



Building Trust from Farm to Fork in Organic Agriculture: A Closer Look at Inspection and Certification Systems

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ABSTRACT

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As the organic agriculture sector grows, the need for standards, inspection, and certification systems to ensure trust in organic products increases. Organic agriculture revolves around standards that determine the practices that farmers must follow. These standards also create a plan for inspection and certification systems. These systems are the cornerstone of ensuring reliability in the organic agriculture sector. This study has been prepared to evaluate the inspection and certification systems within the framework of the sense of trust, which is a critical issue in the organic agriculture sector from farm to fork. The focus of this framework is to ensure that inspection and certification systems keep the principles of organic agriculture intact from farm to fork. This is because these systems are necessary to build trust, access markets, increase consumer confidence and support fair and ethical practices in the sector. However, it is suggested that areas such as facilitating accessible inspection and certification for small-scale farmers, improving consumer education and promoting cooperation for global standards should be studied as potential areas.

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Introduction

Over the past three decades, organic agriculture has seen significant growth, with demand for organic products rising by 16% annually over the last decade (Reddy et al., 2022). Originating in the early 20th century, it emerged as a response to issues created by industrial agriculture, such as resource depletion, declining food quality, and the economic challenges facing rural areas (Brzezina et al., 2017). Organic agriculture is guided by four core principles: “health, ecology, fairness, and care.” These principles support environmental preservation, equitable access to resources for farmers and workers with fair compensation, and consumer access to trustworthy, high-quality, affordable food (Sligh & Cierpka, 2007).

Increasing costs of chemical inputs, like fertilizers and pesticides, along with a growing demand for Non-Genetically Modified Organisms (Non-GMO) foods, also drive farmers toward organic and environmentally friendly Agriculture (Reddy et al., 2022). This rapid development process in organic agriculture has triggered important transformations in producer and consumer behaviors (Seidel et al., 2019).

The primary concern associated with certification revolves around its efficiency. Numerous studies have consistently demonstrated that certified products are more sustainable than their non-certified counterparts. For instance, in the Ecuadorian banana agri-system, organic production results in better outcomes both environmentally and in terms of producer revenues (Bonisoli et al., 2019). Another study is related to farm income. Certified organic coffee production has been reported to contribute to higher farm revenues in Uganda (Ssebunyaa et al., 2019). In another study, the issue of organic agriculture and sustainability was emphasized. Organic and other agricultural certification schemes usually attempt to increase sustainability by following specific regulations such as those prohibiting the use of chemically treated planting material, genetically modified organisms (GMOs), synthetic fertilizers and pesticides as well as non-organically produced feed and prophylactic use of antibiotics for livestock. On the other hand, there are also statements that the sustainability of organic agriculture is contested. For instance, organic agriculture is criticized for generating lower yields, which can translate into lower profitability and inadequate food

production compared to conventional agriculture (Kamau et al., 2022). However, it is worth noting that, in certain instances, as highlighted by Veldstra in 2014, some farmers who acknowledge the benefits of certification have expressed concerns about the complexity of the certification process, such as application, inspection procedures, pricing, etc. They have also identified challenges in their interactions with the certification bodies, which they consider a significant obstacle.

While there is a wealth of literature delving into various aspects of organic products, foreign trade, and technical aspects, this article focuses on inspection and certification systems and the trust among the stakeholders. Our article contributes to the academic literature by evaluating global inspection and certification systems in organic agriculture. While numerous studies have explored certified organic products' economic, social, and environmental sustainability, there remains a gap in the literature regarding inspection and certification systems and the trust factor. For example, in the study conducted by Jawtusich et al. 2011 it was stated that most impact studies are concerned with the environmental impacts of organic farming. Bellassen et al. 2022 stated that existing impact analyses for organic agriculture are more comprehensive and cover both the economic and environmental pillars of sustainability and even some aspects of social sustainability. Canwat and Onakuse (2022) stated that organic markets are a type of market with social, economic, environmental, cultural, regional and other impacts. Organic agriculture is frequently associated with or subsumed under the rubric of "sustainable agriculture" with many using the terms interchangeably. In theory, sustainable agriculture refers to a system that integrates environmental health, economic profitability, and social and economic equity. Shreck et al. 2006 noted that organic farming is often associated with or subsumed under the concept of "sustainable agriculture" and that many use the two terms interchangeably. Furthermore, in this study, it was theoretically stated that sustainable agriculture refers to a system that integrates environmental health, economic profitability and social and economic equity. Taking into account these studies our contribution to the literature has focused on the role of inspection and certification systems in building trust, a relatively underexplored aspect in the existing literature.

