



10th EDF SPS Project

GAP AUDIT TRAINING MANUAL





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PREFACE

The 10th EDF Programme

The overall objective of the 10th EDF Programme is to support the beneficial integration of the CARIFORUM states into the world economy and the overall objective of the SPS programme is to facilitate CARIFORUM States to gain and improve market access by complying with Europe's Sanitary and Phytosanitary (SPS) measures, and to help CARIFORUM states to better develop their own regionally harmonized SPS measures.

The specific objective of the SPS programme is to increase production and trade in agriculture and fisheries which meet international standards while protecting plant, animal and human health and the environment. The Action is directed towards creating and/or strengthening Regional and National SPS systems through systematic focus on:

Legislation, protocols, standards, measures and guidelines in the area of AHFS and fisheries for national and regional SPS regimes: to enhance CARIFORUM Agricultural Health and Food Safety (AHFS) efforts and strengthen enforcement of protocols, standards, measures and guidelines for increased production and marketing in agriculture and fisheries.

National and regional coordination mechanisms in the support of the SPS regime: to support implementation of the SPS measures in the CARIFORUM member states.

National and regional regulatory and industry capacity to meet the SPS requirements of international trade: to support and enhance the institutional capacity of national and/or regional regulatory bodies and industry in the agriculture sector, including the fisheries subsector, to meet the SPS requirements of international trade.

Purpose and Scope of the GAP Manual

The formal implementation of good agricultural practices (GAPs) at the farm level is rapidly becoming very important for trade in fresh produce globally. This is happening at a time when food safety and quality issues, in addition to practices for sound environmental management in production, are being demanded by buyers (businesses), consumers and regulatory authorities. Indeed now, the approach is to incorporate farm and produce certification programmes for assurance of quality into the fresh produce trade.

Farmers and producers either individually or as business entities need assistance in being able to implement these formal GAP arrangements. This guidance is expected to come from Public Sector Agricultural Extension Officers and also private sector stakeholders. This GAP Auditing Manual is to provide such persons with the basic procedures, field skills, techniques and tools needed to plan and conduct an effective GAP audit.

The objective is for the auditor to obtain concise, relevant, and up to date information of the situation on the farm being audited and at the same time to measure its level of compliance with the standards currently in place. Those who use this Manual, for example, extension officers from the private and public sector, should have some knowledge of the GAP practices and should be able to draw from their own experience and judgment to ensure that their findings are representative of what is being practiced, observed and reported on the farm.

The scope of the Manual spans giving an overview of the emergence and use of GAPs and to enable those who are going to be auditors to have an understanding of the issues to be addressed in being able to guide and assist farmers and producers. It further enables the 'would be' GAP auditor to understand and implement field techniques for GAP auditing. The Manual is intended to serve as a teaching guide and entails all activities relating to the production, harvesting and handling of fresh produce.

In preparing the Manual it is recognized that there are many GAP schemes, for example, Fairtrade, Organic and GLOBALG.A.P., being utilized in the region and a general approach is taken in its presentation. However, it is noted that the GLOBALG.A.P. Scheme is one of the more internationally recognized programmes and it is reference throughout the document.

The manual is organized into three sections with eleven chapters.

Section I gives an overview of the importance and application of good agricultural practices in improving the safety, quality and trade of fresh produce in three chapters:

Chapter 1 – An Introduction to GAPs and how it Benefits Food Safety;

Chapter 2 – GAP Standards and Codes and how they are Applied; and

Chapter 3 – The use of HACCP and GMPs as Tools in Implementing GAPs.

Section II gives an overview of GAPs in the region and addresses common deficiencies, in one chapter:

Chapter 4 – Types of Common Deficiencies Associated with a GAP Audit and Compliance Criteria.

Section III, the primary focus of the Manual, addresses auditing principles and practices in the following chapters:

Chapter 5 – Preparing to Conduct a Gap Audit;

Chapter 6 – Understanding Management Systems and Internal Controls;

Chapter 7 – Conducting the Audit;

Chapter 8 – Evaluating and Reporting Audit Findings and the Exit Meeting;

Chapter 9 – Audit Report, Follow-up and Closeout;

Chapter 10 – Record Keeping as a Key Tool in GAP Auditing; and

Chapter 11 – GAP Certification.

The Manual also contains a glossary of key terms used, a list of acronyms and numerous annexes, which provide supplementary information.

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GLOSSARY OF TERMS

Accreditation: The formal recognition by an independent body, generally known as an accreditation body, which is a certification body operates according to international standards.

Applicant: Candidate who applies for GAP certification by an approved certifying body.

Assessment: An appraisal of procedures or operations based largely on experience and professional judgment.

Audit: The Organization for Standardization (ISO) defines an audit as a systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent audit criteria are met.

Audit Client: Any person or organization that requests an audit. The Client can be internal or external.

Auditee: Entity or organization (or part of an organization) that was, or is, being audited.

Audit Evidence: All the information collected during the course of an audit, which serves as the basis for the auditor to make an opinion and determine compliance with the requirements (standard) being audited against. Such evidence includes records, factual statements and other verifiable information (e.g. observation of work activities and physical examination of products, materials and equipment) that is related to the audit criteria being used. There must be sufficient audit evidence for the auditor to submit a final opinion.

Audit evidence can be either qualitative or quantitative. *Objective evidence* is information that shows or proves that something exists or is true.

Audit Findings: Result from a process that evaluates audit evidence and compares it against audit criteria. *Audit findings* can show that audit criteria are being met (conformity) or that they are not being met (non-conformity). They can also identify best practices or improvement opportunities.

Audit Itinerary/Schedule: An audit itinerary is a schedule or timetable of activities to guide the on-site audit process, which will allow for efficiency and time management, although deviations from the timetable may occur sometimes.

Auditor: An official trained and qualified to conduct an audit on behalf of a certifying body. In the GLOBALG.A.P. system, an auditor conducts an audit of the quality management system where applicable and can also conduct inspections of production sites.

Audit Plan: An audit plan specifies how a particular audit will be conducted. It describes the activities that will be carried out in order to achieve the audit objectives.

Audit Report: A standardized means of reporting the audit findings and non-conformances (exceptions) with respect to the appropriate level of management.

Audit scope: A statement that specifies the focus, extent, and boundary of a particular audit. The scope can be specified by defining the physical location of the audit, the organizational units that will be examined, the processes and activities that will be included, and the time period that will be covered.

Biodiversity: The variability among living organisms from all sources, including ‘inter alia’ terrestrial, marine and other aquatic systems, and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.

Calibration: Determination of the accuracy of an instrument, usually by measurement of its variations from a standard, to ascertain the necessary correction factor.

Certification: The provision by an independent body of written assurance (a certificate) that the product, service or system in question meets specific requirements.

Certification Body: A third party auditing organization that audits facilities against a specific international standard or code.

The GLOBALG.A.P. definition is an organization that provides conformity assessment services such as inspections and certifications to producers and producer groups against the GLOBALG.A.P. standards in accordance with ISO/IEC 17065 accreditation requirements, GLOBALG.A.P. General Regulations and License and Certification Agreement.

Checklist: An inspection and audit tool with documented questions that reflect the requirements, procedures, or policies of an organization. For GAP inspections/audits it can be used by producers, producer groups, certification bodies or organizations (approved by GLOBALG.A.P. as appropriate) which help producers to implement GAP standards towards obtaining certification (or GLOBALG.A.P. certification).

Compliance Criteria (CC): Information provided to further illustrate each control point and how to successfully address the requirement(s) identified in the control point.

Conformance: Meeting or complying with established requirements as set out in established procedures or of a particular standard.

Control Points (CP): Each of the requirements requested by a standard (or GLOBALG.A.P. standards) to implement good agricultural practices. Within the GLOBALG.A.P. standards, control points are classified as Major Musts, Minor Musts, or Recommendations.

Control Points and Compliance Criteria (CPCC): The comprehensive set of control points and compliance criteria that define the standard against which a producer’s performance is measured both internally and externally.

Exception: That which is a deviation from a standard. Exceptions are those items that do not conform to general audit finding(s).

Finding: An auditor's (or audit team's) opinion as to the farm's/facility's overall GAP performance during the audit period. The finding is based upon evidence gathered during the audit process.

Food Safety: The assurance that food will not cause harm to the consumer when it is prepared and consumed according to its intended use.

Good Agricultural Practices (GAPs): Practices that address environmental, economic, and social sustainability for on-farm processes, resulting in safe and quality food and non-food agricultural products (FAO).

Hazard (as related to GAPs): A biological, chemical, physical or any other property that may result in a situation that is unsafe for workers, consumers, or the environment.

Hazard (as it relates to food safety): A biological, chemical, or physical agent that could contaminate food at any stage and cause an unacceptable health risk.

Hazard Analysis Critical Control Point (HACCP): A food safety system that identifies hazards, develops control points throughout the flow of food, sets critical limits, and monitors the effectiveness of these control measures.

Internal Controls: The various engineered and managerial means-both formal and informal-established within an organization to help the organization direct and regulate its activities in order to achieve desired results; they also refers to the general methodology by which specific management processes are carried out within an organization.

Mass Balance: A reconciliation of the amount of incoming raw material against the amount used in the resulting finished products, taking into account process waste.

Non-conformance: Activities carried out that are not according to the established procedures or requirements of a particular standard. A non-conformance may be minor or major.

In GLOBALG.A.P., non-conformance occurs when a GLOBALG.A.P. rule that is necessary for obtaining a GLOBALG.A.P. certificate is infringed. For example, the producer who does not comply with 100% of the Major Musts and 95% of the Minor Musts is in a situation of non-conformance. It can also refer to a deviation from the critical limits set at a critical control point, which results in a hazard occurring.

Observation: A statement about something that has been noticed.

Quality Management System (QMS): The organizational structure, procedures, processes and resources needed to implement quality management.

Record: A document containing objective evidence illustrating activities being performed and/or results achieved.

Risk: The chance that a condition or set of conditions will lead to a hazard.

Risk Assessment: An estimate of the probability, frequency and severity of the occurrence of a hazard.

Sample/Sampling: Selecting a portion of a group of data in order to determine the accuracy or propriety or other characteristics of the whole body of data.

Self-Assessment: Internal inspection of the production system and the registered product carried out by the producer or a sub-contractor, based on GLOBALG.A.P. checklist (or checklist from another GAP scheme).

Standard: A document that provides requirements, specifications, guidelines or characteristics that can be used consistently to ensure that materials, products, processes and services are fit for their purpose (ISO).

Substantiate: To establish or prove conclusively.

Traceability: The ability to retrace the history, use or location of a product (e.g. origin of materials, processes applied or distribution or placement after delivery) by means of recorded identification markers.

Verification: Confirmation by examination of evidence that a product, process or service fulfils specified requirements.

Worker: Any person or a farmer who has been contracted to carry out a task. This includes farm owners and managers, as well as family members carrying out tasks on the farm.

LIST OF ACRONYMS

ACP	African Caribbean and Pacific Group of States
CAR	Corrective Action Request
CB	Certification Body
CCP	Critical Control Point
COLEACP	Comité de liaison Europe-Afrique-Caraïbes-Pacifique [Europe-Africa-Caribbean-Pacific-Liaison Committee]
CPCC	Control Points Compliance Criteria
OECS	Organization of Eastern Caribbean States
EU	European Union
FAO	Food and Agricultural Organization of the United Nations
FLO	Fairtrade Labelling Organizations International
GAP	Good Agricultural Practice(s)
GFPs	Good Farming Practices
GGN	GLOBALG.A.P. Number
GMPs	Good Manufacturing Practices
HACCP	Hazard Analysis Critical Control Point
IEC	International Electrotechnical Commission
IFA	Integrated Farm Assurance
IFOAM	International Federation of Organic Agriculture Movements
ILO	International Labour Organization
IPM	Integrated Pest Management
IPPC	International Plant Protection Convention
ISO	International Organization for Standardization
ISSBs	International Standard Setting Bodies
NC	Non-conformance

NGO	Non-Governmental Organization
OIE	Office International des Epizooties (World Organization for Animal Health)
PIC	Prior Informed Consent
PMU	Production Management Unit
QMS	Quality Management System
SA	Social Accountability
SAN	Sustainable Agriculture Network
SPS	Sanitary and Phytosanitary
SOP	Standard Operating Procedure
SSOP	Sanitation Standard Operating Procedure
TBT	Technical Barriers to Trade
WHO	World Health Organization
WTO	World Trade Organization

Section 1: The Importance and Application of Good Agricultural Practices in Improving the Safety, Quality and Trade of Fresh Produce

CHAPTER 1

AN INTRODUCTION TO GAPS AND HOW IT BENEFITS FOOD SAFETY

1.1 Introduction to Good Agricultural Practices (GAPs)

Consumers of fresh produce need to be assured that their fresh food purchases have been grown under conditions that reflect good agricultural practices (GAPs). While the term ‘GAP’ is considered conceptually difficult because of the diversity of schemes of codes, guidelines and definitions within the agricultural sector, a GAP approach is typically applied. GAP refers to the application of recommendations and available knowledge derived from representatives of all stages of the food chain, to addressing environmental, economic and social sustainability for on-farm production and post-production processes resulting in safe and quality food and non-food agricultural products.

It should be noted that GAP also refers to non-food agricultural products, but in the context of the final consumer. The primary focus of this document is on the safety and quality of fresh food products that can be exposed to food safety hazards and risks. For that purpose, good agricultural practices, or GAPs, are production and farm-level approaches to ensure the safety of fresh produce for human consumption.

1.2 Food Safety Risks in Fresh Produce

The increased consumption and movement of fresh produce, in particular fruits and vegetables, has also led to a greater incidence of food borne illnesses associated with eating those foods, particularly because many of them are eaten in the raw state. There are many reasons for the increase in illness. These include:

Changing food industry practices: The increased volume of produce and complexity of their distribution system has increased the sources of contamination. Because the production, harvest and distribution in agricultural products are complex, it is not always possible to know exactly how and at what point the produce may become contaminated.

Increased global trade: As food comes from many different parts of the world it broadens consumer exposure to unfamiliar microorganisms. In that regard the World Trade Organization (WTO) Sanitary and Phytosanitary (SPS) Agreement, is primarily concerned with food safety.

Consumer demand for convenience: The desire for ready-to-eat salads, pre-cut vegetables, sprouts, etc. has increased the potential for microorganism multiplication and the risk of disease for consumers.

Changing social demographics: The changing composition of the region's population – with the increase in the number of the elderly, children, pregnant women and immunocompromised persons, who are more likely to become dangerously ill from exposure.

Changes in consumer food preferences: The increased use of salad bars, eating out and fast foods has provided increased opportunity for contamination.

As food moves from the farm to the table, there are many opportunities for fresh produce to become contaminated. As such, each person at every step of the process needs to make a concerted effort to reduce the chances of this happening. It means paying attention to food safety.

1.2.1 Food Safety in Fresh Produce

Food safety, in general, means the safeguarding of food from any hazardous agent (biological, chemical and physical) that could harm human health.

All businesses that produce, store, distribute, prepare, handle or sell food have **moral, legal and financial** reasons to ensure that the food they handle does not cause illness or injury. As experts working with farmers, producers, workers, input suppliers and service providers, we have an obligation to provide guidance to those various interest groups to ensure that the food produced is safe.

The production of crops (including fresh fruits and vegetables) embraces different activities such as farming, harvesting, post-harvest treatment and processing. Within all these activities, specific hazards exist that affect product safety and quality and might therefore pose a health risk for the consumer.

In order to reduce this risk and to increase produce safety, it is necessary to first assess the potential hazards in the production environment. Once the potential sources of produce contamination or other hazards have been identified, practices can be implemented to control, reduce or eliminate them. The three hazards that pose a threat to food safety are biological, chemical (including allergens) and physical.

Biological hazards

Biological hazards in fresh produce come from micro-organisms such as bacteria, fungi (yeasts and moulds), protozoans, viruses and helminths (worms), which can also be termed microbes. In some cases, microbial contamination is indirectly introduced by pests. The term pest generally refers to any animals of public health importance, such as rodents, birds, insects (e.g. cockroaches, flies and their larvae), that may carry pathogens that can contaminate food.

Micro-organisms capable of causing human disease may be found in raw produce. Sometimes they are part of the fruit or vegetable microflora as incidental contaminants from the soil and surroundings. In other instances, they are introduced into or on food by poor handling practices in agricultural production or post-harvest processes. Bacteria are the most prevalent micro-organism causing food contaminations that can lead to food borne illness. Viruses are also very important.

The primary sources of microbial contamination of fresh fruits and vegetables are:

- Human and animal faeces (e.g. untreated manure/faeces or municipal bio-solids and sewage fluids)
- Contaminated water (agricultural and processing water)
- Contaminated soil, dust, surroundings and handling equipment
- Poor sanitary practices throughout the production chain (contamination by humans or animals)

Bacteria reproduce easily and quickly if the environmental conditions meet their specific requirements for growth and reproduction. Because some bacteria have very low infective doses, prevention of bacterial contamination is the most important control factor to enhance product safety. Also, it is essential to take action to assure that pathogens already present cannot reproduce and grow to hazardous levels.

The two main strategies to prevent hazardous levels of bacterial contamination in fresh produce are:

- Preventing bacteria from reaching the product surface or keeping their initial numbers low (prevention of contamination);
- Ensuring that bacteria that have reached the product cannot grow (prevention of further growth).

Viruses are very small organisms that are unable to reproduce and multiply outside a living cell and they cannot, therefore, grow on or inside food as bacteria do. However, raw fruit and vegetables may become contaminated by viral particles after exposure to contaminated water, soil, dust or surfaces. The virus could then infect the consumer of the product if it is eaten raw. The infective dose of most viruses is extremely small (sometimes as few as 10 viral particles), so prevention of contamination is essential. As such, prevention of product contamination is essential during the production process. This is can be achieved through:

- Proper sanitation and hygiene measures during food handling in agricultural and post-harvest operations;
- Proper washing and sanitizing of produce before final packing.

Parasites are organisms that obtain nourishment and protection from their hosts, which are other living organisms. Parasites are of different types and range in size from tiny, single-celled organisms (protozoa) to larger multi-cellular worms (e.g. helminths). They may be transmitted from animals to humans, from humans to humans, or from humans to animals. Several parasites have emerged as significant causes of food and waterborne disease.

To prevent and minimize the abundance of parasites on fresh fruits and vegetables, the following strategies must be applied at all stages of production:

- No contact with water or soil contaminated with human or animal faeces;
- No contact of infected people, such as product handlers;
- Prevention of contact between animals (pests) and fresh produce.

In conclusion, remember that microbial pathogens and those prevalent in fresh produce pose the greatest threat to the food safety of such produce. The following principles should be borne in mind in any horticulture operation:

- Once a product is contaminated, removing or killing the pathogens on the produce is very difficult;
- Accordingly, prevention of microbial contamination at all steps of operation should be the priority rather than treatment to eliminate any contamination that may have occurred.

The conditions illustrated below can lead to microbial contamination of fresh produce.



Photo 1(a): Harvested baby corn on ground(b) Poor hand washing practice

Exercise!

Using your crop production and food safety knowledge, list some fruits and vegetables, name the specific type of microorganisms that can contaminate them and describe how this can occur. In addition to the group/type of microorganism (e.g. bacteria), identify the organisms by its specific name (e.g. *E. coli*).

Food	Microorganism (Group and name)	How
.....
.....
.....
.....
.....

Chemical hazards

Chemicals and single substances can pose serious health hazards to the consumer if they contaminate fresh fruit and vegetables in significant concentrations. Contamination may be caused by either naturally-occurring substances or by synthetic chemicals used during agricultural production, post-harvest treatment or processing.

In order to minimize risks of chemical contamination of fresh products, it is important to:

- Make minimal and correct use of chemical additives (e.g. agrochemicals, processing and treatment agents, packing additives, pest control agents, antibiotics);
- Prevent contamination during product handling and processing by identifying potential risks and implementing proper practices and countermeasures.

The situations illustrated below can lead to chemical contamination of fresh produce.



Photo 2 (a) Poor storage of chemicals

(b) Over spray on tomatoes

Exercise!

Create a table and list five items of fresh produce (fruits and vegetables), name a chemical to which each item can be subjected and explain how this can occur.

Food	Hazard	How
.....
.....
.....
.....
.....

Physical hazards

Physical hazards may be introduced as foreign material into fresh fruits and vegetables at numerous points in the production chain.

Physical hazards and foreign material in fresh produce can result in serious injury and illness for the consumer. Most of these physical hazards are related to poor handling practices during harvesting, washing, sorting and packing of products. To ensure the food safety of fresh produce, the following principles should be borne in mind:

- Identify possible physical hazards along the production chain (agriculture and post-harvest processes);
- Implement proper practices and countermeasures and create awareness and responsibility among workers.

The situations illustrated below can lead to physical contamination of fresh produce.



Photo 3 (a) Rodent droppings on packing table (b) Packing area exposed to loose material (chipped wood, metal fragments, nails, etc.)

Exercise!

List some fresh produce (fruits and vegetables) and the specific types of physical hazards to which they may be subjected and explain how this can occur.

Food	Hazard	How
.....
.....
.....
.....
.....

1.2 Benefits of Using GAPs to Minimize Food Safety Risks

The effort to reduce the chances of fresh produce becoming contaminated should be significant, given increasing consumer concerns about illness or death resulting from the consumption of contaminated food. Since consumers are the main focus of producers’ production, ‘calming’ their fears must therefore be the producers’ main concern.

In this regard, a key strategy has to be the reduction of the occurrence of microbial and other types of contamination. Although farmers are not the only ones responsible, they play a pivotal role in this strategy by ensuring that their inputs and practices during production enable safe outputs of production. Implementing, reviewing, evaluating and reinforcing good agricultural practices (GAPs) in their day-to-day operations on the farm is critical as farmers and others stakeholders stand to benefit (see Box 1).

Good agricultural practices (GAPs) is a compilation of world-wide practices developed by representatives from all stages of the food chain to ensure the safety of all produce and personnel in the production and marketing food chain.

The farmer and service providers have to become aware of the microbiological as well as chemical and physical hazards that are on the farm and business place, and the potential threat that exists to the consumer.

By implementing a risk reduction programme required by GAP, farmers and service providers protect public health and safeguard their businesses. The financial loss from litigation as a result of an outbreak could be devastating.

Although the elimination of risk is impossible, GAP applied to a particular crop, economic situation, and physical surroundings is the best way to ensure the safety of consumers. There is now increased pressure at the global level for producers, suppliers and retailers, service providers, input suppliers and other business interests to ensure that fresh produced sold to consumers is safe.

The food chain, for all intents and purposes, starts at the farmer level (although it can be argued that it begins with the inputs required to start production), and these farmers must have an understanding and knowledge of the inputs used in production. Sadly, farmers are lagging behind with regard to the practical application of GAPs on the farm and they need help.

BOX 1

The Benefits of Good Agricultural Practices (GAPs)

Benefits for Farmer

- Better and easier access to the market
- Opportunity for fair competition
- Possible increase in quality and quantity
- Possible decreased production cost in the long term
- Clear agreement with retailer

Benefits for the Consumer

- Reduced risk to health and safety
- Better and clear information about the origin of food: traceability
- Trust in food production
- Satisfaction of food demand in terms of quality, variety and safety

Benefits for the Retailer

- Reliable expectations of food safety and quality
- Clear agreements with growers
- Reduction of risks of issues relating to consumer health and safety
- Increased confidence of consumers in food produce, (*positive purchasing attitude*)
- Compliance with the most advanced EU legislation

Benefits for the Agricultural Sector

- Prevention of risk , reduction of issues related to consumer health, safety and environment
- Reduction of health risks for agricultural workers
- Restoration of professional image of agriculture and gain in trust
- Compliance with the most advanced EU USDA, and Canadian legislation
- Possible harmonization of existing trade protocols

CHAPTER 2

GAP STANDARDS AND CODES AND HOW THEY ARE APPLIED

2.1 Good Agricultural Practices (GAPs) Defined

What is the meaning of the term ‘good agricultural practices’ or GAPs?

The concept of good agricultural practice (GAP) has evolved in recent years, mainly in the context of (i) a rapidly changing and globalizing food economy, and (ii) as a result of the concerns and commitments of a wide range of stakeholders regarding food production and security, food safety and quality, and the environmental sustainability of all facets of agriculture. The interest in those concerns and issues comes from stakeholders involved in:

- the supply side (farmers, farmers’ organizations, workers);
- the demand side (retailers, processors and consumers); and
- institutions and services (education, research, extension, input supply) which support and connect demand and supply and also seek to meet specific objectives of food security, food quality, production efficiency, livelihoods and environmental conservation in both the medium and long term.

Broadly defined in 2003 by the Food and Agriculture Organization of the United Nations (FAO), **“GAP refers to the application of practices or protocols to address environmental, economic and social sustainability for on-farm production and post-harvest processes resulting in safe and healthy food and non-food agricultural products”**.

