximize operating profits by supplying food to consumers. Therefore, industrialized agriculture pays more attention to the reduction of its own production costs and the improvement of operating efficiency. Although industrialized agriculture has made great achievements in increasing food supply, diversifying food varieties and alleviating world hunger, its disadvantages have become increasingly prominent and results in high economic, social and environmental costs to countries all over the world. The apparent disadvantages are reflected as follows: frequent food safety incidents, declining food quality, agricultural pollution, deterioration of the ecological environment and the constantly marginalized small-scale agriculture and so on [1,2].

Community Supported Agriculture (CSA) is a form of alternative agricultural developing from the reflection on industrialized agriculture because of people's preferences for health, ecological and social functions of agriculture [3]. The *CSA Action Guide* by British Soil Society defines CSA as "a cooperative relationship between farmers and consumers, who share responsibility and harvest. CSA is a production mode in which a group of consumers support the operation of farms. Consumers pay in advance and farms supply safe agricultural products to them, thus realizing the cooperative form of risk-sharing and benefit-sharing between producers and consumers. [4] In other words, CSA tries to establish a direct link between farmers and consumers. The target is to satisfy consumers' food requirements and protect small farms while possessing its social, economic, landscape, ecological and other multiple functions [5–7]

The CSA devotes to collectively building a more indigenous and equitable agricultural system that allows farmers to focus on good farming practices while their profits can be guaranteed at the same time. CSA is one of the important forms of sustainable agriculture. It is also a "green channel" for China to develop sustainable agriculture and achieve coordinated development between urban and rural areas [8]. Since CSA entered China in 2003, it has gradually attracted people's attention and developed rapidly in China.

On the basis of reviewing the development status of CSA in major countries in the world, this paper summarizes the development course of China's CSA, systematically summarizes the characteristics, development mode, functions and existing problems of China's CSA, and puts forward the development strategies and prospects, so as to provide references for the development of CSA in China and provide experiences for the development of CSA in the world.

## 2. The Origin of Community Supported Agriculture (CSA)

CSA originated in Japan in 1965. In the late 1950s, Japanese people panicked about the environment and food safety because of the occurrence of "Minamata disease". There was an urgent need for healthy and safe food. At the same time, the unbalance between Japan and foreign agricultural trade also affected its food supply. At that time, there was no unified and objective certification system for organic food in the market and the supply and demand were unbalanced. Hence, consumers and producers began to cooperate directly. They encouraged farmers to produce organic products, such as milk and vegetables by signing contracts with farmers, do voluntary work, pay in advance and obtain corresponding product quotas. This small-scale, local and non-profit community-supported agriculture is called "Teikei" [6]. It is a partnership between growers and consumers in which farmers share organically grown produce and, in return, consumers support and secure viable farm operations. This partnership aims to restore and enhance the ecological and agricultural landscapes of farms and their surrounding areas. [9] The organic agriculture and sustainable agriculture advocated by Teikei made people pay more attention to the local ecological environment and sustainable development, which played a great role in promoting the organic agriculture movement in Japan.

At the same time, this form of social support agriculture has gradually affected Europe and the United States, and appeared in Europe during the 1970s (Table 1). AMAP (Alliance for the Protection of Small Family Farms) appeared in France, which aimed to achieve sustainable agricultural development by maintaining small-scale family farms; Germany has developed Solidarische Landwirtschaft, in

which farmers and farmer partners (referring to consumers) formed a united relationship. Consumers with higher income voluntarily paid more than those with lower income to help farms operate. The earliest CSA in the United States appeared in Massachusetts in 1985. Unlike Japan and other European countries, CSA in the United States had no fixed mode and was usually flexibly adjusted according to the requirements from both consumers and producers.

**Table 1.** The Development of community-supported agriculture (CSA) in the World [10].

| Country | Establishment | Organization | Specific Description |
|---|---|---|---|
| Japan | 1970 | Teikei | Consumers and producers began to cooperate directly. They encouraged farmers to produce organic products such as milk and vegetables by signing contracts with farmers, do voluntary work, pay in advance and obtain corresponding product quotas. |
| Switzerland | 1970 | Les Jardins de Cocagne | Citizen associations [10] |
| America | 1986 | CSA | Its core idea is to establish a direct link between producers and consumers, reduce the intermediate links, let consumers know producers, while both sides share risks in agricultural production, and share the benefits of healthy production. |
| Germany | 1986 | Solidarische Landwirtschaft | Solidarische Landwirtschaft means united agriculture. United relationship between farmers and their 'peasant partners' (referring to consumers). High-income consumers voluntarily pay more than low-income consumers to help the farm operate. |
| Italia | 1994 | GAS | GAS is a national organization, which was established in 1996, and now there are more than 600 GAS farms. |
| Denmark | 1999 | Aarstiderne | Organic food distribution service is based on network. |
| France | 2001 | AMAP | To maintain small-scale and family farm production and achieve sustainable agricultural development, France has now established a national "Alliance-Ecologist-Consumers" to support the development of AMAP. |

