10th EDF SPS Project

Good Agricultural Practices
AUDIT TRAINING MANUAL

CARICOM

Caribbean Regional Fisheries Mechanism

CNMSE

CARIFORUM

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GAP AUDIT TRAINING MANUAL

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October, 2016

"This action was funded by the European Union under the 10th European Development Fund – Sanitary and Phytosanitary Measures (SPS) Project being executed by the Inter-American Institute for Cooperation on Agriculture (IICA)".

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 sub-sector, 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 intended 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 with respect to 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, providing those who are going to be auditors with an understanding of the issues to be addressed in guiding and assisting 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 includes all activities relating to the production, harvesting and handling of fresh produce.

There are many GAP schemes being utilized in the region, for example, Fairtrade, Organic and GLOBALG.A.P., so a general approach is taken in the presentation of the Manual. However, it is noted that the GLOBALG.A.P. scheme is one of the more internationally recognized programmes and it is therefore referenced throughout this manual.

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 Good Agricultural Practices;
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, that 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 organisation that requests an audit. The Client can be internal or external.

Auditee: Entity or organisation (or part of an organisation) 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 organisational units that will be examined, the processes and activities that will be included, and the time period that will be covered.

GLOSSARY OF TERMS

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 organisation that audits facilities against a specific international standard or code.

The GLOBALG.A.P. definition is an organisation 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 organisation. For GAP inspections/audits it can be used by producers, producer groups, certification bodies or organisations (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 specific requirements as set out in established procedures or 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.

GLOSSARY OF TERMS

Good Agricultural Practices (GAPs): Good Agricultural Practices are a collection of principles to apply to on-farm production and post-production processes, resulting in safe and healthy food and non-food agricultural products, while taking into account economical, social and environmental sustainability. (FAO)

Hazard: Any biological, chemical, or physical agent that has the potential to cause illness or injury to workers, consumers and/or the environment.

Hazard Analysis Critical Control Point (HACCP): HACCP is a production control system for the food industry. It is a process that identifies where potential contamination can occur (the critical control points or CCPs) and strictly manages and monitors these points as a way of ensuring the process is in control and that the safest product possible is being produced. HACCP is designed to prevent rather than catch potential hazards.

Internal Controls: The various managerial means-both formal and informal-established within an organisation to help the organisation 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 out within an organisation.

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

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.

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

Non-conformance: Activities carried out that are not in accordance with 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 organisational 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 likelihood of a hazard occurring in the future.

Risk Assessment: An estimate of the probability, frequency and severity of the occurrence of a hazard or other non-conformity with regard to food safety, worker safety and pesticide safety (also called a risk analysis).

GLOSSARY OF TERMS

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 on the farm 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	Organisation of Eastern Caribbean States
EU	European Union
FAO	Food and Agricultural Organization of the United Nations
FLO	Fairtrade International
GAP(s)	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
ISSB	International Standard Setting Bodies
NC	Non-conformance
NGO	Non-Governmental Organization
OIE	World Organisation 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 GOOD AGRICULTURAL PRACTICES

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). Although the term 'GAP' is considered conceptually difficult because of the diversity 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 obtained from representatives of all stages of the food chain, to address environmental, economic and social sustainability for on-farm production and post-production processes resulting in safe and quality food and non-food agricultural products.

The primary focus of this document is on the safety and quality of fresh food products, which can may 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 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, one of the issues addressed by the World Trade Organization (WTO) Sanitary and Phytosanitary (SPS) Agreement, is 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 foodborne diseases for consumers.

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

Changes in consumer food preferences: The increased use of salad bars, eating out, street food 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 parasites—which can also be termed microbes. In some cases, microbial contamination is indirectly introduced by pests. The term 'pest' generally refers to any animal of public health importance, such as rodents, birds, and insects (e.g. cockroaches, flies and their larvae), which 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-organisms causing food contamination that can lead to foodborne 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. It is also essential to take action to ensure 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, therefore, they cannot 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. Prevention of product contamination during the production process can be achieved through:

- Proper sanitation and hygiene measures during food handling in agricultural and post-harvest operations;
- Proper washing and sanitising 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 minimise 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 corn on ground

(b) Poor hand washing practice

EXERCISE

Using your crop production and food safety knowledge, list some fruits and vegetables, the name of 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 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 minimise risks of chemical contamination of fresh products, it is important to:

- Use chemicals correctly, as per the label, and only when necessary (e.g. pesticides, fertilisers, processing and treatment agents, additives, pest control agents, antibiotics, cleaning agents);
- 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) Excess spray on tomatoes

EXERCISE

Create a table and list five items of fresh produce (fruits and vegetables). For each item, name a chemical used, describe a hazard and explain how it could 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 (pre- 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

1.3 Benefits of Using GAPs to Minimise 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 globally recognised practices applicable to all stages of the food chain to ensure the safety of all produce and personnel in the production and marketing of food.

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
• Increased market access
• 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 harmonisation 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 globalising 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' organisations, 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, which 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 organisations 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 where 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 institutionalised 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 European Union-Africa-Caribbean-Pacific (EU-ACP) horticultural trade—developed a minimal set of food safety, environmental and social standards that cover the entire 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 that 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 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 that 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 varying degrees:

- 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 into 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 fair trade 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 interests. 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 impact 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.

- improved organisation, 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 recognised 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 consumer information on the product 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 may be difficult for small farmers to comply with on an individual basis and may require adopting a cooperative approach in order to benefit from economies of scale.
- 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 that are increasingly globalised 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 Organisation 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 has been 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 organisations and extension staff, and to help farmers and markets better organise 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 Commission, World Organisation for Animal Health (OIE) and International Plant Protection Convention (IPPC), all of which play a key role in implementing and advising on trade-related sanitary and phytosanitary (SPS) measures.

There can be different scenarios with regard to GAP 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 organisations 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 SPS or TBT Agreements). 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.

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 fulfil certain requirements generally, as required by the market. Such an assurance programme may save time and money, compared to assuring each buyer individually. An example of such producer-set standards are those standards set by national producer associations under the COLEACP harmonised framework.

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 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 groups but also broad stakeholder groups, typically develop standards that involve environmental and social concerns. Standard-setting NGOs may themselves be umbrella organisations 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 use accredited 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 organisations 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.

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.

Based on the 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.

From a practical basis along the production chain, there are eight principles of good agricultural practices that are applicable.

Principle 1. Prevention of microbial contamination of fresh produce is favoured over reliance on corrective actions.

Principle 2. Growers, packers, or shippers should use good agricultural and management practices in those areas over which they have control.

Principle 3. Contamination can occur at any point along the farm-to-table food chain. The major source of microbial contamination with fresh produce is associated with human or animal faeces.

Principle 4. The source and quality of water dictates the potential for contamination.

Principle 5. Practices using animal manure or municipal bio-solid wastes should be managed closely to minimise the potential for microbial contamination of fresh produce.

Principle 6. Worker hygiene and sanitation practices during production, harvesting, sorting, packing, and transport play a critical role in minimising the potential for microbial contamination of fresh produce.

Principle 7. Follow all applicable local, regional or international regulations, standards or practices.

Principle 8. Accountability at all levels is important to a successful food safety program.

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, the implementation of GAP 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 protection of the environment and improved health and safety of workers.

CHAPTER 3

THE USE OF HACCP AND GMP AS TOOLS IN IMPLEMENTING GAP

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 Alimentarius 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 to food safety by management

The Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) 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 recognises the standards set by the the following 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 Organisation for Animal Health (OIE); and
(iii) the International Plant Protection Convention (IPPC) Secretariat.

It is through the adherence to these standards and codes at the farm level that food safety considerations begin.