These practices or protocols are best implemented through a well documented and understood GAP Plan. The Plan must be understood by farm employees, who must therefore be trained in GAPs. The Plan should be re-evaluated at least annually, or at any time when there are changes in the farm that could affect safety.

It is noted, however, that the term ‘good agricultural practices’ may mean different things and have varying implications depending on who defines it. These GAP requirements, which may be established as standard, codes or regulations, have been established mainly by the food industry and producer organizations but also by governments and Non-Governmental Organizations (NGOs). The intention is to establish common requirements (based on which GAP standard is used) and by extension, a uniform approach to assessing farms with respect to meeting these standards, which may be industry, regulatory or internal.

2.2 GAP Standards and Codes and how they are developed

Many GAP standards and codes have been developed by market and non-profit actors, which has resulted in an increase of private sector standard-setting in agriculture. It is noted that the tendency has been for voluntary codes and guidelines to be developed when the implementation of governmental or quasi-governmental standards do not fully meet societal or market needs. These voluntary standards and certification schemes use market incentives in order to encourage management improvements above the minimum level required by law; or to support legislation implementation; or to suggest a framework when formal laws may not exist.

Note that some of these codes and certification programmes may refer to international treaties and conventions, sometimes redefining them into verifiable standards for direct implementation by agricultural producers or traders, or both. These initiatives support other governmental regulatory frameworks or other institutionalized extension schemes. Some certification and labelling programmes (e.g. Fairtrade) have helped secure substantial market shares for farmers, and they sometimes affect areas that are of concern to many governments, such as the environment and labour conditions. However, the opportunities, limitations and potential risks generated by these private or non-profit social and environmental codes in agriculture need to be better understood.

In terms of standards that have been developed, there are a number of examples that can be cited. The Europe-Africa-Caribbean-Pacific Liaison Committee (COLEACP)—an inter-professional association of exporters, importers and other stakeholders of the Europe-Africa-Caribbean-Pacific (EU-ACP) horticultural trade—developed a minimal set of food safety, environmental and social standards which cover the whole production chain from farm to export for fresh horticultural products.

The International Federation of Organic Agriculture Movements (IFOAM), the umbrella body for organic production, has developed basic standards, which serve as guidelines on the basis of which national and private standard setting bodies can develop more specific organic standards.

The fair trade system involves initiatives that provide better market access and better trading conditions to small farmers. This includes a price premium for producers, which is to be invested in social and environmental improvements. Through the Fairtrade Labelling Organizations International (FLO), a number of standards have been developed, including product-specific, labour, trading and farmer associations and cooperatives.

SA8000 (for social accountability), is a workplace standard which focuses on the rights of the worker. In that same type of category, the Sustainable Agriculture Network (SAN)/Rainforest Alliance initially focused on the environmental impact of production methods and habitat conservation, but has increasingly incorporated standards for community relations and labour conditions. In the process, a few product-specific standards and also whole farm standards have been developed. The Rainforest Alliance is the main force behind the initiative.

What started as EurepGAP is a private certification system driven by large-scale retail chains and large produce suppliers/producers in Europe. EurepGAP has now evolved into GLOBALG.A.P., which has developed a range of criteria for general agricultural production, including crops, livestock, horticultural produce and bee-keeping.

It should be noted that the purpose of these requirements varies from fulfilment of trade and government regulatory requirements (in particular with regard to food safety and quality), to more specific requirements of specialty or niche markets. The objective of these GAP codes, standards and regulations include, to a varying degree:

- ensuring safety and quality of produce in the food chain;
- capturing new market advantages by modifying supply chain governance;
- improving natural resources use, workers' health and working conditions; or
- creating new market opportunities for farmers and exporters in developing countries.

Many, though not all, of these standards and codes use the term ‘good agricultural practices’. However, all these standards generally refer to some form of good practice. What is important to note is there is little common ground as to how a ‘good’ practice is defined.

In general, the term ‘good agricultural practices’ is used to refer to widely varying elements, from monitoring of pesticides use, to more all-encompassing aspects of primary production and post-harvest systems, such as environmental impact assessment or labour conditions. Given the variety of existing standards, it is important to understand who is setting the standard and conducting certification and verification, and with what objective.

Generally speaking, the focus of GAP standards may be on issues such as ‘food safety and quality’ or food security and agricultural sustainability. There is more to it than just that, however, as one must differentiate between process and product standards.

What is the difference between process and product standards? Process standards prescribe criteria for the way the products are made, while product standards identify specifications and criteria for the final characteristics of products, which usually come to play at the retail end of the value chain. Many GAP codes and standards are process based, although some may also contain specifications for product requirements.

When standards and codes are developed to address product safety and quality, they tend to focus on the impact of production practices on the end-product, rather than on the impact of production practices on the environment, employment or local development. However, there are some codes and standards (e.g. organic or Fairtrade standards) developed by governments, public agencies, or NGOs, which are likely to be more directed towards the objective of sustainable agriculture and rural development than standards developed by market interest. These types of standards have a down side, in that they will often rely on public incentives such as government payments, extension and technical assistance, which make them a costly option for developing countries. Further, they may also rely on price premiums based on consumers’ willingness to pay for environmental and social sustainability, which may limit their market share and therefore their potential as a tool to achieve sustainable agriculture and rural development.

The key question is “**What are some of the potential impacts of GAP standards and certification on farmers?**” For example,

Consider the impacts of organic farming where:

- productivity gains may be accompanied by higher production cost, mainly in the form of increased labour demand;
- the conversion to organic production may result in initial yield declines and major investment;
- access to premium markets to compensate for yield declines and return on investment usually requires certification to which there is also a cost.

Consider the Fairtrade Label where:

- the Fairtrade price premium appears to be only part, and usually a small part, of the benefits derived from the system, notably because usually only a small part of Fairtrade produce is sold through the Fairtrade market.
- improved organization, better bargaining positions, credit worthiness and economies of scale seem to be more important under this label;
- benefits derived are based on the Fairtrade marketing system and additional support activities from other related agencies.

It is recognized though that both organic and Fairtrade certification seem to lead to general quality improvements, which in themselves are also valuable in conventional markets.

In trying to benefit from such GAP standards and certification schemes, there are a number of constraints of which, particularly small farmers/farming enterprises from developing countries like ours need to be aware.

- Some standards only operate at the wholesale and buyer level and do not provide for product for consumer information and as such there is no product differentiation. It means that farmers may not always receive a premium price for meeting the standard, although there is a cost for related investment or certification.
- Requirements for traceability and quality favour large commercial farms and cooperatives with the capacity to deal with these matters.
- In some countries, a lack of local certification bodies increases certification costs.
- Some standards, such as SA8000, which focus on worker conditions, may not be relevant for smallholders who sometimes rely on family labour. In contrast, the Fairtrade system is especially developed to help small producers in developing countries, but the potential benefits are curtailed by a limited market.
- Stricter standards are often only a part of the new requirements that farmers have to meet in food markets which are increasingly globalized and concentrated.

Further, small farmers and producers are challenged by the more demanding commercial practices and requirements of the large buyers. As such, there would be need for interventions which address GAP adoption together with the broader range of management and institutional support that farmers will need to meet these changing market requirements.

Globally, including within the Organization of Eastern Caribbean States (OECS), governments or quasi-governmental agencies may assume various roles in relation to the development of GAP-related standards and schemes. It is suggested that there should be an exploitation of synergies or a coming together of the market actors and government agencies to facilitate all aspect of GAPs-food safety and quality, food security and agricultural sustainability to allow for more holistic codes and standards, which would benefit all stakeholders. In that regard, the role of government and international agencies is critical in order to provide capacity building to farmers, producers organizations and extension staff, and to help farmers and markets better organize to meet changing demands in food markets.

2.3 Types of GAP Standards and Codes Developed and their Applications

2.3.1 Government/Quasi-Government Agencies

These agencies can develop both voluntary and mandatory standards, the latter is correctly termed ‘regulations’ if set by government, or ‘technical regulations’ as defined in the Technical Barriers to Trade (TBT) agreement when set by quasi-governmental institutions such as Bureaus of Standards. Some of these standards may themselves be based on international agreements or guidelines set by inter-governmental bodies, such as the Codex Alimentarius, World Organization for Animal Health (OIE) and International Plant Protection Convention (IPPC), all of which play a key role in implementing and advising on sanitary and phytosanitary (SPS) measures.

There can be different scenarios with regard GAPs certification. Governments can decide to accredit private certification bodies or to keep the certification in the hands of governmental bodies. Where GAP standards are voluntary for exclusive use or for use alongside labels of certification bodies, only when using the certificate or label do producers and traders have to comply with the regulation.

2.3.2 Private Standards

Standards set by private and non-governmental groups and organizations for reasons such as to manage supply chains or respond to consumer concerns are voluntary, in that actors in the agriculture sector are not legally bound by them, even though they may effectively affect market access. Some developing countries have expressed concerns about the trade-restrictive effects of private standards, particularly as it relates to the higher level of stringency associated with requirements compared with regulations, the proliferation of these standards and the lack of transparency (not notified under the TBT Agreement). These private standards, which go beyond government regulations, can be industry-based and developed by the producers themselves (i.e. the first party), or by buyers or retailers (i.e. the second party), and ultimately call for some kind of certification.

i. Producer Standards

Producers, usually as an association or co-operative, may set a standard and invite a third party to verify implementation in order to demonstrate to a wide range of buyers that they fulfill certain requirements generally in demand in the market. Such an assurance programme may save time and money, compared to assuring each buyer individually. An example of such producer-set standards is those standards set by national producer associations under the COLEACP harmonized framework.

ii. Buyer Standards

Sometimes, buyers who have basically the same product requirements may come together to set a standard for the product(s), as this would quickly convince producers to implement such standards when it becomes clear that they are required by a large part of the market and there is strong business potential. An example of such a buyers’ standard is the EurepGAP (now GLOBALG.A.P.) standard.

Trade Unions, usually in the form of coalitions although from a different perspective, may also be involved in setting standards.

NGOs, which may be advocacy but also broad stakeholder groups, typically develop standards that involve environmental and social concerns. Standard-setting NGOs may themselves be umbrella organizations of various smaller NGOs. The acceptability of these standards depend on factors such as (i) the public recognition of the Non-Governmental Organization (NGO) setting the standard; (ii) the standard setting process, especially the stakeholder consultation; (iii) the ease of implementing the requirements; and (iv) the publicity around the standard.

As with governmental standard setting bodies, NGOs may choose to do the verification themselves, or they may accredit certification bodies.

There are also standards set through two- or three-party coalitions involving governments, the private sector and NGOs. For example, governments, industry and consumer organizations are all represented in International Organization for Standardization (ISO) membership.

2.3.3 Conventions and Treaties

There are a number of international conventions and treaties that influence GAP standards. They include:

- **Conventions of the International Labour Organization (ILO)**—which deal with, among other things, (i) labour conditions involving ‘injustice, hardship and privation’; (ii) elimination of child labour; (iii) health and safety in agriculture.
- **Conventions on pesticides and pesticide use**—such as (i) The International Code of Conduct on the Distribution and Use of Pesticides; (ii) The Rotterdam Convention on the Prior Informed Consent (PIC) Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.
- **The International Treaty on Plant Genetic Resources**

2.4 Principles of Good Agricultural Practices

As can be seen from the above examples, GAP represents a multitude of approaches and applications addressing a range of needs in many parts of the world. The FAO Committee on Agriculture notes that this can be manifested into two challenges. The first challenge is to ensure that extending the use of GAP will take into account the interests of smaller-scale producers in developing countries for both the safety and the sustainability of domestic production. Secondly, the growing number of scattered initiatives for GAP risks burdening farmers with multiple codes of practice and regulations fails to provide for an exchange of information on lessons learned, and could lead to uncertainty for consumers about producer claims.

Given the trend in the development and adoption of GAP, and the varying applications, it is critical that there be continuous discussion and debate to further development on issues pertaining to GAP for the benefit of all stakeholders. FAO, as part of such discussion, has elaborated on the potential roles and benefits for governments, food processing and retailing industries, farmers and consumers and has worked on a framework within which to seek understanding and agreement on the principles, indicators and practices of GAP.

Based on FAO's work in the context of agreed international goals to reduce hunger and promote food security, four principles of GAP, which apply to all scales of farming have been defined as follows:

1. economically and efficiently produce sufficient, safe and nutritious food;
2. sustain and enhance the natural resource base;
3. maintain viable farming enterprises and contribute to sustainable livelihoods;
4. meet the cultural and social demands of society.

In summary, the application of these international GAP standards and codes will help to improve the safety and quality of food and other agricultural products; reduce the risk of non-compliance with national and international regulations, standards and guidelines (in particular of the Codex Alimentarius Commission, OIE and IPPC); and promote sustainable agriculture and help meet national and international environment and social development objectives.

Notwithstanding this, GAPs implementation is challenged by:

- the increased cost of production associated with certain aspects, such as record keeping and certification;
- the standards can be used to serve competing interests of specific stakeholders in agri-food supply chains by modifying supplier-buyer relations;
- the high risk that small farmers will not be able to seize export market opportunities given the difficulties they experience in meeting the resource needs and preparation for standards implementation;
- compliance with GAP standards does not always foster all the environmental and social benefits which are claimed; and
- much awareness raising is needed of 'win-win' practices that lead to improvements in terms of yield and production efficiencies, as well as environment and health and safety of workers.

CHAPTER 3

THE USE OF HACCP AND GMPS AS TOOLS IN IMPLEMENTING GAPS

3.1 Farm Audits and their Importance

In general, a **farm audit** can be defined as a methodical examination or assessment of on-farm (and related off-farm) procedures and practices that aim to verify whether they comply with established legal requirements, internal policies or accepted practices.

A farm audit can cover all aspects of farm production, including inputs, infrastructure and processes or activities and for all types of commodities (i) crops; (ii) livestock; (iii) aquaculture; (iv) apiculture (honey production) or can be specific to a particular activity, procedure, or process.

With respect to food safety, a farm audit may be typically based on GAPS, sometimes referred to as Good Farming Practices (GFPs). The audit can be conducted against specific international private voluntary standards (e.g. GLOBALG.A.P., British Retail Consortium) or international codes, agreements and standards such as ISO 22000, HACCP (hazard analysis critical control point), SPS measures, OIE, IPPC and Codex standards, some of which may be regulated in some countries. The audit may also be based on locally developed voluntary standards, and regulations, including technical regulations.

The importance of a farm audit in ensuring food safety is critical. There are benefits to be derived by auditing for food safety (see Box 2).

BOX 2

Benefits of Auditing for Food Safety

- ✓ Improved safety of food
- ✓ Assurance of compliance with legislation
- ✓ Enhance reputation
- ✓ Cost reductions
- ✓ Identification of deficiencies in control systems and implementation of corrective action
- ✓ Improved management confidence that food safety risks are properly controlled
- ✓ Demonstration of commitment by management to food safety

The Agreement on the Application of Sanitary and Phytosanitary Measures (SPS measures) addresses the proper application of food safety, animal health and plant protection rules, as they relate to international agricultural trade.

Bearing in mind the extent of the global agricultural trade—whether produce and commodities are sold and consumed in their primary form, or are further processed—without the proper application of these SPS measures from production to consumption or from ‘farm to table’, food safety could be seriously compromised.

In addressing food safety through

SPS measures, attention must be paid to all aspects of agricultural production whether it be crops, livestock, aquaculture and also apiculture (bee keeping/honey production).

The SPS Agreement follows the standards set by the three international standard-setting bodies (ISSBs):

- (i) the Codex Alimentarius Commission, which is jointly convened by the World Health Organization (WHO) and the Food and Agriculture Organization (FAO) of the United Nations;
- (ii) World Organization for Animal Health (OIE); and
- (iii) the International Plant Protection Convention (IPPC) Secretariat.

It is through application of these standards and codes at the farm level that other aspects of food safety are derived.

Local or national food safety laws and regulations are also very important to meeting food safety requirements. These laws may be enacted to enable requirements of the SPS Agreement to be met, or may be developed at the national level in keeping with polices, trade arrangements, and importantly scientifically assessed risk to health and safety of consumers and the environment.

Question!

Can you identify some legislation and codes that pertain to GAPs in your country?

3.2 HACCP and GMPs and their Relation to GAPs

The hazard analysis critical control point (HACCP) system can be used as an effective tool for food safety management if the principles are well understood and activities well implemented. HACCP is becoming the system of choice for the management and assurance of food safety across all components of the food industry, including crop production.

The system is a preventative one, which analyses and identifies critical areas throughout a facility (which could be a farm) from raw material procurement through to distribution, retail and consumption, where food safety risks—be it microbiological, chemical, or physical—could occur. Through the use of critical control points, control systems and procedures to minimize or prevent the risks associated with the identified hazard(s) are then put in place, and appropriate records and documentation developed to plan for unsafe practices. HACCP has the potential to identify areas of concern where failure has not yet been experienced, so it is therefore particularly useful for new operations. The use of HACCP will transform a business entity from a solely retrospective end-product testing approach towards a preventative quality assurance approach.

Fresh fruits and vegetables are highly perishable and, in general, their quality cannot be significantly improved after harvest. As such, producers and others in charge of fresh produce operations should focus on quality maintenance through appropriate implementation of

production and handling practices. Since food safety hazards associated with fresh produce are difficult to correct through remedial action, this should be a high priority.

Given, the information available, it can be said that the implementation of GAPs is still quite generic in a number of areas but with support from the application of HACCP principles through some type of on-farm HACCP based system, along with the use of good manufacturing practices (GMPs), the implementation of GAPs can become quite reliable.

Before attempting to apply HACCP principles to fresh produce production and post-harvest operations, farmers, producers, and also auditors should determine if the facilities and practices meet the minimum criteria for GAPs and GMPs. A systems (step-by-step) approach to the evaluation of production and post-harvest systems can lead to the identification of potential problem areas.

Criteria address by GAPs or GMPs should not necessarily be included as part of a HACCP programme. For example, the use of contaminated water for overhead irrigation or for post-harvest washing is not an acceptable GAP. As such, it would not be necessary to consider this as a critical control point (CCP) for HACCP. In fact, here is little utility in attempting to differentiate between the problems associated with violation of a GAP or GMP versus a CCP in HACCP for fresh produce as in all instances the ultimate goal is the delivery of safe food to consumers. The auditor should be acquainted, at least generally, with the recognized critical management steps in fresh produce operations.

A number of areas of focus for the treatment of potential hazards during the production and processing (some of which is done at the same production site) of fresh produce have been identified for GAPs, GMPs and HACCP. They include:

- Production site
- Pesticide use
- Water
- Field sanitation
- Sanitary facilities in the field
- Sanitary facilities in packing houses and processing plants
- Employee health and hygiene
- Packing facility sanitation
- Fresh-cut processing facilities (sometimes takes place at production site)
- Storage and ripening facilities
- Transport of packed product
- Retailers; GMPs that apply to packing operations should be applied to retail handlers as well. Of particular importance is the personal hygiene of employees who stock fresh produce. Often times the problem may occur there and not necessarily at the farm.

Some of these areas have been identified as deficient areas for farmers/growers attempting to implement GAPs, particularly when farm audits are required to meet certification or regulatory requirements. These are addressed separately.

3. 3 Principles of HACCP

Although this is not a course on HACCP, given the nexus between HACCP and the implementation of GAPs for food safety, the seven principles of HACCP are briefly described below:

1. *Conduct a hazard analysis*

Identify the potential hazard(s) associated with food production at all stages, from primary production, processing, manufacture and distribution until the point of consumption. Assess the likelihood of occurrence of the hazard(s) and identify the measures for their control.

2. *Determine the critical control points (CCPs)*

Determine the points, procedures or operational steps that can be controlled to eliminate the hazard(s) or minimize its (their) likelihood of occurrence.

A ‘step’ means any stage in food production or manufacture, including the receipt or production of raw materials, harvesting, transport, formulation, processing, storage, distribution, etc.

3. *Establish critical limits*

Establish the critical limit(s) that must be met to ensure the CCP is under control. That is to determine criteria which separate acceptability from unacceptability. These critical limits define processing boundaries that cannot be exceeded and are determined after a thorough hazard analysis has been conducted, and the correct CCPs have been determined.

4. *Establish monitoring procedures*

Appropriate monitoring procedures must be established and used to ensure that critical limits are not exceeded. Monitoring is the act of scheduled testing or observation recorded by the organization to report the findings at each CCP.

5. *Establish corrective action procedures*

This is the action to be taken when the results of monitoring at a particular CCP indicate a loss of control. Corrective action must be taken to bring the process and affected product, back into control

6. *Establish verification procedures.*

Verification procedures address several concepts under one principle and, in essence, are established to ensure that the HACCP system is (i) working properly; (ii) valid; and (iii) relevant.

7. *Establish a record keeping system*

This is to establish documentation concerning all procedures and records appropriate to the principles and their application. The record keeping system must establish procedures for the identification, storage, retrieval, maintenance, protection, and disposition of documents.

A thorough understanding of these principles will enable a more thorough application of GAPs, particularly as it relates to food safety.

Section II: An Overview of Good Agricultural, Practices (GAPs) in the Region and Addressing Common Deficiencies

CHAPTER 4

COMMON DEFICIENCIES ASSOCIATED WITH A GAP AUDIT

4.1 Important Categories of GAPs for Farm in the Region

When one uses the all encompassing definition for good agricultural practices (GAPs)—to include

economic, environmental, social sustainability and food safety and quality—a broad range of requirements are defined to essentially meet (i) non-food safety and quality requirements and (ii) the food safety and quality criteria, although some criteria are applicable to both. Examples of generic codes and guidelines used in the region include:

- GLOBALG.A.P.– covers a range of criteria for general agricultural production, including crops, livestock, horticultural produce and bee-keeping. (See section on GLOBALG.A.P.)
- Draft Code of Good Agricultural Practices-Crops; St. Lucia
- A Guide to Good Agricultural Practices for Crop Production; Jamaica
- Fairtrade Standards
- Organic Standards

All of these standards and codes generally take into account the broad-based GAPs approach for addressing environmental, economic and social sustainability for on-farm production and post-production processes, which result in safe and quality food and non-food agricultural products; and also the four principles of GAP which apply to all scales of farming as follows:

- economically and efficiently produce sufficient, safe and nutritious food;
- sustain and enhance the natural resource base;
- maintain viable farming enterprises and contribute to sustainable livelihoods;
- meet the cultural and social demands of society.

4.2 GLOBALG.A.P.

Given that GLOBALG.A.P. standard is one the most recognized GAP systems used internationally for farm and produce certification, and since it serves as a reference point for this Audit Manual, an overview of the GLOBALG.A.P. system is given.

What is GLOBALG.A.P.?

The GLOBALG.A.P. Integrated Farm Assurance (IFA) standard covers the certification of the whole agricultural production process from before the plant is in the ground (origin and propagation material control points), or from where the animal enters the production process, to the non-processed product (no processing, manufacturing or slaughtering is covered, except for the first level in aquaculture).

GLOBALG.A.P. provides the standard and framework for independent, recognized third party certification of primary production processes based on ISO/IEC (International Electrotechnical Commission) Guide 65. Certification of the production process—cropping, growing, rearing, or producing—ensure that only those that reach a certain level of compliance with established good agricultural practices (GAPs) set out in the GLOBALG.A.P. normative documents are certified.

The Integrated Farm Assurance (IFA) standard offers many benefits to producers.

- i) It reduces food safety risks in primary production by encouraging the development and adoption of national and regional farm assurance schemes, with a clear risk-assured, HACCP-based reference standard serving the consumer and food chains. It also serves as a technical communications platform for continuous improvement and transparency through consultation across the entire food chain.
- ii) It reduces the cost of compliance by avoiding multiple product audits on mixed farming enterprises by introducing a single ‘one-stop-shop’, avoiding excess regulators burden by proactive adoption by industry, and by achieving global harmonization, leading to a more level playing field.
- iii) It increases the integrity of farm-assurance schemes worldwide, by defining and enforcing a common level of auditor competence, verification status, reporting and harmonizing interpretation of compliance criteria.

The IFA Control Points and Compliance Criteria document is separated into different modules, each covering different areas or levels of activity on a production site. These sections are grouped into:

- i) ‘Scope’ – covering more generic production issues, classified broadly. These are:
 - All Farm Base (AF)
 - Crops Base (CB)
 - Livestock Base (LB); and
 - Aquaculture Module (AB).
- ii) ‘Modules’ (or ‘sub-scopes’) – covering more specific production details, classified per product type.

Options for GLOBALG.A.P. certification are discussed elsewhere in the document under certification issues.

4.3 What are the Deficiencies to be addressed in a GAP Associated Audit

This section, which deals with some of the general control points (practices) that would typically be established in a good GAP Plan, focuses on all the aspects of the GAP definition given, namely environmental, economic, social sustainability and food safety and quality.

