Research on Fresh Agricultural Products Cold Chain Logistics Certification System

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Abstract
Agricultural cold chain logistics provides an important safeguard for the production of the agricultural products and the safety of circulation quality. The fresh agricultural products cold chain logistics certification plays a role in agriculture quality mainly from these areas: Improving the safety traceable of agricultural products, enhancing the supervision efficiency of agricultural products, enhancing the discipline of agricultural supply chain and strengthening consumers’ awareness. This paper analyzes the connotation and main features of agricultural cold chain logistics certification system and dissects authentication mechanism of agricultural products cold chain for the agricultural product safety certification, and proposes the development ideas of agricultural cold chain logistics certification.

Keywords
Fresh Agricultural Products, Cold Chain Logistics, Certification System

1. Existing Issues
As of 2013, the number of ISO 9001 certificates has more than 310,000 in China, accounting for nearly 30% in the world; this number ranked first in the world\(^1\). PISO 14001 environmental system certification, OHSMS 18001 occupational health and safety management system certification, HACCP food hygiene and safety management system certification, ISO27001 information security management system certification and so on have been rapid developing; the number of certification is increasing [1].

Although system certification plays an important role in the development of service industry and the protection of consumers’ interests, it still can not meet the expectations of service oriented enterprises to further enhance the competitiveness of enterprises through certification. The main reasons are as follows: First, the service


itself is intangible, simultaneity, perishable and non-retro activity, etc. ISO 9000 Quality Management System is widely coverage; only on this basis and lack of appropriate specific industries service standards support, it cannot achieve a good standardize for their internal management and improve their service quality; second, many service-oriented businesses can’t through ISO 9000 certification. Consumers cannot rely whether to guide purchase decisions made by certification in many times, which means service organizations cannot reach to improve the competitiveness that be expected [1].

In view of the growing importance of service industry in the national economy, service standards as the technical basis for service certification is also developing with the development of service standards; service oriented enterprises can not meet the quality management system certification only through ISO 9000. In this background, service certification came into being. Agriculture Products Cold Chain belongs to the service sector, which is an important guarantee tools for fresh agricultural products quality and safety, and it is also related to the vital interests of consumers. Cold chain logistics service organization for agricultural products certification and cold chain logistics services gradually gained government departments, enterprises and consumer’s concerns. How to reveal Agriculture Products Cold Chain Services Organizations and cold chain logistics services inherent nature and characteristics, and how to build a Agriculture Products Cold Chain logistics service organizations and cold chain logistics services certification system have become a major topic of current research.

2. Agricultural Cold Chain Logistics Certification System and Its Characteristics Analysis

2.1. Basic Concepts of Agricultural Cold Chain Logistics Certification

(1) The definition and classification of certification.
Certification is divided into mandatory certification and voluntary certification. Mandatory certification is a government management practices which is for implementing mandatory standards. Its procedures are similar to voluntary certification, but it has the different properties and characteristics.

According to different objects, certification general can be divided into product quality certification and quality management system certification. Product quality certification is based on product standards and relevant technical requirements, it’s is awarded and marked by certification company, in order to prove that a certain category of products meet appropriate technical standards and relevant technical requirements of the activities. Quality management system certification means being awarded and marked by certification company. Proving the enterprise’s Quality management system certification can ensure the standards activities.

“People’s Republic of China Certification and Accreditation” define the certification: Defined by the certification company and prove the products, services and management systems comply with the relevant technical specifications, technical specifications related to the mandatory requirements or standards conformity assessment activities. Recognition is defined by authorized institutions on capacity and qualification certification bodies, inspection bodies and laboratories as well as in the review, audit and other certification activities staff will be recognized conformity assessment activities2.

“People’s Republic of China Certification and Accreditation Regulation” put the authentication into three parts: products, services and management system certification. The services is the second product service certification, certification is a new form of authentication. Whether here or abroad, service certification is in initial stage.