Local or national food safety laws and regulations are also very important to meeting food safety requirements. These laws are developed at the national level in keeping with polices, trade arrangements, and scientifically-assessed risk to the health and safety of consumers and the environment and are in compliance with the above mentioned international standards.

Question
Can you identify any legislation or codes that pertain to GAPs in your country?

3.2 HACCP and GMPs and their Relation to GAPs

The 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 exist. Through the identification of critical control points, control measures and procedures to minimise or prevent the risks associated with the identified hazard(s) are then put in place, and appropriate records and documentation developed. HACCP helps to identify areas of risk, so it is therefore particularly useful for new operations. The use of HACCP will transform a business entity from a solely end-product testing approach towards a more preventative quality assurance approach.

Fresh fruits and vegetables are highly perishable and, in general, their quality cannot be improved after harvest. As such, producers and others in charge of fresh produce operations should focus on quality maintenance through the appropriate implementation of production and handling practices. Since contamination of fresh produce is difficult to correct through remedial action, maintenance of quality and food safety measures should be high priority.

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 Good Manufacturing Practices (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. GMPs are a set of basic food safety guidelines that are prerequisites to HACCP and, within the context of this manual, are largely applicable to post-harvest activities. GMPs are constantly changing but include areas such as worker health and hygiene, cleaning and sanitation and record keeping. In fact, the United States Food and Drug Administration (FDA) uses the term Current Good Manufacturing Practices (cGMPs) which is a more dynamic term.

Areas addressed 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, there 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 recognised 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. Oftentimes the problem may occur there and not necessarily at the farm.

Some of these areas have been identified as deficiencies 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 minimise 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 organisation 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 11:
AN OVERVIEW OF GOOD AGRICULTURAL PRACTICES (GAPS) 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 codes and guidelines generally used in the region include:

- GLOBALG.A.P., which 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 Agriculture 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 recognised 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 follows.

What is GLOBALG.A.P.?

The GLOBALG.A.P. Integrated Farm Assurance (IAF) standard covers the certification of the entire 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, recognised third party certification of primary production processes based on ISO/IEC (International Electrotechnical Commission) Guide 65. Certification of the production process—ensures 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 harmonisation, 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 harmonising interpretation of compliance criteria.

The IFA Control Points and Compliance Criteria document is separated into different sections, 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 (see Annex 1).

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, 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 Fertilisers
- Animal Exclusion and Pest Control
- Field Sanitation
- Harvesting and Post-harvest Handling of Fresh Produce (including 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.

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 so as to ensure the safe production of food and protection of the environment.

It is very important to thoroughly evaluate the history of the land that is intended for production. Land history allows the farmer to ascertain the possibility of risks to human health if these lands were to be cultivated. A number of pertinent questions should be asked and correctly answered before lands are used in the production of fruits and vegetables. It must be first ascertained whether the land was used:

- as a landfill or storage for toxic waste
- as a burial ground for either humans or animals
- to dispose of sanitary waste
- as pasture
- for mining or for extraction of oil and/or gas
- for the disposal of incineration material
- for industrial waste or mineral residues

Other information that should be considered include whether:

- The land adjacent to the intended production site was used for animal rearing
- The land has been used as a site for manure storage
- The land has been treated excessively with organic or inorganic fertilisers and /or pesticides.

The situations illustrated below show some of the characteristics to be considered in site selection.

Photo 4(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 post-harvest handling 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.

Photo 5 (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, safe and commercially practical water delivery system should be used. Growers should follow the rule that water of inferior quality is unacceptable for crop production unless remedial action is taken to reduce risk to an acceptable

level. The following are some important factors that should be taken into consideration in relation to water quality for production of fresh produce:

- Prevalence and impact of on-farm animal and loose or stray animals in the area;
- Impact of barriers to minimise 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/stabilised and natural water ways stabilised;
- 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 6a: Water for post-harvest operations must be potable

b) Not potable – Not potable - Do not use

Drinking Water on the Farm

Workers must have access to adequate potable drinking water at all times. This water should be from the recognised 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-sanitised 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 Fertilisers

Guiding Principle

The structure, fertility and biological activity of soils are fundamental to sustaining agricultural productivity. The addition of fertilisers to soils is also very important to that process. The application of fertilisers must, however, be done following safe prescribed practices and be based on crop demands. Correct application to optimise use and storage procedures to avoid loss and contamination must be followed.

Organic Fertilisers

Organic fertilisers are derived from plant material, animal manure, other animal wastes (fish emulsions, blood meal, bone meal, etc.) or from sludge (bio-solids) collected from municipal sewage treatment systems. When properly treated, organic fertilisers offer many advantages.

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 7(a) Aged Manure only applied prior to planting

(b) Composting

Inorganic Fertilisers

Inorganic fertilisers are, in most cases, salts that are produced on a very large scale through commercial chemical synthetic processes. The products themselves generally are not a source of microbiological contamination although if improperly used they can be a source of chemical contamination. However they can become contaminated through the use of unclean equipment for application or by the use of contaminated water for mixing.

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

Photo 8 (a) Is fertiliser applied properly?

(b) Is fertiliser properly stored?

4.3.6. Animal Exclusion and Pest Control

Guiding Principles

All animals, domestic and wild, including mammals, birds, reptiles, amphibians and invertebrates (such as insects, slugs and snails) are considered potential sources or vehicles for contamination of fresh produce with pathogens.

Faeces are the leading animal source of pathogens. Also, 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 minimised, and produce kept safe for consumption. The application of pesticides to protect and enhance crop yield is a common practice worldwide. A pesticide is defined as any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pests. However, consideration must be given to minimising and controlling the use of pesticides and to focus instead on pest management methods, such as Integrated Pest Management (IPM).

A pest 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 minimise risks to human health and the environment. Records of pesticide use must be kept.

Photo 9 (a) Pesticide mixing and disposal pit

(b) Personal protective equipment (PPE) for pesticide use

(c) Personal protective equipment (PPE) for pesticide use

10 (a) Designed for safe pesticide storage

(b) Improper storage of pesticide

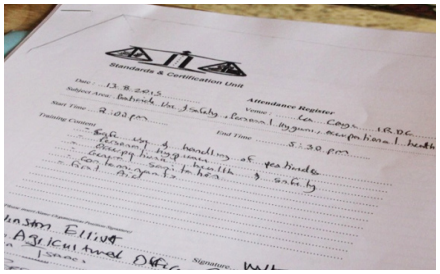


Photo 11: Pesticide training record

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 they must follow proper hygiene 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.

(a) (b) (c)

Photos 12 (a, b, c) Are these toilets adequate, appropriate, clean and well-serviced?

(a) (b) (c)

Photos 13 (a, b, c) Need for adequate hand wash stations with accessories

(a) (b)

Photos 14 (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.

(a)

(b)

(c) Poor Practice

Photos 15 (a, b): Field Waste Packaged for Removal and Disposal

4.3.8 Harvesting and Post-Harvest Handling of Fresh Produce

Guiding Principles

Harvesting of fresh produce represents the transition from GAPs to GMPs, sometimes referred to as good handling practices (GHPs). When a fruit or vegetable is detached from the plant the production phase ends and the post-harvest handling phase begins. Post-harvest handling includes trimming, washing, bunching, post-harvest chemical treatment and packaging in preparation for distribution or shipping.

Fresh produce may be exposed to food safety hazards—mainly microbiological but also physical and chemical during production, harvesting and post-harvest handling, therefore—care must be taken to avoid 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.