The control points (areas of common deficiencies) will be addressed and details of the criteria provided for each of them can be used to guide growers and auditors to allow proper coverage of a GAP plan. The principle underlying each control point is given below and, using GLOBALG.A.P. as a reference, the compliance criteria developed for each control point are laid out in a sample checklist in Annex 2. The control points are as follows:

- Planting Material
- Soil and Land Selection
- Environmental Protection, Biological Diversity and Landscape Conservation in Production
- Agricultural Water
- Organic and Inorganic Fertilizers
- Animal Exclusion and Pest Control
- Field Sanitation
- Harvesting and Post-harvest Handling of Fresh Produce (incl. storage and transportation)
- Worker Health, Safety and Hygiene
- Training and Record Keeping
- Farm Infrastructure
- Product Traceability and Recall
- Complaint Handling

4.3.1 Planting Material

Guiding Principle

Seeds/planting material, if unsafe, can lead to hazards affecting worker and consumer health and safety, as well as soil, water and general environmental contamination. As such, seeds/planting material must be obtained from reputable sources and be free from pests and diseases.



Photo 4(a) Get seeds from reputable sources (b) Avoid seed contamination

4.3.2 Soil and Land Selection

Guiding Principle

When a farm is being established, a desirable characteristic is the continuous integration of site-specific knowledge and practical experiences into future management planning and practices. This control point is to ensure that the land, buildings and other facilities, which make up the fabric of the farm, are properly managed to ensure the safe production of food and protection of the environment.



5(a) Check site history

(b) Grass barriers – Useful

(c) Steep slope farming-No!



(d) Control of animals

(e) Mulch cover – Helpful!

4.3.3 Environmental Protection, Biological Diversity and Landscape Conservation in Production

Guiding Principle

Farmers/growers need to be aware of the environmental concerns of consumers. They must consider the importance of being able to maintain a geological balance, promote biological biodiversity, ensure landscape conservation during agricultural production and generally create a balance between economic, social and environmental goals.

4.3.4 Agricultural Water

Guiding Principle

Water is one of the main basic raw materials to produce food. Fresh water resources are becoming scarce and water allocation is becoming a complex issue. Managing water even at the farm level requires certain knowledge, skills and improved planning, for example, during

times of water scarcity. Clean and sufficient water is important for human health, ecosystem health and general economic growth and development. To achieve this, good on-farm practices for the general management of water, including the extraction, harvesting, storage, use and disposal of waste water is required. Consideration should be given to the following:

- General water management
- Water sources, harvesting and storage
- Water for production of fresh produce
- Water quality for processing of fresh produce
- Drinking water on the farm

Water Sources, Harvesting and Storage

Water used in the production process must be from sources that are safe from contamination of hazardous substances, and the water quality must be suitable for agricultural purposes. It should not be wastewater from industries or from other processes contaminated with hazardous substances. If it is necessary to use wastewater, there must be evidence that the water has been treated to improve its quality and usability for the intended agricultural purpose. Water samples should be collected and submitted for testing whenever environmental conditions make it risky to use such water. Water harvesting is highly recommended when possible, but the practice must be safe, sustainable and pose no risk to the environment. Further, water storage should only be contributing to improving crop quality.



Photo 6(a) Are water sources safe? (b) Is water harvesting practiced?

Water for Production of Fresh Produce

Water used for agricultural production may be obtained from several sources, including rivers, streams, springs, pond, public water supply or harvested rain water. The most efficient and commercially practical water delivery system should be used to optimize the utilization of the water resource. The origin of water being used and control options to ensure consistency of supply can be determined from the following:

- Prevalence and impact of on-farm animal and loose or stray animals in the area;
- Impact of barriers to minimize animal access to water sources;
- Effectiveness of buffer zones established to prevent contamination of water source(s);

- Extent of arable farming and manure application in the region of the water supply;
- Likelihood of contaminated run-off reaching water source and cultivated crops due to topography and rainfall pattern of the area;
- Land usage on adjacent farms that may inadvertently contaminate crop, soil or water;
- Whether contour drains are established/stabilized and natural water ways stabilized;
- Biochemical characteristics in particular microbial, chemical, mineral pollution;
- Documented records of water quality analyses and water quality ratings.

Water Quality for Processing of Fresh Produce

Water used for fresh produce processing (pre-harvest, harvest and post-harvest) can be contaminated by many practices, some of which will be under the control of the producer. Good practices to ensure that water is safe and of consistently good quality for processing of fresh produce must be established.



Photo 7a: Water for post-harvest operations (b) Not potable – Do not use must be potable

Drinking Water on the Farm

Workers must have access to adequate potable drinking water at all times. This water should be from the recognized national authority or approved other sources, including bottled water. The quality of water from other sources must be verified. If water storage is necessary, it must be done in clean, previously-sanitized containers that are kept only for that purpose, kept closed at all times, and stored away from excessive heat and possible sources of contamination.

4.3.5. Organic and Inorganic Fertilizers

Guiding Principle

The structure, fertility and biological activity of soils are fundamental to sustaining agricultural productivity. The addition of fertilizers to soils is also very important to that process. The application of fertilizers must, however, be done following safe prescribed

practices and be based on crop demands. Correct application to optimize use and storage procedures to avoid loss and contamination must be followed.

Organic Fertilizers

The use of properly treated manure or compost is an effective and safe way to increase organic matter content of soil and improve its fertility. Untreated, improperly treated or re-contaminated manure should not be used as it may contain microorganisms with the potential to contaminate fresh produce, and may be detrimental to human health, soil and water quality, and biodiversity. Prescribed and safe practices are to be followed.



Photo 8(a) Aged Manure only applied prior to (b) Composting planting

Inorganic Fertilizers

The frequency, quantities and method of application of inorganic or chemical fertilizers should be recommended by qualified personnel based on the scientific analysis of crop and soil requirements.



Photo 9 (a) Is Fertilizer applied (b) Is Fertilizer properly stored properly

4.3.6 Animal Exclusion and Pest Control

Guiding Principles

Domestic and wild vertebrate animals as well as other identified insect pests are major sources of food safety hazards, mainly biological and, to a lesser extent, physical. These vertebrates and insects are vehicles for disease-causing (pathogenic) microorganisms and

pose a major threat to fresh produce, while the presence of insects or insect parts in or on fresh produce constitutes a physical hazard.

Faeces are the leading animal source of pathogens. In addition, since animals are in close contact with soil, excrement and water, they can easily pick up microbial contaminants on their body surface and transfer them to fresh produce.

Animals can also affect product quality and safety by physically damaging and spoiling produce, which can further lead to microbial contamination.

All animals are a potential source of produce contamination or spoilage. They should therefore be excluded from access to crop fields and kept away from post-harvest processing and packing areas.

Pest Control

Pest control is an important aspect of crop production if good yields are to be maintained, product spoilage and contamination minimized, and produce kept safe for consumption. However, consideration must be given to minimizing and controlling the use of pesticides and to pest management methods, such as Integrated Pest Management (IPM).

A pest and disease control system must be established, with constant monitoring of the results of the measures taken. Pesticides are toxic chemicals. Their application and the quantities used must reduce or minimize risks to human health and the environment. Records of pesticide use must be kept.



Photo 10(a) Bait Station (b) Animals must be excluded



**Photo 11 (a) Pesticide mixing and disposal pit
(b) Personal protective equipment (PPE) for pesticide use
(c) Use of PPE during spraying**



Photo 12 (a): Designed for safe pesticide (b) A good storage alternative

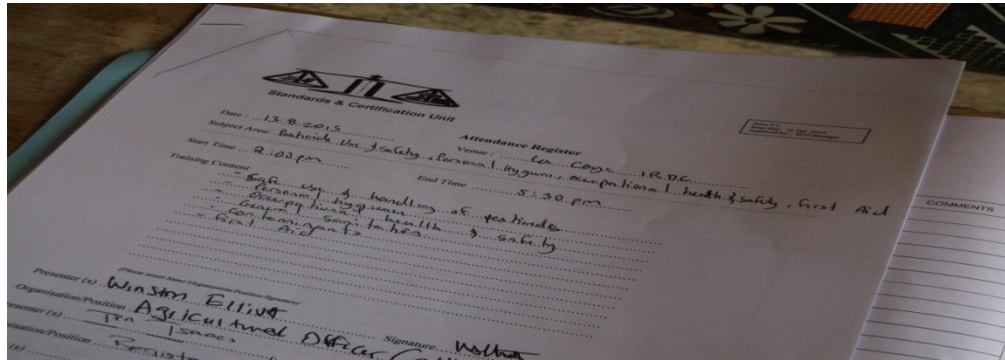


Photo 13: Pesticide training record

4.3.7 Field Sanitation and Practices

Guiding Principle

Fresh produce quality depends, among other things, on the implementation of procedures for managing solid waste and maintaining cleanliness on the farm and in storage areas, during harvesting and processing. Workers must be provided with adequate facilities and follow proper hygienic practices.

Sanitary Facilities and Practices

Toilet facilities and hand washing stations for workers must be accessible, properly located and kept clean at all times. Workers should always have the opportunity to use the facilities when they need to.



Photos 14 (a, b, c) Are these toilets adequate, appropriate, clean and well-served?



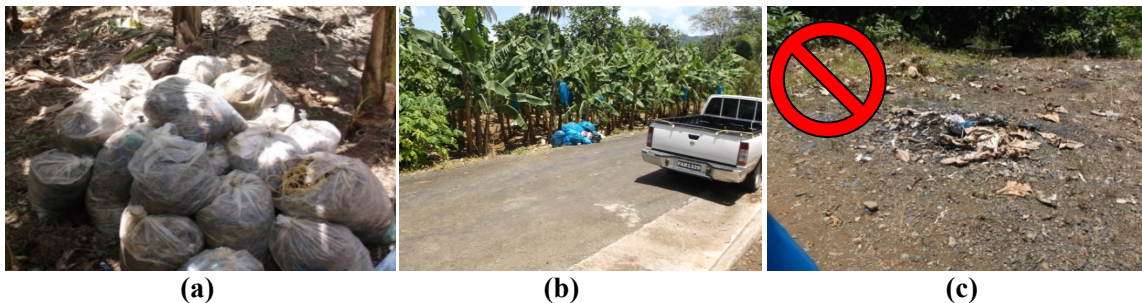
Photos 15 (a, b) Need for adequate hand wash stations with accessories



Photos 16 (a, b) Require designated but appropriate eating area

Field Sanitation (Waste Management)

The quality of fresh produce depends on the observation of acceptable protocols in the field at both the pre- and post-harvest stages. All waste products generated during the production of fresh produce must be identified, sorted and isolated and disposed of appropriately.



Photos 17 (a, b): Field Waste Packaged for Removal and Disposal; (c) Poor Practice

4.3.8 Harvesting and Post-harvest Handling of Fresh Produce

Guiding Principles

Harvesting of fresh produce represents the transition from good agricultural practices (GAPs) to good manufacturing practices (GMPs), sometimes referred to as good handling practices (GHPs). Now, when a fruit or vegetable is detached from the plant, production has been completed and the manufacture of the finished product has begun. The finished product may simply be a packed carton or it may consist of any number of handling, trimming, bunching, and post-harvest or packaging treatments to complete an item that is ready for distribution or shipping.

Fresh produce can be exposed to food safety hazards—mainly microbiological but also physical and chemical—and care must be taken to avoid such contamination. A comprehensive set of Sanitation Standard Operating Procedures (SSOPs) must be developed that are specific to the harvest operation and handling of produce. Worker health and hygiene with particular attention to toilets, hand washing and personal habits and reporting illness is of utmost importance.



Photo 18 (a) Proper Hand washing (b) No Exposed Sores (c) Keep it Covered (d) Report Illness



Photos (19 a, b); Use Gloves (c) (d) Keep Crates Clean before and During use

Post-harvest Operations

The producer must ensure that any post-harvest treatment required for the fresh produce is acceptable by the trading partner. Where chemicals have to be used, a competent and recognized authority must make the determination on the safety of each chemical. Water use for post-harvest washing must be potable water. The quality of post-harvest water (and ice) that comes into contact with fresh produce during cleaning, grading, cooling, and application of surface treatments, is widely recognized as the essential control point for fresh produce. The storage and transportation of post-harvest produce has to be under hygienic and sanitary conditions.



Photo 20: Vehicles for transport of produce must be clean



Photo 20 (a): Birds can cause damage to structure and are a source of contamination **(b) Keep the area clean** **(c) Not organized**

4.3.9 Worker Health, Hygiene, Safety and Welfare

Guiding Principles

People are key to the prevention of product contamination. Farm staff, contractors and producers themselves directly affect food quality and safety. Further, ensuring workers' health increases employee productivity and supports the prevention of produce contamination by microbial pathogens transmitted by sick or injured persons. Thus, preserving good and stable worker health on a continuous basis is a key element for food safety and the long-term economic success of operations. As such, the health and safety status and needs of farm workers needs to be addressed on a regular basis. Education and training will support progress towards addressing those needs and ensuring safe production.

Health and Hygiene

Proper practices need to be established and included in hygiene and health training programmes for all employees. Depending on employees' functions, responsibilities and areas of activity, the level of knowledge and awareness will vary accordingly. Key areas of consideration for worker hygiene include first aid and injuries; hand washing and personal hygiene; dealing with sick workers; drinking water.



Photo21: Appropriate signage for personal hygienic practices

Worker Safety and Welfare

Guiding Principle

Worker welfare and safety is of paramount importance and a clearly identifiable member of farm management should be responsible for the workers' health, safety and welfare. Appropriate and adequate facilities must be provided and the employment conditions of workers should comply with national legislation.

Health, Hygiene and Safety Training

Guiding Principle

There is no substitute for awareness, training, and constant reinforcement of the importance of personal health, hygiene and safety as critical to sustainable business and employment. All workers should receive the appropriate health, hygiene and safety training that is in keeping with their job functions.



Photo 22(a) Training in use of equipment (b) First aid kit must be available



(c) Warning signs for workers and visitors

4.3.10 Training and Record Keeping

Guiding Principles for Training

Training of workers is key to increasing productivity; minimizing product losses and wastage through contamination, spoilage, and poor handling and processing; and ensuring the safety and quality of fresh produce. As such, a training component must be an integral part of any farm management plan or quality management system (QMS). The following are important.

- In addition to the obvious training areas identified, training needs should be assessed so as to provide adequate and appropriate training to workers.
- Training can be conducted both on the farm and externally and a schedule for on-farm training must be available.

Guiding Principles for Record Keeping

Clear, accurate and updated records must be kept to demonstrate that all production activities comply with the general standards outlined. Such records should be used in tracing the history of the fresh produce from farm to the consumer and to show compliance with the prescribe GAPs. .



Photo 23: Records are Very Important for Maintaining and Auditing the GAP System

4.3.11 Farm Infrastructure

Guiding Principles

Farm infrastructure includes buildings that may have areas for storage and post-harvest processing. Equipment is also considered farm infrastructure. Farm infrastructure is a very common source of food safety hazards—whether biological, chemical and physical—and as such, particular attention should be paid to layout, design and maintenance issues. The following should be addressed.

4.3.12 Product Traceability and Recall

Guiding Principles

A system must be in place to trace a batch or batches of produce back to the farm where it was grown and supplied, in case of any food safety problems. This system should be a written, logical sequence of steps to identify the offending product(s) and allow for segregation and recall of produce as necessary and protect the consumer from exposure to the product(s). The alert for a product recall may come from a number of organizations, including the product supplier or supplier association.



PRODUCT CODE	BOXES DECLARED	BOXES REJECTED	QUALITY DEFECTS	BOXES ACCEPTED
20 18kg Fair-Trade Loose Standard (Ftrade/GGAP CERT.)				
2 Default Loose Standard 20.1kg				
Generic Bagged Small 24x7 18kg Box				
Generic Loose Standard 20.1kg Copic Box (Ftrade)				
Bury's Fairtrade Bagged bananas 17kg Black Display Box (GGAP CERT.)				
Bury's Fairtrade Bagged Small 18kg Big Black Display Box (GGAP CERT.)				
Fairtrade Bagged Bananas Big Box (Ftrade/GGAP CERT.)	36			22
Fairtrade Small Bagged 18kg Display Box 20x7 (GGAP CERT.)	22			22
	58			58

Photos 24 (a) Must be traceable Place/source of origin

(b) Records (e.g. sales) are critical for traceability

4.3.13. Complaint Handling

Guiding Principle

The management of complaints will lead to an overall better production system.

- The producer should have a complaints procedure available for both internal and external issues covered by the GAP standard.
- The procedure must ensure that complaints are adequately recorded, studied, and followed-up, including a record of actions taken.

4.4 Risk Assessments

Some control points at which deficiencies are addressed require risk assessments in order to facilitate food safety, workers' health and safety, and environmental protection. A risk assessment is an important step in protecting the products, workers and business, as well as complying with prescribed GAP requirements and the law. It is not expected that a farmer/producer can eliminate all risks but products and workers are expected to be protected as far as is 'reasonably practicable'.

A risk assessment is a careful examination of what, in the work operations, could cause harm to the product, environment or workers, so that it is possible to evaluate whether or not there are sufficient precautions or more should be done to prevent harm.

The process need not be complicated, as in many instances the risks are well known and the necessary control measures are easy to apply. Check to see what is in place to avoid contamination, injury or harm.

When thinking about your risk assessment, remember:

- a **hazard** is anything that may cause harm, such as chemicals, electricity, working from ladders, an open drawer, etc.;
- the **risk** is the chance, high or low, that somebody could be harmed by these and other hazards, together with an indication of how serious the harm could be.

4.3.1 How to Assess the Risk in an Enterprise

In this methodology, there are five basic steps for assessing risks.

Step 1: Identify the hazards

Identify how the product, environment or works could be harmed. Do the following:

- Walk around the workplace and think about any hazards that may cause harm (e.g. practices, equipment, situations, products).
- Ask the workers or their representatives (if applicable) what they think.
- Check manufacturers' instructions or data sheets for chemicals and equipment, as they can be very helpful in spelling out the hazards and putting them in their true perspective.
- Review prior incident and accident records.
- Remember to think about long-term hazards to health (e.g. high levels of noise or exposure to harmful substances) as well as food safety hazards.

Step 2: Decide who/what might be harmed and how

For each hazard it is necessary to be clear about who might be harmed; this will help in identifying the best way of managing the risk.

Remember:

- Some activities have particular requirements (e.g. pest control, harvesting).
- Some hazards may be from the surroundings and activities of others in the surroundings (e.g. other business and farming activities).
- Think about hazards, particularly in situations where individuals (e.g. visitors, contractors, cleaners) may not be in the workplace all the time.

Step 3: Evaluate the risks and decide on the precautions

Having identified the hazards, a decision has to be taken on how likely it is that harm will occur; i.e. the level of risk and what to do about it. Generally, it is necessary to do everything 'reasonably practicable' to prevent harm or injury.

The best approach is to look at what is already being done, and the control measures already in place and compare that with the recommended good practices and see if there is need to do more to get up to standard. As part of the evaluation, ask yourself:

- Can I get rid of the hazard altogether?
- If not, how can I manage the risks so that harm is unlikely?

In trying to managing risks consider:

- trying a less risky option
- preventing access to the hazards
- organizing work/tasks to reduce exposure to the hazard
- issuing personal protective equipment
- providing welfare facilities such as first aid and washing facilities
- involving and consulting workers to be sure that what you propose can work.

Improving health and safety need not cost a lot. For instance, after considering the risks, placing a mirror on a dangerous, blind corner to help prevent vehicle accidents is a low-cost precaution. Failure to take simple precautions can cost a lot more if an accident does happen.

Step 4: Record the work plan/findings and implement them

Implementing the results of the risk assessment is critical to food safety, worker health and safety, and the business. Begin by making a record of your significant findings regarding the hazards, how they might harm people, and what is in place to control the risks. Then share them with staff for their use. Any record produced should be simple and focused on controls (e.g. harvest crates exposed to contaminants: clean and sanitize).

The risk assessment needs to be adequate and show that:

- a proper check was made
- you asked who or what might be affected
- you dealt with all the significant hazards
- the precautions are reasonable, and the remaining risk is low
- employees or their representatives were involved in the process

Develop a plan of action for the risk assessment to include a number of different responses such as:

- Temporary solutions until more reliable controls can be implemented
- Long-term solutions to those risks most likely to cause harm/injury or ill-health
- Long-term solutions to those risks with the worse potential consequences
- Arrangements for training employees on remaining primary risks and how to control them
- Conduct of regular checks to ensure that the control measures remain in place
- Clearly defined responsibilities and by when. – who will lead on what action

Also remember to do the most important things first, checking them off as they are completed.

Step 5: Review the assessment and update if necessary.

Most enterprises will change over time. Sooner or later, new equipment, substances and procedures will be brought in that could lead to new hazards. It is therefore important to review what is being done on a continuous basis. Conduct a formal review of the risk assessment to see the progress. Check to see if:

- There have been any changes
- There are improvements that still need to be made
- Workers spotted problems
- Anything was learnt from accidents or near misses
- Risk assessment are up to date

Do not wait for something to go wrong. Agree on an annual review date for the risk assessment. Remember, if there are any significant changes, do not wait for the review date and, if possible, make the necessary changes at once.

Section 3: GAP Auditing Principles and Practices

CHAPTER 5

PREPARING TO CONDUCT A GAP AUDIT

5.1 What is an Audit (GAP Audit), Types of Audits and Objectives for Auditing

Auditing, in general, is a methodical examination of procedures and practices that aim to verify whether they comply with legal requirements, internal policies and accepted practices. The International Organization for Standardization (ISO) defines an audit as “a systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which audit criteria are met”.

In our context, when a GAP audit is to be undertaken it means that a producer/grower will facilitate the process of an assessment of the farm(s) used for agricultural production to determine whether the stipulated GAP requirements (as per the standard being used) are met. Sometimes, the audit can be specific to only field operations, or to pack houses, or sometimes to post-harvest processing facilities, or in some cases the entire farm may be audited. In this situation, consideration is given to an integrated farm assurance (IAF) as per the GLOBALG.A.P. standard and a GAP audit will involve all operations and procedures from crop production to post-harvest preparation and dispatch.

Exercise!

Write your own definition of a GAP Audit

5.2 Types of Audits

An audit may be defined based on who authorizes the audit and includes;

- **Internal (First-party):** carried out by a company to evaluate its own performance.
In this situation, the producer/grower (which could also be a registered business entity) will use its own personnel to conduct a GAP audit of its operations based on the standard being utilized.

- **External (Second-party):** carried out by a company to evaluate the activities of contractors, suppliers, agents, etc.
This process involves the grower/producer (which could also be a registered business entity) undertaking an assessment of one of its stakeholders. For example, an audit of the operations of a supplier of seedlings to the grower/producers is undertaken to ensure compliance with stipulated requirements.
- **Extrinsic (Third-party):** carried out by external sources (customer, third party organization, regulators, certification body) on your own organization.

When a third-party audit is undertaken, the grower/producers (or business entity) is audited by an external source to ensure compliance with legislation or to facilitate certification of the grower/producer or business entity, so as to meet supplier/buyer requirements to allow trade of its produce.

Exercise!

Give an example of third party GAP audit conducted to meet regulatory requirements.

Give an example of a third-party GAP audit conducted to facilitate trade.

A type of audit may also be defined in terms of its scope and include various types of management system audits as identified in Box 3.

An audit may also be defined based on what aspects are being reviewed in preparation for certification.

- **Stage 1 Audit:** In which case an assessment of the adequacy of documentation and infrastructure in preparation for the Stage 2 Audit is undertaken.
- **Stage 2 Audit:** Certification audit which follows upon satisfactory completion of the Stage 1 Audit.

*Box 3
Audits Defined Based on
Scope*

- *Compliance*
- *Facility*
- *Follow-up*
- *Process*
- *System*
- *Sanitation*
- *Pest Control*

Note that GLOBALG.A.P., which is referenced in this manual, refers to an audit as “the assessment of the Quality Management System (QMS), of a producer group or an option 1 producer with multi-sites who implemented a QMS”. (See details in later section)

This is differentiated from a GLOBALG.A.P. Inspection which is “verification of the compliance with the Control Points Compliance Criteria (CPCC) at the production site level”.

With respect to the implementation and assessment of requirements of a GAP standard, most of the audit types could be applied in part or in full.

5.3 Purpose and Objectives for Auditing

Why Audit? (See Box 4)

- Once a system has been established and implemented, the only possible way an organization can verify the effectiveness of the system is to carry out regular audits.
- Because of inefficient control over all its activities, a company could well be losing a great deal of money.
- Inefficiencies due to duplication of activities, high repair, and scrap rates, malpractices, etc., may result in the cost of putting things right (quality costs) being higher than the profit margin.
- An effective audit should uncover problems, provided it is carried out against documented requirements and by trained and qualified personnel.

