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*In a
nutshell*



Food Safety, Trade and Public Health
Inter-American Institute for Co-operation on Agriculture

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This series is specifically designed to provide a simplified synopsis for persons who need a quick reference guide on issues of relevance to Caribbean Agriculture in an increasingly liberalised trade environment.

This issue highlights the growing importance of food safety and public health in domestic and international trade and seeks to sensitise stakeholders of the importance of complying with international food safety regulations and guidelines.

For more detailed information on any aspect of food safety, readers are encouraged to contact the Coordinators of the IICA Tropical Fruit Crops Project and the Agricultural Health and Food Safety Programme, at the IICA Caribbean Regional Centre, or to access directly, the following web sites:

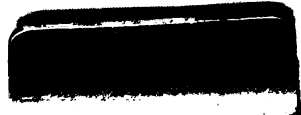
<http://www.ncfap.org/foodsafte.htm>
<http://www.who.int/fsf/ftshtfs.htm>
<http://www.fao.org/ag/agp/agpp/pq/en/Scrttr/secrettr.htm>
http://www.ole.int/overview/a_ole.htm
<http://www.fda.gov>
<http://vm.cfsan.fda.gov>
<http://hammock.lfas.ufl.edu>

*So.... If you're
.....an agricultural planner.....
.....a scientist/technician.....
..... a producer/processor.....
..... a marketer.....
..... a student.....
..... or an interested reader.....
then read on!*

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PREVIOUS ISSUES

- #1. Caribbean Agriculture and the WTO Agreements (1997)
- #2. Caribbean Agriculture and the WTO Sanitary and Phytosanitary (SPS) Agreement (1998)
- #3. Understanding on Rules and Procedures Governing the Settlement of Disputes (1999)



in a Nutshell

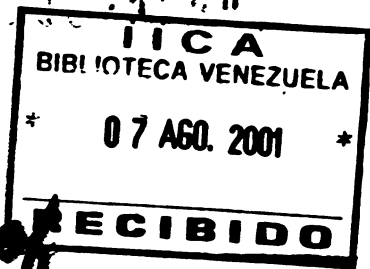
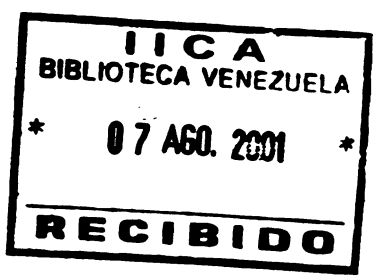


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1 Food Safety, Trade and Public Health

~ some notes

Background

At a time when the volume and variety of food traded and consumed are soaring, many consumers view the escalation in the number of food-borne illnesses as more than just a mere coincidence.

A great many people have lost lives and many more have become ill from consumption of contaminated food. Food enterprises, including hotels and restaurants, have lost sizeable markets due to the negative impact of food-borne illnesses.

Growing consumer awareness and sensitivity have placed greater demands on producers, processors, distributors and government agencies to take actions to ensure a safe food supply.

GOAL Trade liberalisation is aimed at fostering global competitiveness and fair trade in goods and services. Food safety is a serious and growing issue in the global agri-food trade and has the potential to become a significant non-tariff trade barrier. The development of effective food safety systems to protect public health while simultaneously facilitating trade is an important step in addressing this issue.

Impact The focus on food safety is an absolute imperative. The main benefits include:

- Increased confidence that food produced and purchased, whether fresh or processed, is safe for human consumption,
 - enhanced ability to trade in food, food products and food ingredients.

2 Defining the concept

We all have to eat to survive

The world population has become more urban, characterised by modern consumption habits, such as catering, ready-to-cook and convenience foods.



The global food production and distribution system has become more diverse, resulting in many points at which food can be contaminated and many factors that make some groups of people more susceptible than others.

Technological progress, processing innovations, product development and increased trade have placed many new products on the shelves. This requires the development of improved systems to ensure safety at all levels of the food chain.

Food safety is a complex issue, determined by several elements, including scientific, social and political factors and legal and economic considerations.

The safety of a food, food product or food ingredient is determined by its chemical (radiological), physical and microbiological characteristics, and not necessarily by the methods by which it is grown, produced or processed.