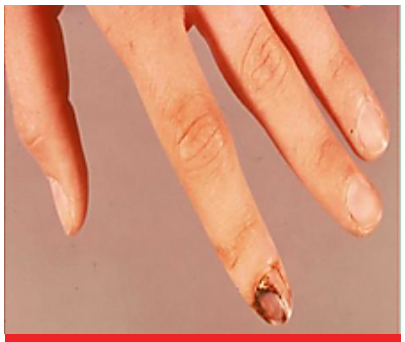


Photo 16 (a) No Exposed Sores

(b) Keep it Covered

(c) Report Illness

(a) No

(b)

Photos (17 a, b); Use Gloves

(a) No

(b)

18 (a, b) Keep Crates Clean before and during use

Post-harvest Operations

The producer must ensure that any post-harvest treatment (chemical or non-chemical) for fresh produce is done in accordance with local (or international where applicable) food safety regulations and guidelines. Where chemicals have to be used, a competent and recognised authority must make the determination on the safety of each chemical. Water used 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 recognised as an essential control point for fresh produce. The storage and transportation of produce must be conducted under hygienic and sanitary conditions.

Photo 19: Vehicles for transport of produce must be clean

Photo 20 (a): Keep the area clean

(b) Not organised

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 impact 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 need 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; and drinking water.

Photo 21: Appropriate signage for personal hygienic practices

Worker Safety and Welfare

Guiding Principle

Worker welfare and safety is of paramount importance. A designated member of the management team 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; minimising 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.
- A training schedule must be developed and implemented.
- Training may be conducted both on the farm and externally.

Guiding Principles for Record Keeping

Keeping records of all farm operations is very important, and is an important aspect of GAP and GMP. 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 prescribed GAPs. The following are examples of what must be recorded:

- Manure/fertiliser application
- Land history (physical description of the soil, crop history, soil amendment history)
- Field and shed sanitation policies and standard operating procedures (SOP)
- Personal hygiene policies
- Training schedule
- Water test results
- Pesticide usage (type of pesticides and dates of application)

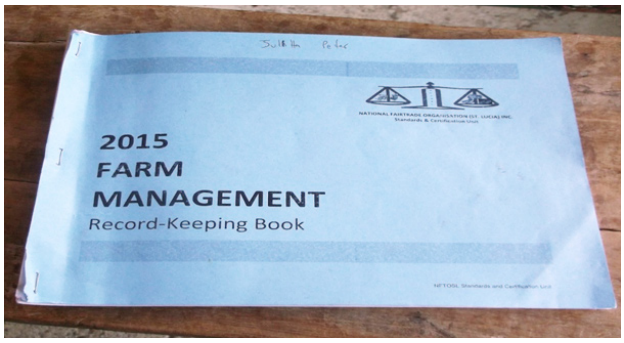


Photo 23: Records are very important for maintaining and auditing the GAP System

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.

- There must be a well-defined process and schedule for cleaning and sanitising all field equipment, including but not limited to cutting tools, buckets, bins, trailers, field packing machinery and any other harvest aid or accessory.

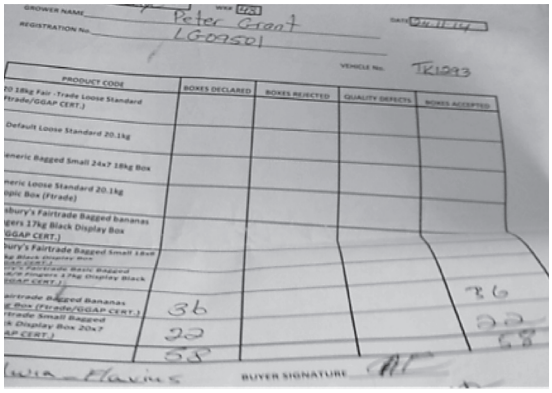
- Field vehicles, including trucks, tractors and trailers used for fruits and vegetables, should never be used for the transport of animals or animal products; manure in particular. This could lead to cross contamination of the produce.
- Packing and storage facilities should be in good repair. They should be inspected regularly for damage to the roof, walls, floors, windows, doors and door seals, lighting, structural support and any other part of the physical plant.
- Chemicals, such as pesticides and fertilisers, should be stored in a safe area (locked and accessible only to designated persons).
- Facilities should be designed so that they are easy to clean and sanitise.

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 to protect the consumer from exposure to the product(s). The alert for a product recall may come from a number of organisations, including the product supplier or supplier association.

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 in place or whether 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. A check should be made to see what is in place to avoid contamination, injury or harm.

When considering the risk assessment, remember:

- a **hazard** is anything that may cause harm, such as chemicals, microbes, 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.

4.4.1 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 worker 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 labels, manufacturers' instructions or data sheets for chemicals and equipment, as they can be very helpful in identifying potential hazards.
- Review prior incidence 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:

- Is it possible to get rid of the hazard altogether?
- If not, how can the risks be managed so that harm is unlikely?

In trying to managing risks consider:

- trying a less risky option;
- preventing access to the hazards;
- organising work/tasks to reduce exposure to the hazard;
- issuing personal protective equipment;
- providing welfare facilities such as first aid and washing facilities; and
- involving and consulting workers to be sure that what is being proposed 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 the significant findings regarding the hazards, how people might be harmed by them, 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 sanitise).

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; and
- 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.
- Training of employees on how to control identified risks.
- Conduct regular checks to ensure that the control measures remain in place.
- Clearly defined responsibilities – who will lead on what action and by when.

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
- Problems were identified by workers
- Anything was learnt from accidents or near misses
- Risk assessments 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 111:
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 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. In some cases, the entire farm may be audited. In this situation, consideration is given to an integrated farm assurance 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.

5.2 Types of Audits

An audit may be defined based on who authorises 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 utilised.
- **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 organisation, regulators, certification body) on your own organisation.
  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:** 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
• Product

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".*

This is different 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 organisation 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 the effectiveness of an established system (e.g. GAP Plan)
➢ To assess compliance with the organisation's own corporate policy
➢ To ensure compliance with regulations/ legislation
➢ To identify and minimise potential risks
➢ To develop procedures to reach objectives
➢ To assess or control a specific problem
➢ To achieve certification

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 organisation works in order 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: This consists of a desk review of documentation pertaining to the QMS by the certifying body (CB) before the audit.

Module 2. On-site activities: This 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.

