GlobalGAP Handbook for Small-Scale Growers in Tanzania
July 2011

Submitted to:

Imani Women Group
c/o CNFA-Tanzania
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1. Introduction

The Imani Women Group (IWG) in Siha district, Kilimanjaro province, Tanzania, is comprised of seventy (70) active members who grow fresh beans and peas to supply to Home Vegetable Limited (HomeVeg). HomeVeg is a local fresh vegetable exporting company that ships high quality vegetables to EU customers. HomeVeg would like to expand their operations to more EU buyers, but to do so HomeVeg requires from small-scale grower groups like IWG to increase their knowledge and experience in harvesting and post-harvest handling of their crops. For IWG to sell more of their production to HomeVeg, the group needs to adopt good agricultural practices and meet export standards. Once done, it is anticipated IWG will be able to reduce the amount of their post-harvest losses from the current 20-40% to 10-15%. This will significantly increase their sales and income and help to reduce poverty among IWG members (Kissinga, 2011).

Citizens Network for Foreign Affairs (CNFA), a USAID-funded international development organization, is providing technical support to IWG on good agricultural practices through this 'GlobalGAP Handbook for Small-Scale Growers in Tanzania'. This Handbook has been specifically complied for IWG and acts as a guide to good agricultural practices addressing soil and water, plant protection, environmental and social, and farm hygiene issues. Further, this GlobalGAP Handbook accompanies training conducted for IWG in July 2011.

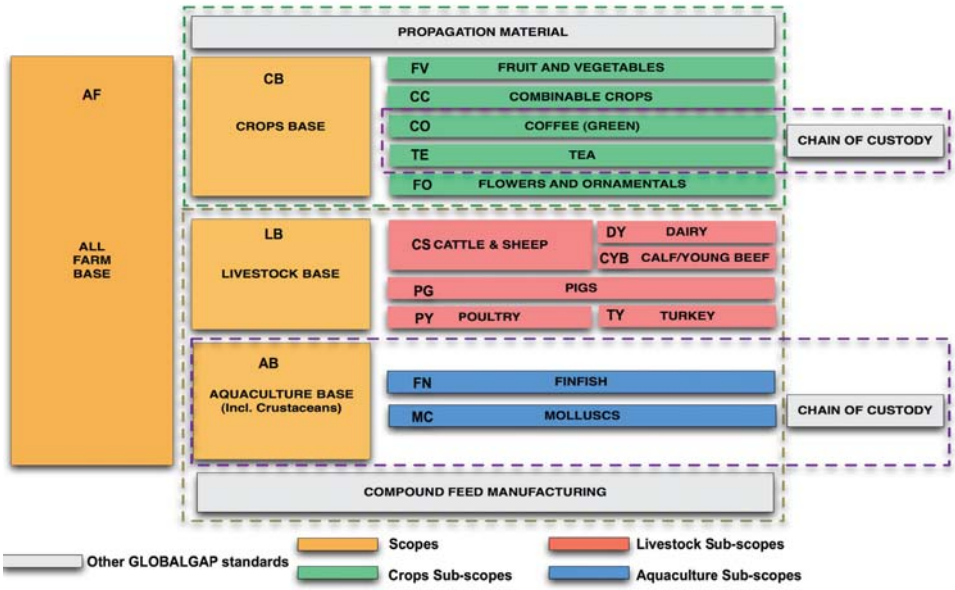
2. GlobalGAP

GlobalGAP (formerly known as EurepGAP) has established itself as a key reference for Good Agricultural Practices (G.A.P.) in the global market place, translating consumer requirements into agricultural production in a rapidly growing list of countries—currently more than 100 on every continent. GlobalGAP began as an initiative by retailers belonging to the Euro-Retailer Produce Working Group (EUREP) in 1997. British retailers, in conjunction with supermarkets in Continental Europe, were the driving force. Reacting to consumer concerns over product safety and environmental and labor standards, different farming practice standards were harmonized. Today these standards have been incorporated into the world's most widely implemented farm certification scheme. Most European customers of agricultural products now demand evidences these practices are followed as a prerequisite for doing business (GlobalGAP, 2011).

The standard is based on a hazard analysis of the production process from the seed stage to dispatch to customers, covering every process throughout the agro-marketing chain. In 2007 EurepGAP changed its name to GlobalGAP to reflect its expanding international role in establishing Good Agricultural Practices. GlobalGAP has become an important standard not only for large-scale farms but also for smallholders all around the world. GlobalGAP implementation can improve farm management practices of small-scale growers, and GlobalGAP certification can be a tool for small-scale growers to access the global market and to be integrated into the global supply chain.

The most recent version of the standard has a checklist in three sections. The first, called 'All Farms' is applicable to all kinds of agricultural operations, whether crops, animal husbandry, or aquaculture. For a fruit and vegetable grower, the 'Crops Base' is comprised of basic questions relevant for different types of agronomy in both filed and greenhouse. Questions specifically tailored for growers in certain sub-sectors, such as fresh fruits and vegetables, combinable crops (grains & pulses), flowers and ornamentals, beverage crops, etc. form the third group. Questions in each group are graded into three levels of importance: *Major* questions are mandatory; *Minor* questions must be complied with 95%, and *Recommendations* are optional. This means that a farmer has some flexibility on some requirements (Yudin & Schneider, 2008).

GlobalGAP Integrated All Farm Base Standards



Source: GlobalGAP Integrated All Farm Base Assurance Standards (2011)

Since each crop has its own unique growing conditions, with regional variations, it is impossible for the standard to cover all possible situations, but in general farms must fulfill requirements from the following areas of concern (Yudin & Schneider, 2008):

- Traceability
- Record-keeping and internal self-inspection
- Varieties and rootstocks
- Site history and site management
- Soil and substrate management
- Fertilizer use
- Irrigation/fertigation
- Crop protection
- Harvesting
- Waste and pollution management, recycling and re-use
- Worker health, safety, and welfare
- Environmental issues

The GlobalGAP standard is published as modules with slightly different versions for fresh fruits and vegetables, meat products, flowers and ornamentals, and aquaculture. The following sections cover good agricultural practices in regard to soil and water, plant protection, environmental and social, and farm hygiene issues.

2.1 Soil and Water

GlobalGAP's soil and water control points cover land preparation, fertilizer, storage, application equipment, records, and the quantity and quality of irrigation water. These control points can be found in the following GlobalGAP sections:

GlobalGAP Crop Base Module
- CB4. Soil Management
- CB5. Fertilizer use
- CB6. Irrigation/Fertigation

GlobalGAP Fruit and Vegetables Module
- FV 2. Soil and Substrate Management
- FV 3. Irrigation/Fertigation

Land

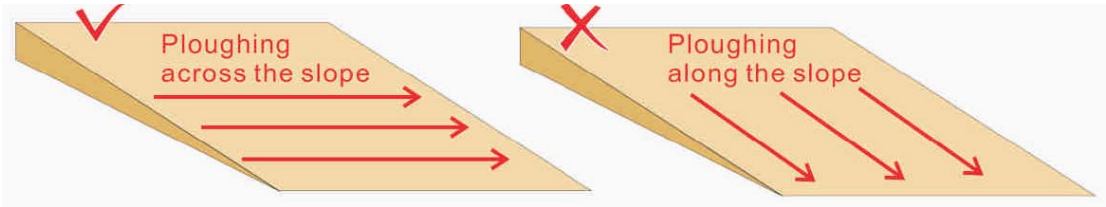
Soil is the basis of all agricultural production, and the conservation and improvement of this valuable recourse is essential. Good soil husbandry ensures long-term fertility of soil, aids yield and profitability.

No.	Control Point	Level
CB.4	**Soil management**	
CB.4.2	Have techniques been used that improve or maintain soil structure, and to avoid soil compaction?	Minor Must

Any land preparation should be done such in a way so as not to compact the soil.

No.	Control Point	Level
CB.4	**Soil management**	
CB.4.3	Are field cultivation techniques used to reduce the possibility of soil erosion?	Minor Must

Any land preparation should be done is such a way so as to avoid soil erosion. For example, if land has a steep slope, it should be ploughed across the slope instead of ploughing along the slope.



Drains and/or sowing grass or trees and bushes on borders of sites all help minimize soil erosion. If a passageway is on a slope, a ditch should be dug to divert water, since water runoff can create serious erosion.

Planting bushes or trees around the site can avoid soil erosion by wind and water.

No.	Control Point	Level
VF.1	**Soil management**	
VF1.1.1	Is there a written justification for the use of soil fumigants?	Minor Must

If you use a soil fumigant during land preparation, the application must be recorded in regard to the location, date, active ingredient, doses, the method of application, operator, justification, and pre-planting interval. The use of Methyl Bromide as a soil fumigant is not permitted.

No.	Control Point	Level
VF.1	**Soil management**	
VF.1.1.2	Is any pre-planting interval complied with?	Minor Must

If you use a soil fumigant, the pre-planting interval must be recorded. You must not plant before the pre-planting interval has expired.

No.	Control Point	Level
VF.2	**Substrates**	
VF.2.1	Does the producer participate in substrate recycling programs for substrates where available?	Recommended

A producer should keep records with quantities recycled and dates. Invoices/loading documents are acceptable. If there is no participation in a recycling program available, this should be justified.

No.	Control Point	Level
VF.2	**Substrates**	
VF.2.2	If chemicals are used to sterilize substrates for reuse, have the location, the date, of sterilization, type of chemical, method of sterilization, name of the operator and pre-planting interval been recorded?	Major Must

When substrates are sterilized on the farm, the name or reference of the field, orchard, or greenhouse must be recorded. If sterilized off farm, then the name and location of the company which sterilizes the substrate must be recorded. The following must all be correctly recorded: the dates of sterilization (day/month/year); the name of the active ingredient; the machinery used (e.g. 1000 I-tank etc.); the method (e.g. drenching, fogging); the operator's name (the person who actually applied the chemicals and did the sterilization); and the pre-planting interval.

No.	Control Point	Level
VF.2	**Substrates**	
VF.2.3	For substrate of natural origin, can it be demonstrated that it does not come from designated conservation areas?	Recommended

There should be records that prove the origin of the substrates of natural origin that are used. These records demonstrate that the substrates do not come from designated conservation areas. When possible, try to recycle the used substrates. When you recycle, record the quantity and the date.

