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Assessment of steps in global gap certification of an agricultural product for producers

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Abstract

The globalization of agri-food supply chains has heightened the demand for internationally recognized certification systems that guarantee food safety, environmental stewardship, and social responsibility. GLOBALG.A.P. (Good Agricultural Practices) has emerged as a leading voluntary certification standard, widely required by European retailers for fruits, vegetables, and other agricultural products. This study assesses the sequential steps involved in obtaining GLOBALG.A.P. certification, including registration, scope selection, internal gap analysis, corrective actions, external audits, certification, and continuous re-certification. The analysis highlights the benefits of certification, such as improved market access, consumer trust, and sustainable farming practices, while also addressing challenges, including high costs, complex documentation requirements, and barriers for smallholder farmers. The findings underscore the importance of capacity-building, cooperative models, and policy support to facilitate wider adoption of GLOBALG.A.P. certification, particularly in developing regions.

Keywords: GLOBALG. A. P; Agricultural Certification; Food Safety; Sustainability; Market Access; Compliance

1. Introduction

The increasing interconnectedness and interdependence of global food supply chains have significantly amplified the imperative for the establishment of standardized protocols that not only ensure food safety and sustainability but also promote ethical agricultural production practices across various regions. In both domestic and international marketplaces, consumers, alongside retailers, are demonstrating an escalating level of concern regarding the specific conditions under which agricultural commodities are cultivated, harvested, and processed, reflecting a heightened awareness of food production practices. Critical matters such as the presence of pesticide residues, the quality of water utilized in agriculture, the welfare of workers engaged in the agricultural sector, the alarming loss of biodiversity, and the essential need for traceability of food sources have increasingly emerged as pivotal issues influencing market acceptance and competitive advantage. Considering these intensifying concerns, various certification frameworks, exemplified by GLOBAL G.A.P. (Good Agricultural Practices), have been instituted with the objective of ensuring that agricultural products adhere to rigorous and comprehensive standards pertaining to quality, safety, and environmental sustainability (GLOBAL G A.P., 2022).

GLOBAL G A.P., which was initially introduced in the year 1997 under the original designation of EurepGAP, was conceived and developed by a coalition of European supermarket chains along with prominent retailers, with the overarching goal of standardizing farm certification criteria across a multitude of countries. In contemporary times, it has emerged as one of the most widely acknowledged and recognized farm assurance programs on an international

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scale, encompassing an extensive array of agricultural products that includes not only fruits and vegetables but also aquaculture, ornamental flowers, livestock, and various combinable crops. Although participation in the certification process under GLOBAL G.A.P. is technically voluntary, in practical terms, it frequently serves as a prerequisite for accessing premium markets, particularly within the European Union, where the majority of large retail entities mandate compliance with GLOBAL G.A.P. standards as an essential condition for their procurement processes (Henson and Humphrey, 2010).

The process of certification itself entails a series of meticulously structured steps, which commence with the registration of producers and selection of the relevant scope, followed by an internal gap analysis, the implementation of corrective actions, and culminates in an independent audit that is executed by an accredited certification body. The evaluation of compliance is conducted against comprehensive checklists that incorporate major musts, minor musts, and recommendations, with certification being conferred only when producers attain full compliance of 100% on the major musts and at least 95% compliance on the minor musts. The validity of the certification extends for a period of one year, necessitating annual renewal to ensure ongoing monitoring and continual improvement in production practices (GLOBAL G A.P., 2022).

The attainment of GLOBAL G.A.P. certification presents a multitude of advantages for agricultural producers, as it facilitates access to lucrative export markets, enhances consumer confidence through mechanisms of traceability and transparency, and fosters environmentally responsible practices that include the reduction of pesticide utilization, the implementation of efficient water management strategies, and initiatives aimed at the conservation of biodiversity (FAO, 2021). On a social level, this certification promotes health, safety, and fair labor conditions for workers, ensuring alignment with established international labor standards. For both retailers and consumers, it serves as a reliable assurance that the products in question adhere to internationally recognized benchmarks for food safety and sustainability (Manning and Baines, 2004).

Notwithstanding these numerous advantages, the certification process is fraught with considerable challenges, particularly for smallholder farmers operating in developing nations. The substantial costs associated with certification, the requisite upgrades to infrastructure, the demands of compliance audits, along with the extensive documentation and rigorous record-keeping requirements, frequently act as formidable barriers that impede participation in the certification process (Kirsten and Sartorius, 2002). In addition to these financial and logistical hurdles, existing knowledge gaps and the scarcity of institutional support can severely restrict the capacity of small-scale producers to effectively implement the necessary standards required for certification (Holzapfel and Wollni, 2014). Consequently, the accessibility of GLOBAL G.A.P. certification tends to be disproportionately skewed in favor of medium and large-scale farms or cooperatives that possess the ability to pool resources and realize economies of scale, thereby enhancing their eligibility for certification (Graffham et al., 2009).