This paper aims to fill the research gaps in this field by examining the procedures and requirements for organic inspection and certification, investigating global inspection and certification systems, understanding how organic farming affects inspection and certification systems, and exploring the links between organic farming and trust building. Through these objectives, we aim to comprehensively analyze organic inspection and certification systems, focusing on their impact and the critical role of trust in organic agriculture.

Few interdisciplinary studies, especially in the social sciences, refer to organic inspection and certification systems (Guevara-Hernández et al., 2014). In this context, our article can potentially make a valuable contribution by addressing this gap in the field.

Organic Concept and Definition of Organic Agriculture

Conventional agriculture has seen a substantial increase in productivity in recent decades, driven by the introduction of modern technologies, including monoculture practices and the widespread use of chemical inputs, commonly referred to as agrochemicals. Nevertheless, although these factors have contributed to higher agricultural productivity, there is a drawback to consider. Excessive reliance on toxic chemical inputs has been linked to several environmental issues. These include erosion, deforestation, pollution of both water and soil, and a decline in biodiversity. These adverse consequences pose significant risks to the sustainability of natural resources (Esgúicero et al., 2019).

The extensive and unregulated use of harmful substances in conventional agriculture worldwide has significantly affected the health and well-being of humans, animals, and the environment. Farmers' endeavors to cultivate wholesome, chemical-free food have gained recognition and legitimacy in response to these concerns. This recognition has been formalized by establishing organic standards, certification processes, and labeling mechanisms (Guevara-Hernández et al., 2014). These measures assure consumers of organic produce's quality and safety, addressing the growing demand for healthier and more environmentally responsible food choices.

IFOAM (International Federation of Organic Agriculture Movements) defines organic agriculture as "a production system that sustains the health of soils, ecosystems, and people." This approach places reliance on ecological processes, biodiversity, and locally adapted cycles, as opposed to the utilization of inputs that can have negative impacts (IFOAM, 2019).

The term "*organic*" encompasses two key dimensions: measurable product standards and process standards. In the first case, specific attributes define organic products, notably the absence of detectable pesticides. However, the latter definition of organic pertains more to the principles governing production and processing than distinguishable qualities in the final product (McCluskey, 2000).

The imperative drove the emergence of organic agriculture to mitigate the detrimental effects of chemical fertilizers, crop protection agents, and livestock practices on the ecosystem. This shift towards organic methods was motivated by recognizing the social and environmental benefits it offered in contrast to conventional intensive agricultural practices (Leksina et al., 2020).

Organic agriculture is a form of inspected and certified agricultural production at every stage, from production to consumption. All stages of this process are carried out according to national and international validity rules, and independent inspection and certification bodies check and certify compliance with these standards. This comprehensive oversight strengthens consumer trust in organic products, assuring the genuineness and commitment to organic principles (Demiryürek & Bozoğlu, 2007).

Materials and Methods

This paper reviews the literature review complemented by the author's firsthand experience as inspectors and certifiers working with inspection and certification bodies in Türkiye, Europe, and various global regions. We have specifically examined relevant scholarly literature through comprehensive bibliographic research.

This study encompasses research from many sources worldwide, including studies conducted by private and governmental institutions on global organic inspection and certification systems. In addition to academic sources, internet resources, books, and articles on these subjects have been consulted. The research methodology includes interpreting existing studies, comprehensively evaluating and synthesizing these sources, and thoroughly examining organic inspection and certification systems with a focus on trust. We aim to clarify the landscape of inspection and certification systems, related policies, and a sense of trust within organic agriculture.

Research Findings

The Standards, Trust, and Organic Inspection and Certification

For a long time, organic farming was understood as a more natural form of agriculture, primarily characterized by the avoidance of chemicals and synthetic inputs. However, this initially narrow view evolved when organic farming was systematically defined within private standards and later formalized in regulations. As the relationship between farmers and consumers became more impersonal, centralized, and globalized, the need for standards and an inspection system became apparent. These measures were necessary to protect producers from unfair competition and consumers from fraud. This need was especially clear when adherence to these standards became a requirement for receiving direct support payments (Schmid, 2007).

Initially, organizations in the realm of organic agriculture developed their production standards. However, in numerous European countries, the practice of organic agriculture has undergone institutionalization and regulation through national and international legislation. Consequently, the responsibility for establishing standards and defining what qualifies as organic has shifted from the purview of private organizations to the domain of public policy (Seppänen & Helenius, 2004).