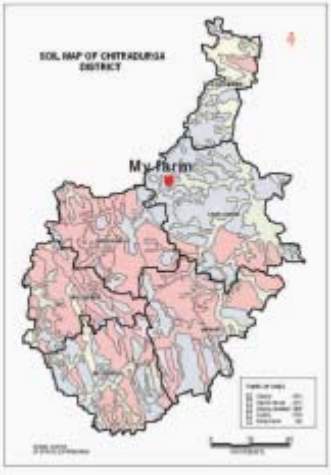
Substrates

No.	Control Point	Level
CB.4	**Soil management**	
CB.4.1	Have soil maps been prepared for the farm?	Recommended

If you apply any fertilizer in random quantity, your crop may not grow well. Money will be wasted and the environment could be contaminated. In order to apply the right type of fertilizer in the right quantity, the following information is required:

1. Nutritional needs of the crop grown
2. Nutrient level of the soil

Try to obtain a soil map of the area to be farmed and know the type of soil it has. When possible, conduct a soil analysis to determine the exact condition of soil used.



No.	Control Point	Level
CB.5	**Fertilizer use**	
CB.5.1.1	Is the application of all fertilizers done according to the specific needs of the crop and soil condition?	Minor Must

The producer must demonstrate that consideration has been given to nutritional needs of the crop and soil fertility and records of analyzes and/or other crop specific literature must be available as evidence.

No.	Control Point	Level
CB.5.5	**Organic fertilizer (N/A if no organic fertilizer)**	
CB.5.5.1	Has the use of human sewage sludge been banned on the farm?	Major Must

Human sewage sludge is not allowed on the farm.

No.	Control Point	Level
CB.5.5	**Organic fertilizer (N/A if no organic fertilizer)**	
CB.5.5.2	Has a risk assessment been carried out for organic fertilizer, which considers its source, characteristics, intended use, before application?	Minor Must

If you want to use organic fertilizer, such as manure and compost, the farm management should conduct a risk assessment of the organic fertilizer to make sure that the risks of disease, weeds, heavy metals, etc. are controlled. Documentary evidence should be

available to demonstrate that at least the following potential risks have been considered: type of organic fertilizer, method of composting, weed seed content, heavy metal content, timing of application, placement of organic fertilizer (direct contact to edible part of crop, ground between crops, etc.).

No.	Control Point	Level
CB.5.5	**Organic fertilizer (N/A if no organic fertilizer)**	
CB.5.5.3	Has account been taken of the nutrient contribution (N-P-K) of organic fertilizer applications?	Minor Must

The person who chooses the fertilizer should have undergone adequate training. If there has been no training, ask for technical advice. Keep the package of the fertilizer to have on hand the basic N-P-K (Nitrogen, Phosphorous, and Potash-Potassium) components and heavy metal contents. N-P-K numbers will be listed on fertilizer labels to correspond to the percentage of these materials found in the fertilizer.

No.	Control Point	Level
CB.5.6	**Nutrient content**	
CB.5.6.2.	Are purchased inorganic fertilizers accompanied by documentary evidence of chemical content, including heavy metals?	Recommended

Documentary evidence should be available detailing chemical content, including heavy metals, for all inorganic fertilizers used on crops grown under GlobalGAP within the last 12 month period.

No.	Control Point	Level
CB.5.2	**Advice on quantity and type of fertilizer**	
CB.5.2.1	Are recommendations for application of fertilizers (organic or inorganic) given by competent, qualified persons?	Minor Must

Fertilizer records should show that a technically responsible person has made the choice of fertilizer. If an external advisor is used, official qualifications or specific training courses will suffice as to expertise. When external advisors not used, the person determining quantity and type of fertilizer must have experience complemented by technical knowledge e.g. access to product technical literature, specific training course attendance, etc).

No.	Control Point	Level
CB.5.4	**Fertilizer storage**	
CB.5.4.8	Is there an inorganic fertilizer stock inventory or record of use up to date and available on the farm?	Minor Must

A stock inventory that indicates the contents of the fertilizer stored (the type and amount) must be available and updated at least every 3 months.

No.	Control Point	Level
CB.5.4	**Fertilizer storage**	
CB.5.4.1	Are all fertilizers stored separately from plant protection products?	Minor Must

To prevent cross contamination between fertilizers (organic and inorganic) and plant protection products (pestidices), a physical barrier should be used, e.g. wall, sheeting, etc. If fertilizers that are applied together with plant protection products (i.e. pesticides) are packed in a sealed container, they can be stored with plant protection products.

No.	Control Point	Level
CB.5.4	**Fertilizer storage**	
CB.5.4.2	Are all fertilizers stored in a covered area?	Minor Must

A covered area must protect fertilizers from sunlight, frost, and rain. Based on risk assessment (fertilizer type, weather conditions, temporary storage), plastic coverage is acceptable. Storage cannot be directly on the soil/ground. Storing lime and gypsum in the field is allowed. Bulk liquid fertilizers can be stored outside in containers as long as spillage can be prevented and the storage requirements on the safety data sheet are complied with.

No.	Control Point	Level
CB.5.4	**Fertilizer storage**	
CB.5.4.3	Are all fertilizers stored in a clean area?	Minor Must

Fertilizers, such as powders, granules, or liquids, must be stored in an area free from waste, rodents, or where spillage or leakage can occur. Bulk liquid fertilizers can be stored outside in containers as long as spillage can be prevented and the storage requirements on the safety data sheet are complied with.

No.	Control Point	Level
CB.5.4	**Fertilizer storage**	
CB.5.4.4	Are all fertilizers stored in a dry area?	Minor Must

The storage area for fertilizers should be well-ventilated and free from rainwater or heavy condensation. There should be no storage directly on the soil/ground. Bulk liquid fertilizers can be stored outside in containers as long as spillage can be prevented and the storage requirements on the safety data sheet are complied with.

No.	Control Point	Level
CB.5.4	**Fertilizer storage**	
CB.5.4.5	Are all fertilizers stored in an appropriate manner, which reduces the risk of contamination of watercourses?	Minor Must

All fertilizers must be stored in a manner which poses minimum risk of contamination to water sources (i.e. liquid fertilizer stores must be surrounded by an impermeable barrier to contain a capacity to 110% of the volume of the largest container). Consideration must be given to the proximity to water courses and flood risks, etc.

No.	Control Point	Level
CB.5.4	**Fertilizer storage**	
CB.5.4.6	Are all fertilizers stored in an appropriate manner, which reduces the risk of contamination of the environment?	Minor Must

Organic fertilizers, stored on the farm, must be stored in a designated area. Appropriate measures must be taken to prevent contamination of surface water (such as concrete foundation and walls, or specially built leak proof containers, retc.) or must be stored at least 25 m from surface water bodies on particular.

No.	Control Point	Level
CB.5.4	**Fertilizer storage**	
CB.5.4.7	Are all fertilizers stored not together with harvested product?	Major Must

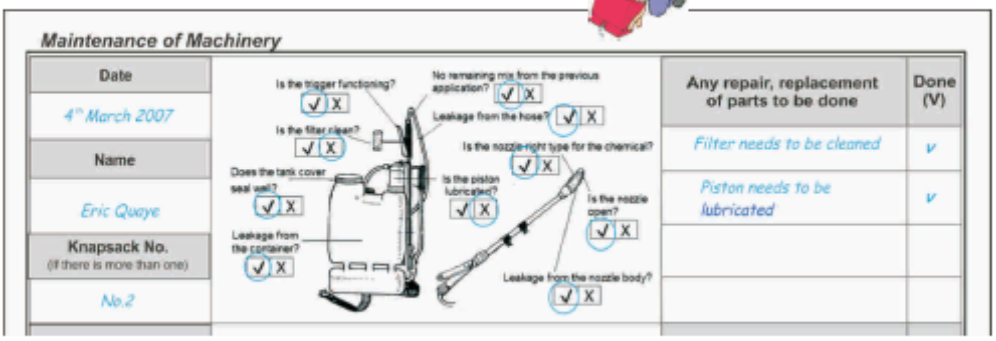
Fertilizers cannot be stored with harvested products.

No.	Control Point	Level
CB.9	**Equipment**	
CB.9.1	Are all sensitive equipment like fertilizer spreader, plant protection product sprayers, irrigation systems, equipment used for weighing and temperature control, routinely verified and where applicable calibrated at lease annually?	Minor Must

All equipment must be kept in a good state of repair with documented evidence of up to date maintenance sheets for all repairs, oil changes, etc. undertaken. For example, for a fertilizer spreader, there must be as a minimum documented records stating that the verification of calibration has been carried out by a specialized company, supplier of fertilization equipment, or by the technically responsible person of the farm within the last 12 months.

When you use a knapsack applicator/sprayer to apply soluble fertilizer, make sure the knapsack is working well before use. Also conduct calibration of the machiner to know the discharge per time or discharge per area. To do this discharge water into a measuring cup for a certain period of time—one minute, and divide the amount of the water by the time to know the discharge per second or minute.

1. Check the condition of the machinery before use.
If there is any problem, do the necessary maintenance.



Maintenance of Machinery

Date	Any repair, replacement of parts to be done	Done (V)
4th March 2007	Filter needs to be cleaned	v
Name	Piston needs to be lubricated	v
Eric Quaye		
Knapsack No. (if there is more than one)		
No.2		

Example of a maintenance form for knapsack

2. Conduct calibration of the machinery to know the discharge per time or discharge per area.

No.	Control Point	Level
CB.5.3	**Records of application**	
CB.5.3.1	Have all applications of soil and fertilizers, both organic and inorganic, been recorded including field, orchard, or greenhouse reference?	Minor Must

Records must be kept of all fertilizer applications, detailing the geographical area, the name or reference of the field, orchard, or greenhouse where the registered product crop is located.

No.	Control Point	Level
CB.5.3	**Records of application**	
CB.5.3.2	Have all applications of soil and fertilizers, both organic and inorganic, been recorded including application dates?	Minor Must

Records must be kept of the exact dates of application (day/month/year).

No.	Control Point	Level
CB.5.3	**Records of application**	
CB.5.3.3	Have all applications of soil and fertilizers, both organic and inorganic, been recorded including applied fertilizer types?	Minor Must

Records must be kept of all fertilizer applications in regard to trade name, type of fertilizer (e.g. N, P, K) or concentrations.