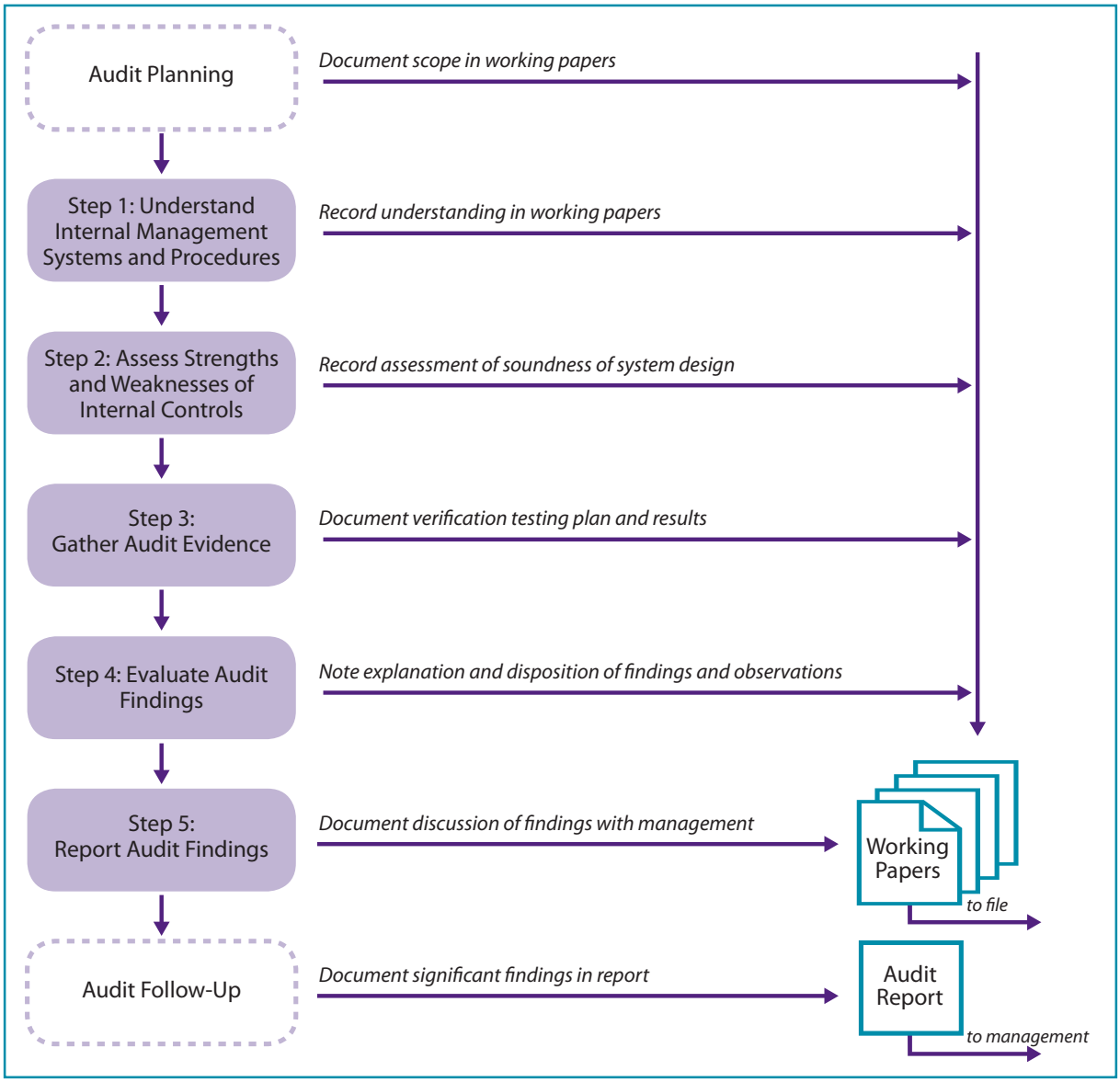


Figure 1: Basic Steps in the Typical Audit Process
(Adapted from Arthur D. Little, Inc. (1988); Environmental, Health, and Safety Auditor's Handbook)

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, organise, and conduct one or more audits.

Step 1. Understanding Internal Management Systems and Processes: Developing 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 the 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 the 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.)
- Selection of lead auditor—if the team consists of two or more persons
- Scan of material—preliminary check of documents
- Selection of team—based on nature and complexity of audit and the technical capabilities of the individual members

- Plan of 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 3) 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 norms . 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 an overall lead auditor 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, the 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.

Part	Description
Auditee	Identifies the organisation/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

Table 1: Parts of the Audit Plan

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 works 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 polices 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; and
- 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 the 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 lead to complacency on the part of the auditors who may 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 4.

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 quality management system of the organisation during the planning and preparation stage of the audit. Usually, a major part of this review is an off-site activity that 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 an established standard checklist does not exist.

An initial document review also enables:

- A 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 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 suggested template for a detailed itinerary 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**	**Organisation Process Description**	**Standard Clause**	**Auditor Allocation**
9:00	Farm house	Opening meeting		
9:30				
4:00 - 4:30	Farm house	Closing meeting		

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 (such as 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 an internal controls questionnaire (see Annex 5 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 QMS refers to the organisational 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. (Summarised descriptions of the parameters are presented in Annex 6.)

1. Legality, administration and structure
2. Management and organisation
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 certified
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. The audit must also be conducted by trained and qualified auditors. 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 organisation 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 conducted within an organisation, 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 the organisation. 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. It also requires an understanding of the extent to which the auditors can rely on the organisation'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 assurances 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 minimise potential conflicts of interest.
4. **Adequate systems of authorisation.** 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 is described below.

7.1 Auditor Tools and Final Preparation

The trained auditor will know that it is necessary to be 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)

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.

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.)

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

This chapter deals with the opening meeting and gathering audit evidence, 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 may vary based on the type of audit), takes place at the farm and sets the tone for the data gathering phase. It is attended by a representative of the auditee and all members of the audit team. The meeting clarifies the roles and responsibilities of both the auditee (the 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.

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 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.

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/he wishes to interview
    - Ensuring the auditor follows all applicable corporate policies and procedures, including safety rules
    - Communicating to the organisation 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 familiarisation 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 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 organisation 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, to review the audit schedule, 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 Auditees

In most audits, a significant amount of the time is spent with the auditee (staff), interviewing them and making observations to collect evidence. As such, auditors must recognise 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 emphasise 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.
• The auditor must take relevant notes to ensure 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 would 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 organisation 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, which 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, auditee documents, industry best practice, or regulatory requirements, etc.).
- Do the operations being conducted appear staged?

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 equipment, materials and products …… …… …… ……

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 by which this is done is called sampling.

If the sampling method does not adequately represent the population under review, the information gathered may 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 are selected in an organised, 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 using a random number table to select the items that are to be reviewed, or (ii) items are chosen 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 will be chosen to review?
    - Sample size can be determined either statistically or on the basis of 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, although sometimes the entire population may be used based on the requirements of the audit.
    - Where a sample size smaller than 10% has 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 7.
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 selecting a particular sampling strategy, method and size?
   This provides assurance to management that a reasonable audit was conducted and ensures quality control of the sampling process.

CHAPTER 8
EVALUATING AND REPORTING AUDIT FINDINGS AND THE EXIT MEETING

8.1 Evaluating Audit Results

The 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 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 which the audit concludes should be addressed).

All of the facts must be discussed in the final analysis meeting and each finding must be developed into a clear and concise statement of the problem, linked to the 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 must determine if the problems are **major or minor** in effect and then the non-conformance drafted accordingly.

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

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

Objective evidence should be 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 organisation will deliver a plan that will be used to remove the root cause of the findings. Nevertheless, 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) **Summarise 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 summarised. 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 as follows:
   "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, 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 summarise exceptions and observations:** The auditor (or audit team) should review the list of exceptions and observations and develop an integrated, organised 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 sometimes not done or are 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. 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 a written exit meeting discussion sheet for review by the team (as applicable) prior to the exit meeting. The purpose of the exit meeting discussion sheet is to provide an organised, complete, written summary of the exceptions noted by the auditor(s).

In preparing the sheet, attention should be paid 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 editorialising.
- 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 the conduct of the audit. The person may also have relevant questions and comments.

An example of an exit meeting discussion sheet is presented in Annex 8.

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 ensures that management clearly understands the results before the end of the audit. The meeting usually consists of persons who attended the opening meeting. Sometimes higher levels of management attend the exit meeting.

There should be an agenda (see Box 10) 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.

Box 10

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 audit, 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 will be available
   - Acknowledge help given by facility staff

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 of the meeting are kept.

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 should be a special follow-up.

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 recipients of the report (bearing in mind the report is targeted towards a number of persons, 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 actions, 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 miscommunication 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 organisation 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 to be made, 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 detained in Annex 9.

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 organisation 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 organisation/facility
- Develop a solution for the non-conformance
- Develop a plan and schedule to correct the deficiency
- Implement the plan within an agreed time frame
- Implement any new control measures
- Verify the effectiveness of the corrective action
- Develop preventive action
- Implement preventive action within an agreed time frame
- 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 organisation 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 a 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 re-evaluate the entire situation. If further action is to be taken, the auditor can:

- Re-issue the same corrective action
- Issue a new corrective action
- Escalate the corrective action by taking it to higher-level management or emphasising the importance to the client.