As they are employed in various systems, standards essentially formalize diverse quality norms and established perceptions of what constitutes high-quality food. This includes exploring sustainability standards, practices for setting standards, and quality agreements within various product chains, production networks, and value chains (Kurtz et al., 2020). Globally, the organic certification sector is mainly regulated by three major government-led systems: the Council Regulation (E.C.) No. 834/2007 in Europe, the United States Government's National Organic Program (NOP), and Japan's Japanese Agricultural Standard (JAS), with the European system being the oldest (Zorn et al. 2012).

In terms of regulations, the most recent data gathered by IFOAM-Organics International in 2022 reveals that

seventy-four countries had successfully implemented comprehensive regulations governing organic agriculture. Additionally, twenty-one countries had formulated organic regulations that were in the process of being fully implemented, while fifteen countries were drafting legislation in this regard. Notably, substantial regulatory changes were observed in regions such as the European Union, North America, and the Pacific Region (Willer et al., 2023).

Building Trust, Labeling, and the Essential Role of Inspection and Certification

Food consumption trends in recent years emphasize consumers' preference for quality, healthy, and environmentally friendly products, as well as an increasing interest in food safety (Bernabéu et al., 2008). For example, a study by Baird in Thailand found that consumers increasingly demand rice grown without chemicals (Baird, 2024).

Regulating the organic production sector is essential to ensure consumer protection and the reliability of certified organic products (Willer & Lernoud, 2018). Indeed, trust is built on the foundation of transparent information. Consequently, the certification process plays a vital role in building trust and strengthening the overall marketing of organic products (Khanna & Tripathee, 2018).

Organic agriculture has four pillars: trust, honesty, transparency, and respect for commitment. Trust should not be perceived solely as an outcome of personal relationships and local economies or merely a result of certification processes. Instead, organic certification practices actively fostered and upheld trust (Galvin, 2018).

The trust of the consumer that organic products are included in the follow-up system from the production stage to the safety and quality control, packaging, labeling, presentation of the origin information, transportation, marketing, and standardization of the methods to be followed, and placing them on a legal basis (Siderer et al., 2005). Sønderkov and Daugbjerg (2011) emphasized that methods aimed at bolstering consumer confidence, particularly those involving government oversight in the certification and labeling processes of organic agriculture production, positively impact consumer confidence levels.

Inspection serves as a bridge connecting transparency and trust, operating through mechanisms that prioritize visibility and clarity, with an emphasis on documentation and rigorous inspections. Its primary objective is to yield normative outcomes, including cultivating public trust and accountability (Galvin, 2018). Although inspection culture is often seen as a response to a "general decline of trust" (Brown, 2010), inspections paradoxically require trust in their procedures and conclusions. Thus, inspections are not merely systems of "trust-making" but are designed to foster widespread public trust and fundamentally depend on internal trust (Galvin, 2018).

Certification offers compelling evidence of various social, economic, and environmental advantages. It serves to enhance practices and accountability within transnational supply chains. Certification can play a pivotal role in preserving and safeguarding natural habitats and promoting compliance with existing laws that may be in place but are inadequately enforced (Tayleur et al., 2017).

Organic certification carries dual significance for consumers: it represents a commitment to personal health and environmental preservation. Consumers frequently worry about agrochemicals and artificial additives in fruits and vegetables, and they generally prefer organic food, which usually contains only about one-third of the pesticides found in conventional options. The safety, nutritional benefits, and health considerations associated with organic certification justify consumers' willingness to pay a premium for these products (Liberatore et al., 2018).

Organic certification provides a less intensive alternative that requires greater traceability and offers economic benefits. Certification proves financially beneficial for businesses as certified products often command higher prices than their non-certified counterparts (Johnson et al., 2019).

Consumers have varying levels of trust in organic-certified versus non-certified labels, and they believe that organic-certified natural foods are worth the higher price. The degree of trust in these labels affects willingness to pay, with trust in organic-certified labels having a significantly greater impact than trust in non-certified labels (Lang et al., 2022). Lang et al. show that natural foods with an organic-certified label justify a higher price compared to those without certification, with consumers willing to pay a 10% premium for organic-certified natural foods over their non-certified counterparts (Lang et al., 2022). In summary, organic certification is crucial in distinguishing organic products from their non-organic counterparts and promoting them in the market, often commanding a premium price (Thimmaiah, 2014).

The standards-based regulation asserts that it primarily functions as a mechanism for quelling the oppositional social aspects of organic agriculture while aligning its economic dimensions with agri-business interests, including farm input suppliers, large-scale commercial farms, produce traders, food processors, and retailers (Gibbon, 2008).

To establish consumer trust, the alignment of a producer's practices with organic standards is verified through independent inspection and certification bodies. Additionally, these bodies must obtain accreditation from an external authority to ensure their inspection competence (Dabbert et al., 2014).