Plot No. 2

Fertilizer Application

Date	Fertilizer	Total amount	Area size	Application method (foliar, broadcast, side placement etc.)	Application machinery	Operator name
31st Jan 2007	MAP (12% N, 61% P) ..... UREA (46% N)..... SOP (50% K2O).....	40kg 10kg 15kg	1 acre	Broadcast	None	Gifty Blekpe

No.	Control Point	Level
CB.5.3	**Records of application**	
CB.5.3.4	Have all applications of soil and fertilizers, both organic and inorganic, been recorded including applied quantities?	Minor Must

Records must be kept of all fertilizer quantities applied in regard to the weight or volume. The actual application made must be recorded, as this is not necessary the same as the fertilizer recommend amount on the packaging.

No.	Control Point	Level
CB.5.3	**Records of application**	
CB.5.3.5	Have all applications of soil and fertilizers, both organic and inorganic, been recorded including method of application?	Minor Must

Records must be kept of all fertilizer applications in regard to method—via irrigation or mechanical distribution. If application machinery is used, this must be recorded.

No.	Control Point	Level
CB.5.3	**Records of application**	
CB.5.3.6	Have all applications of soil and fertilizers, both organic and inorganic, been recorded including operator details?	Minor Must

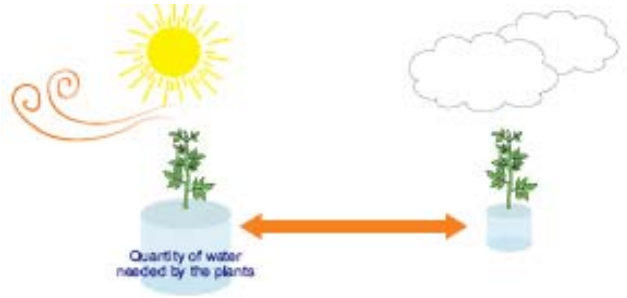
Records must be kept of all fertilizer applications in regard to the name of the operator—who applied the fertilizer. If it is a one-man operation (the producer) and the producer is doing the applications, it is acceptable to record the operator details only once.

No.	Control Point	Level
CB.6.1	**Predicting irrigation requirements**	
CB.6.1.1	Have systematic methods of prediction been used to calculate the water requirement of the crop?	Recommended

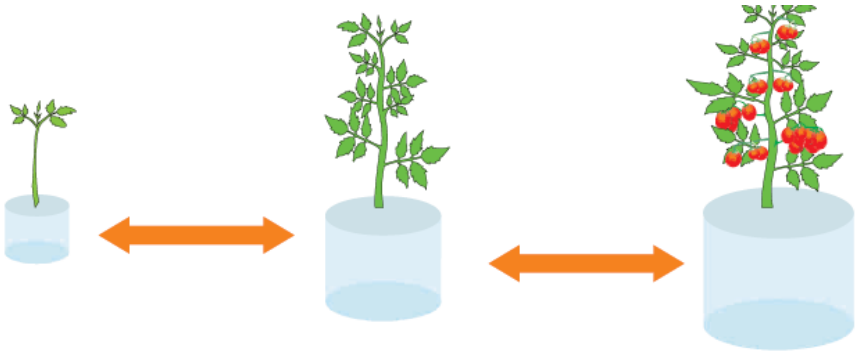
Water is a scare natural recourse and irrigation should be triggered by appropriate forecasting and by technical equipment allowing for efficient/responsible use of irrigation water.

Calculations should be supported by data records, e.g. rain gauges, drainage trays for substrate, evaporation meters, water tension meters (%of moisture in the soil) and soil maps. This data can be accumulated on a regional scale.

When weather is hot and dry and when the wind is blowing, plants need more water. When it is cloudy, they need less water.



When plants are small, they need less water. When plants grow and start to produce fruits, they need more water.



No.	Control Point	Level
CB.6.2	**Irrigation/fertigation method**	
CB.6.2.1	Can the producer justify the method of irrigation used in light of water conservation?	Major Must

The idea is to avoid wasting water. A producer must use the most efficient irrigation system technically available and financially affordable that complies with local restrictions on water usage during certain (dry) periods.

No.	Control Point	Level
CB.6.2	**Irrigation/fertigation method**	
CB.6.2.2	Is there a water management plan to optimize water usage and reduce wastage?	Recommended

This requires a written action plan that aims to optimize water usage on the farm. This can be either a regional activity or individual plan, if the farm is participating in or cover by it.

No.	Control Point	Level
CB.6.2	**Irrigation/fertigation method**	
CB.6.2.3	Are records of irrigation/fertigation water usage maintained?	Recommended

Records should be kept which indicate the date and volume per water meter or per irrigation unit. If the producer works with irrigation programs, the calculated duration of irrigation and actual irrigated water should be written down in the records.

No.	Control Point	Level
CB.6.4	**Supply of irrigation/fertigation water**	
CB.6.4.1	To protect the environment, is water abstracted from a sustainable source?	Minor Must

Sustainable water sources are those that supply enough water under normal (average) conditions.

No.	Control Point	Level
CB.6.4	**Supply of irrigation/fertigation water**	
CB.6.4.2	Has advice on abstraction been sought from water authorities, where necessary?	Minor Must

Where necessary, there must be written documentation regarding abstraction of water in the form of a letter or license, etc.

No.	Control Point	Level
CB.6.3	**Quality of irrigation water**	
CB.6.3.1	Has the use of untreated sewage water for irrigation/fertigation been banned?	Major Must

Untreated sewage and reclaimed water must not be used for irrigation/fertigation. Where treated sewage water is used, water quality must comply with WHO published guidelines for the Safe Use of Wastewater and Excreta in Agriculture and Aquaculture 1989. When there is doubt if water is coming from a possible polluted source (because of a village upstream, etc.) the grower has to demonstrate thought analysis that the water complies with the WHO guideline requirements.

No.	Control Point	Level
CB.6.3	**Quality of irrigation water**	
CB.6.3.2	Has an annual risk assessment for irrigation/fertigation water pollution been completed?	Minor Must

The risk assessment must consider potential microbial, chemical, or physical pollution of all sources of irrigation/fertigation water. The risk assessment shall at least cover: identification of the water sources, irrigation method, timing of irrigation, contact of irrigation water with the crop, and the type of crops—crops that can be eaten raw and either have no protective skin, crops that can be eaten raw and either have a protective skin that is removed before eating or grow clear of the ground, or crops that are always cooked.

If any critical problem is identified in the water analysis, water s houlkd be treated before use.

No.	Control Point	Level
CB.6.3	**Quality of irrigation water**	
CB.6.3.3	Is irrigation water analyzed at a frequency in line with the risk assessment?	Minor Must

A water analysis must be carried out at frequent intervals according to the results of the assessment, which takes the characteristics of the crop into account. Water samples should be taken at the exit point of the irrigation system or nearest a practical sampling point. At a minimum, a risk assessment of irrigation water should be conducted every year.

No.	Control Point	Level
CB.6.3	**Quality of irrigation water**	
CB.6.3.4	According to the risk analysis, does the laboratory analysis consider the microbial contaminants?	Minor Must

According to the risk analysis (if there is a risk of microbial contaminants), there must be a documented record of those contaminates through a laboratory analysis.

No.	Control Point	Level
CB.6.3	**Quality of irrigation water**	
CB.6.3.5	Does a suitable laboratory carry out the water analysis?	Recommended

The laboratory analyzing water samples should be accredited or on the way to accreditation against ISO17025 or equivalent.

No.	Control Point	Level
CB.6.3	**Quality of irrigation water**	
CB.6.3.6	If the risk analysis requires, have any adverse results been acted upon before the next harvest cycle?	Minor Must

Records should be available of corrective actions or decisions taken.

2.2 Plant Protection

GlobalGAP's plant protection points cover workers health, safety and welfare, integrated pest management, and plant protection products. Control points relating to these subjects can be found in the following GlobalGAP sections:

GlobalGAP All Farm Base Module
- AF3. Workers Health, Safety and Welfare (some control points are covered in the GlobalGAP Plant Protection Module; others are covered in the GlobalGAP Environmental and Social Module)

GlobalGAP Crop Base Module
- CB 7. Integrated Pest Management
- CB 8. Plant Protection Products

Plant Protection Products

In situations where pest attack will adversely affect the economic value of a crop, it may be necessary to intervene with specific pest control methods, including plant protection products (PPP). The correct use, handling and storage of plant protection products are essential.

No.	Control Point	Level
CB.8	**Plant protection products**	
CB.8.1.5	Do competent persons make the choice of plant protection products?	MajorMust

Where the plant protection product records show that the technically responsible person making the choice of the plant protection products is a qualified advisor, technical competence can be demonstrated via official qualifications or specific training course attendance certificates. Fax and emails from advisers, governments, etc. are allowable.

When the plant protection product records show that the technically responsible person making the choice of plant protection products is the producers, experience must be complemented by technical knowledge that can be demonstrated via technical documentation, i.e. product technical literature, specific training course attendance, etc.

No.	Control Point	Level
AF.3.3	**Training**	
AF3.3.1	Is there a record kept for training activities and attendees?	Minor Must

A record should be kept for training activities including the topic covered, the trainer, the date and attendees. Evidence of the attendance is required.

Training is key to ensure that GlobalGAP standards are implemented by everyone involved. Producers and their workers should be trained on the following:

1. Good Agricultural Practices (GAP) of the crop
2. Integrated Pest Management (IPM) of the crop
3. Safe handling of chemicals and dangerous equipments
4. First Aid

No.	Control Point	Level
AF.3.3	**Training**	
AF.3.3.2	Do all workers handling and/or administering veterinary medicines, chemicals, disinfectants, plant protection products, biocides or other hazardous substances and all workers operating dangerous or complex equipment as defined in the risk analysis in AF.3.1.1 have certificates of competence, and/or details of other such qualifications?	Major Must

Records must identify workers who carry out such tasks, and show proof of competence, certificates of training, or records of training with proof of attendance.

Workers can attend a formal training course, if it exists. If it does not exist, an organized training can be done with the workers as a group as long as the trainer is qualified. After training, workers should receive a certificate as proof of participation.

No.	Control Point	Level
AF.3.1	**Health and safety**	
AF.3.1.3	Have all workers received health and safety training?	Minor Must

Workers can demonstrate competency in responsibilities and tasks through visual observation. If at time of inspection there are no activities on-going, there must be evidence of instructions and training records. The producer can conduct the health and safety training if competence (training records, training materials) can be proven.

No.	Control Point	Level
AF.3.4	**Hazards and First Aid**	
AF.3.4.5	Are there always an appropriate number of persons (at least one person) trained in first aid present on each farm whenever on-farm activities are being carried out?	Minor Must

There should always be at least one person trained in First Aid (within the last 5 years) present on the farm whenever on-farm activities are being carried out. As a guideline: one trained person per 50 workers.