ISO/IEC17065: 2012 “Conformity assessment-product, process and service certification bodies requirements” standard defined services: supplier and customer need to complete at least one activity results in the contact surface and it is generally intangible. This definition reveals the essence of the service, service provider (supplier) and the customer contact process through interactive technical characteristics meet or exceed customer needs and expectations, with universal and provides an entry point for the service certification and catch Service technical characteristics of one hand in contact process. Typically, the service contact characteristics specified by the service technical standard [2]. Our research on service certification at the beginning of this century, the scholars defined service certification as follows: service certification is a third-party conformity assessment activities which is asked by the required standards and other normative documents requirements. Service certification is a confirmation service to meet the requirements of the activities [3].

Now for certification services, probably divided into four categories. First, provide service organization for

object, and based on ISO 9000 standard, mainly certificated for service management system. Such certification review organization focuses on the ability to guarantee the quality of service, emphasizing process management services. National standards in this field service management system is based on “Service Management System specifications and implementation guidelines” (SB/T10382-2004). Second, the ability to protect services for major authentication object, the review is focused on the service provider’s hardware, software, personnel and other conditions and qualifications has weather reached the appropriate standard. Although there are many types like this, but it’s lack of uniform. Third, it’s aim at the process of certification services, through assess the service process, evaluate the service organization’s service commitment. One company has a lot of promise, the certification company evaluate their commitment. Foreign do this more than domestic. For example, one do the airlines or airports to carry out service authentication. But this is only be evaluated for an airline and airport commitments to customers. These standards are also set by their own foreign certification company, and according to their own criteria for evaluation. At present such certified business volume increase rapidly. Lastly, authentication against for cost services and performance, emphasizing performance improvement as the main purpose of the service and evaluating the results. Through the satisfaction surveys, evaluate the results of these services [4].

(2) Agricultural cold chain logistics certification definition and characteristics.

Agriculture Products Cold Chain system output is a invisible cold chain logistics service, which provider is an enterprise that be involved in agricultural circulation, agricultural cold chain logistics services industry is part of the service industry, quality and safety during the important means of support in Circulation of agricultural products is related to the circulation of agricultural products cold chain logistics services provided by participating companies, Agricultural cold chain logistics services certification involved in the service to enterprise and Service process, the former belongs to the management system certification, the backer belongs to the certification service.

Among them, the cold chain logistics services business certification provide authentication object for cold chain logistics services organizational and based on ISO 9000 standard, mainly certificate for service management system and emphasis the hardware, software, personnel and other conditions and qualifications has weather reached the appropriate standard, Proven ability to meet the requirements of the appropriate administrative organization. Agricultural cold chain logistics service provider companies through the establishment of a third-party authority, according to standardize procedures, with objective and impartial certification testing data to make conclusions. Authentication information and certificates can be react out directly, enable enterprises or service outside of the inherent quality. Certified is beneficial to government regulation, and it helps ensure service enterprises at competitive prices, but also help consumers to make rational choices.

Agriculture Products Cold Chain Services certification is a process for certification services, through assess the service process, evaluate service organization’s service commitment.

This issue combined with the scholars of the service definition and certification of agricultural products cold chain logistics service of their own property, cold chain logistics services for agricultural certification gives the following definition: Proving Agriculture Products Cold Chain Services compliance with the provisions of a third-party cold chain logistics service standards and other regulatory documents required for conformity assessment activities. Its essence is to provide credible proof for agricultural products cold chain logistics services to consumers, businesses and the community. As for agricultural products chain logistics services certification’s definitions, maybe from the following aspects to understand: (a) Agriculture Products Cold Chain Services certification object is a service or a service offerings. Certification object is a services that provided by service organization of agricultural cold chain logistics, not the agricultural chain logistics organization itself, also nor cold chain logistics service organization’s management system; b) Agriculture Products Cold Chain service certification is based on the agricultural chain logistics service standards and other regulatory documents. Agriculture Products Cold Chain services standards including international standards, national standards, industry standards, local standards, other normative documents including corporate standards or specifications (including express commitments) service contracts; c) Agriculture Products Cold Chain service certification is a third-party conformity assessment activities within a specific range. Agriculture Products Cold Chain Services is certified by independent and professional third party company to the relevant parties confirmed that a service products to meet the requirements, and issue an activity supporting documents.