To protect the health of consumers at home and abroad from the risks associated with emerging food hazards, countries must develop the capabilities to identify, monitor, assess, control and minimise the risks associated with outbreaks of food borne illnesses.

It is a basic requirement that the food we eat is safe!

A fundamental concept in food safety is the assessment and control of hazards that may be present in food, food products and food ingredients and minimising health risks associated with these hazards.



A hazard is the potential to cause harm. This may be due to a bacteria, toxin, virus, parasite, chemical or physical hazard or operational malpractices which lead to the unacceptable contamination or growth and/or survival of organisms or microorganisms that cause food to become a public health concern to safety.

New hazards are constantly emerging and those of international concern include:

- ✓ Pesticide residues
- ✓ Veterinary drug residues
- ✓ Paralytic marine toxins
- ✓ Environmental & Industrial contaminants
- ✓ Heavy metal (chemical) contaminants
- ✓ Microbial hazards, i.e., bacterial, fungal and viral pathogens and *antimicrobial* resistance
- ✓ Adulterants and allergens
- ✓ Parasites, viruses, Zoonotic diseases/conditions
- ✓ Use of hormones and genetically modified organisms (GMOs)

No one individual, institution or preventive measure can ensure the safety of all foods and food products. This is a shared responsibility among . . .

- national and international regulatory and statutory bodies;
- private sector food producers, processors, distributors;
- consumers.

Preventive steps may reduce the occurrence of food-borne illnesses BUT all stakeholders must remain vigilant to ensure the quality, safety and wholesomeness of foods consumed for public health and economic benefits.

3 Food Safety and the WTO

Trade liberalisation has resulted in less and less regulation of the agricultural sector. However, consumer demands for higher standards and minimised risks in food products, have led to increased regulation in the food industry.

Importers and public health institutions in developed countries are increasingly enforcing regulations to protect domestic consumers. Exporters must comply with these regulations and standards, where and when they apply, to continue to access markets. These regulations and standards may sometimes be used as barriers to imports.

The WTO multilateral negotiations resulted in the introduction of rules aimed at minimising the negative effects of sanitary and phytosanitary and technical regulations on international trade. The WTO SPS and TBT Agreements act as base documents on issues relevant to food safety in international trade.

- *Agreement on the Application of Sanitary and Phytosanitary (SPS) Measures*
The objectives are protect human, animal and plant health, establish a multilateral framework of rules and disciplines to guide the adoption, development and enforcement of sanitary and phytosanitary measures in order to minimise their negative trade effects, and to further the use of harmonised standards, guidelines and recommendations developed by the relevant international organisations.
- *Agreement on Technical Barriers to Trade (TBT)*
The TBT Agreement covers all technical regulations and standards, including packaging, marking and labelling of all traded goods and conformity assessment procedures. In the agri-food sector, the TBT applies to all rules, except those relating to human, animal and plant life and health covered by the SPS Agreement.

All WTO Members are to adopt the WTO SPS and TBT Agreements, adjust their legislation accordingly, and take measures to comply with minimum protection standards set forth by their articles and provisions.