No.	Control Point	Level
CB.7	**Integrated pest management**	
CB.7.1	Has assistance with implementation of IPM systems been obtained through training or advice?	Minor Must

The technically responsible person on the farm should have received formal documented training and/or the external technical IPM consultant must be able to demonstrate their technical qualifications.

Integrated Pest Management (IPM) involves the careful consideration of all available pest control techniques and the subsequent integration of appropriate measures that discourage the development of pest populations, and keeps plant protection products and other interventions to levels that are economically justified and reduce or minimize risks to human health and the environment. Given the natural variation on pest development for different crops and areas, any IPM system must be implemented in the context of local physical (climatic, topographical, etc.), biological (pest complex; natural enemy complex, etc.) and economical conditions.

No.	Control Point	Level
CB.7	**Integrated pest management**	
CB.7.2	Can the producer show evidence of implementation of at least one activity that falls in the category of ‘Prevention’?	Major Must

The producer must show evidence of implementing at least one activity that includes the adoption of cultivation methods that could reduce the incidence and intensity of pest attacks, thereby reducing the need for intervention.

Chemical application is not the only way to protect crops. There are many things a farmer can do to prevent and control pests and diseases on the far, without using chemicals. Integrated Pest Management is not about organic farming—it is a way to prevent monitor and control pests and diseases on the farm with a combination of biological, mechanical, and chemical methods.

For example, for pest prevention, rotate crops, select a growing site without pest and disease history, increase organic matter content in the soil, mulch crops and between rows, use pest-free planting materials, and disinfect farming equipment—such as pruning saws, etc.

No.	Control Point	Level
CB.7	**Integrated pest management**	
CB.7.3	Can the producer show evidence of implementation of at least one activity that falls in the category of 'Observation and Monitoring'?	Major Must

The producer must show evidence of implementing at least one activity that will determine when, and to what extent, pests and their natural enemies are present, and using the information to plan what pest management techniques are required.

For example, observation and monitoring includes the regular inspection of pests in the field, identification of their natural enemies (other pests), the use of pheromone traps for pest monitoring, and using threshold levels for decision making.

No.	Control Point	Level
CB.7	**Integrated pest management**	
CB.7.4	Can the producer show evidence of implementation of at least one activity that falls in the category of 'Intervention'?	Major Must

The product must show evidence that in situations where pest attack adversely affects the economic value of a crop, interventions with specific pest control methods will take place. Where possible, non-chemical approaches must be considered.

Only when a farmer has exhausted non-chemical methods, should chemical application be considered a last resort. Before then, intervention methods should include the use of natural enemies (other pests), the use of traps, the control of weeds by manual or mechanical eradication instead of by spraying, etc.

No.	Control Point	Level
CB.7	**Integrated pest management**	
CB.7.5	Have anti-resistance label and/or other recommendations been followed to maintain the effectiveness of available plant protection products?	Minor Must

When the level of a pest, disease or weed requires repeated controls in the crops, there must be evidence that anti-resistance recommendations (where legal and effective alternatives are available) are followed. Farmers should make sure they use less toxic plant protection products as much as possible.

No.	Control Point	Level
CB.8.1	**Choice of plant protection products**	
CB.8.1.1	Is the plant protection product applied appropriate for the target as recommended on the product label?	Major Must

All the plant protection products applied to the crop must be suitable and must be able to be justified (according to label recommendations or official registration body publication) for the pest, disease, weed or target of the plant protection production intervention. If the producer uses off-label plant protection products (PPP), there must be evidence of official approval for the use of that plant protection product on that crop in that country.

Farmers must be certain that the plant protection product used is not banned and is suitable for their crop. Before using a plant protection product, the product label should be checked to make sure it is the best product for the crop and the targeted pest or disease.

No.	Control Point	Level
AF.3.5	**Protective clothing/equipment**	
AF.3.5.1	Are workers, visitors, and subcontractors equipped with suitable protective clothing in accordance with legal requirements and/or label instructions or as authorized by a competent authority?	Major Must

Complete sets of protective clothing, which enable label instructions and/or legal requirements and/or requirements as authorized by a competent authority to be complied with should be available, used and in good state of repair. This may include some of the following: rubber boots or other appropriate footwear, waterproof clothing, protective overalls, rubber gloves, face masks, appropriate respiratory (including replacement filters), ear and eye protection devices and life jackets, etc. as required by label or operations on the farm.

No.	Control Point	Level
CB.8.1	**Choice of plant protection products**	
CB.8.1.2	Do producers only use plant protection products that are currently registered in the country of use for the target crop where such official registration scheme exits?	Major Must

All the plant protection products applied must be officially and currently registered or permitted by the appropriate governmental organization in the country of application. Where no official registration scheme exits, refer to the FAO International Code of Conduct on the Distribution and Use of Pesticides.

No.	Control Point	Level
CB.8.1	**Choice of plant protection products**	
CB.8.1.3	Are invoices of registered plant protection products kept?	Minor Must

Invoices of registered plant protection products that are used must be kept for record keeping and available at the time of an external inspection. Keeping invoices will help farmers trace back information about the product later on.

No.	Control Point	Level
CB.8.1	**Choice of plant protection products**	
CB.8.1.4	Is the current list kept of plant protection products that are used and approved for use on crops being grown?	Minor Must

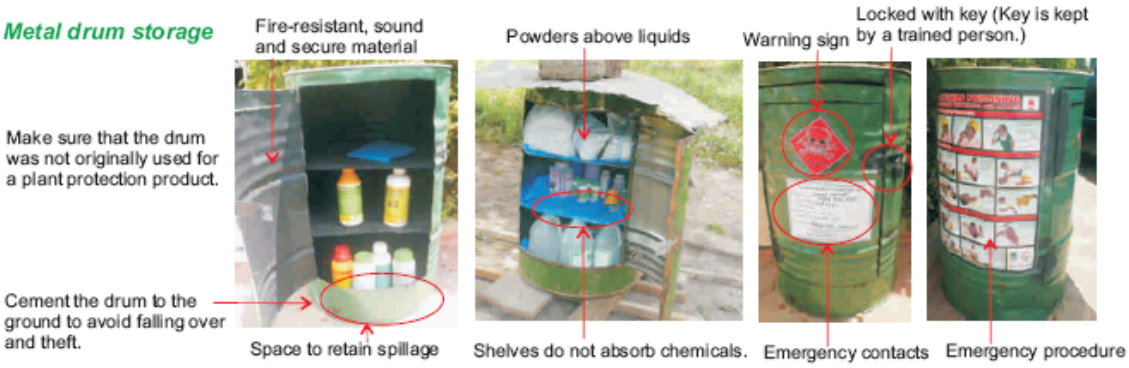
Information must be available for the commercial brand names of plant protection products (including their active ingredient composition, or beneficial organisms) that are authorized on crops being, or which have been, grown on the farm under GlobalGAP within the last 12 months.

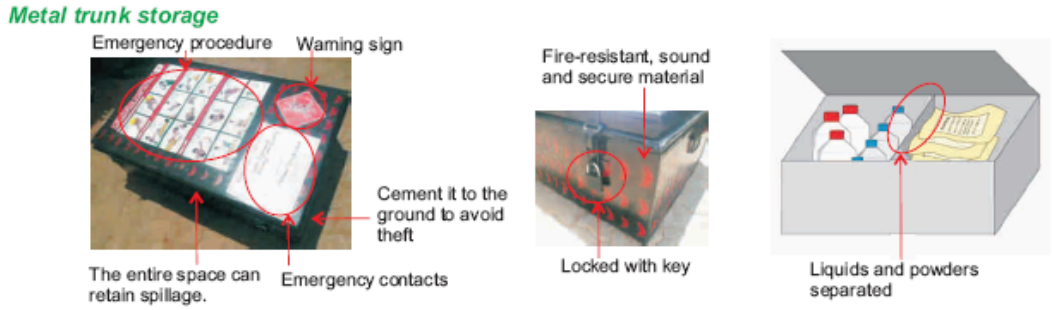
No.	Control Point	Level
CB.8.7	**Plant protection product storage**	
CB.8.7.1	Are plant protection products stored in accordance with local regulations?	Major Must

Plant protection product storage facilities must comply with all the appropriate current national, regional, and local legislation and regulations. Plant protection products are dangerous to human health. If you leave them in open places, children or other people may touch them and there could be accidents.

No.	Control Point	Level
CB.8.7	**Plant protection product storage**	
CB.8.7.2	Are plant protection products stored in a location that is sound?	Minor Must

Plant protection product storage facilities must be built in a manner which is structurally sound and robust. If you only have a few products, you do not need to construct a building for storage. You can be innovative and create an inexpensive storage that meets criteria.





No.	Control Point	Level
CB.8.7	**Plant protection product storage**	
CB.8.7.3	Are plant protection products stored in a location that is secure?	Major Must

Plant protection product storage facilities must be kept secure under lock and key.

No.	Control Point	Level
CB.8.7	**Plant protection product storage**	
CB.8.7.4	Are plant protection products stored in a location that is appropriate to the temperature conditions?	Minor Must

Plant protection product storage facilities must be built of materials or located accordingly to label storage requirements.

No.	Control Point	Level
CB.8.7	**Plant protection product storage**	
CB.8.7.5	Are plant protection products stored in a location that is fire-resistant?	Minor Must

The Plant protection product storage facility or room where the plant protection product storage facility is located should be built of materials that are fire resistant (Minimum requirement RF 30, i.e. 30 minutes resistance to fire).

No.	Control Point	Level
CB.8.7	**Plant protection product storage**	
CB.8.7.6	Are plant protection products stored in a location that is well ventilated (in the case of walk-in storage)?	Minor Must

Plant protection product storage facilities should have sufficient and constant ventilation of fresh air to avoid a build up of harmful vapors. In a storage room, there should be a window for air and light to come through. Without window, toxic gas may accumulate in the room. You need light to be able to clearly read the product labels.

No.	Control Point	Level
CB.8.7	**Plant protection product storage**	
CB.8.7.7	Are plant protection products stored in a location that is well-lit?	Minor Must

Plant production product storage facilities should have or be located in areas with sufficient illumination both by natural and artificial lighting to ensure that all product labels can be ready easily on the shelves.

No.	Control Point	Level
CB.8.7	**Plant protection product storage**	
CB.8.7.8	Are plant protection products stored in a location that is located away from other materials?	Minor Must

The minimum requirement is to prevent cross contamination between plant protection products and other materials by the use of a physical barrier (wall, sheeting, etc.).