One of the critical issues regarding the relationship between inspection and certification systems and trust is the labels on the products. The organic certification label represents consumer trust in organic foods (Watkins, 2016). Generally, labels are used to develop markets and promote production practices by informing consumers and influencing their purchasing decisions. When consumers see an organic label, they associate it with environmental stewardship, animal welfare, and a commitment to healthier, more nutritious food (Zander et al., 2015). Trust in organic standards transcends the label itself, assuring inspection and certification bodies have rigorously assessed and verified adherence to these standards.

For a product to be labeled "organic" it must be produced according to specific organic methods or processes and use only permitted inputs (Giovannucci, 2006). Initially, the product is grown in an organic production system that emphasizes plant and animal health, preventive pest management, and the careful use of

approved materials. It is then monitored and protected against contamination throughout its journey from the field to the final point of sale, whether as a raw agricultural commodity or a processed product with multiple ingredients. The label may indicate "100 percent organic," "organic" (95% to 100%), or "made with organic ingredients" (at least 70% organic ingredients) (Khanna & Tripathee, 2018).

Labeling will be effective in building high consumer trust when it sets and enforces reasonable standards. For labeling to be truly impactful, it relies on consumers' trust in the certification system and their confidence that the standards align with their expectations. This highlights the importance of labels being based on standards validated by both competitors and consumers and supported by independent third-party certification systems (Zander et al., 2015). There is a general feeling of trust towards the inspection system behind the standards. Trust and credibility, as well as the perception of the inspection system behind the label, are similarly important (Stolz et al., 2013).

Certification labels influence consumers' decisions regarding their demand for organic products (Esguicero et al., 2019). These organic labels certify that products have various attributes, including being pesticide-free, free from genetically modified seeds, environmentally friendly, protective of worker safety, associated with small-scale production, part of a local production system, adhering to sustainable agricultural practices without chemical fertilizers, and promoting health-beneficial foods (Rodrigues et al., 2016).

The logo is another crucial element in creating a sense of trust in the system. Organic logos are pivotal in communicating to consumers that a product is "organic" (Dabbert et al., 2014). Various logos signify that a specific product adheres to organic standards. For example, all products sold as organic in Europe must display an E.U. logo. This logo signifies that a product meets the major regulations for organic standards. To use any private organic logos, producers must undergo an additional inspection and certification process. Consequently, these logos offer consumers an extra level of assurance.

Logos can impact both producers and consumers in various ways. They not only help producers secure premium prices but also shape consumer perceptions on a variety of issues. This can lead to brands attracting more customers and increasing consumer trust. Organic product certificates help health-conscious consumers to prefer these products and help producers to gain a competitive advantage. Many studies have been conducted to support these results. For example; Yemez and Akca (2024) found that organic food labelling positively affects consumption and utilitarian consumption behavior also positively affects purchasing behavior. Gerrard et al. (2013) found that United Kingdom consumers' trust in the logo depends on the standards and inspection system that they think underlie the logo.

Nevertheless, consumer awareness of the European Union organic logo remains rather low, which suggests a need for more effective information campaigns and marketing actions. However, the study by Van Loo et al. (2013) points out that consumer awareness of the European Union organic logo is quite low and that more effective

information campaigns and marketing activities are needed. In the study conducted by Larceneux et al. (2011), it was stated that the organic label makes the environmentally friendly feature of the product prominent and this has a positive effect on perceived quality. These references provide a comprehensive framework for examining the effects of logos and certification systems on the behavior of both producers and consumers.

The Inspection Process in Organic Agriculture

The inspection process holds significant importance in organic agriculture for verification of compliance, quality assurance, consumer trust, market access, environmental protection, fair trade, global consistency, and continuous improvement.

Organic agriculture inspections are conducted by independent inspection and certification bodies that adhere to standards set by external organizations. This process starts with the movement of products among farmers, processors, and consumers. The supplier provides an organic certificate, which acts as a quality indicator, issued by an impartial certifying entity according to the quality and certification criteria set by the public sector, such as E.U. regulations (Jahn et al., 2005).

In organic agriculture, a highly interdependent relationship exists between standards and inspection. Organic agriculture standards provide comprehensive regulations that govern the entire process of organic farm production. Producers follow these rules, and their adherence is verified by an impartial third-party organization known as the inspection body (Lippert et al., 2016).

The inspection process for organic farms consists of two primary components. Initially, a farm visit is conducted where the inspector, accompanied by the farmer, assesses all fields and storage areas on the farm. The inspector completes paperwork, primarily inside the farmhouse. During this process, the inspector engages in discussions, asks questions, offers advice, makes observations, and gathers information from the farmer, creating a comprehensive picture of the farm's practices.