BOX 4

Objectives for auditing

- *To monitor and improve performance*
- *To determine effectiveness of an established system (e.g. GAP Plan)*
- *To assess compliance with the organization's own corporate policy*
- *To ensure compliance with regulations/legislation*
- *To identify and minimize potential risks*
- *To develop procedures to reach objectives*
- *To assess or control a specific problem*

5.4 Audit Planning and Preparation

5.4.1 What does the process of auditing involves?

In general, the audit process is guided by certain basic principles as follows:

- Clear and explicit objectives need to be defined for the audit. Why is it being undertaken?
- The audit must be conducted by proficient auditors. Who conducts it determines how effective it is?
- Independent review—the audit must be objective; there is no room for bias.
- Due professional care—an audit is too important for it to be conducted in a haphazard manner.
- Planned and supervised field work—that is how objective evidence is gathered.
- Thorough review of internal controls—there is need to understand how the organization works to conduct an effective audit.

- Sufficient evidence gathered to support audit findings—objective evidence is needed to arrive at decisions.
- Clear and appropriate recording—this is critical to effective audit reporting.
- Appropriate follow-up mechanisms—what comes next after the audit has been completed and results reported?

5.4.2 Main Phases of an Audit

An audit (a GAP audit) can be divided into three main phases as follows:

i) Pre-audit activities: prepare for the audit

Involves selecting and scheduling the farm audit, choosing the audit team, developing the audit plan (scope, priority topics, audit protocols, allocation of resources) and conducting an off-site document review.

ii) Key on-site activities: conduct the audit

During the conduct of the audit, the auditor(s) must gain an understanding of the management system and assess its strengths and weaknesses, gather audit evidence, evaluate audit findings and exceptions, and report audit findings and exceptions.

iii) Post audit activities: reporting and closing out

This requires preparation and revision of the draft Audit Report, issuance of the Final Report and action planning.

With regard to GLOBALG.A.P., the two first phases are defined and are called Modules 1 and 2.

Module 1—Off-site activities: Consists of a desk review of documentation pertaining to the QMS by the certifying body (CB) before the audit.

Module 2—On-site activities: Consists of an on-site audit of the remaining content of the QMS checklist, plus the verification of the information assessed off-site and the way the management system works on-site.

In general, the conduct of any audit, including a GAP Audit can be conducted using the basic steps outlined in Figure 1 below and which are briefly defined.

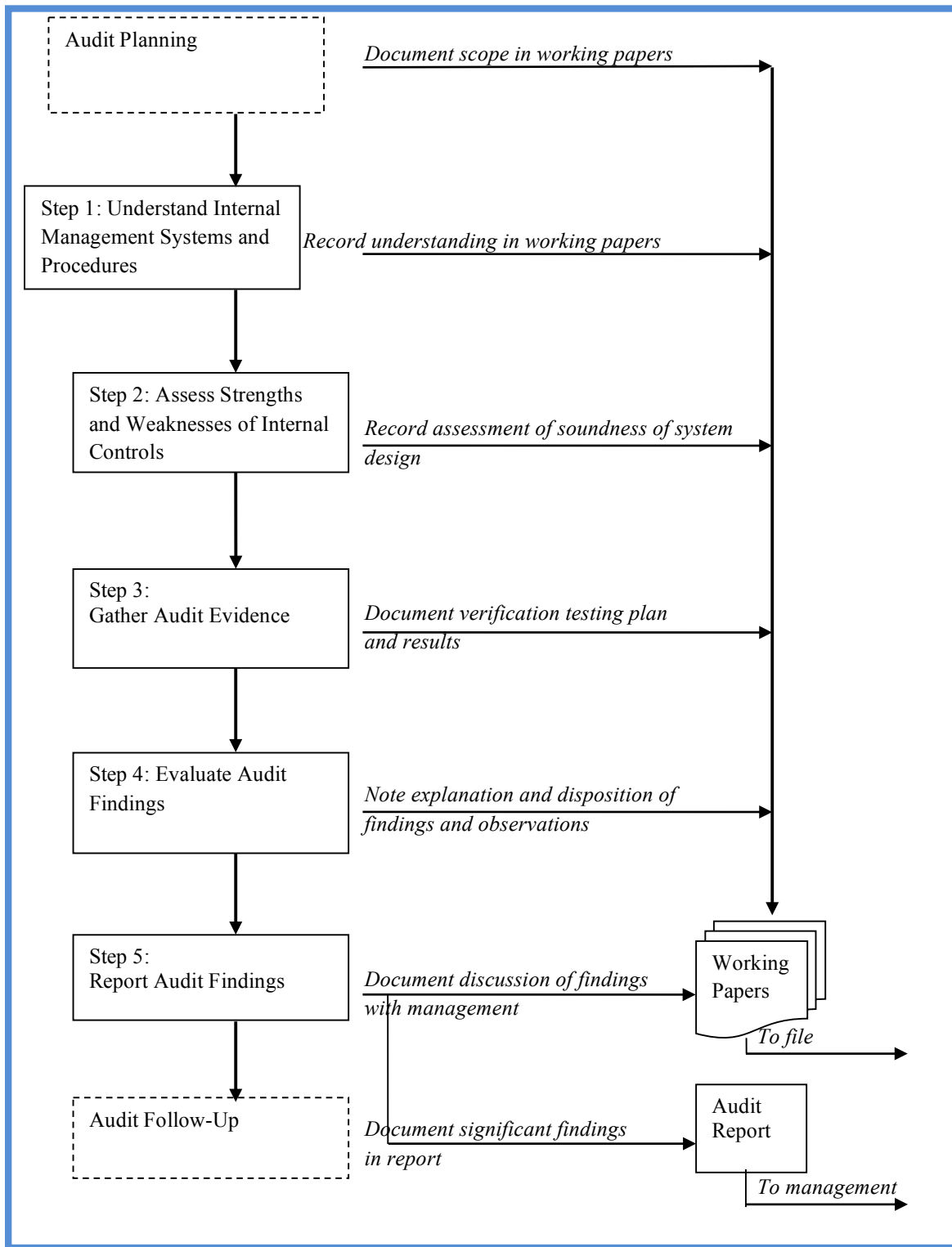


Figure 1: Basic Steps in the Typical Audit Process

(Adapted from Arthur D. Little, Inc. (1988); Environmental, Health, and Safety Auditor's Handbook)

Audit Planning: This is a set of arrangements (all the preparatory work) that are intended to achieve a specific audit purpose within a specific time frame. It includes all of the activities and resources needed to plan, organize, and conduct one or more audits.

Step 1: Understanding Internal Management Systems and Processes. To develop an accurate understanding of a facility's management system, procedures and standard practices as they relate to the scope of the audit. The purpose of this step is to provide the auditors with a framework for evaluating the facility's internal controls, as well as a basis for gathering audit evidence in subsequent audit steps.

Step 2: Assessing the Soundness of a Facility's Internal Controls. Developing an informed judgment about whether the various management systems, procedures, and practices provide sufficient confidence (relative to the associated risks) that the required/desired results will be achieved, and to what extent, if any, the auditor(s) can rely on the facility's controls (if later confirmed to be in place and functioning as intended) in reviewing the facility's status in meeting both applicable external requirements and any internal standards.

Step 3: Gathering Audit Evidence. Information that supports the conclusions of the audit, and which is consistent with the objectives that have been established for the audit.

Step 4: Evaluating Auditing Findings. The assimilation and integration of all audit data and observations into coherent, complete findings and assurance that the audit objectives are being met.

Step 5: Reporting Audit Findings. The informal discussions between the auditor(s) and facility supervision when apparent deficiencies are first noted, the more formal discussions with facility management during the exit meeting, and the formal written report that is prepared to communicate audit results to management (or the client).

Audit Follow-up: This requires the appropriate resolution of corrective actions if a deficiency (non-conformance) is found. The auditee is responsible for determining and initiating the corrective action necessary to correct a deficiency (non-conformance) and to correct the cause of the deficiency. Follow-up may include the issuance of a new corrective action request, or a follow-up audit (based on severity of the non-conformance). Audit closure takes place when all corrective actions for an audit have been closed (or implemented and verified as agreed).

5.4.3 Preparing for the Audit

In planning and preparing for the GAP audit, initial attention needs to be paid to the following:

- Scope—the extent of the audit
- Standards—against what standards is the audit conducted (What GAP standard is being used; e.g., GLOBALG.A.P.)
- Select lead auditor—if the team is two or more persons

- Scan material—preliminary check of documents
- Select team—based on nature and complexity of audit and individual members technical capabilities
- Plan audit—essential for a successful audit
- Assign auditors—based on experience and skills
- Establish documents—records and other data resources that will be used

Audit planning must be done by the auditors, in particular the lead auditor, if more than one will be required to undertake the audit assignment. Let us consider the auditor competencies, roles and responsibilities.

Auditor Competencies

An auditor should have the appropriate education, training, work experience and audit experience for the area of audit that is assigned to them. The auditor should carefully plan the audit by clarifying audit requirements with the help of the lead auditor and execute the audit effectively within the scope of the audit (see Box 5).

The auditor should also possess certain traits and desirable characteristics (Annex 1) and must be able to demonstrate ethical behaviour. Ethical behaviour is based on a conclusion of whether an action is right or wrong. Often, ethical behaviour is defined by moral principles and guidance found in the prevailing culture, society, laws, regulations, or professional conduct dictates. The fundamental concept with regard to auditing ethics is that the decisions and the auditor are honest and impartial. In auditing a system, auditors must conduct themselves in a professional manner, using objectivity and honesty as their guiding principles.

The Lead Auditor

Whether an audit is carried out by a team or an individual, it is a useful idea to have a lead auditor overall in charge of leading the audit team and to effectively manage the audit. The lead auditor should have the appropriate education, training, work experience and audit experience for the scope of the audit and should be responsible for the conduct of the audit.

Normally, the lead auditor will identify suitable members for the audit team, and prepare the audit plan. During the audit, the major duties are supervising all members of the team and representing the team in discussion with the auditee.

The lead auditor, upon consultation with the audit team members, will be responsible for the submission of the audit findings and report.

BOX 5

Roles and Responsibilities of the Auditor

The auditor is required to review and verify documentation, implementation and effectiveness of manuals, directives or procedures, work instructions, requirements or specifications and records.

On that basis the auditor has to document relevant observations and findings, and submitting the findings to the lead auditor (as necessary). In addition the auditor is normally required to verify that the appropriate corrective action(s) have been implemented for any non-compliance found during the audit.

To be effective, the auditor should have knowledge of

- ✓ the system requirements
- ✓ service or product specifications
- ✓ investigation techniques
- ✓ communication techniques
 - ✓ sampling techniques
 - ✓ verification techniques
- ✓ standards/code of practice, etc.
 - ✓ human nature
 - ✓ time management

The Audit Plan

An audit plan constitutes the what, how, and who of the audit; it identifies what steps need to be done, how each will be accomplished, and who will do it and in what sequence. The audit plan is the key to a successful management system audit because it ensures a systematic audit. Table 1 defines the parts of the audit plan.

Table 1: Parts of the Audit Plan

Part	Description
Auditee	Identifies the organization/entity to be audited
Purpose	Defines the reason for the audit and its objectives
Scope	Describes the operational boundaries of the audit
Requirements	Standards used to assess the effectiveness of the (food safety) management system being audited. The statement can list both the internal and external requirements
Applicable documents	List of the records and other data resources that will be used to judge the management system. e.g. standards, corporate policy, regulatory requirements, work instructions, forms, procedures, etc.
Overall schedule (Itinerary)	List the time and length of the following: meetings, facility (farm) tour, interviews, meals and breaks
Audit team members	Individuals who will perform the audit or technical specialists
Approvals	Signatures from appropriate representatives of the client and the auditee

The lead auditor prepares the audit plan and should also decide on a strategy for the conduct of the audit. Typical strategies include:

- **Trace forward:** Follows a chronological order from inputs to finished products and delivery.
- **Trace backward:** Starts with delivery and work towards inputs/receiving; (used to avoid possible cross-contamination).
- **Discovery method:** Audits functions in a random order. This discovery method can lose its effectiveness as some critical elements may be missed, so is best used with another strategy.
- **Element approach:** Auditing in order of a specific standard or requirement.
- **Departmental method:** Departments are audited separately.

A plan must also be established for sampling and collecting data. GLOBALG.A.P. has established sampling plans in its regulations.

5.5 Audit Checklists

Once the audit strategy has been decided (which can later be documented in the audit checklist), an audit checklist (sometimes called audit protocol) has to be developed by the auditor. These checklists are documented questions that reflect the requirements, procedures or policies of a company. A good checklist should consist of structured questions that may help the auditors to determine the existence and effectiveness of the quality system.

The checklist provides a focus for the actual execution of the audit and has numerous functions. A checklist:

- ensures that the audit is systematic and thorough and conducted against specific audit requirements
- provides a record of the auditor's activities
- defines the audit sampling plan
- requires the auditor to understand the management system in detail. It helps the auditor to establish a better understanding of the auditee's activities during the audit
- allows the auditor to systematically identify high-risk areas and with a checklist, the auditor can identify questions relating to this area more easily
- may be sent to a supplier to complete before an audit is conducted to ascertain facts.
- provides a document on which to record notes and objective evidence
- provides a basis for the audit report and corrective action reports
- serves as a time management tool
- serves as the framework for the closing meeting and audit report and can be a good source of information for future audits or for designing better and more comprehensive checklists.

The checklist should be used as a guide and the assessment investigation should pursue and cover any other aspects of the management system that are considered necessary for eventual conclusion.

Clues indicating non-conformities should be noted and investigated if they appear to be significant even if they are not covered in the checklist.

Once an item has been audited, the outcome should be noted. The auditor (audit team) can use the checklist to support the audit report to ensure its comprehensiveness. A sample checklist is detailed in Annex 2

Be mindful! Using checklists has some disadvantages

- Checklists may lead to limiting questions that generate "yes" or "no" answers. Further comments are usually necessary and useful.
- Checklists may breed complacent auditors who just go through the questions without getting the details and seeking objective evidence.
- The use of a checklist may lead an auditor into using a predetermined sequence of thought and questions and may prevent the auditor from using his/her discretion.
- Deviations from the original audit checklist may result because of a change in the schedule or because of observations made during the audit.
- Checklists can lead to a boring and rigid auditing process if the auditor is not flexible in exercising his/her judgment.
- A general checklist may result in a non-focused audit as details may be overlooked.

BOX 6

Remember, when developing checklists

- Review documents to:
 - ✓ identify important aspects of the activity
 - ✓ list them in logical order
 - ✓ prepare set of questions
- Give it structure and prepare in advance of the audit
- It must provide required coverage:
 - ✓ Not used to stifle creativity
 - ✓ Use common sense regarding applicability
- It must be a communication document
- Leave space to record data as objective evidence is required
- Auditors can use:
 - ✓ Yes/no checklists
 - ✓ Yes/no checklists are best converted into open-ended questions
 - ✓ Rating checklists
- Consider:
 - ✓ What is the process during standard operations and under rushed conditions?
 - ✓ What is the process when there is a problem?
- Do:
 - ✓ Become familiar with criteria
 - ✓ Become familiar with questions
 - ✓ Determine whether questions are appropriate
 - ✓ Ask questions fluently, clearly, audibly
 - ✓ Ask questions to support the documented checklist
- Don't:
 - ✓ Use the checklist as an examination
 - ✓ Appear to be unfamiliar with the questions
 - ✓ Follow the sequence if the trail is different
 - ✓ Drift too far away from the checklist questions

GLOBALG.A.P. Checklist (Control Points and Compliance Criteria)

GLOBALG.A.P. has its own established checklists for the conduct of GAP audits. These checklists cover specific themes for good agricultural practice, control points addressed within them, criteria for assessment, and how each criterion is evaluated/rated as **Minor Must, Major Musts** or **Recommendation**. An extract from a sample GLOBALG.A.P. Checklist is presented in Annex 3

5.6 Document Review

What is the Purpose of Document Review in an Audit?

Remember, a document review will enable an auditor to begin to develop an initial understanding of the key features of the organizations quality management systems during the planning and preparation stage of the audit. Usually a major part of this review is an off-site activity which will help to save time when it comes to the actual on-site audit activities. Further, some form of document review is required in the preparation of a checklist if there is not already an established standard checklist.

An initial document review also enables:

- Review of specific documents for compliance with standards, regulations and customer requirements;
- A better understanding of the auditee's processes to help focus the audit;
- The audit team leader to build a team with the appropriate expertise;
- The audit team leader's ability to prepare appropriate and useful audit work documents.

5.7 Audit Itineraries/Schedule of Activities

An audit itinerary is a schedule or timetable of activities to guide the on-site audit process, which will allow for efficiency and time management, although deviations from the timetable may occur sometimes. A timetable is also an important tool for the auditee as it allows for advance administrative and operational arrangements to facilitate the audit and auditors.

The timetable should indicate the time and duration for the activities to be audited, as well as the time for opening, closing, auditee and auditor interim meetings as well as time for auditor breaks. A template for a detailed itinerary may look like what is presented in Figure 2 below.

AUDIT ITINERARY/SCHEDULE

Job Number					
Name of Business Entity					
Type of Audit					
Address of Business					
Site (s) to be Visited					
Business Scope					
Date Itinerary Prepared		Date Itinerary Submitted		Date of Audit	
Standards to be Audited					
Audit Team and Roles					

Timetable of Activities

Time	Site	Organization Process Description	Standard Clause	Auditor Allocation
9.00	Farm house	Opening meeting		
9.30				
etc.				

Figure 2: An Example of a Typical Audit Itinerary

CHAPTER 6

UNDERSTANDING MANAGEMENT SYSTEMS AND INTERNAL CONTROLS

6.1 Understanding Internal Management Systems and Procedures

Understanding management systems (see Box 7) following the planning of the audit is an important first step to be undertaken at the audit site and it should be well understood.

Sometimes this may start as a pre-audit activity where the auditor would commence review of relevant documents in advance of the audit.

BOX 7

Management Systems

Management systems are the collection of programmes, operations, people, documents policies, guidelines, procedures, facilities, and equipment required to effectively manage the business activities (in that case the farm QMS or other defined management system).

This activity requires the auditor to develop an accurate understanding of the facility's (in this case let us say a farm crop production site) management systems and procedures as they relate to the scope of the audit. This may be a Quality Management System (QMS), which is what is audited in accordance with the GLOBALG.A.P. system, or it may be other systems and procedures such as a GAP Plan.

The purpose of this step is to provide the auditor(s) with a framework for evaluating the facility's internal controls, as well as a basis for gathering audit evidence in subsequent audit steps.

Auditors generally develop an understanding of a facility's management system through:

- (i) a review of background material;
- (ii) the opening meeting;
- (iii) the conduct of an orientation tour;
- (iv) the administration of internal controls questionnaire (see Annex 4 for guidance);

(v) a review of the audit plan; and

(vi) trying to understand details of the various systems, procedures and practices.

6.1.1 The Quality Management System (QMS) and GLOBALG.A.P.

A quality management system (QMS) refers to the organizational structure, procedures, processes and resources needed to implement quality management. In GLOBALG.A.P., the implementation of a QMS is mandatory for group certification, and voluntary for individual producer, multi-site certification.

For the purposes of GLOBALG.A.P. certification where a QMS is required, the following parameters must be addressed within that QMS. (Summarized descriptions of the parameters are presented in Annex 5.)

- 1) Legality, Administration and Structure
- 2) Management and Organization
- 3) Document Control
- 4) Complaint Handling
- 5) Internal Quality Management System (QMS) Audit
- 6) Internal Producer and Production Management Unit (PMU) Inspections
- 7) Non-compliance, Corrective Action and Sanctions
- 8) Product Traceability and Segregation
- 9) Withdrawal of Product
- 10) Subcontractors
- 11) Registration of Additional Producers or Production Sites to the Certificate
- 12) Logo use

The availability and appropriateness of documentation is critical to the QMS. Key documentation should include but is not limited to:

- A Quality Manual
- GLOBALG.A.P. Operating Procedures
- Work Instructions
- Recording Forms
- Relevant External Standards; e.g. current GLOBALG.A.P. normative documents.

Auditing of the QMS would also require an assessment of internal control systems as described below. Trained and qualified auditors must also conduct the audit. GLOBALG.A.P. sets out requirements for auditors and inspectors.

6.2 Internal Controls and the QMS

Internal Controls are the various engineered and managerial means—both formal and informal—established within an organization to help it direct and regulate its activities in order to achieve desired results. They also refer to the general methodology by which specific management processes are carried on within an organization, including a farming/producer entity.

Remember, the initial audit activity is to understand internal management systems, procedures, and standard practices that have been established to assist in achieving the required or desired results as defined by your organization. This understanding further requires an informed judgment to be made about whether the management system(s), procedures, and practices provide sufficient confidence (relative to the associated risks) that the required/desired results will be achieved, and about the extent to which the auditors can rely on the organization's controls (if they later are confirmed to be in place and functioning as intended) in reviewing its GAP status. Hence the assessment of internal controls is an important audit activity.

This requires the auditor to evaluate the soundness of the management system (food safety/GAP plan) and design, (i.e. the intended approach) for each key topic or functional area included in the audit scope. The evaluation will determine whether the intended approach for each activity or function, if operating as intended, will reasonably ensure results that are consistent with both applicable external requirements and any internal standards.

This activity is especially important because, depending upon their evaluation, the audit will proceed in one of two directions as follows:

- i) Where the system in place appears to be adequate for achieving the required or desired result, the auditor (or audit team) will selectively test the system(s) while gathering audit evidence to confirm that they are actually in place and functioning as intended;
- ii) If the design of the system does not give reasonable assurance that the required or desired outcome(s) will be achieved, further system review or verification testing (to confirm that an inadequately designed system is, in fact, in place and functioning) is of no value. As such, the 'evidence gathering' step must be focused entirely on performance against specific compliance parameters rather than verification that the system is functioning.

It can be seen therefore that the assessment of the system drives the development of audit sampling plans and verification strategies used when gathering audit evidence.

The seven principles to be followed by the auditor (or the general characteristics of satisfactory internal control) are as follows:

1. **Trained and experienced personnel**—They have sufficient experience, training, and awareness to accomplish the required function or task. Personnel are familiar with applicable regulatory requirements and internal standards.
2. **Clearly defined responsibilities**—Personnel understand their roles and responsibilities in achieving the desired level of performance.
3. **Division of duties**—Appropriate segregation of duties can be an important control device in preventing both abuses and unintentional compliance departures. Checks and balances are established by the assignment of roles and responsibilities to minimize potential conflicts of interest.
4. **Adequate systems of authorization**—Appropriate delegation and clearly established authority for the approval of non-routine or out-of-specification operations. Approval levels are commensurate with the importance of the task.
5. **Documentation**—Critical operating parameters and procedures, along with compliance/performance results, are documented.
6. **Internal verification**—Systems or procedures are in place for reviewing performance and identifying departures from established (external or internal) standards.

7. **Protective measures**—Safeguards are established to prevent or control major problems; alarms or other warning devices are in place to identify critical deviations.

With this understanding of how to address internal control systems, it is now possible to proceed to conduct the GAP audit, which may also include auditing the QMS if one is established for the farm in question

CHAPTER 7

CONDUCTING THE AUDIT (STEP-WISE)

Having assessed the internal controls of the facility, the step-wise approach to conducting a GAP audit.

7.1 Auditor Tools and Final Preparation

The trained auditor will know that he has to come prepared to conduct the audit and will avail himself/herself of the basic tools and materials needed.

What are some of the tools and materials needed? (See Box 8)

Box 8

Tools and materials needed for an audit

- Clipboard
- Checklists
- Notepad
- Pen/pencil
- Sample documents and records
- Other equipment based on the scope and information available from the audit plan; (e.g. calibrated thermometer for temperature measurement, camera, etc.)

Appointment with the Auditee (Farmer)

Having prepared the audit itinerary and schedule, the auditor must confirm that the auditee (farmer or representative) will be available at the site or farm for the appointed time.

7.2 On-site Audit Activities

The on-site component of the audit should be conducted using the formal management system audit process and consist of the following:

- i. Opening Meeting
- ii. Gathering Audit Evidence—collection of data, observation and inspection
- iii. Evaluating Audit Evidence—review evidence and record findings
- iv. Closing (or Exit) meeting

In this chapter the opening meeting and gathering audit evidence are dealt with, while the analysis of results and the closing meeting are each dealt with in separate chapters.

7.2.1 The Opening Meeting

The Opening Meeting, which should last no longer than 30 minutes (but varies based on the type of audit), takes place at the farm and sets the tone for the data gathering phase. It is attended by representative of the auditee and all members of the audit team. The meeting clarifies the roles and responsibilities of both the auditee (in that case person responsible for the farm being audited) and the audit team.