No.	Control Point	Level
CB.8.7	**Plant protection product storage**	
CB.8.7.9	Is all plant protection product storage shelving made of non-absorbent material?	Minor Must

Plant protection product storage facilities should be equipped with shelving which is not absorbent in case of a spillage, e.g. metal, rigid plastic, or covered with a impermeable liner.

No.	Control Point	Level
CB.8.7	**Plant protection product storage**	
CB.8.7.10	Is the plant protection product facility able to retain spillage?	Minor Must

The plant protection product storage facilities should have retaining tanks or should be able to hold up to 110% of the volume of the largest container of stored liquid, to ensure that there cannot be any leakage, seepage, or contamination to the exterior of the facility.

No.	Control Point	Level
CB.8.7	**Plant protection product storage**	
CB.8.7.11	Are there facilities for measuring and mixing plant protection products?	Major Must

The plant protection product storage facilities or plant protection product filling/mixing area if this is different must have measuring equipment whose graduation for containers and calibration verification for scales has been verified annually by the producer to assure accuracy of mixtures and are equipped with utensils, e.g. buckets, water supply point, etc. for the safe and efficient handling of all plant protection products which can be applied.

No.	Control Point	Level
CB.8.7	**Plant protection product storage**	
CB.8.7.12	Are there facilities to deal with spillage?	Minor Must

The plant protection product storage facilities, and all designated fixed filling/mixing areas, must be equipped with a container of absorbent inert material such as sand, floor brush, and dustpan and plastic bags, that must be sign posted an in a fixed location, to be used in case of a spillage of plant protection product.

No.	Control Point	Level
CB.8.7	**Plant protection product storage**	
CB.8.7.13	Are keys and access to the plant protection product facility limited to workers with formal training in the handling of plant protection products?	Minor Must

The plant protection product storage facilities must be kept locked and physical access only granted in the presence of persons who can demonstrate formal training in the safe handling and use of plant protection products.

No.	Control Point	Level
CB.8.7	**Plant protection product storage**	
CB.8.7.14	Are all plant protection products stored in their original package?	Major Must

All the plant protection products that are currently in storage must be kept in the original containers and packs, and in cases of breakage only, a new package must contain all the information of the original label.

No.	Control Point	Level
CB.8.7	**Plant protection product storage**	
CB.8.7.15	Are plant protection products that are approved for use on the crops registered for GlobalGAP certification, stored separately within the storage facility, from plant protection products used for other purposes?	Minor Must

Plant protection products used for purposes other than for registered and/or certified crops (i.e. use in garden, etc.) must clearly be identified and stored separately in the plant protection product storage facility.

No.	Control Point	Level
CB.8.7	**Plant protection product storage**	
CB.8.7.16	Are liquids not stored on shelves above powders?	Minor Must

All plant protection products that are liquid formulations must be stored on shelving which is never above those products that are powder or granular formulations.

No.	Control Point	Level
AF.3.4	**Hazards and First Aid**	
AF.3.4.1	Do accident and emergency procedures exist; are they visually displayed and communicated to all persons associated with the farm activities?	Minor Must

Permanent accident procedures must be clearly displayed in accessible and visible location(s). These instructions must be available in the predominant language(s) of the workforce and/or pictograms. The procedures must identify, for example, the following:

- ✓ Farm's map reference or farm address
- ✓ Contact person(s)
- ✓ An up-to-date list of relevant telephone numbers (police, ambulance, hospital, fire-brigade, access to emergency health care on site or by means of transport, electricity and water supplier).

Examples of other procedures that can be included:

- ✓ Location of the nearest means of communication (telephone, radio)
- ✓ To and where to contact the local medical services, hospital and other emergency services (WHERE did it happen?, WHAT happened?, HOW MANY injured people?, WHAT kind of injuries WHO is calling?)
- ✓ Location of a fire extinguisher
- ✓ Emergency exits
- ✓ Emergency cut-offs for electricity, gas, and water supplies
- ✓ How to report accidents or dangerous incidents.

No.	Control Point	Level
AF.3.4	**Hazards and First Aid**	
AF.3.4.2	Are potential hazards clearly identified by warning signs and placed where appropriate?	Minor Must

Permanent and legible signs must indicate potential hazards, e.g. waste pits, fuel tanks, workshops, access doors of the plant protection product/fertilizer/any other chemical storage facilities. Warning signs must be present.

No.	Control Point	Level
AF.3.4	**Hazards and First Aid**	
AF.3.4.3	Is safety advice for substances hazardous to worker heath available/accessible?	Minor Must

Information (e.g. website, telephone number, data sheets, etc.) must be accessible when required to ensure appropriate action.

No.	Control Point	Level
AF.3.4	**Hazards and First Aid**	
AF.3.4.4	Are First Aid kits present at all permanent sites and in the vicinity of fieldwork?	Minor Must

Complete and maintained First Aid kits according to local recommendations must be available and accessible at all permanent sites and available for transport (tractor, car, etc.) to the vicinity of the work.

No.	Control Point	Level
CB.8.8	**Plant protection product handling**	
CB.8.8.3	Is the accident procedure evident within 10 meters of the plant protection product/chemical storage facility?	Minor Must

An accident procedure containing all information detailing how to proceed must be visually displayed with the basic steps of primary accident care and accessible by all persons within 10 meters of the plant protection product/chemical storage facilities and designated mixing areas.

No.	Control Point	Level
CB.8.8	**Plant protection product handling**	
CB.8.8.4	Are there facilities to deal with accidental operator contamination?	Minor Must

All plant protection product/chemical storage facilities and all filling/mixing areas present on the farm must have eye wash capability, a source of clean water no more than 10 meters distant, a complete First Aid kit and a clear accident procedure with emergency contact telephone numbers or basic steps of primary accident care, all permanently and clearly signed.

No.	Control Point	Level
CB.8.2	**Records of application**	
CB.8.2.1	Have all the plant protection applications been recorded including crop name and/or variety?	Major Must

All plant protection product application records must specify the crop and/or variety treated. Records can be written by producers or by the technical manager on the farm. When records are written by the producers, the technical manager should check them regularly to ensure that they are written correctly.

Example of plant protection record form

Plot No. 2

Plant Protection

Date	Product name	Active ingredients	Target pest and disease	Area size	Total amount of product	Dosage per amount of water	Pre-harvest interval (days)	First Harvest-able Date	Re-entry interval (days)	Operator name	Application machinery	Authorization (Signature of farm manager)
4th Mar 2007	Ridomyl Gold	Metalaxyl Carbenda -zim	Phytoph -thora	1 acre	1000g	200g per 200L	14	18th March 2007	1	Mawuli Asigbee	Knapsack No.2	Reuben Coffie

No.	Control Point	Level
CB.8.2	**Records of application**	
CB.8.2.2	Have all the plant protection applications been recorded including application location?	Major Must

All plant protection product application records must specify the geographical area, the name or reference of the farm, and the field, orchard, or greenhouse where the crop is located.

No.	Control Point	Level
CB.8.2	**Records of application**	
CB.8.2.3	Have all the plant protection applications been recorded including application date?	Major Must

All plant protection product application records must specify the exact dates (day/month/year) of the application. Record the actual date (end date, if applied more than one day) of application.

No.	Control Point	Level
CB.8.2	**Records of application**	
CB.8.2.4	Have all the plant protection applications been recorded including product trade name and active ingredient?	Major Must

All plant protection product application records must specify the trade name (including formulation) and active ingredient or beneficial organism with the scientific name. It must be possible to connect the trade name information to the active ingredient.

No.	Control Point	Level
CB.8.2	**Records of application**	
CB.8.2.5	Have all the plant protection applications been recorded including the name of the operator?	Minor Must

The operator applying plant protection products must be identified in the records.

No.	Control Point	Level
CB.8.2	**Records of application**	
CB.8.2.6	Have all the plant protection applications been recorded including the justification for application?	Minor Must

The common and scientific name of the pest(s), disease(s) or weed(s) treated must be documented in all plant protection product application records.

No.	Control Point	Level
CB.8.2	**Records of application**	
CB.8.2.7	Have all the plant protection applications been recorded including technical authorization for application?	Minor Must

The technically responsible person making the decision of the use and the doses of the plant protection product being applied must be identified in the records.

No.	Control Point	Level
CB.8.2	**Records of application**	
CB.8.2.8	Have all the plant protection applications been recorded including product quantity applied?	Minor Must

All plant protection product application records must specify the amount of product to be applied in weight or volume, or the total quantity of water (or other carrier medium), the dosage in g/l or internationally recognized measures for the plant protection product.

In order to apply the product accurately, make sure that you have the appropriate measuring equipment.

Measuring cups

Scales

You can use an alternative measuring equipment, such a can. Make sure that the can is calibrated with a scale or a measuring cup for each product in advance. Also ensure that the cans are not used for other purpose.

Tomato cans

No.	Control Point	Level
CB.8.2	**Records of application**	
CB.8.2.9	Have all the plant protection applications been recorded including application machinery used?	Minor Must

The plant protection product application records must detail the application machinery type for all the plant protection products applied (if there are various units, these must be identified individually), and the method used (i.e. knapsack, high volume, U.L.V., via the irrigation system, dusting, fogger, aerial, or another method).

No.	Control Point	Level
CB.8.2	**Records of application**	
CB.8.2.10	Have all the plant protection applications been recorded including the pre-harvest interval?	Major Must

The pre-harvest interval must be recorded for all plant protection product applications where a pre-harvest interval is stated as the product label or other sources of information are available.

No.	Control Point	Level
CB.8.3	**Pre-harvest interval**	
CB.8.3.1	Have the registered pre-harvest intervals been observed?	Major Must

The producer must demonstrate that all pre-harvest intervals have been observed for plant protection products applied to the crops, through the use of clear documented procedures such as plant protection product application records and crop harvest dates from treated locations. Specifically in continuous harvesting situations, there are systems in place in the field, orchard, or greenhouse, e.g. warning signs, times of application, etc., to ensure compliance with all pre-harvest intervals.

No.	Control Point	Level
CB.8.8	**Plant protection product handling**	
CB.8.8.2	Are there procedures dealing with re-entry times on the farm?	Major Must

There must be clear documented procedures, which regulate all the re-entry intervals for plant protection products, applied to the crops according to the label instructions. Where no re-entry information is available on the label, there are no specific requirements, but the spray must have dried on the plants before workers re-enter the growing area.