It is important to note that if audit findings indicate the frequent application of the same corrective actions or corrective actions that have been issued for the same non-conformances, the auditor should suspect that the corrective action process is not functioning in an effective manner. Some organisations 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 that activities carried out are not in accordance with the established procedures or requirements of a particular standard. A non-conformance may be minor or major.

A minor non-conformance may be categorised 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 with 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 categorised 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; or
- A total breakdown of the 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 the 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

An **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 categorising 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-fulfilment 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 member and the process managed using a **corrective action request (CAR)** form (see Annex 10).

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 organised 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 (audit notes) on the checklists (or on a notepad). Information recorded should include:

- Activities that do not adhere to prescribed requirements, 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 is able 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 the source will convince the auditee that the audit was done based on facts obtained through documents, records, observations or tests rather than on personal 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 other 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 observations 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 verify once they have been finalised.
- Keep an exhibit list with numbers and descriptions 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, unresolved issues are addressed 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 to 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 unresolved issues. 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 with which a GAP Auditor Should be Familiar

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 for the GAP auditor to have a general idea of what documents, forms and records are required in advance. This would help in the review process and gathering audit evidence.

Some records to be kept are as follows:

- General data of farmer – name, farmer registration number (where applicable), contact information
- General data of farmer – location of plots and maps

- General data of farmer – site and crop production details
- Worker employee records
- Premises, field and pack house sanitation records
- Employee training records
- Individual employee training record
- Agrochemicals inventory stock sheet
- Data record for plant pest survey and application of pesticides
- Fertiliser application records

Sample forms for record keeping are attached in Annex 11.

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 also a mechanism for formal endorsement of the producers' compliance with recognised 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-recognised certification schemes such as GLOBALG.A.P., Fairtrade and Organic production standards. The options for certification under the GLOBALG.A.P. system are presented in Annex 1.

11.2 Basic Steps in a GAP Certification Process

In general, the process of certification for any 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 recognised authority.

3. ***Review of Application and Requested Documents.*** This is done by the recognised authority which advises on follow-up activities.

4. ***Initial Assessment (optional).*** This is for a farm enterprise that may not be sure if it is ready for certification but would like to determine its status regarding implementation of the applicable standard.

5. ***Assessment.*** 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 to 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.

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ANNEXES

Annex 1: 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) The group must 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, using information which is available on the GLOBALG.A.P. website.

The selected 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 complying 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: Individual Certification 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 must be supplied for all **Major Musts** and all non-complaint and not applicable **Minor Must** Control points. Major Musts and Minor Must are discussed 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)

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
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; and
iv) contain in the checklist 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 out by a CB inspector or auditor;
ii) inspect the complete checklist of the applicable scope (s) and sub-scope(s); and
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

- This is applicable to groups and individuals with multiple sites, which have implemented a QMS that complies with requirements set out in GLOBALG.A.P. regulations.
- The 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	1. Internal QMS Audit 2. Internal inspection of each registered producer/production site and all product handling units	1. Internal QMS audit 2. Internal inspection of each registered producer/production site and all product handling units
Externally by the CB	***First visit*** 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 ***Second visit (surveillance)*** 3. Surveillance inspection of (minimum) 50% square root of certified producers/production sites	***First visit*** 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 ***Second visit (surveillance)*** 3. Surveillance inspection of (minimum) 50% square root of the actual number of certified producers/production sites

Product Handling Inspections externally by the CB	***During first or second visit*** If there is only one central product handling facility, it must be inspected every year while in operation. When there are more than one central product handling facilities, the square root of the total number of central product handling units registered must be inspected while in operation. 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.
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. Any 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 should 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 the 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.

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**	• Seed records must be kept to indicate variety, purity, germination, batch number, supplier and country of origin	
		• All seed treatment (products) applied, should be recorded, together with the pest/disease targeted	
		• Seeds must be handled carefully to avoid contamination	
		• Planting material must be stored according to the manufacturers' instructions in order to prevent damage or contamination	
B. Soil and Land Selection 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.			
B.1	***Land Selection, Site History and Management***	• Land for crop production should be selected based on previous land usage/history/capability/suitability, including impact of production on other adjacent crops and surrounding areas (e.g. residential, schools).	
		• Test sites for contaminant(s) if land history is unavailable/ unknown.	
		• All new sites for cropping must have the results of a risk assessment in its dossier.	
		• Crop production sites should be a suitable distance from livestock operations, including feeding points to avoid animal and waste contamination.	
		• Check sites for possible, biological, chemical or physical hazards.	
		• Run-off/contaminated water should not be allowed to enter fields; erosion kept to a bare minimum and cultivation techniques to minimise soil erosion must be adopted.	
		• 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**	• Prepare land/soil using techniques to improve/maintain soil structure and avoid compaction.	
		• Avoid over tillage.	
		• Prepare soil maps prior to planting to include the soil types and physical structure based on the soil classification for each production area.	
		• The planned production should be in-keeping with the soil map recommendations.	
		• The planned production activity must be sustainable and environmentally friendly.	
C. Environmental Protection, Biological Diversity and Landscape Conservation in Production 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 diversity, ensure landscape conservation during agricultural production and generally create a balance between economic, social and environmental goals.			
		• Consider environmental management in the farm management plan.	
		• Consider risk mitigation strategies in agricultural production.	
		• Identification and conservation of wildlife habitats and landscape features (e.g. special species of trees, rock formation).	
		• Creation, as far as is practicable, of a diverse cropping system.	
		• Minimisation of the impact of operations such as tillage and agrochemical use on wildlife.	
		• Management of the water resources and surrounding wetlands in a manner to encourage wildlife and prevent pollution.	
		• Monitoring those species whose presence on the farm is evidence of good agricultural and environmental practice;	
		• Actively support programmes designed to preserve and enhance the national, regional and cultural heritage, including adherence to land use plans and practicing sustainable agriculture.	
D. Agricultural Water 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 and the use and disposal of waste water is required.			
D.1	**General Water**	• There must be a systemic method of predicting crop water requirement. This would avoid excessive or insufficient water application thereby maintaining crop quality.	
		• Water quality assessment/analysis must be carried out once yearly at minimum, to avoid contamination by microbial, chemical, mineral or other pollution hazards.	
		• Where irrigation is used, the irrigation system should be one that is efficient and financially practical thereby ensuring the efficient use of the water.	
		• Water extraction must be sustainable.	

		• Water is needed for many field operations, including irrigation, application of pesticides and fertilisers, rinsing/ washing and cooling; 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: ✓ Proper channelling 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 used as well as yield per unit of cultivated land; ✓ Implementation of a water management plan to optimise 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 fertilisers and pesticides must not be contaminated with microorganisms at levels that affect consumption safety.	
D.2	**Water Sources, Harvesting and Storage** Water used in the production process must be from sources that are safe and free from contamination of hazardous substances. The water quality must be suitable for the intended agricultural purpose.	• Are water sources identified and water-conservation and harvesting methods (tanks, dams) in place before planting?	
		• 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 harvesting practices must be safe, sustainable and pose no risk to the environment.	
		• Water samples should be collected and submitted for testing when environmental conditions are risky to use such water.	
		•Water storage facilities should be well protected and safe.	