4 Components of a Nat

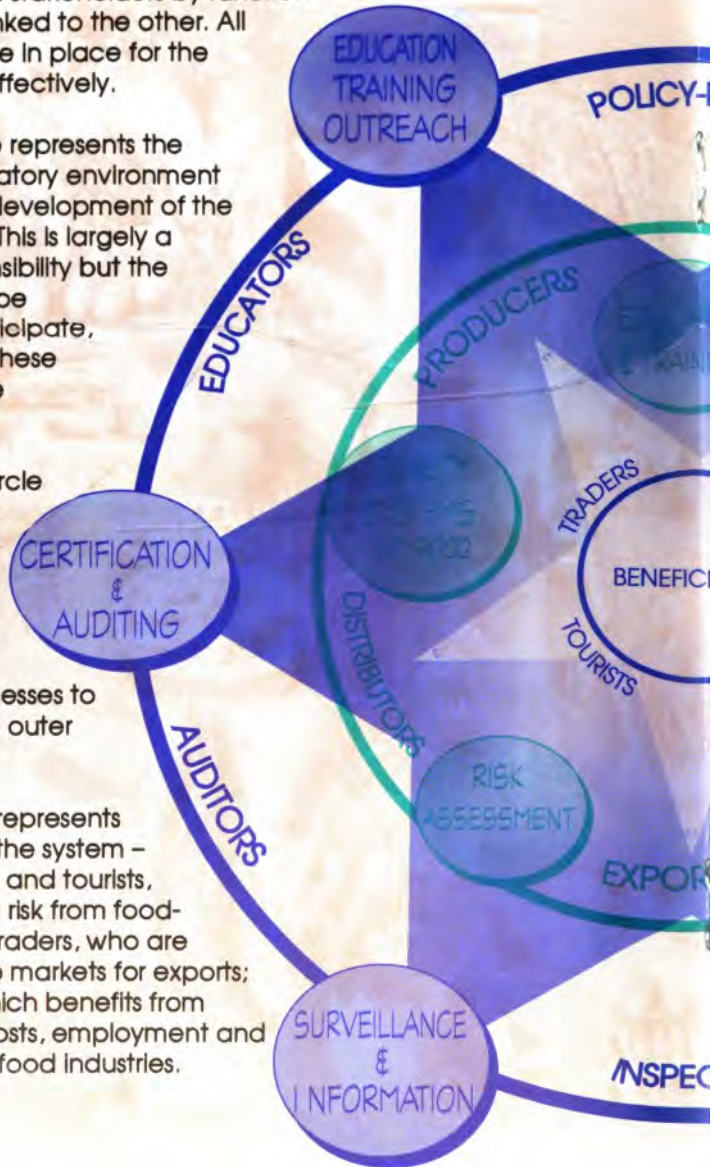
A national food safety system must consider the entire agri-food chain, from government and private sector agencies. Agro-enterprises and food comp food safety infrastructure is not u

Each circle identifies stakeholders by function and is inextricably linked to the other. All components must be in place for the system to operate effectively.

The outer blue circle represents the technical and regulatory environment which enables the development of the food safety system. This is largely a public sector responsibility but the private sector must be encouraged to participate, provide input to all these processes and share ownership.

The middle green circle represents the farm-to-market segment of the food chain directly involved in the production of a final product and includes all the processes to be regulated by the outer circle.

The inner blue core represents the beneficiaries of the system – the local consumers and tourists, who are at reduced risk from food-borne illnesses; the traders, who are assured of access to markets for exports; and the country, which benefits from lower health care costs, employment and income-generating food industries.



National Food Safety System

From pre-production to consumption, and requires collaboration among several parties. Countries could still find export markets closed to their products if the country's standards are not updated or operating efficiently.



Food safety laws, mandatory and voluntary standards should be based on international guidelines.

The strength of the legal system depends on the institutional framework for the enforcement of such laws and should include both rewards for compliance and penalties for non-compliance with HACCP and other safety and quality systems.

Determination of compliance relies on efficient inspection and surveillance of domestic products and industries as well as food imports. Effective operation of this component requires laboratory capacity for product testing and disease monitoring for assessing risks.

The entire system is completely dependent on well-trained human resources and the requisite technologies and equipment.

A National Authority should be established to oversee the system to ensure that it is in harmony with international food safety laws and to foster collaboration among national stakeholders and with similar and related international organisations.

5 Regulations and Standards:

~ international safety benchmarks

Food safety regulations and standards are driven by the consumer and trade and are formulated by the state and industry.

Technical regulations for products, production and process methods, and compliance with same, are formulated by the state. These are mandatory.

Standards are formulated by a governmental recognised body and/or private industry and are generally voluntary. Standards provide rules and guidelines on:

- product characteristics,
- process and production methods (PPMs) that have an effect on product characteristics,
- product-specific terminology and symbols, packaging, marking or labelling,
- methods and analysis.

Public Regulation

Standards-Setting Bodies

• *Codex Alimentarius Commission (Codex)*

Codex, created by the Food and Agriculture Organisation (FAO) and the World Health Organisation (WHO), establishes science-based quality and safety standards, codes of practice and other guidelines to protect public health and ensure fairness in trade of food products.

• *Office International des Epizooties (OIE)*

The OIE was created to facilitate trade in animals and animal products, both to protect public health and prevent the spread of diseases. The OIE provides information to national veterinary services on the occurrence and control methods for animal diseases.

• *International Plant Protection Convention (IPPC)*

The IPPC was created to facilitate the adoption of international sanitary and phytosanitary standards, ensure effective common action to prevent the spread and introduction of pests and parasites affecting plants and plant products and promote control measures.