During the re-entry interval period, keep a warning sign at the site to indicate that the site has been sprayed.

No.	Control Point	Level
CB.8.5	**Disposal of surplus application mix**	
CB.8.5.1	Is surplus application mix or tank washings disposed of in a way that is not compromising food safety and the environment?	Minor Must

Applying surplus spray and tank washings to the crop is a first priority under the condition that the overall label dose rate is not exceeded. Surplus mix or tank washings must be disposed of in a way that is not compromising food safety and the environment. Records must be kept documenting this.

Applicators should make sure their knapsack is empty. If any solution is left, dispose of it at a designated fallow area (where there is no crop grown and far away from water sources and human activities).

No.	Control Point	Level
AF.3.5	**Protective clothing/equipment**	
AF.3.5.2	Are workers, visitors, and subcontractors equipped with suitable protective clothing in accordance with legal requirements and/or label instructions or as authorized by a competent authority?	Major Must

Protective clothing must be cleaned and there must be a cleaning schedule adapted accordingly to the type of use and degree of contamination. Cleaning protective clothing and equipment includes the separate washing from private clothing and glove washing before removal. Wash protective clothing and equipment at the site. Do not bring protective clothing home to wash or mix with other clothing because the chemicals on it will contaminate the other clothes.

Dirty and damaged protective clothing and equipment and expired filter cartridges must be disposed of. Single-use items (e.g. gloves, overalls, etc.) must be disposed of after one use. All the protective clothing and equipment including replacements filters etc. must be stored separately from the plant protection products/any other chemicals that might cause contamination of the clothing or equipment.

No.	Control Point	Level
CB.8.8	**Plant protection product handling**	
CB.8.8.1	Are all workers who have contact with plant protection products submitted voluntarily to annual health checks?	Recommended

It is recommended that all workers who are in contact with plant protection products voluntarily submit to health checks annually. These health checks must comply with national, regional, or local codes of practice and use of results respect the legality of disclosure of personal data.

No.	Control Point	Level
CB.8.9	**Empty plant protection product containers**	
CB.8.9.1	Is re-use of empty plant protection product containers for purposes other than containing and transporting of the identical product avoided?	Minor Must

There must be evidence that empty plant protection product containers have not been or currently are not being re-used for anything other than containing and transporting of the identical product as stated on the original label.

No.	Control Point	Level
CB.8.9	**Empty plant protection product containers**	
CB.8.9.2	Does disposal of empty plant protection product containers occur in a manner that avoids exposure to humans?	Minor Must

There must be a system in place to dispose of empty plant protection product containers that ensures that persons cannot come into physical contact with the empty containers by having a secure storage point, safe handling system prior to the disposal and a disposal method that avoids exposure to persons.

No.	Control Point	Level
CB.8.9	**Empty plant protection product containers**	
CB.8.9.3	Does disposal of empty plant protection product containers occur in a manner that avoids contamination of the environment?	Minor Must

Having a system of disposal of empty plant protection product containers minimizes the risk of contamination of the environment, watercourse and flora and fauna, by having a safe storage point and handling system prior to disposal by an environmentally responsible method.

No.	Control Point	Level
CB.8.9	**Empty plant protection product containers**	
CB.8.9.4	Are official collection and disposal systems used when available?	Minor Must

There must be documented records of participation by the producer where official collection and disposal systems exist.

No.	Control Point	Level
CB.8.9	**Empty plant protection product containers**	
CB.8.9.5	If there is a collection system, are the empty containers adequately stored, labeled and handled according to the rules of a collection system?	Minor Must

All the empty plant protection product containers, once emptied, must not be reused and they must be adequately stored, labeled, handled, according to the requirements of official collection and disposal schemes where applicable.

No.	Control Point	Level
CB.8.9	**Empty plant protection product containers**	
CB.8.9.6	Are empty containers rinsed either via the use of an integrated pressure-rinsing device on the application equipment, or at least three times with water?	Major Must

There must be installed on the plant protection product application machinery pressure-rinsing equipment for plant protection product containers or there must be clear written instructions to rinse each container 3 times prior to its disposal.

No.	Control Point	Level
CB.8.9	**Empty plant protection product containers**	
CB.8.9.7	Is the rinsate from empty containers returned to the application equipment tank?	Minor Must

Either via the use of a container-handling device or via written procedure for the application equipment operators, the rinsate from the empty plant protection product containers must be always put back into the application equipment tank when mixing.

No.	Control Point	Level
CB.8.9	**Empty plant protection product containers**	
CB.8.9.8	Are empty containers kept secure until disposal is possible?	Minor Must

There must be a designated secure storage point for all empty plant protection product containers prior to disposal that is isolated from the crop and packaging materials i.e. permanently signed and with physically restricted access for persons and fauna.

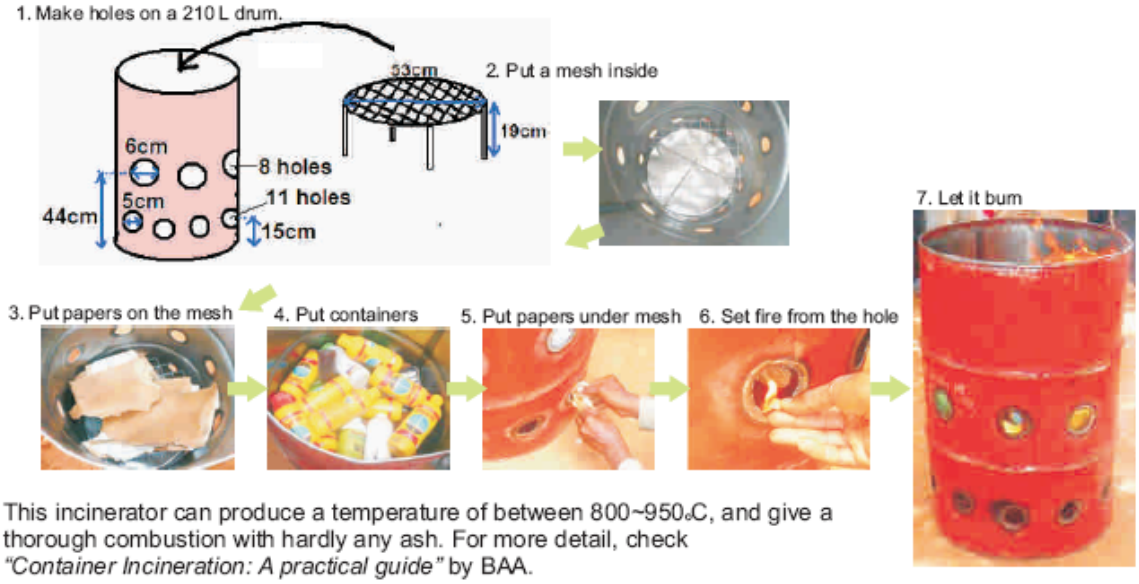
No.	Control Point	Level
CB.8.9	**Empty plant protection product containers**	
CB.8.9.0	Are all local regulations regarding disposal or destruction of containers observed?	Major Must

All relevant national, regional, and local regulations and legislation if it exists must be complied with regarding the disposal of empty plant protection product containers.

No.	Control Point	Level
CB.8.10	**Obsolete plant protection products**	
CB.8.10.1	Are obsolete plant protection products securely maintained and identified and disposed of by authorized or approved channels?	Minor Must

There must be documents that indicate obsolete plant protection products have been disposed of by officially authorized channels. When this is not possible, obsolete plant protection products must be securely maintained and identifiable.

> If there is an official collection-disposal system, you can use the service to `dispose of containers. If there is no collection system and the local legislation allows burning, you can use an incinerator made of a metal drum, designed by the British Agrochemicals Association Ltd (BAA). Such an incinerator can produce a temperature of between 800-950º C., and gives a thorough combustion without little ash. For more details, see: ’.



No.	Control Point	Level
CB.8.6	**Plant protection product residue analysis**	
CB.8.6.1	Can the producer demonstrate that information regarding the Country of Destination (market where he is intending to trade in) Maximum Residue Levels is available?	Major Must

The producer or his customer (farmer) must have available a list of current applicable Maximum Residue Levels for where the product is being to be used. The MRLs will be available after a residue screening system.

No.	Control Point	Level
CB.8.6	**Plant protection product residue analysis**	
CB.8.6.2	Has action been taken to meet the Maximum Residue Levels of the market the producer is intending to trade in?	Major Must

Where the Maximum Residue Levels of the market the producer is intending to trade the produce in are stricter than those of the country of production, the producer can demonstrate that during the production cycle these MRLs have been taken into account (i.e. modification where necessary of plant protection product application regime and/or use of produce residue testing results).

No.	Control Point	Level
CB.8.6	**Plant protection product residue analysis**	
CB.8.6.5	If residue analysis have been done, has the correct sampling procedures been followed?	Minor Must

As a final test of harvested product, a residue analysis should be conducted to prove there is no Maximum Residue Level (MRL) exceeded. Hence, there must be documentary evidence demonstrating compliance with applicable sampling procedures.

No.	Control Point	Level
CB.8.6	**Plant protection product residue analysis**	
CB.8.6.6	Is the laboratory used for residue testing accredited by a competent national authority to ISO 17025 or equivalent standard?	Minor Must

There must be clear documented evidence either on the letter headings or copies of accreditations etc. that the laboratories used for plant protection product residue analysis have been accredited, or are in the process of accreditation to the applicable scope by a competent national authority to ISO 17025 or an equivalent standard. In all cases, the laboratories must show evidence of participation in proficiency tests, e.g. FAPAS must be available.

No.	Control Point	Level
CB.8.6	**Plant protection product residue analysis**	
CB.8.6.7	Is an action plan in place in the event of a Maximum Residue Level being exceeded?	Major Must

There must be a clear documented procedure of the remedial steps and actions (this will include communication to customers, product tracking exercise, etc.) to be taken where a plant protection product residue analysis indicates an MRL (either of the country of production or of the countries where harvested product is intended to be traded in if different) is exceeded.

If MRL is exceeded, the farmer should have an action plan such as the following:

Withdrawal procedure in case of MRL exceedance

1. Use the traceability code to identify the farm and plot where the produce came from.
2. Identify the cause of the problem.
3. Depending on the cause, decide whether to recall the produce from the same plot or from the entire farm, or the produce packed/shipped on the same day.
4. Trace all the produce to be recalled and identify where they are.
5. Contact all customers who have the produce to be recalled.
6. Arrange transport to bring back the produce.
7. Destroy all the recalled produce.
8. Take remedial actions so as to prevent the problem from happening again.
9. Notify the customers about the remedial actions taken.
10. Notify the CB about the withdrawal of produce.
11. Conduct residue testing of the recalled produce to verify the exceedance detected.