2.2. Agriculture Products Cold Chain Certification System Participants and Motivation

(1) Agricultural cold chain logistics certification participants constitute.

Agriculture Products Cold Chain Logistics System participants include government supervision and management departments, trade associations and other social organizations, certification bodies, cold chain logistics service provider, agricultural products cold chain logistics services demand side as well as end-consumers. Certification body make the Conformity assessment to Cold chain logistics service provider based on Agriculture Products Cold Chain relevant laws, standards and technical specifications. The main purpose of certification is to prove service provider that provide quality standards prior for the demand side or consumer reference when choosing services, third-party certification bodies and service processes by government regulators, industry associations and service demand side and other multi-supervision, agricultural cold chain logistics certification architecture picture (as shown in the following Figure 1).

(a) Agricultural cold chain logistics service provider (Figure 1).

Agricultural cold chain logistics service provide pre-cooling, refrigeration transport and storage of cold chain logistics services for consumers, including agricultural production, processing, distribution organizations, and third-party professional logistics enterprises. Agricultural cold chain logistics service provide cold chain quality and safety laws and regulations standards and other specifications as a basis for service production, providing services at competitive prices of agricultural products cold chain logistics services to business or consumer demand, and also provide standard services. Agricultural products cold chain logistics service provider’s own management standards and service support capability is the basis for protection of agricultural products cold chain logistics services. For services related to personal health and safety, agricultural products cold chain logistics service providers are required to compulsory certification in accordance with the legal requirements of health, environment, safety and other aspects and mandatory standards. At the same time, agricultural products cold chain logistics service providers to enhance the competitiveness of enterprises and for extension services and other business needs, voluntary certification may be carried out in accordance with relevant national standards, industry standards, local standards or enterprise standards.

(b) Agricultural products cold chain logistics service’s demand side (corporate or consumer).

The users who purchased from the agricultural products chain logistics service provider where the cold chain logistics services, it’s also called agricultural products cold chain logistics services demand side (corporate or consumer). From agricultural cold chain logistics services is engaged in business activities and an integral part of agricultural production and circulation enterprises residents consumption, and it is also of agricultural products cold chain logistics service provider to meet the process chain logistics business or consumer demand. When businesses or consumers buy the agricultural products chain logistics services related to the quality and safety agricultural products or personal safety of consumers, it requires agricultural products chain logistics service provider subject to mandatory certification bodies which reach the national mandatory standards, meeting the service quality and safety of consumer requirements. Currently, the demand for cold chain logistics services of businesses and consumers as for the information’s bought is in Inferrior, many legitimate rights and interests have little protection, turn the afterwards into pre-advised through service authentication way, enhanced

![Figure 1. Agricultural cold chain logistics certification system architecture.](image-url)
consumer information consumer services, thus contributing to development of agricultural products cold chain logistics industry.

(c) Agriculture Products Cold Chain service certification bodies.

Agriculture Products Cold Chain services agency certification body is established by law in conformity assessment of cold chain logistics services, it can also be called a third-party organization. Agriculture Products Cold Chain Services certification body as third party certification body, itself is an objective independent, open, fair and impartial nature, not to serve based on both sides of supply and demand’s will, it is necessary to safeguard the interests of both supply and demand side, but also on the supervision and management to service provider. Because the service provider and service consumer demand or affected by their own interests, there are some limitations in evaluating the credibility of the quality of service, it must be independent of the parties from the constraints of their economic interests to third parties, an open, just, fair and scientific methods will be used for quality conformity assessment, identification issued by a product or service complies with standards or normative documents prove or logo, provide the public with a reliable guarantee.

(d) Agriculture Products Cold Chain Services Certification Regulatory Authority.