At the opening meeting, the lead auditor (if there is an audit team) is responsible for opening the meeting and guiding the audit team through the auditing process. The meeting includes, but is not limited to, the activities listed in Box 9.

The auditee is responsible for:

- Reviewing applicable corporate procedures, including safety and environmental policies;
- Introducing the auditee's management at the meeting;
- Reviewing the policies that govern property rights;
- Stating the availability of various amenities;
- Identifying the individual that represents the auditee during the audit and any escorts;
- Requesting any clarification;
- Presenting an overview of the farm operations.

Box 9

Opening Meeting Activities

- Thank the host
- Introduce the audit team
- State the purpose and scope of the audit
- Describe the documents used to prepare the audit plan
- Explain audit methods and techniques
- May refer to previous audits and corrective actions
- May ask specific questions about any document reviewed
- May identify areas of interest that client, auditee or lead auditor want audited
- May present the audit checklist to the auditee and identify and changes to plans previously presented to the auditee
- May present a detailed audit schedule
- Verifying that the auditee has communicated the audit plan to employees, security, unions and other relevant body
- Communicating the time of the exit meeting; how non-conformances will be handled and expected time of delivery of the audit report
- Verifying logistics for the audit
- Attendance log and minutes of meeting should be kept

The auditor (or audit team leader) should also advise the auditee of these minimum expectations:

- An audit escort should be provided for each member of the audit team
- The escort becomes the representative of the auditee to the audit team and is responsible for the following:
 - ✓ Obtaining requested supplies and documents
 - ✓ Acting as an audit observer for the auditee's management
 - ✓ Acting as a guide for the auditor
 - ✓ Introducing the auditor to individuals she/she wishes to interview
 - ✓ Ensuring the auditor follows all applicable corporate policies and procedures, including safety rules
 - ✓ Communicating to the organization any changes in the audit schedule
 - ✓ Confirming or denying non-conformances

Finally, based on the scope of the audit and the farm layout, the auditor (or team leader) may request a tour for familiarization and orientation. However, this tour can be worked into the schedule as part of the evidence gathering stage.

7.2.2 Gathering Audit Evidence – Data Collection

Gathering audit evidence is a critical but it is also the most time-consuming phase of the audit. Audit evidence serves as the basis for determining compliance with the requirements (standard) being audited against.

Remember, the objective of the audit is to determine:

- Whether the GAP system and quality management system (as necessary) meets stated requirements.
- Whether controls are effective and correctly implemented to assure the production of safe food.

As such, audits should focus on fact finding rather than fault finding and assume the auditee is innocent until proven guilty. In general, the auditor should not take the approach that things are going wrong. This tactic tends to put a lot of stress on the organization being audited and the employees' actions may not reflect actual day-to-day actions.

When evidence is gathered it must be **objective, appropriate to demonstrate any non-conformance, sufficient** and able to **be easily evaluated**. Let us now consider the techniques for gathering audit evidence.

While gathering audit evidence, it is common to have briefing meetings with the auditee's management and caucus meetings of the audit team (as appropriate).

- ▶ Briefing meetings are designed to provide information on the progress of the audit, resolve issues, and discuss any problems that might have been observed.

- ▶ Caucus meetings are to inform the audit team of developments, for audit schedule review, compare evidence and to start arriving at consensus on results.

Techniques for gathering audit evidence include:

- Interviews—this can be done by using the prepared checklist but also through normal questioning as needed
- Document and record reviews (including those not provided in advance of the on-site audit)
- Observation of work activities and physical examination of product/materials and equipment

These activities are sometimes done individually and other times in combination. The idea is to gather objective evidence, which is information that is proven to be true and verifiable. Remember information gathered must be accurately recorded.

Interviewing Auditee's

In most audits, a significant amount of the time is spent with the auditee (staff), interviewing them and observing to collect evidence. As such, auditors must recognize the sensitivity of the audits and be able to deal with it appropriately.

Note!

Good communication skills are an important tool, so consider the following:

- The type of questioning technique will affect the amount and accuracy of the information received.
- Prepare questions—hence use the checklist as a guide.
- Be a good listener.
- Be sensitive to anxiety in all auditees especially lower-level staff.
- The audit team should be unbiased and confident and should not behave in an arrogant manner.
- Be able to emphasize that auditors are auditing the system for conformance with the standards and not to find fault with the people involved.
- Explain that the purpose of the audit is to identify potential problems and assist in correcting them.
- Be able to reassure auditees.
- Auditor must take relevant notes ensuring that accurate information is being recorded.
- Information obtained through interviews and observations should be verified by acquiring the same information from other independent sources, such as documented procedures, records or measurements.
- The audit team should hold regular meetings during the audit to verify evidence collected and clarify any observations or audit notes.

- It is essential for the lead auditor to get feedback on the audit team's performance from the auditee; this should enable the lead auditor to continuously monitor and manage the audit timetable and make changes when necessary.

Document and Record Reviews

A document and record review is a critical part of the audit. Documents specify what should be done and records provide objective evidence of what activities have been conducted. The document and records review link the auditee's past performance to the current position and allows the auditor to:

- Assess areas where repeat problems have occurred in audit reports
- Conduct reviews to ensure that the documents are adequate to meet the objectives of the management system

The organization needs to make appropriate, current documents available to auditors to help them execute assigned responsibilities.

Records should be accurate, complete, written in ink, and appear to be created during the normal course of business. For example, if a mistake was made during data entry, the correct value should be entered onto the record, the mistake should be crossed out with a single line so that the original value can be read and the person who made the correction should initial and date the record. If an auditor finds that records are incomplete, incorrect or conflicting, he/she must resolve these discrepancies.

Much emphasis is placed on record review in a food safety system (GAP system) as it can be considered as evidence in a court of law. The record review process provides evidence and assurance of whether the record keeping system is acceptable and can be trusted. For example, if a review and analysis is acceptable, it is evidence that products produced during the period under consideration is safe. However, if the evidence tells the auditor that a particular lot of product was determined not to be safe, then the record keeping system is suspect. In fact, if several record keeping incidents are observed, then the entire system may be suspect.

Since a review of all the records may not always be possible, then a sample has to be taken and the auditor must develop a mechanism for sampling. **Sampling may also be applied to other aspects of the audit, including documents, employees or pieces of equipment.**

Question!

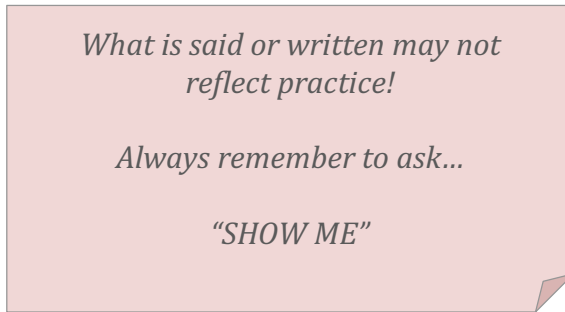
What are some of the records and documents that an auditor would want to sample and to review for a GAP audit?

List of Documents

.....
.....
.....
.....

List of Records

.....
.....
.....



.....

Observation of Work Activities and Physical Examination of Products/Materials and Equipment

A large part of the audit is observation of work practices, equipment, and facilities and it yields much information.

Auditors need to be well trained in observation techniques and understand the process. Auditors must have the appropriate criteria to determine if operators are executing their responsibilities as written. For example, in a GAP audit, the auditor needs to establish the following:

- Are processes, procedures and instructions followed properly?
- Is produce handled appropriately in all respects?
- Do employees know their roles and responsibilities in following the GAP/food safety system/QMS?
- Do supervisors know their roles and responsibilities?
- Are the documents and records being properly used and maintained?
- Are there gaps in the system(s)? (What is executed, and auditee documents, industry best practice, or regulatory requirements, etc.).
- Do the operations being conducted appear choreographed?

The auditor should observe facility operations over all relevant work schedules/periods/shifts. The GAP auditor can observe practices and procedures by (i) walking the field; (ii) entering farm facilities; (iii) taking measurements; and (iv) checking equipment, materials and products.

Exercise!

Identify some GAP requirements that can be observed for conformance for each of the four techniques mentioned above.

i) Walking the field

.....
.....
.....

ii) Entering farm facilities/amenities

.....
.....
.....

iii) Taking measurements

.....
.....
.....

iv) Physical examination of products, materials and equipment

.....
.....
.....

Auditors must always remember that audits are disruptive to the normal work process and individuals are never at ease when someone is observing them. Care must be taken during this part of the process because in many operations, additional personnel in the work space may disrupt the flow of product or limit the space otherwise.

Time management is critical to ensure an effective audit. It means auditors must use their discretion when choosing areas for in-depth investigation or observation.

An auditor's responsibility is not to uncover problems that are outside the scope of the audit. However, if this type of problem is uncovered, the auditor should not ignore it and the action taken should depend on the severity and effect of the problem on the integrity of the system. Further, an auditor should always keep the auditee's management informed of any significant problem as it is uncovered. This can be done by communicating these issues through the escort

or during briefing meetings with the auditee's management. The idea is to prevent surprises at the exit or closing meeting.

Sampling

Because it is often not possible to examine and analyse each item at the auditee's facility during an audit, a sample (a part, or piece of a unit, or entity, or information selected to represent a whole group) must be taken for use. The process is called sampling.

If the sampling method does not adequately represent the population under review, the information gathered can be misleading and cause the auditor to draw a biased, inaccurate, or unsubstantiated conclusion.

To help ensure that each sample selected is appropriate and defensible, six basic steps should be followed.

1. **Determine the objective** or what particular aspect of a requirement (regulatory or internal) is to be reviewed. What is the auditor to review?
2. **Identify the population** under review. What is the population of records, employees, documents, etc., to be reviewed? What segments of that population are relevant to the audit?
3. **Determine the sample method** to be used. Is it judgmental or probabilistic? If probabilistic, what type?
 - The method chosen should be consistent with the overall goal of the audit and the objective of the particular audit step
 - Use **judgmental or directive sampling** (in situations where the auditor suspects a problem) to gather examples of deficiencies or problems to support an auditor's assessment of a weak or improper (food safety, quality, etc.) management system; as such the sampling approach is directed toward those particular segments of the population where problems are likely to exist.
 - A judgmental sample cannot be used to draw compliance conclusions about an entire population, as it focuses on only a subset of that population. It can be used, however, to determine the need for further probabilistic sampling.
 - **Probabilistic sampling** is more widely used and data is selected in an organized, methodical manner to represent the population that is being reviewed.

The most widely used method of **probabilistic sampling** is the **random method**.

In this method, all items have an equal chance of being selected and it is used when the objective is to obtain evidence representative of the whole population. The sample can be obtained by (i) numbering the items within the population and use a random number table to select which items are to be reviewed or (ii) items pulled out at random without prejudice. When using random sampling, use a random starting point in the review of items.

Other probabilistic methods are block, stratification and interval or systematic.

- When reviewing items in a sample, (e.g. records in a sample), the auditor must determine the significance of any deficiency noted, how many such deficiencies must be present to accept or reject the system, and what action to take when deficiencies are found.
4. **Determine the sample size.** How many items chosen to be review?
- Sample size can be determined either statistically or based on the auditor's judgment, based on the goals and objectives of the audit programme.
 - Appropriate sample size depends upon population characteristics and specific audit objectives.
 - Usually a 10-20% sample is considered adequate for all intents and purposes. sometimes the entire population will be used based on the requirements of the audit.
 - Where a sample size smaller than 10% is to be used because of a large population, the auditor must be sure that the sample is large enough to allow reasonable conclusions to be drawn.
 - Two suggested schemes for determining minimum sample size are given in Annex 6.
5. **Conduct Sampling-** What tests will be performed on the sample chosen for review?
- Pay attention to any potential bias entering the sampling process.
 - Use independent records wherever possible to develop a sample, and records for sampling should be selected by the auditor.
 - The representatives of the sample are important not only in terms of the population selected, but also in terms of the time frame within which the sample was obtained.

The more closely the sample represents the entire review time frame, as well as the entire population, the more representative the sample becomes!

6. **Document the results** (sample, strategy, and methodology employed – What is the rationale for a selecting a particular sampling strategy, method and size?

This provides assurance to management that a reasonable audit was conducted and to ensure quality control of the sampling process.

CHAPTER 8

EVALUATING AND REPORTING AUDIT FINDINGS AND THE EXIT MEETING

8.1 Evaluating Audit Results

This final step in the data collection process is an evaluation of audit results to determine if the system (GAP, QMS, etc.) conforms to the stated goals and objectives. It also determines if the system is effective and efficient in preventing any related incidents. The analysis is typically done throughout the audit, but the audit team meets at the end of the audit for a final analysis and develops an agenda for the exit or closing meeting.

Audit results include the *audit findings* (an overall statement of compliance with the required standards), *exceptions*, (specific deficiencies with respect to the applicable standards or requirements), and *observations* (which may include exemplary practices, but more often include specific deficiencies or areas of concern not specifically required but the audit believes should be addressed).

All of the facts need to be discussed in the final analysis meeting and each finding must be developed into a clear and concise statement of the problem, linked to audit requirements. Further each finding should be supported by at least two pieces of objective evidence and if possible should identify the root cause of the problem. In addition, the audit needs to determine if the problems are **major or minor** in effect and then the non-conformance is drafted.

The auditor (or lead auditor) needs to be aware of both corporate and regulatory policies that govern serious and critical findings, as sometimes the organization may set internal criteria (critical limits) tighter than the regulatory (or other) policies.

Minor issues should not be overlooked during the analysis since deterioration of a minor problem can lead to a future food safety incident. It is appropriate and important for the auditor to identify areas where the organization should be commended.

Objective evidence is used to determine the degree of conformance to a requirement or standard. Non-conformances must be verifiable and traceable. The analysis of the results will be used as a basis to develop audit findings and report non-conformances. It also serves as the basis for the exit meeting and the audit report.

Audit findings are drafted during the analysis by the audit team or auditor. Individuals should not be named in, or connected with, findings. It is only appropriate to name a person who has specific knowledge of the situation. If the client (party on behalf of whom the audit was conducted) is responsible for approving and issuing the actual non-conformance, any non-

conformance documents presented to the auditee during the closing meeting should be marked as draft or not presented at all.

In preparing the audit findings, closeout dates should not be set as a fixed time. Deadlines should be set through negotiations between the auditor and auditee, and should be based on how critical the finding and the actual time required to properly complete the tasks. It is best to set a date by which the organization will deliver a plan that will be used to remove the root cause of the findings. Regardless, any negotiations regarding the timing of a finding should consider the safety of the product leaving the facility (farm), and corrections at least on a temporary basis should be performed as soon as possible.

In summary, the key steps in evaluating audit results are as follows:

- 1) **Provide ongoing feedback to facility/farm personnel.** Frequent communication initiated by the auditor with facility/farm personnel will allow for a smooth and effective audit, allow the auditor to raise concerns and learn of extenuating circumstances, and reduce the possibility of surprises as the audit draws to a close.
- 2) **Review assigned audit steps (or parts) for completion.** The auditor (or each auditor if in a team) should review the actions taken to ensure that they are complete for a particular area audited and with respect to the audit's objectives and the audit plan.
- 3) **Summarize findings, exceptions and observations.** Once the auditor is satisfied that sufficient evidence for each area audited has been gathered, the findings, exceptions, and observations are summarized. This is usually done by drawing a conclusion at the end of each audit step and describing each exception noted during the audit in a summary statement in the audit notes.

A conclusion could be:

“Conclusion: Having observed farm workers washing their hands, it is noted that the correct steps for hand washing are not followed”

- 4) **Ensure that all findings and exceptions have been substantiated:** The auditor (or audit team) should critically review the findings (particularly in areas where exceptions were not identified) and confirm that sufficient audit evidence was identified and considered during the audit to support all conclusions reached.
- 5) **Develop a complete list of audit exceptions and observations:** Having substantiated all audit findings, the auditor(s) should develop a complete list of audit exceptions and observations for each area audited. Every effort should be made to ensure completeness of the list and without concern about the significance of the exception at this time. The significance or importance will be checked after the list has been completed.
- 6) **Integrate and summarize exceptions and observations:** The auditor (or audit team) should review the list of exceptions and observations and develop an integrated, organized summary. For example, look for common exceptions, patterns or trends.

The evaluation of audit results is an activity that is extremely important and yet it is frequently cut short. There are some common pitfalls of which an auditor should be aware.

- ***Focusing on deficiencies only.*** The auditor must ensure the factual accuracy of each deficiency noted. However, in the process of accurately wording the deficiencies, auditors frequently fail to sufficiently review the basis for those areas where no deficiencies were noted.
- ***Failing to complete each step of the evaluation process.*** The evaluation of audit results is not a simple, single step that occurs after gathering audit evidence and before the exit meeting. As a result, one or more steps in the evaluation are not done or cut short.

8.2 Preparation for the Exit Meeting

Once the analysis is completed, the audit team should be able to develop a unified response that describes the adequacy and effectiveness of the audited system. The final analysis must be a consensus of the audit team, and if there are disagreements, the team leader has the responsibility to resolve the conflicts, and the team leader must be supported during the exit meeting.

A good way to prepare for the exit meeting is for the auditor (or team leader) to develop an exit meeting discussion sheet in handwritten form for review by the team (as applicable) prior to the exit meeting. The purpose of the exit meeting discussion sheet is to provide an organized, complete handwritten summary of the exceptions noted by the auditor(s).

In preparing the sheet, attention should be paid attention to the following:

- Ensure factual accuracy. The facts to substantiate each exception should be noted.
- Maintain a professional tone. Stick to the relevant facts and avoid editorializing.
- Review the discussion sheet with the person responsible for GAPs or farm operations as this person will want to know what will be presented to farm management, particularly if they are not informed of exceptions during conduct of the audit. The person may also have legitimate questions and comments.

An example of an exit meeting discussion sheet is presented in Annex 7

8.3 The Exit Meeting

The on-site exit meeting held at the end of the formal audit is used to present audit findings and exceptions to facility (farm) management and ensure that management clearly understands the results before the end of the audit. The meeting is usually attended by persons who attended the opening meeting. Sometimes higher levels of management attend the exit meeting.

There should be an agenda (see Box 9) for the meeting, which typically consists of three main parts as follows:

1. *Opening of the meeting*—to break the ice, help ensure a smooth start, and describe the overall reporting process
2. *Presenting the audit findings*—at which the auditor (or team leader) distributes copies of the exit meeting discussion sheet to all present and then presents the findings (non-conformances or exceptions), clarifying as necessary and noting comments made by facility personnel.
3. *Closing the meeting*—end on a positive note, describing the timing of the audit report and the facility’s responsibilities in the reporting process and acknowledging the help and cooperation of the facility staff.

The meeting is led by the auditor (or team leader) who should ensure that there is an attendance list and that minutes are kept of the meeting.

Remember, the exit meeting is not the forum for detailed debate over a non-conformance or a finding. However, if the auditee can produce information or evidence that would affect the finding, the audit team/auditor must consider this prior to completion of the audit report. The escort may help to explain non-conformances or findings during the meeting.

The lead auditor is responsible for ensuring that:

- the non-conformance or finding is clearly defined;
- the process for effective corrective action is described, both in determining the cause and implementation of an appropriate solution;
- there is emphasis on timely resolution of the corrective actions, and for ascertaining the need, if any, for a follow-up audit and the areas/functions that would be affected. If the non-conformances pose a significant risk, there will be a special follow-up.

BOX 9

Typical Agenda for an Exit Meeting

- 1) Opening of Meeting
 - Thank the host
 - Reaffirm the purpose, scope and objectives of the audit
- 2) Present Audit Findings
 - Present an audit summary and describe the results
 - Describe how the results were prioritized
 - Describe the details of the audits, including presenting the findings, concerns, and any commendations
 - Verify acknowledgement of the findings
 - State that the audit does not uncover everything. There may be additional non-conformances
- 3) Closing the Meeting
 - Verify the follow-up procedures and resolution of findings
 - Inform the auditee of when the Audit Report would be available
 - Acknowledge help given by facility staff

CHAPTER 9

AUDIT REPORT, FOLLOW-UP AND CLOSEOUT

9.1 Audit Report

The Audit Report provides formal written documentation of the audit findings clearly and accurately. Within this overall goal, the audit report has three basic purposes:

- i) To provide management with information on the results of the audit. This information has to be sufficient to meet the needs of the report's recipients (bearing in mind the report has a number of customers, including client, auditee and its line staff responsible for day-to-day farm operations) and consistent with the overall objective of the audit;
- ii) To demonstrate the need for and to initiate corrective action so that once non-conformances have been identified, action steps are set in motion to correct the deficiencies found; and
- iii) To document the scope of the audit and the auditor's (or audit team's) conclusion regarding the facility's (farm's) GAP compliance status.

The report should be sent to the auditee within a mutually agreed time frame and the sooner the better as there tends to be a reduction in the urgency of the corrective actions and an increase in miscommunications when audit communiqués are delayed.

The report should guide the auditee in subsequent decisions and actions. The report should contain the following elements:

- Date report is issued
- Date of audit
- Details of organization audited
- Purpose, scope and objective of audit
- Details on itinerary, timetable
- Identification of the audit team
- Identification of the auditee's representative
- Identification of audit criteria and standards
- Distribution list
- Executive summary
- Record of the audit
 - Entry meeting to include summary and attendance list
 - Observations to include supporting evidence associated with findings; comments; areas of conformance; areas of non-conformance; areas of concern; commendations
 - Exit meeting to include summary of meeting; attendance list; positive points observed; review of non-conformances; discussion of recommendations;

designated follow-up; general observations; best practice and commendations; auditee comments about non-conformances if appropriate and significant; and follow-up

➤ Follow-up and close-out requirements

If recommendations are made, this should be as an appendix and the auditor(s) must be careful to ensure that the auditee retains ownership of the system. If recommendations are in order, a good practice is for the auditor to provide more than one option (where possible) for addressing the finding so that the auditee can choose.

Some key principles for Audit Report Writing are detailed in Annex 8.

9.2 Follow-up and Closeout

A critical aspect of audit closeout is the appropriate resolution of corrective actions. The auditee is responsible for determining and initiating the corrective action necessary to correct a deficiency (non-conformance) and to correct the cause of the deficiency. This entails the organization taking appropriate action to contain the short-term problems and to develop and implement strategies to prevent reoccurrence. During the process, the auditee's management must do the following:

- Set priorities for corrective action requests (CARs)
- Identify the individuals responsible for resolving the findings
- Identify the underlying cause and trigger events
- Determine if the problem can occur elsewhere in the organization/facility
- Develop a solution for the non-conformance
- Develop a plan and schedule to correct the deficiency
- Implement the plan within an agreed timeframe
- Implement any new control measures
- Verify the effectiveness of the corrective action
- Develop preventive action
- Implement preventive action within an agreed timeframe
- Verify effectiveness of preventive action.

When these activities have been completed, the auditee should prepare a validation report. This provides formal documentation and objective evidence that the CARs have been properly addressed and appropriate actions were taken to eliminate the root cause(s) of the findings.

Once the organization has taken appropriate actions to prevent reoccurrence, the auditor can close out the findings and CARs. Any post-audit action depends on the type of non-conformance, the nature of the corrective action and the client's verification requirements. It may be sufficient for the auditor to review evidence showing that the corrective action has been executed and it is effective in preventing reoccurrence. In this case, the auditor can verify the adequacy of the corrective action at the next audit. If the non-conformance is severe, the auditor may recommend

another audit and the audit client has the responsibility to determine if a follow-up audit is necessary.

The scope of the follow-up audit is to ensure effective implementation of the corrective action and development of a preventive action. What is important is that the review must address whether the auditee's corrective actions were implemented and whether they were appropriate to prevent the reoccurrence of the non-conformance—if preventive actions were indicated.

If the corrective action is neither implemented nor effective, the auditor should first reevaluate the entire situation. If further action is to be taken, the auditor can:

- Recycle the corrective action
- Issue a new corrective action
- Escalate the corrective action by taking it to higher-level management or emphasizing the importance to the client.

It is important to note that if audit findings indicate frequent recycling of corrective actions or corrective actions that have been issued on the same symptom, the auditor should suspect that the corrective action process is not functioning in an effective manner. Some organizations will track the progress of corrective actions.

9.2.1 Closure

Audit closure takes place when all corrective actions for an audit have been closed (or implemented and verified as agreed). The lead auditor should send a letter to the auditee indicating that all corrective actions have been completed and the audit is closed.

Audits, audit reports, corrective action requests and follow-up audits should be controlled and regulated.

9.3 Non-conformances and Understanding Corrective and Preventive Action

Inevitably, in the conduct of an audit, not all requirements of a standard, internal facility requirements or regulations are met, or there may be varying levels of compliance, as in the case of GLOBALG.A.P. types of control points. It is important, therefore, for an auditor to have a basic understanding of these issues.