## 3. Development of Community Supported Agriculture (CSA) in China

With the emergence of food safety accidents in China in recent years, people gradually lose confidence in the industrialized food system and the globalized food supply system. In addition, the state vigorously advocates the "modernization of agriculture" and the construction of urban and rural ecological civilization. The Alternative Food Network system (AFNs) represented by CSA, farmers' fairs, consumer cooperatives, landscape agriculture, slow food movement and so on has gradually become the focus of attention of the government, enterprises, communities and academia for its role in ensuring food safety, strengthening the protection of the ecological environment and promoting the development of rural areas. Community Supported Agriculture (CSA) is the most representative mode of organic agriculture in this system [11].

Presently, China's CSA project is still in its infancy. After the concept of CSA was introduced to Hong Kong successively and developed rapidly there. Then it was spread to other regions in 2003 and developed rapidly. (Figures 1 and 2).

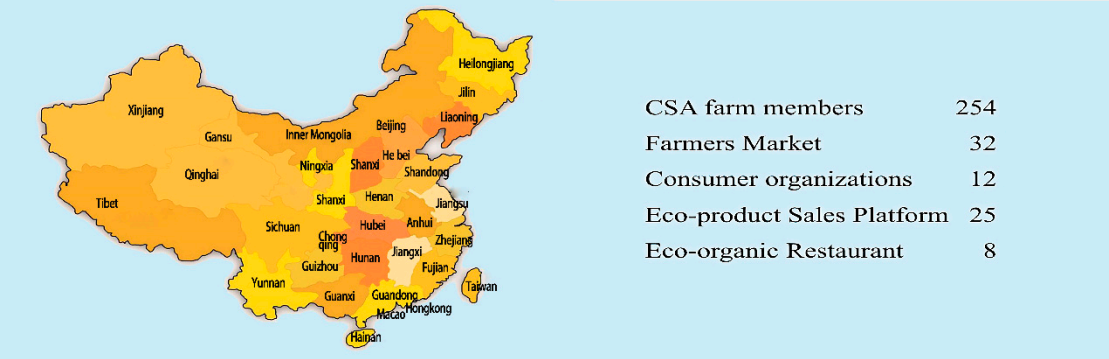


**Figure 1.** Scale and Form of CSA Development in China in 2019.


| | | | |
|---|---|---|---|
| Sichuan Province | 39 | Chongqing City | 6 |
| Beijing City | 23 | Heilongjiang Province | 5 |
| Fujian Province | 19 | Jilin Province | 5 |
| Shanghai Province | 16 | Guangxi Province | 5 |
| Anhui Province | 14 | Yunnan Province | 5 |
| Hebei Province | 13 | Hubei province | 4 |
| Jiangsu Province | 13 | Gansu Province | 4 |
| Shanxi Province | 13 | Shanxi Province | 3 |
| Shandong Province | 9 | Tianjin City | 3 |
| Zhejiang Province | 8 | Xinjiang Uygur Autonomous Region | 2 |
| Guizhou Province | 8 | Jiangxi Province | 1 |
| Liaoning Province | 7 | Hainan Province | 1 |
| Henan Province | 7 | Ningxia Hui Autonomous Region | 1 |
| Inner Mongolia Autonomous Region | 6 | | |

**Figure 2.** Distribution of CSA Farms in China in 2019.

"Native Good Products Exhibition Hall" established in early 2005 in Liuzhou City, Guangxi Province is the embryonic form of community support for agriculture in China.

"Native Good Products Exhibition Hall" is an interactive base between urban and rural areas. It mainly exhibits "native" agricultural products without chemical fertilizers and pesticides produced by farmers, carries out activities such as meeting farmers and consumers, and establishes mutual trust relationship. They bring people who have the same willingness to support healthy agriculture together. Such organization is also called "farmer-loving association". In 2006, the campaign of purchasing rice and land in Lankao, Henan Province, can be seen as the germination of CSA in the country. In 2009, Beijing's "Little Donkey Citizen Farm" became the first CSA experimental farm in real sense. It began to integrate direct marketing, prepaid fees, risk sharing, membership system, box plan and internship projects into the operation of CSA farm. As the construction of the Little Donkey Citizen Farm has exerted great social impact, it has promoted the development of CSA in all parts of China. Since then, with the vigorous promotion of Wen Tiejun, Shi Yan and other scholars, the community-supported agriculture has developed rapidly in China.