Agriculture Products Cold Chain Services Certification regulators including all levels of government regulators and industry associations. China National Certification and Accreditation Administration (People’s Republic of China Certification and Accreditation Administration), the State Council decided to set up and authorized to perform administrative functions, unified management, supervision and overall coordination authorities nationwide certification and accreditation work. China National Accreditation Committee (English abbreviation for: CNAS) is in accordance with the provisions of “People’s Republic of China Certification and Accreditation Regulations”, the establishment of national accreditation bodies approved by the National Certification and Accreditation Administration Committee and authorized certification body responsible for unification, laboratory and inspection bodies and other relevant institutions accreditation. CNCA for enterprises to establish and implement a management system implementation supervision, and certification bodies operational guidance and supervision and inspection. Provinces, autonomous regions and municipalities quality and technology supervision department of the State Council that set up by quality supervision, inspection and quarantine departments in the local entry-exit inspection and quarantine authorities, to the extent authorized by the State Council certification and accreditation regulatory department of management system certification activities and services to implement supervision management. Establishment of the National Certification and Accreditation Administration Committee is to establish a certification and accreditation system of government administration inevitably, it is unified supervision, management and overall coordination required certification and accreditation of the country, it is a fundamental solution to the certification and accreditation of overlapping functions, it will play the overall advantage, improving the effectiveness that be verified. Industry Association as the industry enterprises and government links to the link, responsible for the accreditation and certification in accordance with the relevant oversight standards development work, play a complementary role to government regulation.

(2) Agricultural products cold chain logistics certification system participants motivation.

Agricultural chain logistics service certification as a new thing in our country’s agricultural chain logistics field, having a greater impact on the development of the whole industry, the research analyzed from different perspectives agricultural chain logistics service certification on agricultural products cold chain logistics service providers, agricultural products cold chain logistics services to consumers, and government departments involved in influencing party.

From the agricultural chain logistics service provider’s perspective, agricultural products cold chain logistics service certification not only helps agricultural product cold chain logistics service providers to better meet customer requirements, but also help agricultural product cold chain logistics service provider to optimize the allocation of resources, reducing operating costs, improving management, enhancing the visibility and credibility, and enhancing market competitiveness; the provider of internal supervision and management of agricultural products through third-party agencies and cold chain logistics services, which will help improve service quality, build agricultural cold chain logistics service brand.

From Demand side or the service consumer perspective, through agricultural cold chain logistics services Certification, service demand side or the consumer can obtain the right information in the choice of agricultural cold chain logistics services, it can guarantee the quality and safety of agricultural products that consumer spend,

service needs only to be more authoritative, more professional, more personalized service, when there is a problem in the quality of service, consumer can complaints to the certification body.

From the perspective of government and society, the agricultural chain logistics service certification can improve other aspects of the cold chain logistics market agricultural safety and health regulatory efficiency; contribute to the formation of agricultural products cold chain logistics industry fair competitive environment to better safeguard consumer the rights and interests, promote the safe operation of agricultural cold chain logistics, security, distribution of agricultural products, as well as the safety of consumer spending.

3. Agriculture Products Cold Chain Authentication Mechanism for the Quality and Safety of Agricultural Products Analysis

3.1. Enhancing the Quality and Safety of Agricultural Product’s Whole Traceability

Cold chain logistics involved in agricultural product from the “field” to “table” of all production and marketing process, it is one of the important factors affecting the quality and safety of agricultural products, quality and safety of agricultural products is part of an important guarantee for achieving quality and safety of agricultural products traceability coherence play an irreplaceable role. Agriculture Products Cold Chain authentication service has strict requirements for the production of records, such as found that the quality and safety of agricultural products cold chain logistics issues, government departments, employees and end consumers can be traced back to all aspects of the whole chain of recording. Responsibility of producers and suppliers of agricultural supply chain participants have been strengthened and form a complete chain of responsibility.

Agriculture Products Cold Chain certification system internal management system and standardized service processes the information recording by improving, thereby significantly improving the transparency and traceability of agricultural information, and ensure that agricultural products consumer’s products are safe and reliable.

3.2. Improving the Efficiency of Agricultural Product Quality Safety Supervision

Passed the agricultural products cold chain logistic system’s establishment, in the process of the agricultural products cold chain logistic serves, provide technical support for government supervision and management by law though agricultural products cold chain logistics service quality. And change the present situation of the regulatory burden heavier for administrative department, it is undertake by certification institution, each department based on the certification severs results, supervision and management agricultural products cold chain logistic system serves quality, improve the efficiency of the government safety supervision over the quality of agricultural products, help to build agricultural cold chain logistics service environment of fair competition.