A non-conformance (NC) or exception means activities carried out are not according to the established procedures or requirements of a particular standard. A non-conformance may be minor or major.

A minor non-conformance may be categorized as follows:

- Represents either a management system weakness or minor issue that could lead to a major non-conformance if not addressed. Each minor NC should be considered for

potential improvement and any system weaknesses should be further investigated for possible inclusion in the corrective action program.

- Failure to conform to a requirement, which (based on judgment and experience) is not likely to result in a system failure.
- Single isolated lapse or incident, which
 - will not adversely affect the usability of a product, performance or service (minimal risk of non-conforming product, produced and delivered)
 - will not affect any product or process output Example: paperwork oversights, minor changes to procedures for clarification

A minor non-conformance does indicate that there are occasional lapses that must be addressed through corrective action.

Examples of minor-conformances include:

- ✓ Training record not available
- ✓ Inspection instrument past its calibration date
- ✓ Signature missing
- ✓ Product list incomplete

A major non-conformance may be categorized as follows:

- Based on objective evidence, the absence of, or a significant failure to implement or maintain conformance to the requirements of the applicable standard. (i.e. the absence of, or failure to implement a complete Management System clause of the standard); or
- A situation, which would, on the basis of available objective evidence, raise significant doubt as to the capability of the Management System to achieve the stated policy and objectives of the customer.
- Total breakdown of system, control or procedure

The situations that may lead to a major non-conformance include:

- A number of minor non-conformances related to the same clause
- Non-conformity that would result in probable shipment of non-conforming or uninspected product, which will impact usability of a product
- Failure to implement a corrective action from the previous audit

A major non-conformance represents serious problems in the system that must be addressed with attention and resources on a priority basis. Examples of major non-conformances include:

- ✓ No documented procedure for an element in a standard
- ✓ Critical purchases from unevaluated suppliers
- ✓ Verification of the system has not been implemented

Observation: is defined as a statement of fact made during an audit and substantiated by objective evidence and auditor's informational comments based on an assessment of a special process or system.

The GLOBALG.A.P. system uses the following terms for categorizing deficiencies in the system.

Major Musts: One of three types of control points with which the producer is required to comply in order to obtain GLOBALG.A.P. certification. Complying with 100% of the Major Musts is compulsory.

Minor Musts: One of three types of control points with which the producer is required to comply in order to obtain GLOBALG.A.P. certification. Producers must comply with 95% of all of the applicable Minor Musts.

Recommendation: One of three types of control points within the GLOBALG.A.P. standards. All recommendation control points have to be inspected during the self-assessments and external announced inspections but there is no requirement for successfully meeting recommendations.

Non-compliance: A GLOBALG.A.P. control point in the checklist that is not fulfilled according to the associated compliance criteria.

Non-conformance: This occurs when a GLOBALG.A.P. rule that is necessary for obtaining a GLOBALG.A.P. certificate is infringed. For example, the producer who does not comply with 100% of the Major Must and 95% of the Minor Musts is in a situation of non-conformance. It can also refer to a deviation from the critical limits set at a critical control point, which results in a hazard occurring.

Deficiencies found in the audited system have to be corrected to ultimately lead to system improvement. This is done through the **corrective** and **preventive action** approach.

A corrective action is an action taken to correct a problem based on an incorrect result or a departure from procedure. A corrective action arises from:

- Audits (internal and external)
- Observations
- Non-fulfillment of a requirement
- Client feedback

A preventive action is a proactive process to identify improvement opportunities and potential sources of non-conformance.

A corrective and preventive action programme should be established at the facility and should be closely linked to the internal audit programme. It is managed by a designated staff and the process managed using a **corrective action request (CAR)** form (see Annex 9).

CHAPTER 10

RECORD KEEPING AS A KEY TOOL IN GAP AUDITING

10.1 The Importance of Record Keeping

Just as it is important for the farm being audited to have clear, accurate and up-to-date records on all farm operations, it is equally important for the auditor to have an organized system of recording and storing information gathered before, during (this is particularly important) and after the audit. Accurately recorded information provides objective evidence required as part of the audit process.

As an auditor gathers information, it should be recorded (take audit notes) on the checklists (or also on a notepad). Information recorded should include:

- Activities which do not adhere to prescribed requirements and based on the criteria given; (control points and criteria)
- Classification of non-conformances; this could be as
 - Major non-conformances
 - Minor non-conformance;
 - Major musts (as per GLOBALG.A.P.)
 - Minor musts (as per GLOBALG.A.P.)
 - Recommendations (as per GLOBALG.A.P.)
- Areas for improvement

A good checklist should be designed to facilitate the efficient recording of audit notes. The checklist should be easy to use, contain enough space and include commonly used descriptions of events, so that the auditor to verify and record within the shortest possible time.

Audit notes should provide the source of information by quoting the relevant document identification (e.g. procedure number, control point number, record numbers, readings on measuring and monitoring devices, product lot number). The auditor's (or audit team's) ability to quote from source will convince the auditee that the audit is done based on facts obtained through documents, records, observations or tests rather than on personnel opinion. This will reduce the time spent on tracing the source of information.

Audit notes are important as they:

- 1) Provide a documented record of the observations made by the auditor;
- 2) Ensure that important observations on both good and bad practices are not forgotten;
- 3) Provide documentary evidence of the details of the audit;
- 4) Serve as records for the certification body or auditor to prove that they have performed the audit with due diligence.

In addition to using the checklist, special forms or any form of documentation can be used to take audit notes. Audit Notes may also be referred to as field notes or working papers and should contain all the information the auditor needs to support his/her findings and conclusions. Specifically, it should contain:

- 1) Time, date and location where the observation were made
- 2) Auditee's name
- 3) Precise and adequate description of the relevant observations
- 4) Identification of the procedure if available
- 5) The cross referencing procedures involved so as to establish an audit trail
- 6) Confirmation of the observation by the auditee where appropriate
- 7) Readings of instruments where appropriate.

10.2 Record Keeping Techniques for the Auditor

Some techniques for recording information include:

- Write while conducting the audit as delays may result in inaccuracies
- Start each new topic on a new page and leave space should additional information be acquired
- Develop and use standard 'tick-marks' (legend codes) and personal shorthand to increase efficiency
- Include photocopies of selected documents and include them as numbered exhibits
- Highlight 'to do' items and findings, note items that call for further investigation or additional information and document them as completed and then cross-referenced once they have been finalized
- Keep an exhibit list with numbers and description to keep track of exhibits
- Label pages clearly as this helps in reviewing the notes
- Review notes frequently to ensure that audit tasks have been completed, open issues resolved and adequate evidence gathered to support findings
- Write clearly and in an understandable style to allow a person not involved in the audit to reach the same conclusions
- Keep statements factual and based on sound evidence
- Write legibly will aid in the review of notes by yourself, the team leader and others in authority
- Uniformity is important. Use a common paper size, dated and initialled on the same part of every page.

Auditors should routinely review their audit notes throughout the audit to be sure they are complete. The information covered in the audit notes should include all elements of the audit steps and leave no questions or open items. Audit notes should be complete, free-standing records of the actions taken by the auditor that can be used to verify and document compliance and non-compliance situations.

There should also be a post audit review of the audit notes before preparation of the final audit report that provides for a quality assurance check on the auditor and the audit. This review can be done by the Team Leader (or other third party as appropriate).

10.3 Basic Farm Records a GAP Auditor Should be Familiar With

Farmers are expected to keep a number of documents and records as part of their GAP System (or plan) and also if applicable as part of their quality management system.

It is prudent that the GAP auditor have a general idea of what documents, forms and records are required in advance, which would help in the review process and gathering audit evidence.

Some records to be kept are as follows:

- General Data of Farmer
- General Data of Farmer – Location of plots and maps
- General Data of Farmer – Site and crop production details
- Worker Employee Records
- General Premises, Field and Pack House Sanitation Records
- General Employee Training Records
- Individual Employee Training Record
- Agrochemicals Inventory Stock Sheet
- Data Record for Plant Pest Survey and Application of Pesticides
- Fertilizer Application Records

Sample forms for record keeping are attached in Annex 10.

CHAPTER 11

GAP CERTIFICATION

11.1 Why GAP Certification

The ultimate goal of a third party GAP audit for a farming entity is to achieve certification to demonstrate that agreed requirements and processes are being met, and to facilitate trade between the enterprise and its trading partner(s).

A GAP certification programme provides a written, third party assurance that an activity or a product is compliant with established standards. It is assurance that the production of fresh produce/product is carried out using good agricultural practices. It is a mechanism for formal endorsement of the producers' compliance with recognized standards in pre-production, production and post-harvest processes by way of official certification.

Certification is one of the tools for motivating businesses to improve their environmental, social and economic performance. It fosters the attitude of continual improvement and is known to reduce operational costs without decreasing the quality of product. All stakeholders have the opportunity to benefit with the implementation of a GAP certification system.

As mentioned previously, there are a number of options for GAP certification globally. Individual countries may have their own GAP certification schemes, which may be regulated or voluntary. There are also various market-led certification programmes, while some schemes are established by non-profit entities. Many of these schemes are private and established by producers or buyers (e.g. retailers) of agricultural produce.

In the Eastern Caribbean States, some islands are looking to establish their own GAP certification programmes but there is also a move to adopt globally recognized certification schemes such as GLOBALG.A.P., Fairtrade and Organic standards. The options for certification under the GLOBALG.A.P. system are presented in Annex 11.

11.2 Basic Steps in a GAP Certification Process

In general, the process of certification for one of the many GAP schemes involves a number of basic steps as follows:

1. ***The Decision to become Certified.*** This could be voluntary, regulatory or because of market demands. The farming entity must determine if it is willing and ready to comply with the requirements of the standard(s), regulations, etc.
2. ***Application/Registration.*** This is a formal process whereby the farming entity declares its intention to become certified and submits relevant documentation to the recognized authority.

3. ***Review of Application and Requested Documents.*** This is done by the recognized authority which advises on follow-up activities.
4. ***Initial Assessment (optional):.*** This is for a farm enterprise, which may not be sure if it is ready for certification but would like to determine its status regarding implementation of the applicable standard.
5. ***Assessments.*** This may take the form of inspections or audits (either done internally or by a certifying body) based on the scope/option for certification.
6. ***Certification decision:*** After completion of the applicable assessment, the inspector or auditor prepares a report and submits it to the Certification Body, which will make the final decision on certification. The applicant will be informed and will be instructed on further requirements for maintaining certification.

Finally, since certification may be first based on an internal audit before it is followed by an external audit, it is incumbent upon the farmer or producer to comply with the audit results and deal with non-conformances as agreed with the auditor (internal or external). Notwithstanding this, the farmer or producer has a right to question or challenge audit results and if the farmer or producer (auditee) can produce information or evidence that would affect the finding, the audit team/auditor must consider this prior to completion of the audit report.

With regard Certification, whether it be with GLOBALG.A.P., Fairtrade or a national scheme, the process has to be independent enough to allow a formal appeal against a non-conformance. Any complaint or appeal against a certifying body (CB) follows the CB's own complaints and appeals procedures, which would have been communicated to its clients. In the case where the CB does not respond adequately, the complaint—in the case of a GLOBALG.A.P. scheme—can be addressed to its Secretariat. Other schemes would have their own established rules for dealing with these matters.

ANNEXES

Annex 1: Traits and Desirable Characteristics of an Auditor

Required Traits	Desirable Characteristics	Undesirable Qualities
Observant	Knowledge of requirements for the audit	Argumentative
Honest	Sound judgment/open mindedness	Opinionated
Investigative	Patience	Lazy
Questioning	Interest	Easily influenced
Thorough	Tenacity strength)	Inflexible
Communicates well	Professional attitude/integrity	Impulsive/Jumps to conclusions
Adaptable	Good listening skills	Gullible
Cooperative	Inquisitiveness	Uncommunicative
	Good verbal and written skills	Devious
	Analytical	Poor at planning
	Honesty	Unprofessional
	Diplomacy	Prescriptive
	Discipline	Argumentative
	Planning skills	
	Objectivity	
	Empathy	

Annex 2: A Sample GAP Audit Checklist for Control Points (Deficiencies Identified) and Compliance Criteria

Grower/Farmer Information			
Audit Number:			
Audit Date:			
Type and Subject of Audit:			
Auditor (s)			
Page 1 of			
Item No.	Control Point	Compliance Criteria	Level: Yes/No (1/0); N/A
A. Seeds/Planting Material			
A.1	Are all seeds and planting material obtained from reputable sources and are free from pests and diseases	<ul style="list-style-type: none"> Seed records must be kept to indicate variety, purity, germination, batch number, supplier and country of origin 	
		<ul style="list-style-type: none"> All seed treatment (products) applied, should be recorded, together with the pest/disease targeted 	
		<ul style="list-style-type: none"> Seeds must be handled carefully to avoid contamination 	
		<ul style="list-style-type: none"> Planting material must be stored according to the manufacturers' instructions in order to prevent damage or contamination 	
B Soil and Land Selection			
<p>When a farm is being established, a desirable characteristic for is the continuous integration of site-specific knowledge and practical experiences into future management planning and practices. This control point is to ensure that the land, buildings and other facilities, which make up the fabric of the farm, are properly managed to ensure the safe production of food and protection of the environment.</p>			
B.1	<i>Land Selection, Site History and Management</i>	<ul style="list-style-type: none"> Land for crop production should be selected based on previous land usage/history/capability/suitability, including impacts of production on other adjacent crops and surrounding areas (e.g. residential, schools) 	

		<ul style="list-style-type: none"> • Test sites for contaminant(s) if land history is unavailable/ unknown. 	
		<ul style="list-style-type: none"> • All new sites for cropping must have the results of a risk assessment in its dossier 	
		<ul style="list-style-type: none"> • Crop production sites should be a suitable distance from livestock operations, including feeding points to avoid animal and waste contamination 	
		<ul style="list-style-type: none"> • Check sites for possible, biological, chemical or physical hazards 	
		<ul style="list-style-type: none"> • Run-off/ contaminated water should not be allowed to enter fields, erosion kept to a bare minimum and cultivation techniques to minimize soil erosion must be adopted. 	
		<ul style="list-style-type: none"> • A recording system must be developed for each field, orchard or greenhouse illustrating the crop (s) and agronomic activities which have taken place on each location/plot. 	
B.2. Soil Preparation and Management			
		<ul style="list-style-type: none"> • Prepare land/soil using techniques to improve/maintain soil structure and avoid compaction 	
		<ul style="list-style-type: none"> • Avoid over tillage 	
		<ul style="list-style-type: none"> • Prepare soil maps prior to planting to include the soil types and physical structure based on the soil classification for each production area. 	
		<ul style="list-style-type: none"> • The planned production should be in-keeping with the soil map recommendations. 	
		<ul style="list-style-type: none"> • The planned production activity must be sustainable and environmentally friendly. 	
C	<p>Environmental Protection, Biological Diversity and Landscape Conservation in Production</p> <p>Farmers/growers need to be aware of the environmental concerns of consumers, must consider the importance of being able to maintain a geological balance, promote biological biodiversity, ensure landscape conservation during agricultural production and generally create a balance between economic, social and environmental goals.</p>		
		<ul style="list-style-type: none"> • Consider environmental management in their farm management plan 	
		<ul style="list-style-type: none"> • Consider risk mitigation strategies in agricultural production 	

		<ul style="list-style-type: none"> • Identification and conservation of wildlife habitats and landscape features (e.g. special species of trees, rock formation); 	
		<ul style="list-style-type: none"> • Creation as far as is practicable, of a diverse cropping system; 	
		<ul style="list-style-type: none"> • Minimization of the impact of operations such as tillage and agrochemical use on wildlife; 	
		<ul style="list-style-type: none"> • Management of the water resources and surrounding wetlands in a manner to encourage wildlife and prevent pollution; 	
		<ul style="list-style-type: none"> • Monitoring those species whose presence on the farm is evidence of good agricultural and environmental practice; 	
		<ul style="list-style-type: none"> • Actively support programmes designed to preserve and enhance the national, regional and cultural heritage, including adherence to land use plans and practicing sustainable agriculture. 	
<p>D) Agricultural Water</p> <p>Water is one of the main basic raw materials to produce food. Fresh water resources are becoming scarce and water allocation is becoming a complex issue. Managing water even at the farm level requires certain knowledge, skills and improved planning, for example, during times of water scarcity. Clean and sufficient water is important for human health, ecosystem health and general economic growth and development. To achieve this, good on-farm practices for the general management of water, including the extraction, harvesting, storage, use and disposal of waste water is required.</p>			
D.1	General Water	<ul style="list-style-type: none"> • There must be a systemic method of predicting crop water requirement. This would avoid excessive or insufficient water application thereby maintaining crop quality. 	
		<ul style="list-style-type: none"> • Water quality assessment/ analysis must be carried out once yearly at minimum, to avoid contamination by microbial, chemical mineral or other pollution hazards. 	
		<ul style="list-style-type: none"> • Where irrigation is used, the irrigation system should be one that is efficient and financially practical thereby ensuring the efficient use of the water. 	
		<ul style="list-style-type: none"> • Water extraction must be sustainable. 	
		<ul style="list-style-type: none"> • Water is needed for many field operations, including irrigation, 	

		<p>application of pesticides and fertilizers, rinsing/washing, cooling and transport and water quality affects the safety of fresh produce directly or indirectly. As such the management of water will require measures to ensure its economical and optimal use to prevent/control erosion and to avoid contamination of and damage to adjacent lands. The following good practices should be observed.</p> <ul style="list-style-type: none"> ✓ Proper channel and drainage in dry or wet environments and soil moisture conservation in dry areas; ✓ Creation of buffer zones to prevent contamination of water sources; ✓ Using appropriate techniques to monitor crop and soil water status; ✓ Monitoring and providing water requirements for irrigated crops; ✓ Monitoring yield per unit water use as well as yield per unit of cultivated land; ✓ Implementation of a water management plan to optimize water usage and reduce waste (including reuse and recycling); ✓ Management of the water table in collaboration with the relevant authorities to prevent excessive extraction or accumulation; ✓ Provision of safe clean water at all times for staff. ✓ Water for dissolving fertilizers and pesticides must not be contaminated with microorganisms at levels that affect consumption safety. 	
D.2	<p>Water Sources, Harvesting and Storage</p> <p>Water used in the production process must be from sources that their surroundings are safe from contamination of hazardous substances, and water quality is suitable for the agricultural purpose.</p>	<ul style="list-style-type: none"> • Are water sources identified and water-conservation and harvesting methods (tanks, dams) in place before planting? 	
		<ul style="list-style-type: none"> • If it is necessary to use wastewater there must be evidence that the water has been treated to improve its quality and usability for the intended agricultural purpose. 	

		<ul style="list-style-type: none"> • Water harvesting practice must be safe, sustainable and pose no risk to the environment. 	
		<ul style="list-style-type: none"> • Water samples should be collected and submitted for testing when environmental conditions are risky to use such water. 	
		<ul style="list-style-type: none"> • Water storage facilities should be well protected and safe to avoid creating any problems to other activity(ies) in the vicinity and the environment. 	
D.3	<p>Water for Production of Fresh Produce</p> <p>The most efficient and commercially practical water delivery system should be used to optimize utilization of the water resource.</p>	<p>The origin of water being used and control options to ensure consistency of supply must be determined from the following.</p> <ul style="list-style-type: none"> • Prevalence and impact of animal on farms and loose or stray animals in the area; • Impact of barriers to minimize animal access to water sources; • Effectiveness of buffer zones established to prevent contamination of water source(s) • Extent of arable farming and manure application in the region of the water supply; • Likelihood of contaminated run-off reaching water source and cultivated crops due to topography and rainfall patter of the area; • Land usage on adjacent farms that may inadvertently contaminate crop, soil or water; • Whether contour drains are established/stabilized and natural water ways stabilized; • Biochemical characteristics in particular microbial, chemical, mineral pollution • Documented records of water quality analyses and water quality ratings. 	
D.4	<p>Water Quality for Processing of Fresh Produce</p>	<ul style="list-style-type: none"> • Periodic sampling and testing of water; 	
		<ul style="list-style-type: none"> • Keeping water storage or water contact equipment in a clean and sanitized condition; 	

		<ul style="list-style-type: none"> Development of standard operating procedures (SOPs)/cleaning and sanitary schedules for all equipment, including frequency, cleaning practice and post-cleaning hygienic inspection; 	
		<ul style="list-style-type: none"> Developing and applying SOPs to cover a preventative maintenance schedule for important water storage and transportation equipment. 	
		<ul style="list-style-type: none"> Implementing measures that minimize microbial contamination; 	
		<ul style="list-style-type: none"> Undertaking routine inspections of all equipment and facilities designed to obtain or maintain recommended water quality; 	
		<ul style="list-style-type: none"> Applying chemical substances that disinfect food and water in the prescribed manner according to regulations and the manufacturer 	
		<ul style="list-style-type: none"> Maintenance of appropriate records for the above. 	
D.5	Drinking Water on the Farm	<ul style="list-style-type: none"> Water for drinking must be from the recognized national water authority. Water quality data must be obtained from the Authority or other approved sources on a regular basis 	
		<ul style="list-style-type: none"> If water for drinking is derived from other sources, the quality must verified by an approved authority who will also advise on any treatment that may be necessary. 	
		<ul style="list-style-type: none"> If storage is necessary, it must be done in clean, previously sanitized containers that are kept only for that purpose, kept closed at all times, and stored away from excessive heat and possible sources of contamination. 	
E	Organic and Inorganic Fertilizers		
	<p>The structure, fertility and biological activity of soils are fundamental to sustaining agricultural productivity. The addition of fertilizers to soils is also very important to that process. The application of fertilizers must however be done following prescribed practices.</p>		
E.1	Organic Fertilizers	<ul style="list-style-type: none"> At no time should raw untreated human sewage sludge be used in any form of crop production. 	
		<ul style="list-style-type: none"> Any land air marked for agricultural production on which treated human 	

		sewage sludge have been deposited would have to first demonstrate through laboratory analysis that such lands are free of any pathogens and other compounds which may have a adverse effect on human or crop health, soil quality, ground water or wildlife.	
		<ul style="list-style-type: none"> Organic manure, compost or the end results of vermiculture can greatly improve soil fertility, texture and the water and nutrient retention capacity. 	
		<ul style="list-style-type: none"> Where raw manure is applied, this must be done approximately two (2) weeks prior to planting or 120 days prior to harvesting. 	
		<ul style="list-style-type: none"> All manures should be stored in an appropriate manner to avoid contamination to the environment (including water ways). 	
		<ul style="list-style-type: none"> Manures should be in a form that facilitates easy application (spread on soil surface or mixed with the soil). 	
		<ul style="list-style-type: none"> Manure storage or treatment sites must be situated away from production, handling areas, water bodies, dwelling houses, and main roads. The distance depends on factors such as farm layout and slope, run-off controls that are in place, the likelihood of spread by wind, rainfall or animals, the quantity of manure and how it is obtained. 	
		<ul style="list-style-type: none"> Manure heaps should always be covered. 	
		<ul style="list-style-type: none"> Equipment that comes into contact with untreated manure must be cleaned 	
		<ul style="list-style-type: none"> Manure application should be based on soil nutrient status, crop nutrient requirement and the desire to improve soil texture 	
		<ul style="list-style-type: none"> Workers with open sores, boils or open wounds must not handle manure. 	
		<ul style="list-style-type: none"> Worker who handles manure should be vaccinated. 	
		<ul style="list-style-type: none"> A data record sheet containing the following must be filled: <ul style="list-style-type: none"> ✓ Source of the manure ✓ Treatment applied to the manure prior to use. ✓ Is treatment passive (passage of 	

		<p>time) or active (pasteurization, heat drying, etc.)</p> <ul style="list-style-type: none"> ✓ Amount used. ✓ Date of application. ✓ Place applied. ✓ Responsibility for the application ✓ Contribution of manures to the nutrient requirement of the crop. • Identification of chemical, microbial and other hazards and related hazard control measures 	
E.2	Inorganic Fertilizers		
		<ul style="list-style-type: none"> • A soil analysis of the cropping area must be done prior to fertilizer application. 	
		<ul style="list-style-type: none"> • A nutrient management plan must be developed to ensure maintenance of the nutrient status of the soil. 	
		<ul style="list-style-type: none"> • The frequency, quantities and method of inorganic fertilizers should be recommended by qualified personnel based on scientific analysis of the crop and soil. Fertilizer application must therefore satisfy the crop requirement and maintain soil nutrient status. 	
		<ul style="list-style-type: none"> • Data recording of the application should include the following:- <ul style="list-style-type: none"> ✓ Date of application ✓ Quantity and type applied ✓ Method of application ✓ Type of applicator ✓ Weather condition when applied ✓ Where/ location of application 	
		<ul style="list-style-type: none"> • All fertilizers must be stored in the original package. 	
		<ul style="list-style-type: none"> • All fertilizers must be protected from unfavorable weather conditions. 	
		<ul style="list-style-type: none"> • Fertilizer must always be stored away from fresh produce and other farm materials. 	
F	Animal Exclusion and Pest Control		
	<p>Both domestic and wild vertebrate animals, other identified insect pests are a major source of food safety hazards, mainly biological and to a lesser extent physical. These vertebrates and insects are vehicles for disease-causing (pathogenic) microorganisms and pose a major threat to fresh produce, while the presence of insects or insect parts in on fresh produce constitutes a physical hazard.</p>		

F.1	Animal Exclusion		
		<ul style="list-style-type: none"> • Most crop production areas are located away from livestock production facilities. If the opposite is true steps must be taken to lower the risk of contamination. Confinement in pens, yards fencing or other physical barrier as appropriate should be applied. 	
		<ul style="list-style-type: none"> • A proper waste management system must be implemented to keep at a bare minimum the likelihood of leakages, overflow and or run-off from contaminating the crop production areas. 	
		<ul style="list-style-type: none"> • Steps need to be taken to restrict livestock and wild animals from gaining access to the crop production areas and water sources; cover or fence water holding sources. 	
		<ul style="list-style-type: none"> • Do not allow field workers to bring their pets into operation areas. 	
		<ul style="list-style-type: none"> • Crop production areas must be monitored regularly for the presence or indicators of signs of wild/domestic animals in the crop production areas. 	
		<ul style="list-style-type: none"> • Wild and or domestic animals should be restricted from entering the cropping area by sustainable and environmentally friendly measures. 	
		<ul style="list-style-type: none"> • Dispose of dead animals on the farm promptly and properly via burial or incineration. 	
F.2	Pest Control		
		<ul style="list-style-type: none"> • There should be an established system for pest and disease control and monitoring of results 	
		<ul style="list-style-type: none"> • Does the pest and disease control system ensure that the minimum of toxic substances are released into the environment 	
		<ul style="list-style-type: none"> • Is an IPM approach used for pest and disease control 	
	Proper use of pesticides		
		<ul style="list-style-type: none"> • Pesticides should be used on the crops for which they are targeted and registered. 	