D.3	**Water for Production of Fresh Produce** The most efficient and commercially practical water delivery system should be used to optimise the utilisation of the water resource.	The origin of water being used and control options to ensure consistency of supply must be determined from the following. • Prevalence and impact of animals on farms as well as loose or stray animals in the area; • Impact of barriers to minimise 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/stabilised and natural water ways stabilised; • Biochemical characteristics in particular microbial, chemical, mineral pollution; • Documented records of water quality analyses and water quality ratings.	
D.4	**Water Quality for Processing of Fresh Produce**	• Periodic sampling and testing of water; water must be potable;	
		• Keeping water storage or water contact equipment in a clean and sanitised condition;	
		• Development of SOPs/cleaning and sanitary schedules for all equipment, including frequency, cleaning practice and post-cleaning hygienic inspection;	
		• Developing and applying SOPs to cover a preventative maintenance schedule for important water storage and transportation equipment.	
		• Implementing measures that minimise microbial contamination;	
		• Undertaking routine inspections of all equipment and facilities designed to obtain or maintain recommended water quality;	
		• Applying chemical substances that disinfect food and water in the prescribed manner, according to regulations and the manufacturer	
		• Maintenance of appropriate records for the above.	
D.5	**Drinking Water on the Farm**	• Water for drinking must be potable and obtained from the recognised national water authority. Water quality data must be obtained from the authority or other approved sources on a regular basis	
		• If water for drinking is derived from other sources, the quality must be verified by an approved authority who will also advise on any treatment that may be necessary.	
		• If storage is necessary, it must be done in clean, previously-sanitised 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 Fertilisers The structure, fertility and biological activity of soils are fundamental to sustaining agricultural productivity. The addition of fertilisers to soils is also very important to that process. The application of fertilisers must however be done following prescribed practices.			
E.1	**Organic Fertilisers**	• At no time should raw untreated human sewage sludge be used in any form of crop production.	
		• Any land ear-marked for agricultural production on which treated human sewage sludge have been deposited should first undergo laboratory analysis in order to establish that such lands are free of pathogens and other compounds which may have an adverse effect on human or crop health, soil quality, ground water or wildlife.	
		• The use of raw manure should not be encouraged, however if applied, it must be done approximately two (2) weeks prior to planting or 120 days prior to harvesting. Raw manure must never be used for foliar application.	
		• All manure should be stored in an appropriate manner to avoid contamination of the environment (including waterways).	
		• Manure should be in a form that facilitates easy application (spread on soil surface or mixed with the soil).	
		• Manure storage or treatment sites must be situated away from production, handling areas, water source, 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 its source.	
		• Manure heaps should always be covered.	
		• Equipment that comes into contact with untreated manure must be cleaned and sanitised.	
		• Manure application should be based on soil nutrient status, crop nutrient requirement and the desire to improve soil texture	
		• Workers with open sores, boils or open wounds must not handle manure.	
		• Worker who handles manure should receive appropriate vaccinations.	
		• A data record sheet containing the following must be filled: ✓ Source of the manure ✓ Treatment applied to the manure prior to use. ✓ Is treatment passive (passage of time) or active (pasteurisation, heat drying, etc.) ✓ Amount used. ✓ Date of application. ✓ Place applied. ✓ Responsibility for the application ✓ Contribution of manure to the nutrient requirement of the crop. • Identification of chemical, microbial and other hazards and related hazard control measures	

E.2	**Inorganic Fertilisers**	• A soil analysis of the cropping area must be done prior to fertiliser application.	
		• A nutrient management plan must be developed to ensure maintenance of the nutrient status of the soil.	
		• The frequency, quantities and method of inorganic fertilisers should be recommended by qualified personnel based on scientific analysis of the crop and soil. Fertiliser application must therefore satisfy the crop requirement and maintain soil nutrient status.	
		• Data recording of the application should include the following:- ✓ Date of application ✓ Quantity and type applied ✓ Method of application ✓ Type of applicator ✓ Weather condition when applied ✓ Where/ location of application	
		• All fertilisers must be stored in the original package.	
		• All fertilisers must be protected from unfavourable weather conditions.	
		• Fertiliser must always be stored away from fresh produce and other farm materials.	
F. Animal Exclusion and Pest Control Both domestic and wild vertebrate animals and invertebrate pests are major sources of food safety hazards, mainly biological and to a lesser extent physical. These vertebrates and invertebrates are vehicles for disease-causing (pathogenic) microorganisms and pose a major threat to fresh produce. The presence of dead insects or insect parts on fresh produce constitutes a physical hazard.			
F.1	**Animal Exclusion**	• 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.	
		• 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.	
		• 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.	
		• Do not allow field workers to bring their pets into operation areas.	
		• Crop production areas must be monitored regularly for the presence or signs of wild/ domestic animals entering the crop production areas.	
		• Wild and or domestic animals should be restricted from entering the cropping area by sustainable and environmentally friendly measures.	
		• Dispose of dead animals promptly and properly via burial or incineration.	

F.2	**Pest Control**	• There should be an established system for pest and disease control and monitoring of results	
		• Does the pest and disease control system ensure that the minimum of toxic substances are released into the environment	
		• Is an IPM approach used for pest and disease control	
F.3	**Proper use of pesticides**	• Pesticides must only be used on the crops for which they are labelled and registered.	
		• The recommended intervals and rates for the various pesticides must be followed.	
		• All persons applying pesticides must wear proper protective clothing.	
		• All unused pesticides must be disposed of in a safe manner.	
		• Labels on all pesticides must be properly read and followed.	
		• All pesticides should be properly stored and away from the crop production area.	
		• All empty pesticides containers must be washed several times (at least three times) and dispose of in the proper manner.	
		• The necessary safety equipment for persons handling or applying pesticide must be made available.	
		• First aid kits must be available.	
		• Equipment for application of pesticides must be properly calibrated.	
		• Equipment used for the application of pesticide must be washed on completion of task.	
		• Workers should receive regular medical checks and appropriate records kept.	
		• The withdrawal period for all pesticide must be followed at all times.	
		• Producers should be aware of all restrictions of pesticides on crops harvested for export or domestic consumption.	
		• Records of pesticide application must be kept.	
		• All obsolete pesticides should be disposed of in the recommended manner.	
		• 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**	• A pre harvest assessment of the crop production area should be performed and documented. The risks should noted and assessed.	
		• 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.	
		• Toilet facilities should be adequately ventilated and should guarantee privacy.	

		• 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.	
		• Potable drinking water devices, toilets and hand washing facilities must be maintained and cleared regularly	
		• Are these units located to minimise risk of product contamination and are well placed and easily identifiable for cleaning or servicing?	
		• Are these units easily located for cleaning and or servicing?	
		• There should be a response plan in place in the event of any serious risk e.g. damage to structure, spill.	
		• Eating and smoking are confined to designated areas.	
G.2	**Field Sanitation**	• Harvest and storage facilities should be cleaned and sanitised as required before use.	
		• The harvest and storage facility should be properly inspected for signs of pests e.g. insects, birds, rodents, slugs/ snails.	
		• All damage and unwanted containers should be properly discarded.	
		• All containers used to transport fresh produce should be cleaned before use.	
		• All dirt and soil should be removed from fresh produce before leaving the field.	
		• Systems should be put in place to ensure produce that have already been washed, cooled and packaged does not get contaminated in the process.	
		• Crop growing conditions should not harbour pest.	
		• All unwanted plant and crop material should not be left in the crop production area.	
H. Harvesting and Post-harvest Handling of Fresh Produce			
H.1	**Proper Harvesting and Field Packing**	• To guarantee acceptable good quality of fresh produce, harvesting must be done using specified commodity standards agreed upon for each commodity or specified by the trading partners.	
		• 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.	
		• 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.	
		• Workers involved in harvesting of produce must be trained in basic hygiene before handling of fresh produce.	
		• Fresh produce should be cooled to remove field heat	
		• Fresh produce should be packed in clean, sanitised and appropriate containers to transport from the farm.	