In the process of government from the direct supervision management to indirect management, from the view of society, it also avoiding various examination from various aspect, promote the safe use and popularization of fitness facilities. Though issued the inspection report to produce cold chain logistics provider of facilities, equipment and services, for compliance certified by third party certification bodies for the implementation of the standard case of agricultural Cold Chain Logistics. Social affairs departments check work greatly reduced, increasing public its results, a strong enhancement of the transparency of the administration (process closed), credibility (third party). Various standards and technical specifications is certified cold chain logistics service an important basis for agricultural products, through the certification, making quality and safety of agricultural products cold chain logistics management more quantitative, objective, fair and realized “administrative technology” and breaking the previous management to focus only on limitations administrative means.

3.3. Enhancing the Agricultural Self-Discipline Businesses

Hazard Analysis and Critical Control Point (HACCP) certification, after years of development the inputs of good manufacturing practice (GMP) certification and Good Agricultural Practices (GAP) certification system certification beginning helping to create a secure cold chain logistics service brands. Agricultural cold chain logistics services gradually be welcomed by consumers.

Various certification systems is through a third-party credit guarantees, to promote origin market, connect, and interact with producers and consumers, in order to establish a brand for producers, to help consumers build confidence. Agricultural supply chain-related enterprises to maintain hard-won brand and reputation which has
been established, in accordance with requirements of the certification system will inevitably try to organize production, and thus enhance the quality and safety of agricultural products. It shows that certification system to achieve the transition from product testing to full management, from the terminal to the source retroactive regulatory shift from passive to active management to enhance prevention, which is to ensure the quality and safety of agricultural role [5].

3.4. Strengthen the Awareness of Consumers to the Quality and Safety of Agricultural Products

Agriculture Products Cold Chain Certification System to produce cold-chain logistics and agricultural products to provide consumers with the right information in the choice of agricultural products [6]-[9]. The majority of consumers buy agricultural products with their own subjective consciousness (experience) and limited knowledge, but cannot determine the intrinsic quality of produce additional cold chain logistics services, the quality of agricultural products have to buy is difficult to protect. It does not really meet their own needs. After agricultural Cold Chain Logistics Certified by certification authority, access to specific certification label, certification mark, to prove their quality in line with national standards, with a particular certification mark, consumers can accurately grasp the information, so that be paid by consumer resources for cold chain logistics support, the majority of consumers according to their consumption ability, hobbies, etc., reasonably buy products for their own conditions. Under conditions of information transparency by rational consumer choice in the market of agricultural products of different quality levels, contribute to the development of cold chain logistics through consumer-driven industry, in order to form a good market order, avoid bad market phenomena happened.

4. The Analysis of Agriculture Products Cold Chain Certification Development Idea

China’s agricultural cold chain logistics service certification work has just started; it is still in the primary stage of certification practices and the research foundation is weak; it needs to be tested in practice on a long road, so as to establish a scientific and rational, standardized agricultural cold chain logistics service certification system, which can promote agricultural products cold chain logistics services certification a sustainable development.