		<ul style="list-style-type: none"> The recommended intervals and rates for the various pesticides must be respected 	
		<ul style="list-style-type: none"> All persons applying pesticides should wear proper protective clothing. 	
		<ul style="list-style-type: none"> All remaining pesticides should be disposed of in a safe manner 	
		<ul style="list-style-type: none"> Labels on all pesticides should be properly read. 	
		<ul style="list-style-type: none"> All pesticides should be properly stored and away from the crop production area. 	
		<ul style="list-style-type: none"> All empty Pesticides containers should be washed several times and dispose of in the proper manner. 	
		<ul style="list-style-type: none"> The necessary safety equipment for persons handling or applying pesticide should be made available. 	
		<ul style="list-style-type: none"> First aid kits should be available 	
		<ul style="list-style-type: none"> Equipment for application of pesticides should be properly calibrated. 	
		<ul style="list-style-type: none"> Equipment used for the application of pesticide should be washed on completion of task 	
		<ul style="list-style-type: none"> Workers should receive regular medical checks and appropriate records kept 	
		<ul style="list-style-type: none"> The withdrawal period for all pesticide should be highly respected 	
		<ul style="list-style-type: none"> Producers should be aware of all restrictions of pesticides on crops harvested for export by the country of consumption. 	
		<ul style="list-style-type: none"> <u>Records of Pesticide Application must be kept</u> 	
		<ul style="list-style-type: none"> All obsolete pesticides should be disposed of in the recommended manner. 	
		<ul style="list-style-type: none"> All workers involved in pest and disease control must be trained and records retained. 	
G Field Sanitation and Practices			
G.1	Sanitary Facilities and Practices		
		<ul style="list-style-type: none"> A pre harvest assessment of the crop production area should be performed and documented. The risks are noted and assessed. 	

		<ul style="list-style-type: none"> The number, condition and placement of field sanitation units should comply with the recommended standards e.g. one (1) toilet and one (1) hand washing facility for every twenty (20) or less workers of the same sex. Other materials such as hand-washing soap, hand-drying paper towels and a waste container should also be provided. 	
		<ul style="list-style-type: none"> Toilet facilities should be adequately ventilated and should guarantee privacy. 	
		<ul style="list-style-type: none"> Facilities should be located inside ¼ mile of the working area and must not be located near a water source or in a location that would subject such facilities to potential run-off in the event of heavy rains. Such run-off has the potential to contaminate water sources, soil, fresh produce, animals and workers. 	
		<ul style="list-style-type: none"> Potable drinking water devices, toilets and hand washing facilities must be maintained and cleared regularly 	
		<ul style="list-style-type: none"> Are these units are located to minimize risk of product contamination and should well placed and easily identifiable for cleaning or servicing. 	
		<ul style="list-style-type: none"> Are these units easily located for cleaning and or servicing. 	
		<ul style="list-style-type: none"> There should be a response plan in place in the event of any serious risk e.g. damage to structure, spill. 	
		<ul style="list-style-type: none"> Eating and smoking are confined to designated areas. 	
G.2	Field Sanitation		
		<ul style="list-style-type: none"> Harvest and storage facilities should be cleaned and sanitized as required before use. 	
		<ul style="list-style-type: none"> The harvest and storage facility should be properly inspected for signs for pests e.g. insects, birds, rodents, slugs/ snails. 	
		<ul style="list-style-type: none"> All damage and unwanted containers should be discarded. 	
		<ul style="list-style-type: none"> All containers used to transport fresh producers should be cleaned before use. 	

		<ul style="list-style-type: none"> • All dirt, soil should be removed for fresh produce before leaving the field. 	
		<ul style="list-style-type: none"> • System should be put in place to ensure produce that have already been washed, cooled and packaged does not get contaminated in the process. 	
		<ul style="list-style-type: none"> • Crop growing conditions should not harbour pest. 	
		<ul style="list-style-type: none"> • Unwanted plant and crop material should not be left in the crop production area. 	
H	<u>Harvesting and Post-harvest Handling of Fresh Produce</u>		
H.1	Proper Harvesting and Field Packing	<ul style="list-style-type: none"> • To guarantee acceptable good quality of fresh produce, harvesting must be carried using specified commodity standards agreed upon for each commodity or specified by the trading planters. 	
		<ul style="list-style-type: none"> • Produce may be harvested either manually (by direct hand detachment or by hand with the aid of an implement such as knife, clipper or prong) or mechanically by a machine. In either case GMPs (or GHPs) with a focus on worker and equipment hygiene to ensure food safety is critical. 	
		<ul style="list-style-type: none"> • Harvesting must be carried out and produce stored and processed under acceptable hygienic and environmental conditions and in a place reserved for that purpose. For example, harvesting crates should not sit on the bare ground. 	
		<ul style="list-style-type: none"> • Workers involved in harvesting of produce must be trained in basic hygiene before handling fresh produce. 	
		<ul style="list-style-type: none"> • Fresh produce should be cooled to remove field heat 	
		<ul style="list-style-type: none"> • Fresh produce should be packed in clean, sanitized and appropriate containers to transport from the farm. 	
		<ul style="list-style-type: none"> • Accurate and precise records of harvest, storage and processing of the commodity should be maintained. 	
		<ul style="list-style-type: none"> • It's the responsibility of the producer to ensure that the fresh produce is kept in the best quality before reaching the buyer. 	

		<ul style="list-style-type: none"> All tools, equipment or specific method used in the harvesting operation is in good working condition and does not in any way contribute to the lowering of fresh produce quality 	
		<ul style="list-style-type: none"> Containers used in the transportation of fresh produce must be kept clean and free from odour, soil, insects, and debris. 	
		<ul style="list-style-type: none"> Containers for moving or transport of pesticides or fertilizers must be separated from those for produce to protect the product from biological, chemical and physical contamination. 	
		<ul style="list-style-type: none"> Harvested produce or crates should not sit on the bare ground or floor 	
H.2	<i>Post-harvest Operations</i> Post-harvest operations may take place on the field or produce are brought to the pack house for post-harvest processing operations.		
		<ul style="list-style-type: none"> The producer must ensure that any post-harvest treatment required for the fresh produce is acceptable by the trading partner. 	
		<ul style="list-style-type: none"> Post-harvest chemicals must be used in accordance with product label and applications for post-harvest chemical treatment must be recorded in the appropriate format and should include: <ul style="list-style-type: none"> ✓ Crop/product ✓ Location ✓ Date of application ✓ Trade name ✓ Type and quantity of treatment used ✓ Name of operator 	
		<ul style="list-style-type: none"> Water used in the harvesting and post-harvesting of fresh produce must be potable water. Recycled water should be filtered before use. 	
		<ul style="list-style-type: none"> Such water must be free from all impurities i.e. chemical, biological, pathogens, etc. It must be subjected to periodic sampling and testing, and results retained for guidance. 	

		<ul style="list-style-type: none"> All workers involved in the loading and unloading of fresh produce during transportation must adhere to basic hygiene and sanitation practices. 	
		<ul style="list-style-type: none"> Produce inspectors, buyers and other visitors should also comply with established hygienic practices before coming into contact with produce and processing areas. 	
		<ul style="list-style-type: none"> Vehicles used in the transportation of fresh produce must be kept clean at all times. 	
		<ul style="list-style-type: none"> Temperatures should be maintained to ensure both the quality and safety of fresh produce; 	
		<ul style="list-style-type: none"> Pack houses, processing and storage facilities where post-harvest operations are carried out should be in good repair. 	
		<ul style="list-style-type: none"> Produce should be loaded onto vehicles and transport cartons in a manner that will minimize damage 	
I) Worker Health, Safety and Hygiene			
I.1	Health and Hygiene		
		<ul style="list-style-type: none"> There should be documented personal hygiene and sanitation polices and accessible to all? 	
		<ul style="list-style-type: none"> Workers must be trained in hygiene practices 	
		<ul style="list-style-type: none"> Supervisors must be familiar with and know the importance of signs and symptoms of infectious diseases. 	
		<ul style="list-style-type: none"> Fresh produce and other materials or equipment which comes into contact with workers must be protected from infected workers. 	
		<ul style="list-style-type: none"> First aid kits should be available at least on a permanent site not too far from the work field. 	
		<ul style="list-style-type: none"> Visitors to the farm should follow good hygiene practices. 	
I.2	Worker Safety and Welfare		
		<ul style="list-style-type: none"> Workers must be trained in the operation of all dangerous or complex equipment on the farm. 	

		<ul style="list-style-type: none"> • Accident and emergency procedures exist, are prominently displayed and clearly understood by all. 	
		<ul style="list-style-type: none"> • Workers must adhere to establish safe work procedures and instructions for the safe and efficient use of tools and machinery. 	
		<ul style="list-style-type: none"> • First aid kits should be available at least on a permanent site not too far from the work field. 	
		<ul style="list-style-type: none"> • Workers in the field should have access to proper sanitary facilities in order to prevent risks of serious microbial produce contamination. 	
		<ul style="list-style-type: none"> • Water for consumption by workers needs to be potable at all work sites. 	
		<ul style="list-style-type: none"> • All hazards on the farm must be clearly identified by warning signs where appropriate 	
		<ul style="list-style-type: none"> • All workers must be provided with the appropriate personal protective equipment (PPE) when the task being undertaken require them 	
		<ul style="list-style-type: none"> • The employment conditions of farm workers engaged in fresh production and processing should comply with national regulations and international conventions as appropriate. 	
I.3	<i>Health, Hygiene and Safety Training</i>		
		<ul style="list-style-type: none"> • All farm workers must be trained in the following areas <ul style="list-style-type: none"> ✓ Good hygiene practices for handling of fresh produce. ✓ First aid for skin cuts, bruises, wounds, etc. ✓ Pest and disease control measures. ✓ Waste disposal methods. ✓ Handling, storage and application of pesticides and fertilizers. ✓ Use of farm facilities. ✓ Use of farm equipment. 	
		<ul style="list-style-type: none"> • Documented records of training of each employee should be kept 	
J	Training and Record Keeping		
J.1	Training	<ul style="list-style-type: none"> • In addition to the obvious training areas identified, training needs should be assessed and adequate and appropriate 	

		training provided to workers.	
		<ul style="list-style-type: none"> • Training can be conducted both on the farm and externally and a schedule for on-farm training must be available. 	
J.2	Record Keeping	<p>Clear, accurate and updated records must be kept to demonstrate that all production activities comply with the general standards outlined. Such records can be used in tracing the history of the fresh produce from farm to the consumer and to show compliance with the prescribe GAPs.</p>	
		<ul style="list-style-type: none"> • The Recording System should include the following <ul style="list-style-type: none"> ✓ The origin of the planting material, e.g. commercial nursery, seed supplier, farm. ✓ Name of the crop and variety. The variety produced should be that agreed upon by consumer/ buyer and producer. If crop/ variety is GMO this should be clearly stated. ✓ The batch number must be recorded. ✓ The producer needs to know and have recorded the degree of susceptibility of the variety/ crop to pest and disease. ✓ All pest and disease management activities carried out must be properly documented. ✓ All inputs used up to the point of sale to the consumer must be recorded. ✓ A history of the crop (s) and agronomic activities on the land should be present. ✓ A risk assessment plan based on the prior use of the land and surrounding areas. ✓ A management plan base on the risk assessment plan showing the methods used to reduce the identified risk. ✓ Maps showing the production areas should be highlighted. ✓ These maps should assist in developing cropping programmes and crop rotation strategy. ✓ These maps should assist in the adoption of technologies that contribute to sustainable soil use. 	

		<ul style="list-style-type: none"> ✓ All fertilizers i.e. organic/ inorganic must be recorded. ✓ In the case of inorganic fertilizers, type, quantity must be recorded. ✓ Its use should be base on soil nutrient status and the plant requirement. ✓ Organic fertilizers likewise type, quantity used, origin, must be noted, in addition to the type of treatment it has been subjected too. ✓ The place of and date of all fertilizer application must be recorded. ✓ The individual who applies all fertilizers i.e. organic/ inorganic must be noted. ✓ There should be documented evidence that irrigation water is periodically tested. ✓ Source of irrigation water must be recorded. ✓ A risk mitigation plan for irrigation water should be in place. ✓ All irrigation schedules and their duration must be recorded. ✓ Where more than one water source or tanks exist they should be labelled. 	
		<ul style="list-style-type: none"> • These records should be kept for a minimum of two years, unless stated otherwise. 	
K	Farm Infrastructure		
		<ul style="list-style-type: none"> • Storage, processing and packing facilities should be designed to prevent contamination of food products and that they are easy to clean and sanitize. 	
		<ul style="list-style-type: none"> • Pack houses, processing and storage facilities should be in good repair. They should be inspected regularly for presences of pests (e.g. birds and nests), damage to the roof, walls, floors, windows, doors and door seals, lighting, structural support and any other part of the physical plant. 	
		<ul style="list-style-type: none"> • Where processing and packing facilities have concrete floors, the floor should have an adequate number of drains that are properly distributed throughout the 	

		<p>facility. This will facilitate easier cleaning and removal of water that may be spilled during normal operation of the facility. The drains themselves should be inspected regularly to ensure that they are not blocked and they must be cleaned regularly.</p>	
		<ul style="list-style-type: none"> • Areas surrounding the facility should also be inspected to identify and remove potential risks. Hazardous waste, fuel, pesticides or other chemical contaminants should never be stored in or near a packing or storage operation. 	
		<ul style="list-style-type: none"> • Garbage cans and dumpsters should be covered so they do not attract insects, birds, rodents or other pests and should be emptied on a regular (if practical, daily) basis. 	
		<ul style="list-style-type: none"> • There should be appropriate, adequate and well located utilities such as water, lighting, fuel, etc. 	
		<ul style="list-style-type: none"> • Equipment required may be specific to the type of facility, but, in general, should be made of non-toxic, impervious, non-porous and easy to clean and sanitize. 	
		<ul style="list-style-type: none"> • Equipment should be durable and may also need to resist heat, acid and corrosion as necessary. 	
		<ul style="list-style-type: none"> • Equipment design should as much as possible avoid areas where food particles can accumulate and where pests would find harbourage. 	
		<ul style="list-style-type: none"> • Whenever possible, equipment should have rounded corners and edges to prevent workers bruising themselves. 	
		<ul style="list-style-type: none"> • Equipment should be installed so that workers can follow a logical workflow and clean and sanitize thoroughly. Some portable equipment makes cleaning easier and should be used when possible. 	
		<ul style="list-style-type: none"> • There should be established and documented preventive maintenance programme to service the facility (pack house), equipment and processing utensils with the goal of preventing food product contamination. 	

		<ul style="list-style-type: none"> Repairs and maintenance should always be completed in an effective and timely manner. Records of inspections and maintenance activity should be a part of a SSOP 	
L	Product Traceability and Recall A system must be in place to trace a batch or batches of produce back from the farm where it was grown and supplied in case of any food safety problems.		
		<ul style="list-style-type: none"> The traceability system should include the following; <ul style="list-style-type: none"> ✓ Written product withdrawal and recall policy; ✓ Defined recall process, including a recall action team; ✓ Proper coding of packaged product units ✓ Proper complaint handling procedures ✓ A system of notification for farm (company) personnel, customers and regulatory agencies; ✓ A means to recover food products ✓ A means to properly dispose of the food products to prevent reentry into the food chain. 	
		<ul style="list-style-type: none"> Producers (facilities) should maintain accurate records of lot or batch numbers assigned to products 	
		<ul style="list-style-type: none"> Lot or batch numbers should be incorporated into distribution documents such as shipping manifest or bills of lading to facilitate product tracking, and copies of these records should be held for at least the shelf life of the product. 	
		<ul style="list-style-type: none"> Producers (companies) should periodically test the effectiveness of the trace and recall programme through mock recall exercises and the results of these exercises summarized, documented and maintained on file. 	
		<ul style="list-style-type: none"> Producers (facilities) should maintain accurate records of lot or batch numbers assigned to products 	
		<ul style="list-style-type: none"> Lot or batch numbers should be incorporated into distribution documents such as shipping manifest or bills of lading to facilitate product 	

		tracking, and copies of these records should be held for at least the shelf life of the product.	
		<ul style="list-style-type: none"> • Producers (companies) should periodically test the effectiveness of the trace and recall programme through mock recall exercises and the results of these exercises summarized, documented and maintained on file. 	
		<ul style="list-style-type: none"> • Specifically for a GAP certified programme, the following applies; <ul style="list-style-type: none"> ✓ Procedures for separation of certified and non-certified products; ✓ Procedures to ensure that all final products originating from a certified production process are correctly identified. ✓ Final checks are undertaken to ensure that the correct product dispatch of certified and non-certified products. ✓ Appropriate identification procedures in place, and records for identifying products purchased from different sources (e.g. other producers) available for all registered products. ✓ A procedure to demonstrate mass balancing should be available. 	
M	Compliant Handling		
	Management of complaints will lead to an overall better production system.		
		<ul style="list-style-type: none"> • The producer should have a complaints procedure available to both internal and external issues covered by the GAP standard. 	
		<ul style="list-style-type: none"> • The procedure must ensure that complaints are adequately recorded, studied, and followed-up, including a record of actions taken. 	

Annex 3: Extract from Crops Base GLOBALG.A.P. Checklist

No	Control Point	Compliance Criteria	Level (Evaluation)
CB	Crops Base		
CB 1	<p>Traceability</p> <p>Traceability facilitates the recall/withdrawal of foods, flowers and ornamentals and enables customers to be provided with targeted and accurate information concerning implicated products</p>		
CB1.1	Is GLOBALG.A.P. registered product traceable back to and trackable from the registered farm(and other relevant registered areas) when it has been produced and, if applicable handled	There is a documented identification and traceability system that allows GLOBALG.A.P. registered products to be traced back to a registered farm, or, or for a farmer group, to the registered farms of the group, and tracked forward to the immediate customer (one step up, one step down). Harvest information should link batch to the production records or the farms of specific producers. Produce handling should also be covered, if applicable. No N/A.	Major must
CB 3	<p>Soil Management and Conservation</p> <p>Good soil husbandry ensures the long term fertility of the soil, aids yield and contributes to profitability. Not applicable in the case of crops that are not grown directly on the soil (e.g. hydroponics, potted plants).</p>		
CB3.2	Have soil maps been prepared for the farm	The types of soil are identified for each site, based on a soil profile or soil analysis or local (regional) cartographic soil type map	Recom.
CB3.5	Does the producer use techniques to reduce the possibility of soil erosion	There is evidence of control practices and remedial measures (e.g. mulching, cross lines techniques on slopes, drains, sowing grass or green fertilizers, trees and bushes on borders of sites) to minimize soil erosion (e.g. water, wind).	Minor must

Annex 4: Guidance for Preparing a GAP Internal Control Questionnaires

Guidance for questions is given for each of the seven general characteristics of internal control

1) Training and experience personnel; questions relating to

- Experience and training of the producer/grower
- Experience and training of workers
- Knowledge of GAP plan, food safety policy, health regulations, standards and codes

2) Clearly defined responsibilities; questions relating to

- Farm organizational chart
- Job descriptions
- Worker handbook

3) Division of duties; questions relating to

- Job descriptions
- Delegation of authority
- Specific training

4) System of authorization; questions relating to

- Authority for approval of GAP plan, QMS
- Authority for making changes to documentation
- Internal and external audits
- Corrective Action Request
- Traceability issues
- Complaint investigation

5) Important documentation; questions relating to

- GAP plan and QMS
- Farm management record keeping book
- Control points and criteria

6) Internal verification; questions relating to

- Inspections
- Internal and external audits
- Management review meetings and plans for performance improvement

7) Protective measures; questions relating to

- Physical security of farm and pack house
- Calibration of equipment
- Physical safety systems for pesticide handling and disposal

Annex 5: Summary of GLOBALG.A.P. Requirements for a QMS

1. Legality, Administration and Structure

Legality

There has to be documentation, to show that the applicant is or belongs to a legal entity, and that the legal entity is entitled to carry out agricultural production or trading, and be able to legally contract with and represent the group members and production sites.

The legal entity has to enter into a contractual relationship with GLOBALG.A.P. and meet all contractual requirements and that a single entity can only operate one QMS per crop per country.

Producers and Production Sites

There are requirements for Producer Members of Producer Groups including:

- i. Written contracts (to include identification, production commitments and other information) in force between each producer member and the legal entity .
- ii. Producer group registered members are legally responsible for their respective production sites, although this takes place under the common QMS of the group.
- iii. Members of a producer group are not legal certificate holders.

There are requirements for Production Sites in Option 1 Multi-sites and include the following;

A production site is defined as a production area (e.g. fields, plots) that is owned or rented and managed by one legal entity, and where the same input factors are used. One site may contain several non-touching areas (areas that do not share a common border are non-contiguous) and production of more than one product on the same site is possible. All production sites where products are include in GLOBALG.A.P. Certification have to be identified and registered.

The production site must be owned or rented and under the direct control of the legal entity. Where production sites are not owned by the legal entity, it must be clearly documented that the site owner has no input into the decision making process governing operations of the site. There must be contract between the owner and legal entity to include name of certificate holder or producer and also the site owner and legal identification, contact details of both parties and site production information. The certificate holder is responsible for all the registered production.,

Producer and Site Internal Register

A register has to be maintained of all contracted group member produces and of all the applicable sites used for production in accordance with the GOLBALGAP Standard.

Requirements for producer Groups

For each producer, the register must contain, among other things, identification, contact and production and internal inspection information.

Those producers of the legal entity who do not apply to be included in the GLOBALG.A.P. Group Certification must be listed separately and are not required to be registered in the GOLBALGAP Database

2. Management and Organization

The QMS must be robust and ensure that the group's registered members or production sites comply in a uniform manner with the GLOBALG.A.P. Standard requirements.

Structure

The structure should enable the appropriate implementation of a QMS across all registered producer members or production sites.

The applicant should have a management structure and sufficient suitably trained resources to effectively measure that the requirements of GLOBALG.A.P. are met by all producers and at all production sites. The organizational structure should be documented and include individual responsible for: Managing the QMS; the internal inspections of each producer member and production site annually (i.e. internal inspector (s)); the internal audit of the quality management system and verifying the internal inspections (i.e. internal auditor). There should be at least one person in the QMS structure (e.g. internal auditor) who is responsible and able to train the internal inspectors and producers; technical advice to the group (depending on the scope of the group).

The management must give internal auditors and inspectors sufficient authority to make independent and technically justified decisions during the internal controls.

Competency and Training of Staff

The competency requirements, training and qualifications for key personnel (producers and producer groups, but also any other identified personnel) should be defined and documented. These qualification requirements also apply to external consultants.

The management must ensure that all personnel with responsibility for compliance with the GLOBALG.A.P. standard are adequately trained and meet the defined competency requirements.