In 2015, the 6th International Community-Supported Agriculture Conference "landed" in Beijing, reflecting that China has become an important country in the world to study and practice the CSA concept [11]. According to the statistics from CSA Alliance of Socio-ecological Agriculture in China, there are more than 300 projects in operation (including 254 CSA farms, 32 famer markets, 12 customer organizations, 25 eco-product sales platforms and so on) in more than 20 provinces and cities (Figure 2).

## 4. Characteristics and Models of Community-Supported Agriculture (CSA) in China

From the perspective of the development of CSA in China and abroad, the common feature of CSA is that the consumers and producers establish direct links in terms of capital, talent, technology and products [12]. Globally, CSA is rooted in different regional economy and culture, which inevitably shows certain differences and distinct characteristics. Chinese scholars have explored the characteristics of CSA from different perspectives.

Zhang Hong et al., [13] believe that there is a principal-agent contractual relationship between producers and consumers, and that the characteristics of participants in the CSA mode are: in the CSA operation, consumers are key stakeholders, and farmers are important participants in the production and management of the CSA farms. Liu Liwei [14] believes that as an economic cooperation mode, community-supported agriculture has three typical characteristics: regionality, security and fairness. Sun Juan et al., [15] proposed four basic characteristics of CSA from the perspective of management concepts, marketing methods and operational principles. The four basic characteristics are food health and safety, benefits and risk sharing, direct local sales and distribution and the pursuit of the overall coordinated development of the community. Shi Yan et al., [16] classified community-supported agriculture as a typical mode of ecological urban agriculture, and believed that community-supported agriculture had two characteristics: "healthy, safe and environmentally friendly production process" and "local and fresh products".

In addition to the above characteristics, Chinese CSA has the following 3 characteristics.

### *4.1. Characteristics of Community Supported Agriculture (CSA) in China*

#### 4.1.1. Food Safety Is the Primary Goal

"Community-supported agriculture" has been developed along with people's concern for food safety [14–16]. Similar to other countries, China's CSA farms initially set their development goals to address food safety through ecological planting. For example, health and green agricultural products can be obtained by prohibiting the use of chemical fertilizers, pesticides and herbicides, but by manual work. At present, organic certification lacks credibility. Only urban and rural residents who produce and operate together can produce real organic products, rebuild consumer confidence, and ease the antagonism between consumers and producers.

#### 4.1.2. Agricultural Product Distribution Is the Main Operation Mode

Most of the existing CSA farms are located on the fringe of large and medium-sized cities. Even if some farms are located in rural areas, they are also within the service radius of the city, which makes CSA farms have geographic advantages in the distribution of agricultural products (distribution of agricultural products in proportion to the quota ordered), making fresh and safe agricultural products a link between urban and rural areas. Therefore, the distribution of agricultural products on CSA farms in China is a typical "local producing and marketing" model, which is completely opposed to the modern food industry and chemical or fossil agriculture, and contributes to the establishment of long-term reciprocal and cooperative relationships.

#### 4.1.3. Fair Trade Is the Basic Principle

In the 1950s, the concept of "fair trade" originated in Europe and America. Originally, it aimed to establish a sustainable development opportunity for vulnerable production. Fair trade today refers to a new business operation mode, which emphasizes the transaction based on moral evaluation and builds a healthier, more responsible and sustainable trade partnership. The basic principles of CSA such as organic production, fair and mutual assistance, transparency and openness are consistent with the concept of fair trade, and fair trade is the driving force of long-term development of CSA [17].

### *4.2. The Modes of Community-Supported Agriculture (CSA) in China*

Each country and region have formed different CSA operation modes according to their unique characteristics in agricultural foundation, local culture and social structure [18].

The situation varies greatly in different parts of China, and the CSA modes varies from place to place. Scholars have made a comparative analysis of the operation modes of CSA projects in many provinces in China [19,20]. According to different criteria, different types of modes can be classified. Chen Weiping [13] divides China's CSA into five modes: order mode, renting and planting mode, mixed mode, Co-Purchasing mode and crowd-funding mode. Li Changqin [21] discussed the origin, definition and characteristics of organic agriculture in three forms of smallholder organizations (CSA), smallholder collective (ICS) and participatory security system (PGS).

According to the different status of CSA initiators. Zhou Feiyue divided China's CSA mode into four types: public partnerships, small-scale farmers' cooperatives, production-education -research model and NGO (Non-government Organization) [12]. Liu Fei [22] divided CSA mode into three typical mods: consumer-driven mode, producer-driven mode and NGO-driven mode. According to the different fund providers and characteristics, CSA is divided into six types [23]: mode with small farms and cooperatives, mode established by individual or partnership, mode established by government, universities, scientific research institutes and other official institutions, NGO-driven mode, government-driven mode, restaurant-driven mode with small organic farms. In the practice of CSA, practitioners and forerunners innovated the management mode according to the actual situation

of Chinese society, and divided CSA into labor share and distribution share according to the different members of CSA [24].