The standards developed by international bodies should serve as a benchmark for national standards.

Industry Standards

Food Safety Systems

Voluntary approaches by the industry to manage food safety and quality issues, have in some cases, been adopted by governments and made mandatory, such as the Hazard Analysis Critical Control Point (HACCP). HACCP is internationally recognised as the system of choice to ensure food safety. The Codex Food Hygiene Committee has produced a set of principles and guidelines for the uniform implementation and application of HACCP.

• *Hazard Analysis Critical Control Point (HACCP)*

HACCP, developed in the United States, is product-specific and concentrates on specific threats to food safety throughout a product life cycle. The system is designed to identify potential hazards and/or critical points and develop a structured plan to provide for the control, reduction or prevention of these identified hazards. Given current levels of technology and knowledge, HACCP focuses on prevention, rather than end-product testing.

The HACCP system is regarded as the best existing system for safeguarding public health:

- the United States (US) and European Union (EU) countries require food processing industries to apply HACCP,
- exporters of meat, poultry, fish and fruit and vegetable products to the US must comply with HACCP regulations,
- exporters to the EU must implement a HACCP plan or system.

Implementing HACCP

The HACCP plan is built upon seven principles which embody the concept of prevention. These principles are aimed at minimising or eliminating risks to human health. Successful implementation of HACCP should be guided by scientific evidence of such risks.

HACCP helps to determine the points in the process that are absolutely critical in producing the safest foods. Ensuring safe foods means exercising control at these critical points.

Without good manufacturing practices and standard operating procedures, developing and implementing a HACCP Plan becomes more difficult.

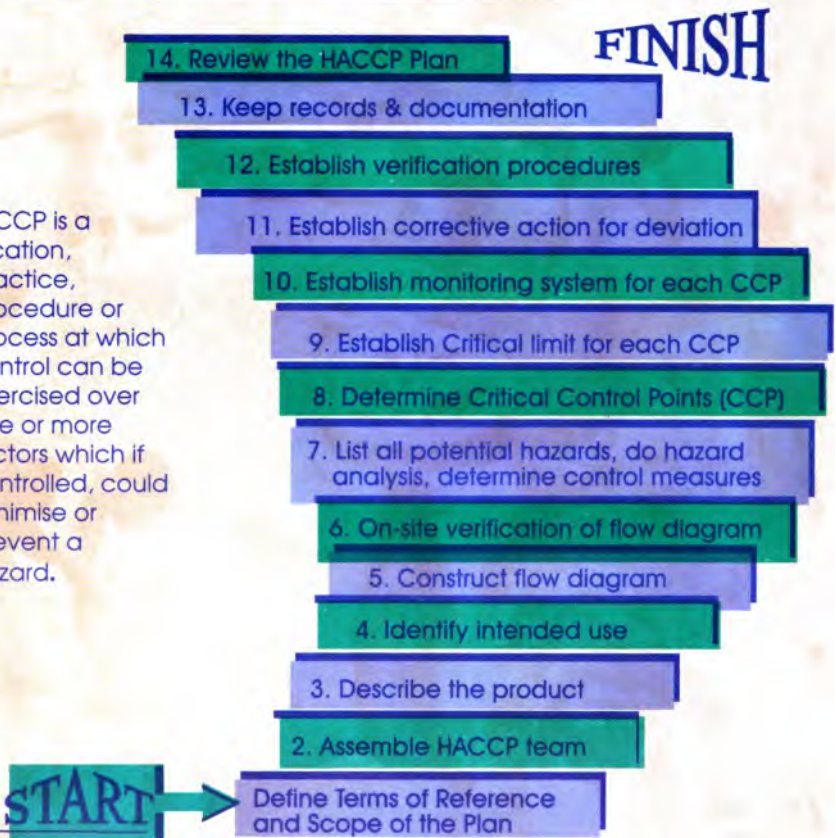
HACCP must be customised for each establishment as the methods and conditions of production/processing are unique to each enterprise. In designing a HACCP system, one must consider the impact of :

- Inputs, raw materials and ingredients,
- food production and manufacturing practices,
 - the role of production and manufacturing processes to control hazards,
 - the likely end use of the product,
 - epidemiological evidence of food safety,
 - consumer populations at risk.