2.3 Environmental and Social

On-farm environmental and social issues cover workers' health, safety, and welfare, waste and pollution management, recycle and re-use, and environment and conservation. These control points are covered in the following GlobalGAP sections:

GlobalGAP All Farm Base Module
- AF3. Workers Health, Safety and Welfare
- AF4. Waste and Pollution Management, Recycle and Re-use
- AF5. Environment and Conservation

Workers health, safety and welfare

People are key to the safe and efficient operation of any farm. Farm staff and contractors as well as producers themselves stand for the quality of the produce and for environmental protection. Education and training will help progress toward sustainability and build on social capital. Compliance criteria for these control points is intended to ensure safe practice in the work place and that all workers understand, and are competent to perform their duties; are provided with proper equipment to allow them to work safely; and that, in the event of accidents, proper and timely assistance can be obtained.

No.	Control Point	Level
AF. 3.1	**Health and safety**	
AF.3.1.1	Does the farm have a written risk assessment for hazards to worker health and safety on farm?	Minor Must

A written risk assessment can be a general one but it must be appropriate for conditions on the farm. The assessment must be reviewed and updated whenever there are changes in the organization (e.g. new machinery, new buildings, new plant protection products, modified cultivation practices, etc.) occur. Examples of risks include: moving machine parts, electricity, excessive noise, dust, vibrations, extreme temperatures, ladders, fuel storage, etc.

No.	Control Point	Level
AF. 3.1	**Health and safety**	
AF.3.1.2	Does the farm have written health and safety procedures including issues of the risk assessment of AF.3.1.1?	Minor Must

Health and safety procedures must at least include all points mentioned in the risk assessment (AF.3.1.1) and they must be appropriate for the farming operations. This could also include accident and emergency procedures and contingency plans, dealing with any identified risks in the work situation. Procedures must be reviewed annually and updated when the risk assessment changes.

No.	Control Point	Level
AF. 3.4	**Hazards and First Aid**	
AF.3.4.1	Do accident and emergency procedures exist; are they visually displayed and communicate to all persons associated with the farm activities?	Minor Must

Permanent accident procedures must be clearly displayed in accessible and visible locations. The procedures must identify, for example, the following:

- ✓ Farm's map reference or farm address
- ✓ Contact person(s)
- ✓ An up-to-date list of relevant phone numbers (police, ambulance, hospital, fire-brigade, access to emergency health care on site or by means of transport, electricity and water supplier).

Examples of other procedures that can be included:

- ✓ Location of the nearest means of communication (telephone, radio)
- ✓ How and where to contact the local medical services, hospital and other emergency services
- ✓ Location of fire extinguisher
- ✓ Emergency exits
- ✓ Emergency cut-offs for electricity, gas and water supplies
- ✓ How to report accidents or dangerous incidents

Phone numbers of:
Farm manager
Nearest hospital
Ambulance
Police & fire service
Poison center
etc.
Farm address

Use the local language used by workers

No.	Control Point	Level
AF. 3.4	**Hazards and First Aid**	
AF.3.4.2	Are potential hazards clearly identified by warning signs and placed where appropriate?	Minor Must

Permanent and legible signs must indicate potential hazards, e.g. waste pits, fuel tanks, workshops, access doors of the plant protection product/fertilizer/any other chemical storage facilities. Warning signs must be present at all potentially dangerous places

No.	Control Point	Level
AF. 3.4	**Hazards and First Aid**	
AF.3.4.3	Is safety advice for substances hazardous to worker health available/accessible?	Minor Must

Information (e.g. websites, telephone numbers, data sheets, etc.) must be accessible when required to ensure appropriate action is taken.

No.	Control Point	Level
AF. 3.4	**Hazards and First Aid**	
AF.3.4.4	Are First Aid kits present at all permanent sites and in the vicinity of fieldwork?	Minor Must

Complete and maintained First Aid kits according to local recommendations must be available and accessible at all permanent sites and available for transport (tractor, car, etc.) to the vicinity of work.

No.	Control Point	Level
AF. 3.6	**Worker Welfare**	
AF.3.6.1	Is a member of management clearly identifiable as responsible for workers health, safety and welfare?	Major Must

If you have workers on the farm, you are responsible for their welfare as workers. There must be documentation available that clearly identifies a member of management who is responsible for ensuring compliance with existing, current, and relevant national and local regulations and the implementation of the policy on workers health, safety and welfare. Records should be kept of both permanent and casual workers:

- ✓ Full name
- ✓ Date of entry
- ✓ Period of employment
- ✓ Regular working time
- ✓ Overtime regulations

No.	Control Point	Level
AF. 3.6	**Worker Welfare**	
AF.3.6.2	Do regular two-way communication meetings take place between management and workers? Are there records from such meetings?	Recommended

Records show that the concern of the workers about health, safety and welfare are being recorded in meetings planned and held at least once a year between management and workers at which matters related to the business and worker health, safety or welfare can be discussed openly (without fear of intimidations or retribution). The auditor is not required to make judgments about the content, accuracy or outcome of such meetings.

No.	Control Point	Level
AF. 3.6	**Worker Welfare**	
AF.3.6.3	Do workers have access to clean food storage areas, designated rest areas, hand-washing facilities and drinking water?	Minor Must

Hand-washing facilities, potable drinking water, a place to store food and to eat must be provided to the workers.

Eating place

Drinking potable water

Handwashing facility

No.	Control Point	Level
AF. 3.6	**Worker Welfare**	
AF.3.6.4	Are on site living quarters habitable and have the basic services and facilities?	Minor Must

The living quarters for the workers on farm must be habitable, have a sound roof, windows and doors, and have the basic services of running water, toilets, and drains. In case of no drains, septic pits can be accepted if compliant with local regulations.

No.	Control Point	Level
AF. 5.1	**Identification of waste and pollutants**	
AF.5.1.1	Have possible waste products and sources of pollution been identified in all areas of the business?	Minor Must

Waste minimization should include: review of current practices, avoidance of waste, reduction of waste, re-use of waste, and recycling of waste.

Possible waste products (such as paper, cardboard, plastic, orl, etc.) and sources of pollution (e.g. fertilizer excess, exhaust smoke, oil, fuel, noise, effluent, chemicals, sheep-dip, feed waste, algae produced during net cleaning, etc.) produced by the farm processes must be recorded.

No.	Control Point	Level
AF. 5.2	**Waste and pollution action plan**	
AF.5.2.1	Is there a documented farm waste management plan to avoid or reduce wastage and pollution and does the waste management plan include adequate provisions for waste disposal?	Recommended

It is recommended that a comprehensive, current, documented plan that covers wastage reduction, pollution and water recycling is available. Air, soil, water, noise, and light contamination must be considered when drafting this plan.

No.	Control Point	Level
AF. 5.2	**Waste and pollution action plan**	
AF.5.2.2	Has all litter/waste been cleaned up?	Major Must

There should be no evidence of waste/litter in the immediate vicinity of the production or storage buildings. Incidental and insignificant litter and waste on the designated areas are acceptable as well as the waste from the current day's work. All other litter and waste should be cleared up, including fuel spills. Areas where product is handled indoors should be cleaned at least once a day.

No.	Control Point	Level
AF. 5.2	**Waste and pollution action plan**	
AF.5.2.3	Are organic wastes composted on the farm and utilized for soil conditioning (provided there is no risk of disease carry-over)?	Recommended

It is recommended that organic waste material be composted and used for soil conditioning. Composting assures there is no risk of disease carry-over.

No.	Control Point	Level
AF. 6.1	**Impact of farming on the environment and biodiversity**	
AF.6.1.1	Does each producer have a management of wildlife and conservation plan for the enterprise that acknowledges the impact of farming activities on the environment?	Minor Must

Farming and environment are inseparably linked. Managing wildlife and landscape is of great importance; enhancement of species as well as structural diversity of land and landscape feature will benefit the abundance and diversity of flora and fauna.

There must be a written action plan that aims to enhance habitats and maintain biodiversity on the farm. This can be either a regional activity or individual plan, if the farm is participating in or covered by it. This includes knowledge of IPM practices, of nutrient use of crops, conservation sites, water supplies and the impact on other users, etc.

No.	Control Point	Level
AF. 6.1	**Impact of farming on the environment and biodiversity**	
AF.6.1.2	Has the producer considered how to enhance the environment for the benefit of the local community and flora and fauna and is this policy compatible with sustainable commercial agricultural production and does it minimize environmental impact of the agricultural activity?	Recommended

The producer should be able to demonstrate tangible actions and initiatives on the production site or by participation in a group that is active in environmental support schemes looking at habitat quality and habitat elements. There should be a commitment

within the conservation plan to undertake a base line audit of the current levels, location, condition, etc. of the fauna and flora on the farm so as to enable actions to be planned. With the conservation plan there is a clear list of priorities and actions to enhance habitats for fauna and flora where viable and increase bio-diversity on the farm.

No.	Control Point	Level
AF. 6.2	**Unproductive sites**	
AF.6.2.1	Has consideration been given to the conversion of unproductive sites (e.g. low lying wet areas, woodlands, headland strip or areas of impoverished soil) to conservation areas for the encouragement of natural flora and fauna?	Recommended

There should be a plan to convert unproductive sites and identified areas that give priority to ecology into conservation areas there viable.

No.	Control Point	Level
AF. 6.3	**Energy efficiency**	
AF.6.3.1	Can the producer show monitoring of energy use on the farm?	Recommended

Energy use records should be kept. For example, farming equipment should be selected and maintained for optimum consumption of energy. The use of non-renewable energy sources should be kept to a minimum.

2.4 Hygiene

On-farm hygiene covers farm hygiene, personal hygiene, harvesting hygiene, and produce handling hygiene. These control points are covered in the following GlobalGAP sections:

GlobalGAP All Farm Base Module

AF3. Workers Health, Safety and Welfare (only the control points related to hygiene are covered here).

GlobalGAP Fruits and Vegetable Module

FV 4. Harvesting
(FV5. Produce Handling is not covered in this document but is covered in GlobalGAP Smallholder QMS Set-up Guide).

Farm hygiene

Keeping a farm hygienic is essential for production of safe products. By displaying general hygiene instructions, workers, subcontractors, and visitors who come to the farm can always be reminded to keep the farm hygienic.