From the above analysis, it can be seen that there is some overlap about the classification of CSA modes. So, we recommend dividing China's CSA into following 6 modes: city partner mode, small-scale cooperatives, production-education-research mode, NGO mode, government-driven mode and restaurant-driven mode.

Every country and region have different CSA operating modes based on their unique agricultural status, local culture and social structure. Differences in CSA modes of different countries reflect differences in national conditions which leads to mode innovations. In the process of development of China's CSA, the unique modes have their own advantages and disadvantages (Table 2). This requires that, on the one hand, it is necessary to learn the general experience of foreign CSA modes; on the other hand, it is also necessary to combine innovation with China's national conditions to find a development mode suitable for the country and local development.

**Table 2.** Comparison of CSA models of different themes in China.

| Main Mode | Mode Characteristics | Advantages | Disadvantages |
| --- | --- | --- | --- |
| City partner | 1. CSA partners are from city citizens, who have abilities to organize and mobilize urban consumers.<br>2. Citizen partnerships directly link up and lead CSA production, lease and intensively use farm land, and introduce advanced technology.<br>3. CSA partners and city members establish a better way for communication. | 1. Citizen partners have strong direct selling ability;<br>2. CSA is advanced and stable;<br>3. It is convenient to organize members to work in the field. | 1. Serious land and capital problems, high risks.<br>2. The initiators rely on their own capital to establish CSA, which hinders their long-term development. |
| Small-scale farmer cooperatives | 1. Through small-scale farmer cooperation, farmers supervise each other, produce green agricultural products, and ensure the quality.<br>2. Different small-scale farmers are responsible for different agricultural production. They can rationally take advantage of their land and grow the most suitable agricultural crops. | 1. Low cost and better adaptability to the natural environment;<br>2. The diversification of agricultural products can better meet the diversified needs of consumers. | 1. It is not conducive to the introduction and utilization of advanced urban factors (capital, talent and technology, sales channels, etc.<br>2. It is not good for long-term development owing to small-scale and decentralized production. |
| Production–education–research | With the help of social resources, capital and land are supported by the country. | 1.Practioners have firm beliefs and advanced ideas;<br>2. Easy to implement advanced concepts and produce demonstration effect. | 1. Single production, which is severely restricted by the region;<br>2. It is difficult to expand and develop to a larger scale. |
| NGO mode | Providing support for scattered CSA | 1.Beneficial for promoting advanced experiences and promoting industry alliance.<br>2. NGO can supervise CSA farms as a third party. [25] | 1.Auxiliary function, limited resources and experiences.<br>2.For developing countries, how to integrate with their national conditions is a huge challenge [26] |
| Government-driven mode | Depending on the project, government provides financial and technical support for CSA farms. | More reliable, wider scope of guidance, more stable | Needs considerable investment by government, and difficult to promote |
| Restaurant-driven mode | Combining production and management to reduce costs and improve operational efficiency | With strong purchasing power to support small organic farmers and farms, the successful farms establishing famous brand can also choose to participate in the operation of organic restaurants. | It needs to invest a lot of money and has a high operational risk. |

## 5. Functions of Community-Supported Agriculture (CSA) in China

As for the reason why CSA spreads and develops, Oberholtzer [27] believes that, besides the concept of protecting environment and mutual support, the main reasons are that consumers support small farms, support local economy, protect cultivated land from non-farming and maintain the existence of agriculture in their own areas.

As a new phenomenon, the emergence of community-supported agriculture has aroused tremendous repercussions in China. There are many studies on its functions.

The CSA mode has a huge institutional advantage in preventing and controlling safety risks of agricultural products [28]. The proportion of CSA vegetables purchased by members, the degree of

trust in the farm, and virtual participation have a significant positive impact on changes in dietary behavior of CSA members [29].

CSA can overcome information asymmetry by organizing community activities. Community support can prevent small farmers from blind and excessive production, thus reducing the cost of planting. Through community connection, circulation can be shortened and quality risks of agricultural products can be reduced. Community supervision helps establish trust mechanism and realize the recovery of integrity [28]. CSA has the function of drawing close the relationship between producers and consumers and shortening the distance between them [30]. Timothy found that sometimes the farm does not hesitate to reduce the number of members in order to maintain familiarity and interaction between farmers and members or among members [31]. Regular cultural festivals can help to strengthen the links between CSA producers and consumers [32].