Following the farm visit, inspection documents are compiled inside the farmhouse. These documents encompass crucial information about the farm, including its contact details, the primary fertilizers, other inputs utilized, and details about the farm's livestock. Additionally, the inspection report records information such as acreage, crop types, crop rotation practices, sources of plant propagation materials, field locations (including maps), estimated crop yields, historical field usage or land use records, input procurement and sourcing records, certification documentation, labeling details, and information about plant protection methods and crop varieties for each field. Following the conclusion of these inspections, the farmer endorses the inspection report with their signature, and the inspector provides them with a copy for their records.

As shown in Figure 1, the inspection process consists of four distinct procedures. One of these procedures involves the inspection and certification body overseeing producer-farmers, agricultural holdings, and the companies' producing inputs. Another aspect of the inspection process entails the accreditation body

monitoring the inspection and certification body. Additionally, the inspection and certification bodies are subject to oversight by the public authority (for example, the Ministry of Agriculture and Forestry in Türkiye). Furthermore, public authorities can also inspect organic farming producers, as shown by the dashed arrow line. All actors within the system play a crucial role in ensuring effective inspections.

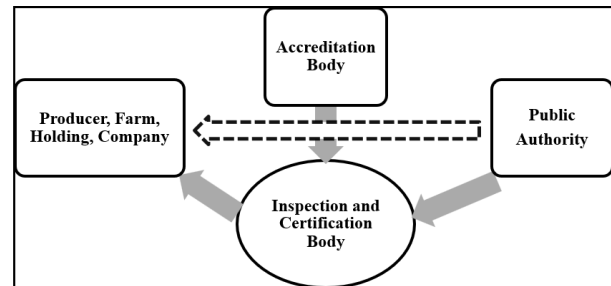


Figure 1. Inspection process between the main actors in the system

Source: Developed by the authors

The Certification Process in Organic Agriculture

The certification process plays a vital role in organic agriculture for the following key reasons: reliability and trust, quality assurance, market access, environmental management, consumer confidence, global trade, continuous improvement, fair trade, and ethical practices.

Certification ensures to the consumer that a product or service adheres to specified standards and maintains a certain level of quality (Thimmaiah, 2014). Certification systems are established to protect consumers by providing quality labels that enhance market transparency (Jahn et al., 2005).

The primary role of certification is to ensure that actors adhere to established standards. The common certification model, known as "third-party certification," involves independent private entities serving as certifiers (Fouilleux & Loconto, 2015). Additionally, certification is a process in which a third party provides written assurance that a product, process, or service meets specific standards. Certification typically has three basic requirements (Shahane & Behera, 2022):

- The methods and materials used in production must meet organic standards,
- There must be clear and ongoing documentation of these methods and materials, and management system procedures to be in place,
- There must be a paper trail tracing a product back to its production site to verify the methods and materials used in production.
- An internal audit should be conducted before an external audit.

Certification primarily aims to regulate and facilitate the sale of organic products to consumers, assuring them that organic production maintains food integrity from seed to sale (FAO, 2007). It also ensures that production and processing are managed with a comprehensive approach that promotes ecosystem health (Santacoloma, 2007).

Regional variations in standards and certification processes for organic agriculture can be advantageous, considering the diverse geographical, agronomic, cultural, and developmental aspects worldwide. However, these differences present challenges for Certification Bodies in recognizing and certifying organic products. Consequently, organic producers may also find it difficult to have their certified products recognized across various markets (FAO/IFOAM/UNCTAD, 2012). For example, a study conducted in Thailand stated that serious obstacles were encountered in the project implemented because organic certification standards were incompatible with international standards. This has adversely affected the support structures for organic farming by setting unrealistic expectations for farmers about what is required to produce organic rice for the international market (Baird, 2024).

The certifying process of a farm can be lengthy, often spanning up to three years, coupled with thorough planning and costly procedures. Organic certification creates an even higher cost for large-scale organic operations that cultivate thousands of acres and sell to commercial buyers such as grocery stores. This leads to selling organic products at a premium compared to conventional ones. This price difference arises from the rigorous regulatory requirements farms must adhere to and the increased cost associated with organic production methods (Watkins, 2016).

The decision to certify organic depends on each country's specific legal regulations governing certified organic production and marketing. Organic certification requires producers to manage their land using organic practices for three years. During this transition period,

producers cannot sell their produce as organic, although they may charge a higher price for being in the “transitional” phase (Veldstra, 2014); producers can sell their products with the phrase that it is a transition process product, except in the case of fibers according to the Private Organic Textile Standards.