Records of qualifications and training should be maintained for all key personnel (managers, auditors, inspectors, etc.) involved in compliance with GLOBALG.A.P. requirements to demonstrate competence.

If there are more than one internal auditor or inspector, they must undergo training and evaluation to ensure consistency in their approach and interpretation of the standard (e.g. by documented shadow audits/inspections).

Systems must be in place to demonstrate that key staff are informed and aware of development, issues and legislative changes relevant to the compliance with the GLOBALG.A.P. standard.

3. Document Control

All documentation relevant to the operation of the QMS for GLOBALG.A.P. compliance has to be adequately controlled. This documentation should include, but is not limited to: the quality manual; GLOBALG.A.P. operating procedures; working instructions; recording forms; relevant external standards, e.g. the current GLOBALG.A.P. normative documents

Policies and procedures must be sufficiently detailed to demonstrate compliance checks of the requirements of the GLOBALG.A.P. Standard.

Policies and procedures must be available to relevant staff and producer group registered members.

The contents of the Quality Manual should be reviewed periodically to ensure that it continues to meet the requirements of the GOLBALGAP Standard and those of the applicant. Any relevant modifications of the GLOBALG.A.P. Standard or published guidelines that come into force should be incorporated into the Quality Manual within the period given by GLOBALG.A.P..

Document Control Requirements

There has to be a written procedure defining the control of documents, including review and approval before issue, when changes are made, identification, and removal of obsolete documents.

Records

There must be records to demonstrate effective control and implementation of the QMS and compliance with the requirements of the GOLBALGAP Standard. Records should be kept for a minimum of two years and stored (can also be stored electronically) and maintained in suitable condition and are accessible for inspection.

4. Complaint Handling

The applicant must have a system for effectively managing customer complaints and the relevant part of the complaint system should be available to the producer member. There should be documented procedure that describes how complaints are received, registered,

identified, investigated, followed up and reviewed to cover both the applicant and individual producers which has to be available to customers as required.

5. Internal Quality Management System Audit

The QMS for the GOLBALGAP Scheme has to be audited at least annually and internal auditors must comply with the requirements set by GLOBALG.A.P. and also independent of the area being audited.

Records of the internal audit, audit findings and follow up of corrective actions resulting from an audit must be maintained and available. The completed QMS checklist with comments for every QMS control point should be available on site for review by the CB auditor during the external audit.

The organization (producer group or multi-site company) must have completed and signed the Food Safety Policy Declaration.

6. Internal Producer and Production Site Inspections

Inspections have to be carried out at each registered producer (and corresponding production sites) or production site at least once per year against all relevant GLOBALG.A.P. Control Points and Compliance Criteria. The internal inspectors must meet prescribed requirements and independent of area being inspected.

The inspection report generated should contain the following information: Identification of registered producer and production site(s); signature of the registered producer or production site responsible; date; inspector name; registered products; evaluation results against each GLOBALG.A.P. Control Point; details of any non-compliances identified and period for corrective action; inspection result with calculation of compliance; duration of the inspection; name of internal auditor who approved the checklist.

The internal auditor (or audit team) must review and make the decision on whether the producer or site is compliant with the GLOBALG.A.P. requirements, based on the inspection reports presented by the internal inspector.

7. Non-Compliances, Corrective Action and Sanctions

There should be a procedure to handle non-compliances and corrective actions, which may result from internal or external audits or inspections, customer complaints or failures of the QMS. There should be documented procedures for the identification and evaluation of non-conformances and non-compliances to the QMS by the group or by its members, respectively.

Corrective actions following non-compliances must be evaluated and a timeframe defined for action and the responsibility for implementing and resolving corrective actions has to be defined.

A system of sanctions and non-conformances that meets the requirements define in the GLOBALG.A.P. General Regulations Part I has to be operated with producers or production sites and mechanisms must be in place to notify the Certification Body immediately of suspensions or cancellations of registered producers or production sites. Records should be maintained of all sanctions, including evidence of subsequent corrective actions and decision-making processes.

8. Product Traceability and Segregation

There should be a documented procedure for the identification of registered products and to enable traceability of all products, both conforming and non-conforming, to the applicable production sites. A mass balance exercise should be carried out, at least annually, per product to demonstrate compliance within the legal entity.

Products meeting the requirements of the GLOBALG.A.P. Standard and marketed as such must be handled in a manner that prevents mixing them with non-GLOBALG.A.P. approved products and effective systems and procedures have to be in place to prevent any risk of mislabelling of GLOBALG.A.P. certified and non-certified products and GLOBALG.A.P. products must be identified with a GLOBALG.A.P. Number (GGN).or other established reference..

In case of parallel production/parallel ownership, the QMS will ensure that all final ready-to-be-sold products (either from farm level or after products handling), originating from a certified production process are correctly identified with a GGN. In case of Option 2, it will be the GGN of the group and may include additionally the GGN of the source. In case of Option 1 multi-site, it will be the GGN of the individual producer. The GGN should be used on the smallest individually packed unit, regardless if it is a final consumer packaging or not. The GGN should not be used to label non-certified products. This is not applicable only when there is a written agreement available between the producer and the client not to use the GGN on the ready to be sold product. This can also be a client's own label specification where a GGN is not included.

There must be a final document check to ensure correct product dispatch of certified and non-certified products and all transaction documentation (sales invoices, other sales related, dispatch documentation, etc.) related to sales of certified product to include the GGN of the certificate holder and contain a reference to the GLOBALG.A.P. certified status.

Procedures should be documented and maintained, appropriately to the scale of the operation, for identifying incoming certified and non-certified products from members of the group or sites of the Option 1 multi-site producer or purchased from different sources (i.e. other producers or traders). Records must be kept.

Sales details of certified and non-certified products must be recorded, with particular attention to quantities delivered/sold as certified and descriptions provided. The Product

Handling Units (PHUs) included in the QMS certification scope shall operate procedures, which enable registered products to be identifiable and traceable from receipt, through handling, storage and dispatch.

9. Withdrawal of Product

Documented procedures, including (identification of types of event that may lead to a withdrawal, responsibility for withdrawal decision, mechanism for notifying customers and GLOBALG.A.P. Certification Body, and methods of reconciling stock) has to be in place to effectively manage the withdrawal of registered products.

The procedure should be capable of being operated at any time and has to be tested in an appropriate manner at least annually.

10. Subcontractors

Where any services are subcontracted to third parties, procedures must exist to ensure that these activities are carried out in accordance with the requirements of the GLOBALG.A.P. Standard. Records must be maintained to demonstrate that the competency of any subcontractor is assessed and meets the requirements of the standard.

Subcontractors should work in accordance with the group's QMS and relevant procedures and this has to be specified in service level agreements or contracts.

11. Registration of Additional Producers or Production Sites to the Certificate

New producers and sites may be added (subject to internal approval procedures being met) to a certificate in effect. It is the responsibility of the certificate holder (group or multi-site) to immediately update the Certification Body on any addition or withdrawal of producers or sites to/from the list of registered producers.

12. Logo Use

The producer/producer group should use the GLOBALG.A.P. word, trademark or logo and the GGN according to the General Regulations and according to the Sublicense and Certification agreement. Those marks must never appear on the final product, on the consumer packaging, or at the point of sale, but the certificate holder can use any or all in business-to-business communication.

Annex 6: Two Suggested Schemes for Determining Sample Size*

Population Size	Minimum Sample Size
2-8	All
9-15	9
16-25	10
26-50	13
51-90	20
91-150	32
151-280	50
281-500	80
501-1200	200
1201-3200	315
3201-10,000	500

Population Size	Suggested Minimum Sample Size(%)		
	A*	B*	C*
2-10	100	100	30
11-25	100	39	17
25-50	53	21	16
51-100	26	13	9
101-250	17	12	6
251-500	13	5	3
501-1000	6	3	2
Over 1000	2-3	2	1-2

A* Suggested minimum sample size for a population being reviewed that is considered to be extremely important in terms of verifying compliance with applicable requirements or is of concern to the organization in terms of potential or actual impacts of non-compliance.

B* Suggested minimum sample size for a population being reviewed that will provide additional information to substantiate compliance or non-compliance, or is of considerable importance to the organization in terms of potential or actual impacts associated with non-compliance.

C* Suggested minimum sample size for a population being reviewed that will provide ancillary information in terms of verifying overall compliance with a requirement.

*Adapted from Arthur D. Little, Inc. (1988); Environmental, Health, and Safety Auditor's Handbook

Annex 8: Key Principles of Audit Report Writing

1) Shorten Phrases

- Use as few words as possible in communicating your thoughts;
- Do not write sentences that are too complicated and try and use one modifying clause

Examples:

Poor

On a weekly basis
A variety of options
During the course

Improved

Weekly
Various options
During

2) Use the Appropriate Verb Tense

- As a rule the an audit report should be written in the past tense;
- In context, the present and future tense may be appropriate on occasions;
- Strive to write sentences in the same tense; As a rule of thumb, if findings reflect a past event, use the past tense and if findings reflect a current or ongoing situation then use the present tense.

Poor

(Past situation)

Daily inspections are not documented
During May 2014

Improved

Daily inspections were not documented
during May 2014

(Current situation)

Pest control logs were not documented

Pest control logs are not being documented

3) Avoid the use of Spit Infinitives

Poor

The goal is to quickly achieve.....
The members were to routinely meet.

Improved

The goal is to achieve quickly.....
The members were to meet routinely.

4) Use verbs as Verbs and Nouns as Nouns

- It is a poor practice to use a verb as a noun or vice versa. (e.g. the noun container is often misused as a verb; “The shipment was containerized”.
- Verbs camouflaged as nouns or adjectives should also be avoided.

Poor

The collection of samples is performed
according to procedures

Improved

Samples are collected according to
procedures

The change will have an improved level of awareness

The change will improve awareness

5) Distinguish between Adjectives and Adverbs

- Misuse can lead to misinterpretation

Poor

The driver drove slow

Improved

The driver drove slowly

The report was proper in being filed

The report was filed properly

6) Avoid Switching from Active to Passive Tense (or vice versa)

Poor

We visited the pack house where many different types of chemicals were observed

Improved

We visited the pack house where we observed many types of chemicals

7) Use singular Verbs with Nouns Joined by ‘or’

Example;

Poor

*One or the other of the two auditors **have** made **their** report.*

Improved

*One or the other of the two auditors **has** made **his** report.*

8) Avoid use of ‘due to’

- Due is an adjective and should modify only a noun or pronoun
- Should not be substituted for ‘owing to’, ‘because of’, or ‘on account of’, all familiar compound prepositions.

Example;

Poor

*The farm received a citation **due to** several Exceptions noted in the pack house*

Improved

*The farm received a citation **because of** several exceptions noted in the pack house*

9) Avoid Dangling Modifiers

- A phrase or clause because of its position in a sentence appears to modify a word that it does not logically modify.

Poor

Having recovered the pesticide samples, the drums were segregated in the storeroom

Improved

Having recovered the pesticide samples, the operator segregated the drums in the storeroom

10) Be precise in Your Choice of Words

- Be specific and convey your thoughts in as few words as possible
- Be concise, be concrete and avoid awkwardness and obscurity

11) Avoid Misusing Words

Examples:

Affect and effect

The missing data will affect the results

The missing data will effect a delay in the presentation of the audit results

Can and May

The method may be use

Both teams can use the method

Compare to versus Compare With

The new plan will be compared to the old one

We compared the plans of pack house 1 with those of pack house 2.

i.e. versus e.g. These are abbreviated expressions for ‘id est,’ that is to say (i.e.); and ‘exempli gratia’, for example (e.g.).

The plan had several omissions, e.g.,

The plan, i.e., the removal of pesticide waste

Fewer or Less

Use fewer when referring to numbers; use less when referring to quantities or degree.

Oral versus Verbal

Oral refers to spoken language; verbal refers to all words spoken or written.

The grower has received oral authorization.

The Manager sent a verbal agreement.

Annex 9: Corrective Action Request (CAR) Form

Classification of Non-conformance: Major: Minor:

Problem Noted:
.....
.....
.....
.....

Root Cause:.....
.....
.....

Temporary Action Taken:
.....
.....
.....

Long Term Corrective Action:
.....
.....
.....

Assigned to:

Due Date:.....

Reviewed by:..... Date:.....

Was Corrective Action Effective: Yes..... No:.....

Comments:.....
.....
.....
.....
.....

Status of Corrective Action: Open: Closed:

Annex 10: Some Sample Forms for Record Keeping

Form 1-General Data of Farm Owner/User

Data for Year:.....

Farmer's Name: (Mr./Mrs./Ms) Family Name:.....

Farmer Address:

Street/Locality:..... District:.....

Country:.....

Farmer Registration No..... Size of Farm.....(Acres)

Number of Planting Plots:.....

Plot No:..... Planting Plot Code:.....

Plot Address:

Name of Community/Locality:.....

Agricultural Region (if applicable):.....

District:

Contact Person or Representative

(Mr./Mrs./Ms):..... Family Name:.....

Address

Street/Locality:.....

District:.....

Tel:.....

Form 2- General Data of Farm Owner/User (Location of Plots and Map)

Data for Year:.....

Farmer's Name: (Mr./Mrs./Ms) Family Name:.....

Farmer Address:

Street/Locality:..... District:.....

Country:.....

Farmer Registration No..... Size of Farm.....(Acres)

Number of Planting Plots:.....

Plot No:..... Planting Plot Code:.....

Map showing plot location, access route, location of crop (s) and farm facilities (e.g. worker toilets, pack house/storage, pesticide storage, eating area, waste disposal/storage receptacle(s), hand washing station (s) N
↑

Form 3- General Data of Farm Owner/User – Site and Crop Production Details

Planting Plot No: **Operating Year:**

Planting Plot Address:
.....

Crop (s).....

Variety	Spacing.....	No. of Plants.....	Date of Planting.....
Variety	Spacing.....	No. of Plants.....	Date of Planting.....
Variety	Spacing.....	No. of Plants.....	Date of Planting.....
Variety	Spacing.....	No. of Plants.....	Date of Planting.....

History of Production Area Before Present Planting of the Past 2 Years

Area has been Cultivated: Yes..... No.....

If Cultivated, type of cultivation: Year 1:.....
Year 2:

Soil:

Soil Properties: With Analysis Without Analysis.....

Soil Type: Recommended for Use: Yes No:

With Amendments Without Amendments:.....

Type of Soil Amendment:

.....

.....

History of Plant Pest Infestation and Eradication:

Pest Name:..... Infestation Year: % Infestation Area:..... Eradication:.....
(Yes/No)

Pest Name:..... Infestation Year: % Infestation Area:..... Eradication:.....
(Yes/No)

Pest Name:..... Infestation Year: % Infestation Area:..... Eradication:.....
(Yes/No)

Water:

Water Quality With Analysis..... Without
Analysis:.....

Type of irrigation System:..... Irrigation Rate: L/hr

Form 5-General Premises, Field and Pack House Sanitation Records

Inspection	Day/Date					Comments
Are premises and fields well maintained and free of litter and debris						
Pre-harvest assessment of crop production area						
Toilets and changing facilities functional and clean						
Eating area clean and food waste properly disposed of.						
Hand wash stations functional with all accessories						
Field waste well maintained for disposal						
Pack house in good repair and is kept clean						
Pack house well lit and ventilated as necessary						
Pack house garbage well stored and disposed of						
Pack house free of pest or signs of pests						
Rodent and insect control measures are in place						
Packaging material properly stored						
All chemicals used are properly stored (under lock) and labelled						
Workers well attired for the operations involved in						
Chemicals mixed according to procedures and chemical waste properly disposed of						
Water sources are safe and not contaminated						
All equipment and harvesting containers are inspected and clean						
Vehicles cleaned and sanitized						
Harvest produced are handled, packed, carried, stored and distributed under hygienic and safe conditions						
Temperature controls are maintained for safety of produce						

Water and chemicals used in post-harvest operations are safe						
Workers are trained ad follow basic hygiene rules						

Inspected by:..... **Verified by:**.....
Date:..... **Date:**.....

Verified by:- _____

Job Title: _____

Verified by:.....

Job Title:.....

Other (specify)

Type	Date Received	Quantity Received (Kgs/Litres)	Received by	Total on Hand (Kgs/Litres)	Quantity Used (Kgs/Litres)	Date Used	Balance (Kgs/Litres)	Comments	Checked By (Signature & Date)

Checked by:.....

Job Title:.....

Forms 11 (a & b): Pesticide Application Records

(a) Records of workers applying Pesticides	
Name of Applicator	
Commencement date of farm employment	
Experience in operation undertaken	
Date of training	
Area (Topics) covered in training	
Name of Trainer and Institution	
Date Authorized Signature.....	

(b) Records of Pesticide Application	
Crop (variety, product code , etc.)	
Date of planting	
<u>Name of pesticide used</u>	
<u>Location of application</u>	
<u>Date of application</u>	
<u>Nature of problem</u>	
<u>Period of time before harvest</u>	
<u>Name of person responsible for application</u>	
<u>Date of last calibration of equipment used</u>	
<u>Quantity of pesticide applied</u>	
<u>Pesticide pre-harvest interval</u>	
Date..... Authorized Signature.....	

Annex 11: Options for Certification under GLOBALG.A.P.

Certification Options

For GLOBALG.A.P. certification, the term ‘producer(s)’ refers to persons (individuals) or businesses (company, individual producer or producer group) that are legally responsible for the production processes and the products of the respective scope, sold by those persons or businesses.

Producers can apply for certification using any of two (2) options (individual or group certification under GLOBALG.A.P. or a benched scheme.) The options are based on the constitution of the legal entity apply for certification. Only GLOBALG.A.P. is considered there.

Option 1- Individual Certification

- a) Individual producer applies for certification
- b) The individual producer is the certificate holder once certified

Option 1 – Multi-site without Implementation of a QMS

- a) Individual producer or one organization owns several production sites that do not function as separate legal entities.

Option 1 – Multi-site with Implementation of a QMS

- a) Individual producer or one organization owns several production sites that do not function as separate legal entities, but where a QMS has been implemented
- b) In this case the Quality Management Systems (QMS) rules will apply.

Option 2 – For Producer Groups

- a) A producer group applies for group certification
- b) The group, as a legal entity is the certificate holder once certified
- c) A group should have a QMS implemented and comply with the QMS Rules.

Registration and Assessment Process

Registration

Any producer looking to be certified must first be registered. The applicant should, as a first step, choose a GLOBALG.A.P. approved Certification Body (CB) relevant to the scope of certification, information which is available on the GLOBALG.A.P. website.

The chosen CB is responsible for the registration of the applying producer in the GLOBALG.A.P. database, data updates, and collection of fees.

The application of the producer must cover specified information and by registering, the applicant commits to comply with the certification requirements at all times, the communication

of data updates to the CB and the payment of the applicable fees established by GLOBALG.A.P. and the CB.

Assessment

In order to achieve certification, a registered party must perform either a self-assessment (Option 1 and Option 1 Multi-site without QMS) or internal inspections/audits (Option 1 Multi-site with QMS and Option2) and receive inspections/audits by the chosen certification body.

During any of these assessment, except the self-assessment, comments have to be supplied for all **Major Musts** and all non-complaint and not applicable **Minor Must** Control points. Major Musts and Minor Must are discussed later in the manual.

Option 1 – Single Sites and Multi-sites without QMS

To be followed by applicants that are single legal entities (individual producer or company) with single production sites or multiple production sites operated under one legal entity without a QMS.

Assessments are to be undertaken before the certificate is issued (initial evaluation) and annually thereafter (subsequent evaluations). The assessments to be undertaken are summarized below.

Type of Assessment	Initial Evaluations	Subsequent Evaluations
Self-assessment by producer	1. Entire scope (all registered sites)	1. Entire scope
Externally by the CB	2. Announced inspection of entire scope	1. Announced inspection of entire scope 2. Unannounced inspection (minimum 10% of certificate holders)
	3.	

Self-assessments under Option 1 must:

- i) Cover all registered sites, products and processes under the certification scope to verify compliance with the requirements defined in the applicable control points (details in section...);
- ii) Be conducted by or under the responsibility of the producer;
- iii) Be conducted before the initial inspection and thereafter at least annually before announced subsequent inspections against the complete checklist (Major and Minor Musts and Recommendations) of all relevant scope(s) and sub-scope(s) and registered areas. The completed checklist must be available on site for review at all times;
- iv) The self-assessment checklist must contain comments of the evidences observed for all non-applicable and non-compliant control points.

Certification Body Inspections under Option 1 must:

- i) Be announced and unannounced and carried by a CB inspector or auditor;
- ii) The CB has to inspect the complete checklist of the applicable scope (s) and sub-scope(s);
- iii) The inspection must cover
 - a) All accepted products and production processes
 - b) All registered production sites
 - c) Each registered product handling unit
 - d) Where relevant, the administration sites

Option 2 and Option 1 Multi-sites with QMS

- Applicable to groups and individuals with multiple sites who have implemented a QMS that complies with requirements set out in GLOBALG.A.P. regulations.
- Applicant is responsible for ensuring that all producers and production sites under the certification scope comply with the certification requirements at all times.
- The CB inspects only a sample of producers or production sites and it is the responsibility of the applicant to determine the compliance of each producer or production site. The CB will assess whether the applicant's internal controls are appropriate.
- The summary of assessments to be undertaken before a certificate is issued (initial evaluation) and annually thereafter (subsequent evaluation) is presented below.

Type of Assessment	Initial Evaluations	Subsequent Evaluations
Internally by the producer group and Option 1 Multi-site operation with QMS	<ol style="list-style-type: none"> 1. Internal QMS Audit 2. Internal inspection of each registered producer/production site and all product handling units 	<ol style="list-style-type: none"> 1. Internal QMS audit 2. Internal inspection of each registered producer/production site and all product handling units
Externally by the CB	<p><i>First visit</i></p> <ol style="list-style-type: none"> 1. Announced QMS audit + square root of the total number of registered central product handling units while in operation 2. Announced inspection of (minimum) square root of registered producer/production sites <p><i>Second visit (surveillance)</i></p> <ol style="list-style-type: none"> 3. Surveillance inspection of (minimum) 50% square root of 	<p><i>First visit</i></p> <ol style="list-style-type: none"> 1. Announced QMS audit 2. a) Inspection of (minimum) square root of actual number of registered producers/production sites or b) If no sanction from previous surveillance: inspection of (minimum) square root of actual number of registered producers/production sites minus the number of producers/production sites inspected during the previous surveillance inspection <p><i>Second visit (surveillance)</i></p>

	certified producers/production sites	3. Surveillance inspection of (minimum) 50% square root of the actual number of certified producers/production sites
Product Handling Inspections externally by the CB	<p><i>During first or second visit</i></p> <p>If there is only one central product handling facility, it must be inspected every year while in operation.</p> <p>When there are more than one central product handling facility, the square root of the total number of central product handling units registered must be inspected while in operation.</p> <p>Where the product handling does not take place centrally, but on the farms of the producer members, this factor has to be taken into account when determining the sample of producers to be inspected.</p>	
Unannounced QMS audits externally by the CB	Additional unannounced QMS audit of 10% of certificate holders with QMS	

QMS Audit

The audit announced or unannounced must be conducted by a CB auditor and has to be based on the QMS checklist from GLOBALG.A.P..

An announced audit of the QMS will be carried out at the initial assessment and thereafter once per annum. The audit may be conducted in two modules (i) off-site and (ii) on-site (details in section of conducting audits).

The CB should carry out additional QMS unannounced audits for a minimum of 10% of the certified producer groups and multi-sites with QMS annually. A non-conformances detected will be handled as in an announced audit.

Certification Body Producer/Production Site Inspections

A CB inspector or auditor must carry out the inspections for the complete checklist (Major Musts, Minor Musts and Recommendations) of the applicable scope(s) and sub-scope(s) during all inspections.

The inspection must cover all accepted products, production processes and where relevant the product handling units and administrative sites.

Where an initial inspection or first inspection is conducted by a new CB, as a minimum, the square root (or next whole number rounded upwards if there are any decimals) of the total number of the producers/production sites in the certification scope must be inspected before a certificate can be issued. During the validity period of the certificate, the surveillance inspection of (minimum) 50% square root of certified producers/production sites/must be carried out.

The CB should conduct subsequent announced external inspections of each producer group and multi-site annually. The inspections have to be split into two separate visits during the certification cycle with the aim of increasing the reliability of the system and must include (i) re-certification audit; and (ii) surveillance producer inspections. This does not reduce the minimum number of inspections necessary during the certification cycle.

The number of producers/sites to be inspected should be based on prescribed criteria and before a certification decision can be made, at least the square root of the total number of current producer/production sites must have been inspected during the last 12 months. A CB may take the decision to increase the sample during the surveillance inspections, if there is a need to investigate whether a non-compliance is structural or not.

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