By establishing a link between producers and consumers, CSA not only enhances consumers' agricultural literacy and social responsibility, but also promotes local economic development [33]. Scholars generally believe that the income of most CSA farmers is higher than the average level of the industry [34]. CSA can create "community of common interests" [35], and it is still an effective way to translate social values into practical actions. [36] CSA is an important way to achieve sustainable development of agriculture in the future. Zhang qingwen [37] believes that the function of CSA is mainly reflected in the following aspects: first, it is conducive to the development of local economy. Through the implementation of CSA, the localization of food production and circulation enables a larger proportion of funds to be kept in the local economy, which can promote local employment and the development of industry and commerce. The second is to help protect the local environment; Third, it helps to enhance the trust between people. On the basis of developing CSA in Liaoning Province, Zhang Gangjun [38] concluded that CSA could adjust and optimize industrial structure, promote farmers' income, produce healthy food, curb ecological deterioration and meet the needs of urban residents for "farming culture". Liang Dan et al., [39] analyzed the function of CSA from the point of view of food safety. They believed that community support agriculture could improve ecological environment, promote urban–rural communication, provide healthy and safe products and increase farmers' income and realize rural sustainable development. Liu Liwei [14] believed that CSA has the multifunction of protecting rural ecological environment, providing safe agricultural products, developing economy. Its role of helping agriculture, countryside and farmers is helpful to enhance the interaction, trust and support between urban and rural areas, and to build a harmonious society.

CSA can improve the ecological and environmental conditions, increase social benefits, rebuild the trust between urban and rural areas and enhance the interaction between urban and rural areas, which will greatly contribute to the construction of a harmonious urban–rural relationship [40]. CSA can promote the interaction between urban and rural areas, avoid waste of agricultural products resulting from blindness of agricultural production, enable farmers to get access to fair trade which increases their income, improve farmers' living conditions, mobilize the enthusiasm of organic food producers and form a virtuous circle of agriculture development [41]. In addition, CSA also plays an important role in protecting and restoring local agricultural traditions and related agricultural heritage.

So, the function of community-supported agriculture is mainly manifested in three aspects: economic benefit, environmental benefit and social benefit. It has played a multifaceted role in agriculture, which promotes farmers' income, reduces the use of chemical fertilizers, deepens people's understanding of healthy lifestyle and environmental protection, strengthens the communication and connection between cities and rural areas and promotes the harmonious development of society.

In China, CSA is an effective way to speed up the development of modern agriculture in eco-city, an effective way to crack the safety of food production and marketing, an important carrier to satisfy city citizens' "farmers complex" (A kind of homesickness by the people who have moved from rural areas to cities but miss the previous rural life)and an important support to solve the "three rural problems"(agriculture, rural and farmer development), coordinate urban and rural development, establish circular economy and improve the quality of ecological environment.

In a word, CSA in China has many functions, such as social, economic, landscape, ecological functions, which has many forms and exerts a great influence on people's lives. (Table 3)

**Table 3.** Functions and forms of Community-Supported Agriculture (CSA).

| Function | Forms | Brief Description |
| --- | --- | --- |
| Ecological function | Improve environment | Adopting sustainable ways to produce organic foods without polluting and destroying the ecological environment, which is an important part of green agricultural production mode [42] |
| Economic function [14] | Providing organic products | Applying farm manure and organic fertilizers to improve soil fertility, adopting biological and mechanical methods to control diseases, insects and weeds, avoiding food pollution caused by applying chemical fertilizers, pesticides and plant growth regulators, constantly meeting the needs of citizens for healthy and safe food and improving their living standards. |
| | Increase income | Increasing farmers' income by selling organic products with higher price, developing rural tourism and renting rural land. The income of CSA farmers is higher than the average level of industry. [34] |
| | Expanding employment | Reducing the outflow of rural population and expand local employment of rural population. |
| | Tourism [43–45] | Developing urban leisure agriculture, farmhouse entertainment and agricultural landscape and other rural tourism modes. |
| Social function | Inheriting the culture | Relying on the rural ecological system to inherit farming culture, folk culture and local culture, villagers, citizens and all the people can "remember the taste in childhood and remember nostalgia". Let the children from modern cities experience the life of their elder generations. Protecting and restoring local agricultural tradition and related agricultural heritage [46] |
| | Popular science education | For rural-born children, they can receive the "real" education about "agriculture, countryside and farmers"; For the children born in the city, they receive "re-education" in the countryside, especially through experiencing farming culture and engaging in related agricultural activities. |
| | Training talents | Training new generation of agricultural practice and management talents through production, education and research in CSA base; Training a "three rural" team who understand agriculture, like rural areas and care about farmers. |
| | Rural development | Establishing mutual trust between urban and rural residents, promoting the harmonious development of urban and rural areas, and promoting the development of rural communities. |

## 6. Problems Existing in China's Community-Supported Agricultural

CSA is a kind of new alternative agriculture originating in Japan but developing in western developed countries. Although scholars generally hold a positive attitude toward its environmental, social and economic functions [14,42], CSA faces some urgent problems and special challenges in the process of "localization".