Upon successful completion of the inspection phase, the organic certification process proceeds. The first step of organic certification is the selection of a certifier, which can be the International Federation of Organic Agricultural Movements (IFOAM), the European Union (E.U.), Japanese Agricultural Standards (JAS), National Organic Program (NOP), or national inspection and certification bodies in the producer's home country. Subsequently, the second step entails submitting an organic systems plan, including the application process and a review of the plan by the certifier, culminating in an organic inspection (Khanna & Tripathee, 2018).

Applicants must contact an organic certifying body to obtain application forms, which usually involve a fee. After reviewing the application, a qualified inspector will perform an on-site inspection for a fee, submit a report to the certifying body, and, if successful, the certification body will issue a certification certificate. The initial certification process can take several months, depending on the certifying body's schedule and the complexity of the application. However, if organic practices are already in place and documented during the initial visit, certification may be granted shortly thereafter (Ferguson, 2004). Detailed information on the certification process can be seen in Figure 2 below.

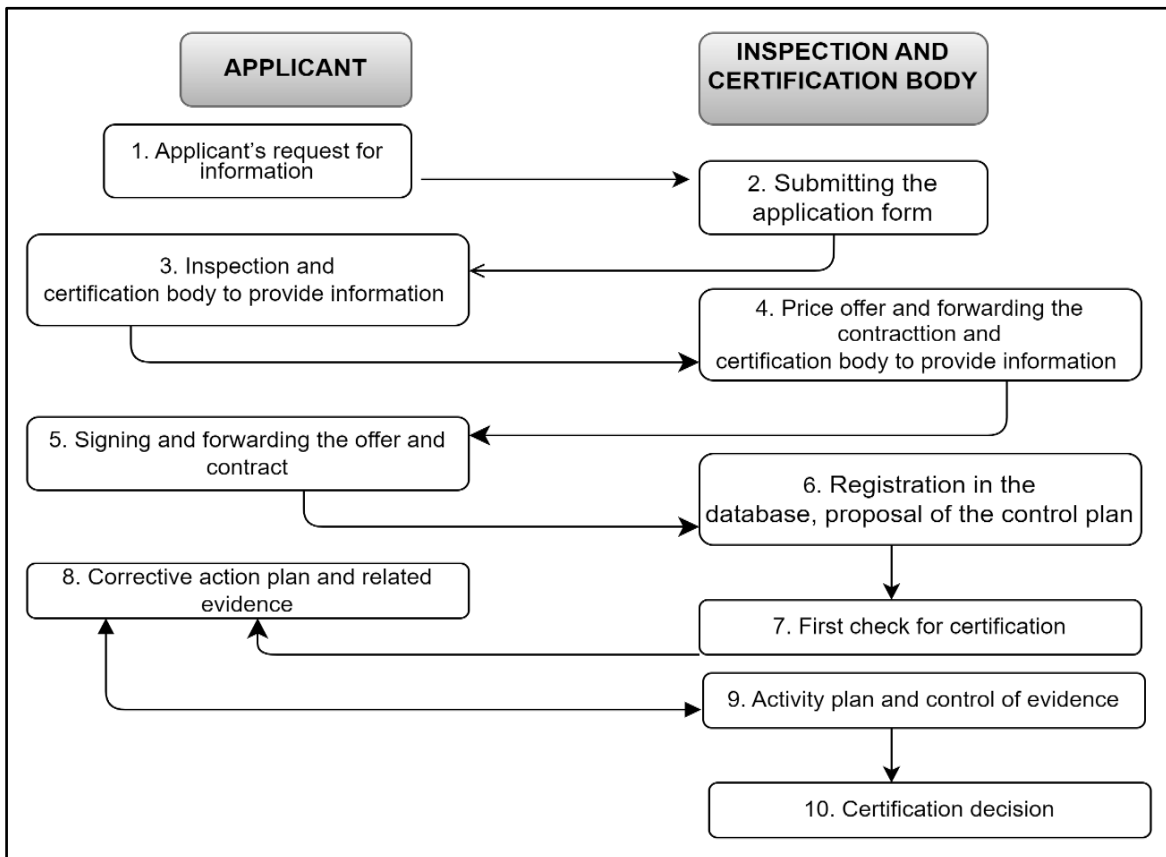


Figure 2. Certification Process (Source: Developed by the authors)

One of the critical issues concerning the certification process is the cost of certification. Certification costs vary depending on the fees set by the inspection and certification bodies. Each inspection and certification body is free to establish its pricing policy. Whether the application is made individually or as a group is crucial in determining the costs. The cost of individual applications is higher than that of group applications, as shown in Solfanelli et al. 2021.