4.1. Construction of Agricultural Cold Chain Logistics Certification System

The primary task of the development of China’s agricultural products cold chain logistics service certification is to build a produce cold chain logistics services certification system. Unified and comprehensive agricultural cold chain logistics service certification system certification not only can effectively regulate the behavior of service certification bodies, improve service certification normative, authoritative and effective, cold chain logistics service certification on agricultural promotion and popularization also has a very an important role. Agriculture Products Cold Chain Service certification system can be divided into four areas, namely, the standard system, the responsibility system, evaluation system and supervision system. Cold chain logistics service standards are certified in accordance with the cold chain logistics services, to build a more comprehensive farm certification standards for cold chain logistics service system; it will help enhance cold chain logistics service authentication science, objectivity and impartiality. Cold chain logistics services certification system mainly realizes the attitude and auditor-service certification bodies and retroactive liability mechanisms to achieve the responsibility of traceability, making the certification body and bodies have a responsibility to follow; enhancing risk awareness service certification bodies; at the same time, improving their sense of responsibility. Long-term development of foreign service certification industry formed a good market competition mechanism. China’s agricultural cold chain logistics certification market has just started, in the short term is difficult to survival of the fittest competition in the market mechanism. Therefore, the establishment of the certification of quality agricultural products cold chain logistics service certification bodies reasonable evaluation criteria, and it is essential to cultivate and produce cold-chain logistics services certification market norms. No evaluation to standards of service certification bodies will lead to the merits of the authentication result too close to recognize, causing “Gresham’s Law” of market failures. We improve the legal system; and the law is one of the important aspects of the supervision system. Only a strong law enforcement system in order can form a strong deterrent to poor service certification industry certification bodies. Only a prosecuted order can form a good industry, in order to promote the certifi-
4.2. Establishing the Agricultural Cold Chain Logistics Service Certification and Standards of Organic Integration Linkage Mechanism

Agriculture Products Cold Chain service certification are technical basis of services certification, have service standards or not, as well as the level of agricultural products quality certification in the field of cold chain logistics service expansion directly related to the effectiveness of advance, construct a linkage mechanism from the government, industry standardization committees and industry associations and other aspects, thus contributing to the certification of agricultural products cold chain logistics services and service standards work of in-depth integration.

Through linkage mechanism, and timely access to agricultural party cold chain logistics service standards relevant information and where appropriate participate in service standards; on the other hand, the market for agricultural products cold chain logistics service certification requirements, as well as through agricultural Cold Chain Services Certification Practice discovery terms of service standards also exist inappropriate timely feedback to produce cold chain logistics service standards makers, through positive interaction with each other, and promote the development of service certification [1].

4.3. Enhancing the Credibility of the Agricultural Chain Logistics Certification Bodies

Statutory qualifications of agricultural cold chain logistics certification career certification body does not mean that it will naturally develop, the credibility of the certification body is the foundation of certification market development. Only certified results are recognized by the industry and consumers, but also will have more resources to produce cold-chain logistics organization to apply for certification. And social stakeholders whether to trust the authentication result, first of all depends certified product meets customer needs. Here customers can be consumers of agricultural products, production management or research and teaching institutions, may also be the government, industry associations and other regulatory agencies. Second, depending on the impartiality and authority of the certification body, that certified the company’s credibility. This requires the certification bodies must be certified according to the law, comply with relevant laws and regulations, strict demands on themselves, eliminate corruption certification, and strive to be honest and upright, in order to enhance the credibility of the certification bodies [2].

4.4. Improving the Agricultural Chain Logistics Services Certified Public Recognition and International Mutual Recognition

Development of agricultural products and services certified cold-chain logistics require public recognition and support, therefore, as to strengthen the agricultural chain logistics service certification and accreditation of publicity, improving agricultural cold chain logistics service certification and accreditation of public awareness. Through positive guidance to improve public consciousness of public opinion, increasing public participation and supervision awareness; promote macro-environment to protect basic social services Certification and Accreditation credible results and information sharing; concerned with public demand, improving agricultural cold chain logistics service certification impartiality and effectiveness, playing a leading and guiding role of the government position in the results admissible in the establishment of service certification propaganda mechanism, enhancing the ability of consumers to use the service authentication results and improve their awareness of certification and accreditation results.

With the development of economic globalization and the presence of foreign certification bodies, our agricultural products cold chain logistics services Certification body should actively participate in the activities of international certification and accreditation organizations to keep up with international standards and interactive development. For the Government, it’s need to participate in the activities of relevant international and regional organizations effectively, and improve the capacity and level of our participation in the relevant international or regional organizations; promote international mutual recognition actively, including FTA mutual recognition and cooperation, regional economic cooperation within the organization mutual recognition of cooperation; do-

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mestic service guide certification and accreditation agencies involved in international mutual believe that the core of international cooperation and collaboration, encourage more organizations to participate in international competition.

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