		• Accurate and precise records of harvest, storage and processing of the commodity should be maintained.	
		• It is the responsibility of the producer to ensure that the fresh produce is kept in the best quality before reaching the buyer.	
		• 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	
		• Containers used in the transportation of fresh produce must be kept clean and free from odour, soil, insects, and debris.	
		• Containers for moving or transport of pesticides or fertilisers must be separated from those for produce to protect the product from biological, chemical and physical contamination.	
		• Harvested produce or crates should not sit on the bare ground or floor	
H.2	***Post-harvest Operations*** Post-harvest operations may take place in the field or produce taken to the pack house for post-harvest processing operations.	• The producer must ensure that any post-harvest treatment required for the fresh produce is acceptable by the trading partner.	
		• 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: ✓ Crop/product ✓ Location ✓ Date of application ✓ Trade name of chemical ✓ Type and quantity of treatment used ✓ Name of operator	
		• Water used in the harvesting and post-harvest operation of fresh produce must be potable water.	
		• 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 recorded and kept.	
		• All workers involved in the loading and unloading of fresh produce during transportation must adhere to basic hygiene and sanitation practices.	
		• Produce inspectors, buyers and other visitors should also comply with established hygiene practices before coming into contact with produce and processing areas.	
		• Vehicles used in the transportation of fresh produce must be kept clean at all times.	
		• Appropriate temperatures should be maintained to ensure both the quality and safety of fresh produce;	
		• Pack houses, processing and storage facilities where post-harvest operations are carried out should be in good repair.	
		• Produce should be loaded unto vehicles and transport cartons in a manner that will minimise damage	

I. Worker Health, Safety and Hygiene			
I.1	Health and Hygiene	• There should be documented personal hygiene and sanitation polices and accessible to all	
		• Workers must be trained in good hygiene practices	
		• Supervisors must be familiar with and know the importance of signs and symptoms of infectious diseases.	
		• Infected workers must not handle or come into contact with fresh produce and other materials or equipment.	
		• Visitors to the farm should follow good hygiene practices.	
I.2	Worker Safety and Welfare	• Workers must be trained in the operation of all dangerous or complex equipment on the farm.	
		• Accident and emergency procedures exist, are prominently displayed and clearly understood by all.	
		• Workers must adhere to established safe work procedures and instructions for the safe and efficient use of tools and machinery.	
		• First aid kits should be available on a permanent site not too far from the work field.	
		• Workers in the field should have access to proper sanitary facilities in order to prevent risks of microbial contamination of produce.	
		• Potable water for consumption by workers must be available at all work sites.	
		• All hazards on the farm must be clearly identified by warning signs where appropriate	
		• All workers must be provided with the appropriate personal protective equipment (PPE) when the task being undertaken require them	
		• The employment conditions of farm workers engaged in fresh produce production and processing should comply with national regulations and international conventions as appropriate.	
I.3	**Health, Hygiene and Safety Training**	• All farm workers must be trained in the following areas ✓ Good hygiene practices for handling of fresh produce. ✓ First aid for skin cuts, bruises, wounds, etc. ✓ Pest and disease control measures. ✓ Waste disposal methods. ✓ Proper handling, storage, application and disposal of pesticides and fertilisers. ✓ Use of farm facilities. ✓ Use of farm equipment.	
		• Documented records of training of each employee must be kept	
J. Training and Record Keeping			
J.1	**Training**	• In addition to the obvious training areas identified, training needs should be assessed and adequate and appropriate training provided to workers.	
		• Training can be conducted both on the farm and externally and a schedule for training must be available.	

J.2	**Record Keeping**	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.	
		• The Recording System should include the following ✓ 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 kept. ✓ A risk assessment plan based on the prior use of the land and surrounding areas. ✓ A management plan based 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 which would contribute to sustainable soil use. ✓ All fertilisers i.e. organic/ inorganic must be recorded. ✓ In the case of inorganic fertilisers, type, quantity must be recorded. ✓ Its use should be based on soil nutrient status and the plant requirement. ✓ Organic fertilisers type, quantity used, origin, must be noted, in addition to the type of treatment it has been subjected too. ✓ The place and date of all fertiliser application must be recorded. ✓ The individual who applied all fertilisers 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.	
		• These records should be kept for a minimum of two years, unless stated otherwise.	

K . Farm Infrastructure			
		• Storage, processing and packing facilities should be designed to prevent contamination of food products and should be easy to clean and sanitise.	
		• 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 parts of the physical plant.	
		• Where processing and packing facilities have concrete floors, the floor should have an adequate number of drains that are properly distributed throughout the 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.	
		• 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.	
		• 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 basis.	
		• There should be appropriate, adequate and well located utilities such as water, lighting, fuel, etc.	
		• 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 sanitise material.	
		• Equipment should be durable and may also need to be resistant to heat, acid and corrosion as necessary.	
		• Equipment design should as much as possible avoid areas where food particles can accumulate and where pests would find harbourage.	
		• Whenever possible, equipment should have rounded corners and edges to prevent workers bruising themselves.	
		• Equipment should be installed so that workers can follow a logical workflow and clean and sanitise thoroughly. Some portable equipment makes cleaning easier and should be used when possible.	
		• There should be an established and documented preventive maintenance programme to service the facility (pack house), equipment and processing utensils with the goal of preventing food product contamination.	
		• 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.			
		• The traceability system should include the following; ✓ 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 recalled food products to prevent re-entry into the food chain.	
		• Producers (facilities) should maintain accurate records of lot or batch numbers assigned to products	
		• 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.	
		• Producers (companies) should periodically test the effectiveness of the trace and recall programme through mock recall exercises and the results of these exercises summarised, documented and maintained on file.	
		• Specifically, for a GAP certified programme, the following applies; ✓ 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 the correct 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. Complaint Handling Management of complaints will lead to an overall better production system.			
		• The producer should have a complaints procedure available to 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.	

Annex 3: 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	
	Planning skills	
	Objectivity	
	Empathy	

Annex 4: Extract from Crops Base GLOBALG.A.P. Checklist

No	Control Point	Compliance Criteria	Level (Evaluation)
CB Crops Base			
CB 1	**Traceability** Traceability facilitates the recall/withdrawal of foods, flowers and ornamentals and enables customers to be provided with targeted and accurate information concerning implicated products		
CB1.1	Is the GLOBALG.A.P. registered product traceable back to and trackable from the registered farm (and other relevant registered areas) where 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, 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	**Soil Management and Conservation** 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 in the soil (e.g. hydroponics, potted plants).		
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.	Recommended
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 fertilisers, trees and bushes on borders of sites) to minimise soil erosion (e.g. water, wind).	Minor must

Annex 5:
Guidance for Preparing a GAP Internal Control Questionnaire

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

1) Training and experience of 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 organisational chart
- Job descriptions
- Worker handbook

3) Division of duties; questions relating to

- Job descriptions
- Delegation of authority
- Specific training

4) System of authorisation; 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 6: 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 enter into a contract with and represent the group members and production sites.

The legal entity must enter into a contractual relationship with GLOBALG.A.P. and meet all contractual requirements and that a single entity can only operate one Quality Management System (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 that are not legal certificate holders.

There are requirements for Production Sites in Option 1; Multi-sites, which 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 included in GLOBALG.A.P. Certification must 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 the operations of the site. There must be a contract between the owner and legal entity to include the name of certificate holder or producer and also the site owner as well as 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 must be maintained of all contracted group member producers 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 GLOBALG.A.P. Database.

2. Management and Organisation

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 personnel to effectively measure whether the requirements of GLOBALG.A.P. are met by all producers and at all production sites.