The significance of GLOBALG.A.P. certification resides in its dual role as both a requisite for market participation and a comprehensive sustainability framework that guides agricultural practices. By assessing the sequential steps involved in certification, this study aims to provide a clearer understanding of the process, its benefits, and its challenges. Such an assessment is particularly valuable for producers' considering certification, policymakers designing support programs, and researchers analyzing the transformation of agricultural markets under global sustainability standards (Henson and Humphrey, 2010).

Given these opportunities and constraints, it is essential to analyze the certification process in detail. Therefore, the general objective of this study is to assess the steps involved in GLOBAL G.A.P. certification of an agricultural product, highlighting their significance, benefits, and challenges for producers in meeting international market requirements.

1.1. What is Global G.A.P?

Global G.A.P is an organization that has established voluntary global standards for certification of agricultural products and develops an independent certification system for food and worker safety, sustainability, and other Good Agricultural Practices (GAP). Global G.A.P has become an important quality assurance system for producing agricultural products.

In addition, it can be considered a prerequisite requirement that a producer needs to do when he/she intends to export agricultural products to foreign markets that require high quality.

Good agricultural practices (G.A.P) is the production process an agricultural product went through from the first stage of production to the final stage. Which includes the selection of area, land use, fertilizer application, water use, pest

control, harvest, packaging, storage, field sanitation and delivery product etc, to develop sustainable agriculture with the following main aims:

- Ensuring safety of the food
- Ensuring safety for both producers and consumers
- Environmental protection
- Traceability of the products

In previous years, Global G.A.P was considered as an advanced standard. However, it has been recently considered a prerequisite requirement when producers want to export their agricultural products to other markets requiring high quality. As a result of Global G.A.P application, it also helps products to reach high prices compared to similar products which have not proven their origin, safety and quality.

Currently, Global G.A.P organization has issued sets of main standards that can apply to different groups of agricultural products and activities, including the main groups: cultivation, husbandry, aquaculture, seedlings, feed, pet transportation, and some other auxiliary standards such as standards of the chain of custody, animal welfare, risk assessment on social practices, etc.

GLOBAL G.A.P is a bridge between producers and consumers, which helps agricultural products overcome technical barriers to penetrate various and strict markets. In addition, Global G.A.P also helps producers to control production activities and minimize risks. With these vital advantages, GLOBAL G.A.P has currently been selected by ministries and agencies to break through the difficult output. It can be said that, in the trend of international integration and increasing competition in agriculture, achieving GLOBAL G.A.P certification is one of the prerequisites for producers to take the initiative to survive and develop in today's fluctuated agricultural market.

2. What to do before GLOAL G.A.P Certification

2.1. Getting Familiar with Different Global G.A.P Certification and IFA Options.

Before Global G.A.P, you need to get familiar with the different certification options and IFA versions offered by Global G.A.P for producers. There are 2 types of Certification Options.

- Option 1 is for individual producers, whether you operate a single site or multiple sites. This producer subsequently becomes a certificate holder once they have passed their audit.
- Option 2 is for group certification, where the group (as a legal entity) is the certificate holder. This is for most producers that prefer to pool their resources together to save costs. This Group certification with a compulsory shared QMS enables producers to apply as a group where each producer receives their Global Gap Number (GGN), which is the unique numbers given to producers (and any other legal entities registered in the GLOBAL G.A.P. system) made up of a prefix (often referring to the standard) and a 13-digit number, separated by a space. However, only one certificate is granted for the group upon passing the audit or inspection.

It is important to note that a GGN is obtained from the Certification Bodies (CB) after a producer or group of producers has successfully registered. A Certification Body (CB) is a Global G.A.P approved third-party organization responsible for inspection, auditing, and issuing certificates on behalf of Global G.A.P.

There are 3 versions of Integrated Farm Assurance (IFA) certifications; IFA V5.2, V5.3 GFS, and V5.4 GFS.

- The Global G.A.P IFA V5.2 is suitable for producers whose markets do not require compliance with the Global Food Safety Initiative (GFSI).
- Both IFA V5.3 and V5.4 are GFSI bench-marked, which means that they are for producer whose markets require GFSI compliance.