Certification is essential for both national and international markets, as all major markets require it for organically marketed products. Domestic bodies typically concentrate on certification for local markets, while international bodies focus more on the export sector (UNCTAD/UNEP, 2008). However, there are also cases where the opposite happens; for example, many companies in Türkiye trade organic products domestically and internationally.

Another different issue is the recognition of organic products between countries. For instance, organic products approved in one country may not be recognized in another. To export organic products internationally, operators must comply with different export market standards. In such cases, obtaining multiple certifications might be the best approach. However, the bureaucratic complexities within the organic certification sector often create barriers to imports and exports, leading to increased costs. This issue is particularly prominent when a certification body conducts a single inspection against multiple organic standards (Xie et al., 2009).

The Role of Inspection and Certification Bodies

An inspection and certification body refers to individuals or organizations authorized by the public authority to oversee and certify every organic product or input phase, from production to the end consumer.

In organic food marketing, inspection measures are essential for maintaining food quality. Responsibility for ensuring quality involves proper management monitoring, inspection, and the implementation of an effective quality assurance system. Third-party inspection and certification bodies can effectively perform this role by providing transparent and independent procedures. They assure all stakeholders that inspection and monitoring are effectively integrated into the producer's quality assurance system. These third-party bodies are committed to providing certifications as quality guarantees, bridging the information gap between producers and consumers (Canavari et al., 2010).

Certification serves as a guarantee for production processes and the quality attributes of goods, and it can be a crucial market tool for product differentiation. However, the effectiveness of this mechanism, which aims to eliminate distortions caused by asymmetric information, may vary according to the ethical behavior of third-party audit and certification bodies (Giannakas, 2002).

In the organic sector, it is essential for certification systems to address specific issues that affect the confidence of both market operators and consumers. This confidence is crucial for ensuring that organic products meet market needs and expectations. The relatively slow global growth of the organic market, ongoing debates about the definition of organic, and skepticism surrounding organic food

underscore the need for a comprehensive examination and careful design of the third-party inspection and certification system in the organic food sector (Canavari et al., 2010).

Inspection and certification bodies are critical to verifying compliance and building trust in the standards system. Certification involves auditors interpreting standards, leading to considerable variation in how Certification Bodies operate and what they accept as valid evidence of compliance. This can result in consumer confusion or potential fraud within the system (Fouilleux & Loconto, 2017).

One of the issues related to the field of inspection and certification bodies is the fee they receive in return for the services they provide. Each inspection and certification body has its fee policy. From the perspective of these bodies, providing affordable certification can be a key competitive advantage in the certification market. However, implementing low-cost strategies may significantly affect the quality of inspections. Consequently, the underlying institutional structure can greatly impact the overall effectiveness and reliability of the certification system (Jahn et al., 2005).

There is an inextricable link between inspection and certification bodies and the accreditation system. Accreditation plays a vital role in the operation of inspection and certification bodies, as it is a fundamental requirement for their viability. Without accreditation, these bodies cannot effectively function. Accreditation serves as a mechanism to ensure the credibility of third-party inspection and certification bodies. This entails complying with the ISO 17065 standard, which pertains to conformity assessment bodies with organic standard specifications (Fouilleux & Loconto, 2017).

The accreditation program for overseeing organic certification bodies adheres to the guidelines outlined in the International Organization for Standardization (ISO) Guide 17065 (It was previously known as ISO 65). For example, according to ISO 17065, the certification body shall not advise or provide consultancy services to the applicant (Seppänen & Helenius, 2004). According to ISO 17065, these and many similar issues are recorded, and these rules are systematically implemented.

When examining the accreditation system in the realm of organic agriculture, two primary accreditation systems emerge. One is integrated into national and supranational legal frameworks and is overseen by national Accreditation Bodies (A.B.s) affiliated with the International Accreditation Forum (IAF). The other system is strictly private and carried out by the specialized organization, the International Organic Accreditation Service (IOAS). In contrast, the first system is fully controlled by the State. The checklist system functions as a "shadow accreditation" system overseen by the EC, a central authority monitoring certification activities in third countries. For example, on the website of ETKO, an inspection and certification body operating in Türkiye and abroad presents their E.C. approval as an E.U. accreditation. A private transnational A.B. performs the second system of organic accreditation. IOAS, a US-based non-profit organization, offers ISO/IEC 17065 accreditation to third-party Certification Bodies based on the 2010 IFOAM auditable standard (Fouilleux & Loconto, 2017).

Discussion

This paper reviews the literature and seeks to answer whether inspection and certification systems encourage building a sense of trust in the organic farming sector. While consumers may seem to be the system's focus at first glance, it is clear that many stakeholders, including inspection and certification bodies, their employees, and public authorities, significantly impact building trust in the system.