### *6.1. Common and Widely Discussed Problems in Producer, Consumer and Their Relationship*

He Fei et al., [47] believe that the current CSA mode mainly has met the following difficulties: (1) shortage of labor force (2) low comparative benefits of organic agriculture in the market environment; (3) supervision system is not perfect; (4) The supporting facilities of community-supported agriculture are imperfect and so on. Fu Huiyang [48] pointed out that due to the "squeeze" of the modern market which derived from the modern industry and bases on capital investment and consumption of natural resources, CSA in China faced many difficulties in the early stage of development, such as management, talent, market, land and so on.

Many scholars also analyzed the dilemma from the perspective of production, consumption and the relationship between them.

#### 6.1.1. From the Perspective of Producers, China's CSA Mainly Faces Difficulties in Technology

Chen Weiping et al., [18] pointed out producers are short of organic farming technology. Ju Haiying [40] believes that although farmers have made progress in organic farming, they have been engaged in organic farming for a short period of time and need to grasp a lot of knowledge about diseases control and planting technology. In domestic CSA production, there are widespread problems such as lack of organic planting technology, limited kinds of supply, uncertainty of quantity and quality of agricultural products, one-way pricing and narrow market target [18]. Yang xi et al., [49] believe that the cost of ecological input is high, and that stable financing channels are very scarce.

#### 6.1.2. From the Perspective of Consumers, Trust Is the Primary Problem Faced by CSA, and How to Establish Food Trust Is the First Priority

Pei Tao [50] points out that the challenges that community-supported agriculture are facing are trust and expectation. For example, consumers doubt whether producers grow different kinds of vegetables in small farms to meet the needs of consumers in dad weather and so on. Another problem is supervision mechanism. Consumers are more concerned about how to ensure that the organic vegetables they eat are completely organic. Shi Yan used the participatory action research method to discuss the trust building mechanism of CSA [16]. Chen Weiping [18] believes that producers must establish consumer trust in food through five ways: concept of care, open production mode, frequent interaction with consumers, Shared third-party relationship and supply of high-quality food. Yang Xi et al., [49] believe that CSA cannot meet the diversified needs of consumers, and that the quality of products and services is unstable.

#### 6.1.3. In Terms of the Relationship between Producers and Consumers, There Are Contradictions and Mutual Communication Problems between Suppliers and Demanders of Community Supported Agriculture in Terms of Quantity and Quality

Due to the contradiction between the single type of agricultural products provided by the farm and the diversified demands of consumers, the uncertainty of the quantity and quality of agricultural products provided by the farm imposes a certain burden on consumers, leading to the loss of some members [49] In addition, the lack of interaction between farms and members leads to low participation of members, and the one-way pricing mechanism of farms leads to members' dissatisfaction with prices [18].

Based on the above situation and dilemma, it is necessary to establish a reasonable supervision mechanism. He Yufei believes that NGO can act as a third party to implement supervision [25]. Cheng Cunwang et al., call for building a diversified supervision system to deal with food safety [24]. Some scholars pointed out that problems like food safety crisis, public trust, market supervision are the manifestation of failure in government supervision. The government should take corresponding responsibilities in CSA development and play an active role in promoting policy formulation, market guidance, supporting facilities for organic production [47].

### *6.2. Other Problems that Need to Be Further Studied*

#### 6.2.1. In Terms of System, the Relevant Legal System is Imperfect and the Implementation Is Not in Place

To promote the construction of ecological civilization, improve the rural living environment and strengthen the production and management of organic products, the government has promulgated a series of legal systems on organic food certification, food safety, pollution prevention and control since 2004. The purpose of these legal systems is: first, to solve the increasingly serious food safety problems in China; second, to make strict regulations on the production conditions, quality control and quality inspection while leading the production of organic agricultural products; third, to control agricultural pollution, protect the ecological environment, guide the green production of agriculture, and finally

form a recyclable agricultural economy. However, However, the existence of many legal systems cannot cover up the current problems in environmental protection and organic production such as lack of operability and credibility in the certification of organic products, inadequate supervision and punishment for violations of laws related to food safety and agricultural pollution. For example, the certification of organic food is difficult to achieve in the actual operation of CSA. The reason is that every organic food should be certificated every season. There are dozens of vegetables in each CSA farm, each of which is small-scale and the cost of certification often exceeds the affordability of farmers.