2.2. Flowchart of Global GAP Certification Process

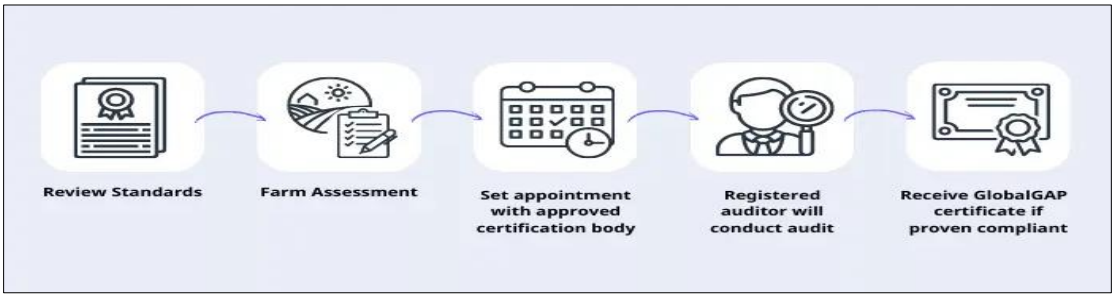

Figure 1 Global GAP certification process

2.3. The five steps to Global G.A.P certification are being discussed below

2.3.1. Standard selection

After deciding which certification option and Global G.A.P IFA version to apply for, the producer then proceeds to use the Smart Builder Checklist to find information on standards and add-ons that are applicable to his/her specific production practices on the Global G.A.P website. While accessing the smart checklist builder, the first thing to do is to choose the production type which are grouped into 7 scopes, namely, Combined Crops (CC), Aquaculture (AQ), Fruits and Vegetables (FV), Flowers and Ornamentals (FO), Plant Propagation Materials (PPM), Compound Feeds (CF) and Hops (HO). Now that the producer has defined the production type, the next thing is to choose a core solution which are internationally acknowledged standards for primary production and the supply chain. To comply with the standards requirements, each scope has sub scope and is structured in terms of clauses referenced by a combination of both numbers and letters; for example, AF1.1.1 is applicable for All Farm-Based (AF) scope. For certification purposes, producers need to comply with Control Point Compliance Criteria (CPCC) evaluated as Minor Must or Major Must level.

When choosing a core solution, some options will be made available to the producer to choose the perfect primary production standard audit for his/her products. Furthermore, the next thing is for the producer to choose a range of add-ons which build on core solutions to extend the certification coverage and provide extra assurance on specific topics where needed. Add-ons is a flexible way to extend an audit to include additional topics. Usually audited together with a GLOBAL G.A.P. core solution, each add-on has its own principles and criteria and results in a letter of conformance following a successful audit. The add-ons are in the form of questions, and the producer answers the ones that are relevant to his/her production. Specifying buyer requirement is the next after choosing add-ons. In this section the producer can select buyers to determine any additional solutions which may be relevant for him/her. And the list of retailers that have private solutions with additional audit criteria which may be combined with a GLOBALG.A.P. standard will be shown to the producer to select among these retailers together with an option to select none of them and after that, the producer can now generate his/her checklist. Please note that these checklists are automatically generated, and cannot guarantee 100% accuracy due to the unique situation of every producer and supply chain company

After implementing the Global G.A.P standard selection, producers may utilize the checklist obtained to carry out a self-assessment program as required by clause AF. A self-assessment program informs producers in areas they need to improve to be fully compliant with CPCC (Control Point Compliance Criteria).

2.3.2. Audit preparation / farm assessment

Global G.A.P offers suitably registered trainers or farm assurers to assist with audits preparation and training. Registered Trainers are independent farming experts who are supported by the GLOBAL G.A.P. Secretariat to train producers and other interested parties in the implementation of our standards and add-ons. They also assist in mandatory required documentation such as policies, procedures, and risk assessments, to name a few.

After the producer has sought assistance from the approved Farm Assurers, the next thing to do would be to conduct a preparatory internal audit. In addition to that, the Farm Assurer will also assist in the Quality Management System's compulsory documents file, which includes various policies, procedures, risk assessments, training records, chemical spraying records, water testing results etc. Farm Assurers will also assist in identifying nonconformity through internal audit reports that the producer needs to address using corrective actions.

2.3.3. Certification body selection

After producers have accustomed themselves to the standard, the next thing to do is to find the contact of a CB of their choice in the country where they are based and request an audit. The producer would then make a fee comparison of CBs available and decide which to register for their Global G.A.P certification. Then, the producer can now contact an inspector or auditor from a selected CB while being confident that they've met all the standard requirements.