The organisational structure should be documented and include individuals 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).
- training the internal inspectors and producers and providing technical advice to the group —depending on the scope of the group [e.g. internal auditor(s)]

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 GLOBALGAP. 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 must be adequately controlled. This documentation should include, but is not limited to: the quality manual, GLOBALG.A.P. operating procedures, working instructions, recording forms, and 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 GOLBALG.A.P. Standard and those of the applicant. Any relevant modifications of the GLOBALG.A.P. Standard or published guidelines that come into force must be incorporated into the Quality Manual within the period given by GLOBALG.A.P..

Document Control Requirements

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

Records

There must be records to demonstrate the effective control and implementation of the QMS and compliance with the requirements of the GOLBALG.A.P. Standard. Records should be kept for a minimum of two years and stored (they 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 a documented procedure that describes how complaints are received, registered, identified, investigated, followed up and reviewed to cover both the applicant and individual producers. This must be available to customers as required.

5. Internal Quality Management System Audit

The QMS for the GOLBALG.A.P. Scheme must be audited at least annually and internal auditors must comply with the requirements set by GLOBALG.A.P. They also have to be 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 organisation (producer group or multi-site company) must have completed and signed the Food Safety Policy Declaration.

6. Internal Producer and Production Site Inspections

Inspections must 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 must be independent of the 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 and 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; and 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 any non-compliances and corrective actions that 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 with the QMS by the group or by its members, respectively.

Corrective actions following non-compliances must be evaluated and a time frame defined for action along with the responsibility for implementing and resolving corrective actions.

A system of sanctions and non-conformances that meets the requirements defined in the GLOBALG.A.P. General Regulations Part I must be in operation 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 of all sanctions should be maintained, 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 in order to enable traceability of all products, both conforming and non-conforming, to the applicable production sites. A mass balance exercise should be carried out per product, at least annually, 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 them mixing with non-GLOBALG.A.P. approved products. Effective systems and procedures must be in place to prevent any risk of the mislabelling of GLOBALG.A.P. certified and non-certified products. 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 should 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 (see Annex 1), it will be the GGN of the group and may include, additionally, the GGN of the source. In case of Option 1 multi-site (see Annex 1), it should 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. The only time when this is not applicable is 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 the sales of certified product should include the GGN of the certificate holder and should contain a reference to the GLOBALG.A.P. certified status.

Procedures appropriate to the scale of the operation should be documented and maintained, for identifying incoming certified and non-certified products from members of the group, 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 included in the QMS certification scope must include operation procedures, which would 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) must be in place to effectively manage the withdrawal of registered products.

The procedure should be capable of being operated at any time and must 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. This must be specified in service level agreements or contracts.

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

New producers and production 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 must use the GLOBALG.A.P. word, trademark or logo and the GGN according to the General Regulations and according to the Sub-license 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 7: 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: Sample Exit Meeting Discussion Sheet

Farm …….. Functional Scope of Audit

Auditor /Audit Team Present …….

Farm Management Present ……..

Other Present …….

Discussion Date …… Prepared by ……. Reviewed by ……..

Item No	Exception	Type	I	Reference in Audit notes	Comment

R = Audit Finding – Regulatory
F = Audit Finding – Farm/Facility Policy and Procedures
O = Management System Observation
I = Internal Attention only (not for audit report)

Annex 9: 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	**Improved**
On a weekly basis	*Weekly*
A variety of options	*Various options*
During the course	*During*

2) Use the Appropriate Verb Tense

- As a rule, the audit report should be written in the past tense;
- In context, the present or 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.

Examples:

Poor	**Improved**
(Past situation)	
Daily inspections are not documented during May 2014	*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

Examples:

Poor	**Improved**
The goal is to quickly achieve…….. The members were to routinely meet.	*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.

Examples:

Poor	**Improved**
The collection of samples is performed according to procedures	*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

Examples:

Poor	**Improved**
The driver drove slow	*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)

Examples:

Poor	**Improved**
We visited the pack house where many different types of chemicals were observed	*We visited the pack house where we observed may types of chemicals*

7) Use singular Verbs with Nouns Joined by 'or'

Example:

Poor	**Improved**
One or the other of the two auditors have made their report.	*One or the other of the two auditors has made his report.*

8) 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.

Examples:

Poor	**Improved**
Having recovered the pesticide samples, the drums were segregated in the storeroom.	*Having recovered the pesticide samples, the operator segregated the drums in the storeroom.*

9) 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.

10) 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.

Examples:

The grower has received oral authorization.

The Manager sent a verbal agreement.

Annex 10: 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 11: 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)

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
Other Data: ……
……
……
……

Form 4 -Worker Employment Records

Producer/Grower Name:_____

Farm Address/Location_____

Name & Alias First name, surname	Start Date	Age	Sex	Position	Operations	Wage	Employment Status/Date Terminated	Signature	Comments

Checked by: ……. …….. Date:…….

Job Title:……..…….

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 in which they are involved						
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						
Harvested produce is 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 and follow basic hygiene rules						
Inspected by: ……..……. Verified by: ……. Date: ……. Date: ……..						

Form 6-Group Employee Training Records

Workers Name	Date Started	Job or Function	Subject	Description and Type (e.g. on-the-job, talk, accredited)	Date/ Duration	Training Provider	Date for refresher if needed	Signature of Trainee	Checked by (Signature & date)

Verified by:-_____

Job Title:_____

Form 7- Individual Employee Training Record

Name of Employee: ……..…..

Job Title: …… Supervisor: ……

Date employment commenced: …… Employment Status: ……..

Training Subject or Description	Date of Training	Training Provider & Signature	Worker Confirmation	Comments	Signature & Date of Verification

Verified by:……..

Job Title:……...

Form 8 - Agrochemicals Inventory/Stock Sheet									
Type of Agrochemical	**Grower/Producer Details** **Name of Planting Area Owner Mr/Mrs/Miss …….. Family Name……..** **Registered No of Owner/Farmers ID…… Plot No……** **Plantation Area…… Crop(s)…… Planting Plot…… Area…….. Year……..**								
Fertilizers									
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)**
Pesticides									
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)**
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)**

Form 9 - Data Record Form for Plant Pest Survey and Application of Pesticides

Grower/Producer Details:

Name of Planting Area Owner Mr/Mrs/Miss…….. Family Name……..

Registered No of Owner/Farmers ID…… Plot No.……Plantation Area……..

Crop(s)& Variety ……..Planting Plot…….. Number of Plants ……..Area…….. Year……..

Production Step	Plant Pest Survey				Pesticide Application					Other Control Method(s)	Operator
	Day/Month/Year Survey	Result			Day/ Month/ Year Used	Name of Pesticide	% Active Ingredient& Formulation	Application Rate	Total Substance Used/Planting Area		
		Plant Pest Name	Not Found	Found (amount)							

Checked by:……..

Job Title:……..

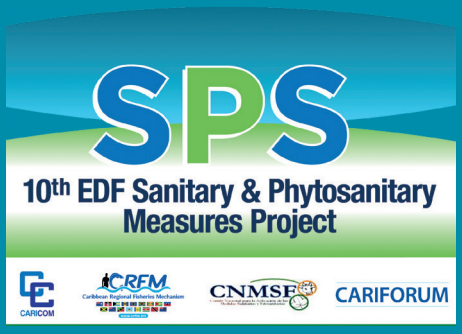
Form 10 - Fertilizer Application Records									
Date Applied	**Plot No**	**Crop(s)**	**Acreage**	**Fertilizer Type Used**	**Method**	**QuantityKgs/Lbs**	**Comments**	**Operator Name**	**Operator Signature & Date**

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	
Name of pesticide used	
Location of application	
Date of application	
Nature of problem	
Period of time before harvest	
Name of person responsible for application	
Date of last calibration of equipment used	
Quantity of pesticide applied	
Pesticide pre-harvest interval	
Date …… Authorized Signature…….	



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