#### 6.2.2. In Terms of Economy, the Cost of Organic Agricultural Products is Difficult to Control Because of Small Scale and Lack of Competitiveness

CSA farm is inseparable from land. Land rent is a big sum of expenditure for farmers. Because of the pursuit of higher food safety, consumers have more stringent requirements on the quality of soil, water and surrounding ecological environment. At the same time, CSA is usually located around the city. Such land is very scarce, so the rent is higher than ordinary ones. Secondly, because of the long-term "focusing on land use and ignoring maintenance" in the process of agricultural production and management, the unbalanced soil nutrients, the thinning of the tillage layer, the decline of basic soil fertility and serious pollution are relatively common. The ecological maintenance and protection for the land that cannot meet the standards of organic production is also an important part of the early investment of CSA farms. Finally, it lacks of government support and stable financing channels. CSA needs a large amount of early-stage funds to provide basic conditions for production and services, and these basic equipment and infrastructure have a very strong specificity. Once they are invested, it takes a very long time to recover the cost. Besides, there are some possible natural disasters and other irresistible factors. Therefore, the current CSA enterprises are facing the dilemma of lack of financing channels. Most of them rely on the scattered financing of consumers and the occasional support of local governments. Undoubtedly, it is not enough for the healthy and sustainable development of the CSA in China.

#### 6.2.3. In Terms of Social Culture, Awareness of Environmental Protection Needs to Be Strengthened

The development of CSA depends on citizens' awareness of environmental protection, including their understanding and implementation capacity of environmental policy, green production, circular economy, organic production and other related knowledge. The reality is that, although residents' awareness of environmental protection and food safety is increasing, the excessive dependence of modern agriculture on pesticides and fertilizers and the lasting impact of traditional consumption concepts make most residents insist on choosing low-priced and good-looking agricultural products instead of relatively high-priced organic agricultural products, which is clearly not favorable for the development of CSA. Additionally, consumers and producers hope to achieve different goals through CSA: CSA farmers tend to pursue "risk sharing, financing and green production", while consumers are more concerned about "food safety, experience happiness and inexpensive products". Moreover, compared with foreign consumers' demands from CSA "food safety, freshness and support for agricultural development", domestic consumers still lack the recognition of the public welfare of CSA. From this point of view, residents' consumption concept needs to be guided. After all, the enhancement of residents' awareness of environmental protection and food safety is the fertile soil for CSA to survive.

#### 6.2.4. In Terms of Technology, Modern Organic Agriculture and Traditional Farming Experience Have Not Blended yet

From the technical point of view, there are two factors restricting the development of CSA. First, the organic agricultural production in our country started late, and most farmers have not grasped the relevant technology; Second, the traditional organic agricultural farming experiences have not been inherited, but long-term dependence on chemical fertilizers and pesticides is hard to be abandoned.

These factors lead to a dilemma in the operation of CSA farms: on the one hand, to ensure the organic planting methods, fertilizer and pesticides are prohibited; on the other hand, due to lack of relevant experience and technology, it is difficult to carry out organic pest control. which makes the quality and quantity of agricultural products unstable, indirectly affecting the development of the farm.

## 7. Strategies for Development of China's Community-Supported Agriculture

### *7.1. Give Full Play to the Leading Role of the Government to Provide Policy, Financial and Technical Support for Community-Supported Agriculture*

Many scholars believe that CSA is an important way to achieve sustainable development of agriculture in the future. From the micro point of view, scholars generally believe that most CSA farmers' income is higher than industry average [34]. Macroscopically, there is no doubt that it plays an important role in reducing poverty and improving farmers' lives, but it still requires the support of policy [51]. The U.S. government institutionalized support for CSA through the formulation of agricultural subsidy policy and supplementary nutrition assistance program (SNAP), and regarded it as a long-term effective measure to ensure food security and sustainable agricultural development [52].

Likewise, Chinese government also should play two roles: planner and supporter. First, in order to achieve rapid development of CSA in China, government planning and guidance are indispensable. At present, most of the CSA farms in China are small farms, who are skilled in traditional farming techniques and have rich farming experiences, but usually lack management experiences. If the government can plan as a whole and establish a nationwide effective and interactive CSA network, it can promote technical exchanges and cooperation between farms. The cooperation promoted by the local government between CSA farms and surrounding scenic spots can further open the market of organic agricultural products and enhance the brand awareness of CSA farms on the premise of enhancing the overall market competitiveness and the capabilities of preventing and controlling risk. Second, government should provide support in policy and economy. In China, the concept of healthy consumption has not been popularized, so most consumers can't perfectly judge the quality of agricultural products, which implies that developing CSA potential customers take quite a long time. At the same time, in terms of product variety and cost control, CSA farms are difficult to compete with large supermarkets. These factors determine that the development of CSA cannot be separated from the support of the government, especially the systematic and economic support. In terms of economy, it is difficult for green agricultural production mode to achieve benefits as high as that from large-scale farming and aquaculture. The government should consider establishing an ecological value compensation mechanism based on public finance and incorporating qualified CSA farms into current agricultural policy system. In addition, some special support projects can be set up. For the purpose of food safety, special funds can be set up to support organic agriculture and ecological agriculture projects. In terms of funds, CSA operators can be provided with lower loan interest rates to reduce their financing costs.