Inspection and certification systems have the potential to reassure consumers. However, the degree of trust can vary due to several factors. These systems are primarily designed to ensure that products or services comply with specific standards related to quality, safety, environmental impact, or ethical considerations. When consumers come across a certification label on a product, it typically leads them to trust that the item has undergone an impartial verification process and adheres to the stipulated criteria. However, several factors influence consumers' trust in inspection and certification systems. These factors include trust in the inspection and certification body, transparency, rigor, consumer awareness, legal and regulatory framework, consistency, independent reviews, and alignment with consumer values.

Organic farming and food production adhere to specific standards and practices designed to reduce synthetic chemicals, promote sustainable farming methods, and ensure transparency throughout production. Robust inspection and certification systems are indispensable to guarantee that consumers receive genuinely organic products and that farmers remain committed to these principles. These systems are established to verify and authenticate compliance with these organic standards.

Below, we explain how inspection and certification systems build trust in the organic agriculture sector.

- *Building Consumer Trust:* Organic certification labels are recognizable symbols of organic authenticity. Consumers tend to place greater trust in products featuring official organic certification labels because these labels signify adherence to specific organic standards.
- *Regulatory Compliance:* Organic certification often aligns with government regulations and standards for organic farming. Adherence to these standards assures consumers that organic products meet established legal requirements.
- *Continuous Monitoring:* Organic certification is not a one-time procedure; it includes ongoing monitoring and periodic inspections to ensure sustained compliance with organic standards. State authorities oversee inspection and certification bodies, while accreditation bodies monitor these organizations. This ongoing oversight helps maintain trust in the sector over time.
- *Transparency:* Certification systems mandate record-keeping and documentation of farming practices and product handling, which are essential aspects of inspection and certification systems in organic agriculture. This transparency enables consumers to trace organic products' origin and production process, bolstering trust in their authenticity.

- *Quality Assurance:* Inspection and certification systems ensure that organic farms and food producers adhere to rigorous quality standards. This verification process plays a crucial role in guaranteeing the quality of organic products, a critical factor in building consumer trust.
- *Third-Party Verification:* Many organic certification programs involve third-party organizations or certification bodies that operate independently of the producers. This independence eliminates conflicts of interest and ensures impartial evaluations, enhancing confidence in the certification process.
- *Market Access:* Organic certification is often a prerequisite for access to organic markets. Farmers aiming to sell their products as organic must adhere to certification requirements, enabling them to access premium markets and command higher prices.
- *Environmental and Ethical Considerations:* Organic certification often includes criteria related to environmental sustainability and ethical farming practices. Consumers who value these principles are more likely to trust certified organic products.
- *Global Recognition:* Many organic certification systems are internationally recognized, meaning organic products certified in one country are accepted in others. This global recognition enhances trust in organic products on an international scale.
- *Market Growth:* As the demand for organic products grows, inspection and certification systems are evolving to meet consumer expectations. This adaptability and responsiveness to consumer needs contribute to trust in the sector's commitment to organic principles.

Conclusions and Recommendations

This study assesses the inspection and certification systems within the organic agriculture sector and examines the key factors influencing trust among the actors involved.

In conclusion, inspection and certification systems are essential for ensuring trust, authenticity, and sustainability in the organic agriculture sector. By applying rigorous verification processes, third-party oversight, and adherence to established organic standards, these systems give consumers and other actors in the system confidence that organic products meet quality and ethical standards.

Although inspection and certification systems have significantly benefited the organic agriculture sector, there are still opportunities for further improvement and research.

Many producers involved in organic agriculture operate small farms. Simplifying and streamlining the certification processes for these small-scale, resource-constrained organic farmers can make certification more accessible. Additionally, establishing various support mechanisms for small-scale farmers to participate in inspection and certification systems is crucial. Creating incentives in this regard is necessary to ensure the inclusion of these producers in the organic product supply chain.

Education and consumer awareness are pivotal in establishing trust in the system. To achieve this, it must invest in educational programs and outreach initiatives that enhance consumer awareness and understanding of organic product labels and their role in fostering trust.

There are numerous inspection and certification bodies in organic agriculture worldwide. There is a need to promote greater consistency and standardization in global organic certification criteria to minimize confusion and inconsistencies among different inspection and certification bodies.

Traceability of organic products is paramount for building trust in the system. Utilizing advanced tracking systems to improve organic products' traceability and provide consumers with information about the product's origin and processing will benefit the system.

Declarations

Author Contribution Statement

Yener Ataseven: Literature review, investigation and writing the original draft

Alper Demirdöğen: Literature review, commenting and editing

Mustafa Akyüz: Consulting, commenting and investigation

Conflict of Interest

The authors declare no conflict of interest.

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