No.	Control Point	Level
AF. 3.2	**Hygiene**	
AF.3.2.2	Does the farm have documented hygiene instructions for all workers?	Minor Must

Hygienic instructions can be displayed visually—in signs/pictures or in the language of the workforce. Instructions must include, at a minimum:

- ✓ The need for cleaning hands.
- ✓ The covering of skin cuts.
- ✓ The limitation of smoking, eating, and drinking to certain areas.
- ✓ The notification of any infections or illnesses in the area. If workers display symptoms of any of these illnesses they must be restricted from contact with products or food-contact surfaces.
- ✓ The use of suitable protective clothing.

No.	Control Point	Level
AF. 3.2	**Hygiene**	
AF. 3.2.3	Have all persons working on the farm received basic hygiene training according to the hygiene instructions in AF.3.2.2?	Minor Must

Basic training can be written or verbal, provided by qualified people. All new workers should receive hygiene training and confirm their understanding. All workers, including farm owners and managers, throughout the year should review and sign for the farm's hygiene instructions.

No.	Control Point	Level
AF. 3.2	**Hygiene**	
AF.3.2.4	Are the farm's hygiene procedures implemented?	Major Must

During a GlobalGAP inspection, farm workers must demonstrate they follow and understand hygiene instructions.

No.	Control Point	Level
AF.4.	**Subcontractors**	
AF.4.2	Are all subcontractors and visitors aware of the relevant procedures on personal safety and hygiene?	Minor Must

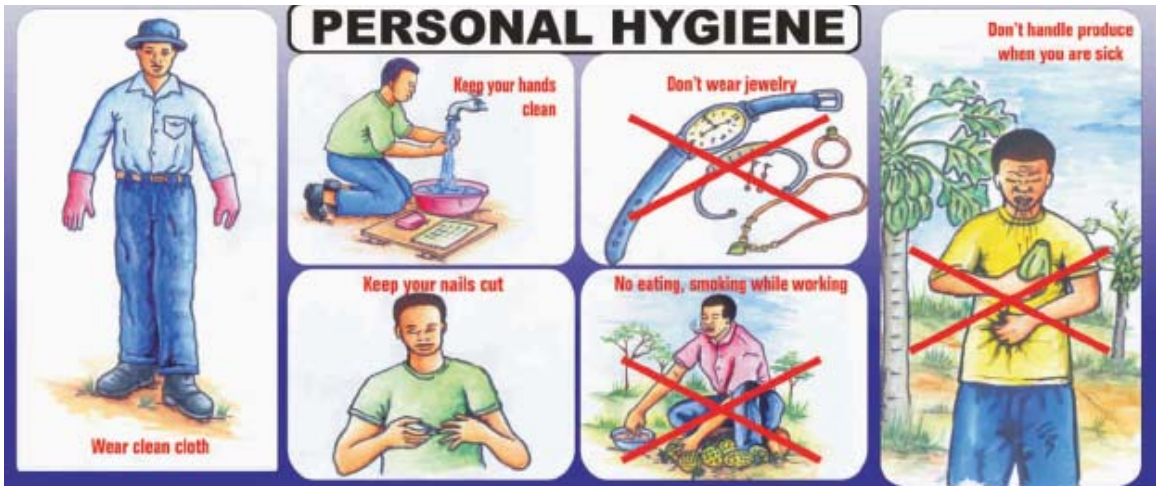
When subcontractors and visitors come to the farm, show them the farm hygiene display/poster. Hygiene instructions must be officially communicated to them and relevant instructions should be visible in a common area where anyone can review them.

Personal hygiene

Personal hygiene is critical especially at harvest since workers will be in direct contact with produce. If they are sick, if their hands are dirty, or if they wear large jewelry, harvest produce could be contaminated or damaged.

No.	Control Point	Level
FV.4	**Harvesting**	
FV.4.1.4	Have workers received specific training in hygiene before handling produce?	Major Must

All harvest workers need to be trained on hygiene. They should always be reminded of personal hygiene instructions with a display/poster at the farm. Instructions should include the washing of hands, not wearing large jewelry or a watch, keeping fingernails short, smoking, eating, or drinking in a designated area only, etc.



No.	Control Point	Level
FV.4	**Harvesting**	
FV.4.1.5	Are documented instructions and procedures for handling produce to avoid contamination of the product implemented?	Major Must

A farm must be able to provide evidence that its workers are complying with hygiene instructions and procedures. Workers must be trained using pictorial or written instructions to prevent physical contamination (such as snails, stones, insects, knives, watches, mobile phones, etc.), microbiological contamination (handling product when a worker is ill), and chemical contamination of the product during harvesting.

Harvesting hygiene

During harvesting, anything that gets into a direct contact with vegetables should be kept clean.

No.	Control Point	Level
FV.4	**Harvesting**	
FV.4.1.6	Are the containers and tools used for harvesting cleaned, maintained, and protected from contamination?	Major Must

Reusable harvesting containers and harvesting tools such as scissors, knives, and pruning sheers should always be cleaned after use. Containers should only be used for produce and not transporting other things.

Harvesting equipment (machinery) should be cleaned, maintained, and a cleaning and disinfection schedule should be in place to prevent contamination. Records should be kept on this.

No.	Control Point	Level
FV.4	**Harvesting**	
FV.4.1.7	Are vehicles used for transport of harvested produce cleaned and maintained?	Major Must

Vehicles, along with other farm equipment, should be regularly cleaned.

No.	Control Point	Level
FV.4	**Harvesting**	
FV.4.1.8	Do harvest workers that come into direct contact with crops have access to clean hand washing equipment?	Major Must

Wash stations should be maintained in a clean and sanitary condition to allow workers to clean and disinfect their hands. Farm workers should wash their hands or make use of an alcohol-based hand sanitizer prior to start of work, after each visit to a toilet, and after using a handkerchief/tissue, after handling contaminated material, after smoking, eating, or drinking, after breaks and prior to returning to work at any other time when their hands may have become a source of contamination.

No.	Control Point	Level
FV.4	**Harvesting**	
FV.4.1.9	Do harvest workers have access to clean toilets in the vicinity of their work?	Minor Must

Portable toilets should be designed, constructed, and located in an area that minimizes the potential risk for production contamination and be directly accessible for servicing. Fixed or mobile toilets (including pit latrines) are constructed of materials that are easy to clean and they are in a good state of hygiene. Toilets are expected to be in a reasonable proximity (500m or 7 minutes) to place of work. Failure point=no or insufficient toilet in reasonable proximity to place of work.

No.	Control Point	Level
FV.4	**Harvesting**	
FV.4.1.10	Are produce containers used exclusively for produce?	Major Must

Produce containers must be only used to contain harvest product. They should not be used for storing/carrying agricultural chemicals, lubricants, oil, cleaning chemicals, plant or other debris, lunch bags, tools, etc. If multi-purpose trainers or cars are used as produce containers, they must be cleaned prior to use.

Produce handling hygiene

If you are packing your produce into cartons used for export directly from the field, ensure that the packing and storing condition and packing materials are hygienic. If produce is packed at a packing house, you need to comply with the hygiene requirements at a packing house.

No.	Control Point	Level
FV.4	**Harvesting**	
FV.4.2.1	Does the harvesting process hygiene procedure consider handling of harvested produce and produce packaged and handled directly in the field, orchard, or greenhouse?	Major Must

All produce packed and handled directly in the field, orchard, or greenhouse must be removed from the field overnight. If produce is stored on a short-term basis at the farm, food safety requirements have to be complied with.

No.	Control Point	Level
FV.4	**Harvesting**	
FV.4.2.2	Are packed produce protected from contamination?	Major Must

All field packed produce must be protected from contamination.

No.	Control Point	Level
FV.4	**Harvesting**	
FV.4.2.3	Is any collection/storage/distribution point of field packed produce maintained in clean and hygienic conditions?	Major Must

If packed produce is stored on-farm, storage areas must be cleaned.

No.	Control Point	Level
FV.4	**Harvesting**	
FV.4.2.4	Is packing material used for in-field packing, stored to protect against contamination?	Major Must

Packing material must be stored to protect it against contamination.

No.	Control Point	Level
FV.4	**Harvesting**	
FV.4.2.5	Are bits of packaging material and other non-produce waste removed from the field?	Minor Must

Bits of packaging material and non-produce waste must be removed from the field.

No.	Control Point	Level
FV.4	**Harvesting**	
FV.4.2.6	If packed produce are stored on-farm, are temperature and humidity controls (where applicable) maintained and documented?	Major Must

Temperature and humidity controls (where applicable) must be maintained and documented when packed produce are stored on the farm.

No.	Control Point	Level
FV.5.8	**Post-harvest treatments**	
FV.5.8.5	Is the source of water used for post-harvest treatment (including ice) potable or declared suitable for drinking by competent authorities?	Major Must

The water used at the point of harvest and post-harvest must be potable and handled under sanitary conditions to prevent contamination.

Summary

The Imani Women Group (IWG) in Tanzania grows fresh beans and peas to supply to Home Vegetable Limited (HomeVeg). HomeVeg is a local fresh vegetable exporting company that ships high quality vegetables to EU customers. For IWG to sell more of their production to HomeVeg, the group needs to adopt good agricultural practices and meet export standards. Once done, it is anticipated IWG will be able to reduce the amount of their post-harvest losses from the current 20-40% to 10-15%. This will significantly increase their sales and income and help to reduce poverty among IWG members.

GlobalGAP has established itself as a key reference for Good Agricultural Practices (G.A.P.) in the global market place, translating consumer requirements into agricultural production in a rapidly growing list of countries—currently more than 100 on every continent. GlobalGAP standards have been incorporated into the world's most widely implemented farm certification scheme. Most European customers of agricultural products now demand evidences these practices are followed as a prerequisite for doing business. The standard is based on a hazard analysis of the production process from the seed stage to dispatch to customers, covering every process throughout the agro-marketing chain.

GlobalGAP has become an important standard not only for large-scale farms but also for smallholders all around the world. GlobalGAP implementation can improve farm

management practices of small-scale growers, and GlobalGAP certification can be a tool for small-scale growers to access the global market and to be integrated into the global supply chain.

Citizens Network for Foreign Affairs (CNFA) is providing technical support to IWG on good agricultural practices through this 'GlobalGAP Handbook for Small-Scale Growers in Tanzania'. This Handbook has been specifically complied for IWG and acts as a guide to good agricultural practices addressing soil and water, plant protection, environmental and social, and farm hygiene issues.

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