Third, provide technical support for organic agriculture. The development of CSA cannot be separated from the support of modern organic agricultural technology. Agricultural departments should vigorously promote organic agricultural projects and organic agricultural production technology; strengthen the research and development and promotion of high-tech products and technologies of organic agriculture; build a platform to strengthen the exchanges and cooperation among CSA farmers, scientific research institutions and universities; and build an e-commerce platform for agricultural products to further promote online exhibition and trading; reduce circulation chains and transaction costs so as to realize the better connection of production and market.

### *7.2. Utilize Modern Information Technology to Construct a New Agricultural Production and Management System and Establish Consumer Trust in Community-Supported Agriculture*

Two-dimensional code technology, network database and mobile Internet technology can be used to provide entry, supervision and query services for business managers, planters and consumers.

Provide consumers with two forms of traceability: website and mobile phone. All data are managed by the database, providing data support for traceability and supervision.

Trust between consumers and producers can achieve by the following two ways. First, Constructing the Traceability System of the Internet of Things. Integrated sensors, cameras and other devices are installed in the CSA farms. Through automatically acquired data and video images, the process of crop planting can be visualized and the data can be opened to the community users for inquiry, which can improve the intuitive understanding of the products and increase the mutual trust between consumers and the CSA farms or enterprises. (2) Establishing close ties with WeChat. In the future, CSA farms and farms or enterprises can consider setting up WeChat public account, which enables community users to query relevant data directly from WeChat platforms and send feedback directly to farm or enterprise managers on WeChat, thus greatly improving communication among farms, enterprises and customers, and enhancing the vitality of CSA.

### *7.3. Develop Various Forms of Mutual Assistance and Cooperation According to the Special Needs of Different Groups*

Farmers cooperatives, consumer cooperatives and farmers' associations are encouraged to be established to attract rural residents, urban residents, enterprises and institutions to participate; Scientific research departments, agricultural technology extension departments, volunteers and college students should be mobilized to participate in CSA construction; and explore more diverse modes suitable for local status to fully realize social, economic, ecological and landscape functions of CSA.

## 8. Conclusions and Prospects

This paper mainly summarizes the origin of CSA, the development process at home and abroad, the characteristics and the current problems of China's CSA, and further discusses its functions and modes, from which the following conclusions are drawn: (1) Although China's SCA started late, it develops rapidly. (2) China's CSA is still at the initial stage. In the process of localization, it faces many problems such as management, talent, market, trust and technology. (3) Chinese CSA has unique social, economic and cultural functions. It not only conforms to global issues, such as sustainable development, food security and community construction in the context of globalization, but also provides new ideas for solving the current urban–rural structure contradiction, three rural issues (issues concerning agriculture, farmer and rural area), supply-side structural reform in agriculture and other hot social issues. (4) To solve the problems faced by CSA, the government, producers and consumers should play a joint role. The government should provide support to CSA in terms of policy, capital and technology, help it integrate dispersed production resources by using modern information and management technology, build a two-way interactive platform between production and marketing, improve the organic certification system, adjust product structure, build well-known brand, establish an integrated system of production, sales and service, reduce operating costs, innovate management mode, and promote the healthy and sustainable development of CSA in China.

As a developing agricultural production and marketing mode, CSA links farmers with consumers to bridge the gap between them and achieve the dual goals of direct marketing and sustainable development. CSA is a new agricultural management mode to maintain food safety and restore ecological development. It is also an important mechanism to realize agricultural modernization and coordinate urban and rural development. CSA is highly consistent with the concept of solving the contradiction between urban and rural dual structure, three rural issues, food security and ecological construction in China. Therefore, CSA has broad prospects for development in China.

On the study scope of CSA, domestic studies mainly focus on the development mechanism of SCA, operation mode, characteristics and relationship between production and consumption, food trust, problems and challenges and other macro aspects. However, how to realize the localization of CSA in combination with regions, how to bring ordinary farmers into the system, the contribution rate of economy, ecology and culture of CSA in China, and how to promote and apply CSA are

all worthy of further study. In terms of research methods, the scholars of CSA research in China mainly comes from fields such as sociology, economics, geography, ecology. With the deepening of the research, anthropology, culturology, informatics, remote sensing of agriculture and forestry and other comprehensive multidisciplinary knowledge will be more widely used in the research of CSA.

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