2.3.4. Audit process

During the audit process, it is important to know that the inspections by the auditor from the selected CB will occur on two different occasions. The first inspection will take place on an announced date communicated to the individual producer or group of producers. In contrast, the second inspection will occur randomly unannounced with no communication of the inspection date. Furthermore, group certification producers will be selected based on a square root of the total number of producers for an unannounced audit. And in contrast, the auditor will only select 10% of the total group for an announced inspection. And the audit process is divided into two sessions for the day. The first session is dedicated to file inspection. It is through this inspection that mandatory QMS documents are audited for compliance. The auditor will ask for proof of the implementation of the standards that arise from documented procedures and policies. Such documents cover employees' health and safety like medical screening results for chemical sprayers and training certificates for first aid and firefighting, to name a few. Furthermore, activities that have an impact on food safety such as irrigation water quality test results (CC 5.3), MRL residue results (CC 7.6.1), soil and leaf sample results, as well as hygiene training records (AF 3.3) must be readily available on file during the audit.

The second session of the audit focuses more on the processes applicable to the producer pertaining, among others, handling, storing and disposal of PPPs according to CPCC of CC 7.7-7.9. The installation of mandatory signage with the potential to impact food safety like a noticeably displayed hygiene procedure for employees, contractors and visitors, as well as hand washing (FV 5.1.5) and ablution facilities signage, to name a few. It is imperative to consider that signage requirement also extends to orchard identification (AF 1.1.1).

In fundamental nature, Global G.A.P consists of three CPCC determinants prior to certificate issuance, namely Major Must, Minor Must and Recommendations. Although recommendations do not affect the producer certification, they are beneficial in improving the production site's efficiency, productivity and sustainability. A producer must attain 100% of all Major Must CPCC applicable for their respective scope where one or more non-compliance will declare the non-conformance. This means that the producer should have one or more Major Musts finding on their audit because their certification will be jeopardized if not. Lastly, only 95% of Minor Must nonconformity is permissible to pass the certification; therefore, anything more than will result in unsuccessful certification. Citing an example, for a strawberry producer to obtain their certification, they must attain 100% on all Major Must, and at least 95% on Minor Must to meet requirements under AF, CC and FV altogether. For Global G.A.P audits, nonconforming findings results from failing to attain 100% Major Must and 95% Minor Must CPCC. Consequently, a CB will issue a warning and grant a producer a period of three months to implement corrective action effectively after detecting non-conformance during the initial site inspection. Corrective actions are the necessary measures that are implemented to address nonconforming findings. Furthermore, a subsequent inspection will be conducted in which non-conformance shall be closed off within less than 28 days

If food safety, health and the environment safety workers found the production site's nonconforming to their safety standard guidelines, then the CB shall issue an immediate suspension of the certification. It is at this step that a GGN is issued to producers. A GGN is a unique 13-digit producer identification code that also allows producers to track other producers, suppliers, and products available on the Global G.A.P database.

2.3.5. Audit outcome

After the completion of an audit by the CB and the farm or production site(s) have conformed with the requirements, a certificate will be issued. Only legally registered businesses may be issued the Global G.A.P certificate. The certificate is valid for a period of one year. The producer may then use the GGN label to sell their products. The label is considered a badge of responsible farming and transparency by most retailers and consumers, therefore highly beneficial for the producer's products.

3. Conclusion

GLOBAL G.A.P. certification has become a cornerstone of modern agricultural trade, providing a structured framework that assures food safety, environmental sustainability, and social responsibility in farming practices. The certification

process begins with producer registration and internal audits, followed by corrective actions, third-party verification, and annual re-certification ensures that agricultural products meet internationally recognized standards.

The assessment of these steps highlights that certification brings significant benefits to producers, including improved market access, consumer trust, and enhanced resource management. It also promotes sustainable farming practices, such as judicious pesticide use, efficient water management, and biodiversity conservation. For consumers and retailers, GLOBAL G.A.P. serves as a guarantee of product quality, safety, and traceability within increasingly complex global supply chains.

However, the process is not without challenges. High certification costs, complex documentation requirements, and technical capacity gaps pose barriers, especially for smallholder farmers in developing regions. These limitations risk excluding the very producers who could benefit most from improved access to export markets. To overcome these barriers, supportive mechanisms such as group certification models, capacity-building programs, financial support, and government or NGO facilitation are crucial.

In conclusion, while GLOBAL G.A.P. certification represents a demanding process, its successful implementation offers a pathway for producers to integrate into competitive global markets while aligning agricultural practices with principles of sustainability, food security, and social equity. Strengthening support systems for farmers, particularly smallholders, will be essential for ensuring that the benefits of certification are broadly shared across agricultural value chains.

Compliance with ethical standards

Disclosure of conflict of interest

I, Jamiu Bolaji Adesokan, declares that there are no known financial, professional, or personal conflicts of interest that could have influenced the work reported in this manuscript entitled *"Assessment of Steps in GLOBAL G.A.P. Certification of an Agricultural Product for Producers."*

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