The 14

Step Approach

A CCP is a location, practice, procedure or process at which control can be exercised over one or more factors which if controlled, could minimise or prevent a hazard.



Prerequisite Programmes (PRPs)

These are good management practices which should form the foundation of food safety and quality systems to reduce hazards.

- **Good Agricultural Practices (GAPs)**
GAPs are broad guidelines for minimising contamination of primary agricultural commodities through the control of water, manure, worker health and hygiene, chemical use, field and facility sanitation and transportation.
- **Good Manufacturing Practices (GMPs)**
GMPs are general guidelines related to location, plant layout, design and maintenance, equipment, plumbing, ventilation systems, waste disposal, product processing, packaging, employee training, hygiene and sanitation programmes and pest control.
- **Standard Operating Procedures (SOPs)**
SOPs are detailed instructions on how to comply with GMPs and should be developed for each individual operation. Sanitation Standard Operating procedures (SSOPs) are SOPs that describe the steps to be followed in cleaning and sanitising surfaces.

Quality Assurance Systems

Companies are continually working to improve the quality of their processes, products and services. Internationally, the ISO 9000 certification is the most widely applied form of self-regulation.

International Standards Organisation (ISO) 9000

ISO-9000 standards specify the critical elements of quality management systems to produce final products that consistently meet required specifications. The standards range from ISO 9000 to ISO 9004. The ISO-9002 applies to the food industry and can incorporate an HACCP system.



Certification

Certification of a quality management system is an important requirement for export. A company's quality management system is certified after successful completion of a series of internal and external audits. The certifying agency should be an internationally recognised authority for the certification to be accepted.

6 Whose Standards? Which Markets? What Products?

Many product standards used in agri-food trade are voluntary and developed by firms and industries. Sometimes, these industry standards may be more stringent than government standards and generally differ from country to country. This may reduce international competition and prevent firms from entering the market.

Producers and manufacturers must adjust their production processes to satisfy the specific technical specifications if they are to continue to access these target markets.

Some developing country exporters may have difficulties in implementing specified systems, complying with stringent national standards and getting accredited against a number of different, and sometimes conflicting standards.

This may lead to a two-tier system, with exporting firms operating with higher standards than those producing for the domestic market.

Regardless of their level of infrastructure and institutional capabilities, agri-export developing countries will have no choice but to comply with international guidelines, "voluntary" and national standards to continue to access export markets.

With the strengthening of international rules, increased trade in food products and the growing use of biotechnology, trade conflicts over food regulatory issues and their reform are likely to become more common.

To limit the opportunity for safety-related trade disputes, the development of a common approach to food safety regulations is a priority trade issue.

Governments and industry are encouraged to adopt international standards in the development of national standards. Central to this process, are the international standards being developed by Codex.

7 Food Safety, Trade and Public health

~ priority issues for the Caribbean



The agri-food industry is important to the Caribbean. However, exporters face intense competition due to reduced trade preferences, elimination of trade barriers and strict product standards and domestic producers face greater competition from increased levels of food imports. Consumers benefit from a wider choice of products, but must be assured that the food traded and consumed is safe, of good quality and wholesome.

Governments must:

- ✓ establish priorities to implement food safety systems;
- ✓ ensure that their standards & inspection systems prevent the importation of unsafe or sub-standard foods;
- ✓ ensure that support and regulatory services, statutory bodies and agri-food producers and processors can conform to international food safety guidelines in order to
 - increase consumer confidence in the entire food chain, and
 - prevent loss in market access for exports.

Agri-food industries must:

- ✓ know and understand the existing product standards, health, sanitary, testing and inspection requirements of their markets;
- ✓ ascertain whether these national requirements conform to international regulations and guidelines;
- ✓ undertake cost-benefit analysis of implementing these systems;
- ✓ implement internationally accepted safety systems in order to:
 - reduce design, production, handling and storage costs;
 - enhance ability to satisfy product standards;
 - improve competitiveness and access to markets.

Consumers themselves, must:

- ✓ remain vigilant when purchasing, storing, preparing and consuming food in fresh or processed form, whether domestically produced or imported.

Caribbean countries must develop internationally accepted food safety and quality systems to enhance market access for their products and instill consumer confidence in the food chain/supply.

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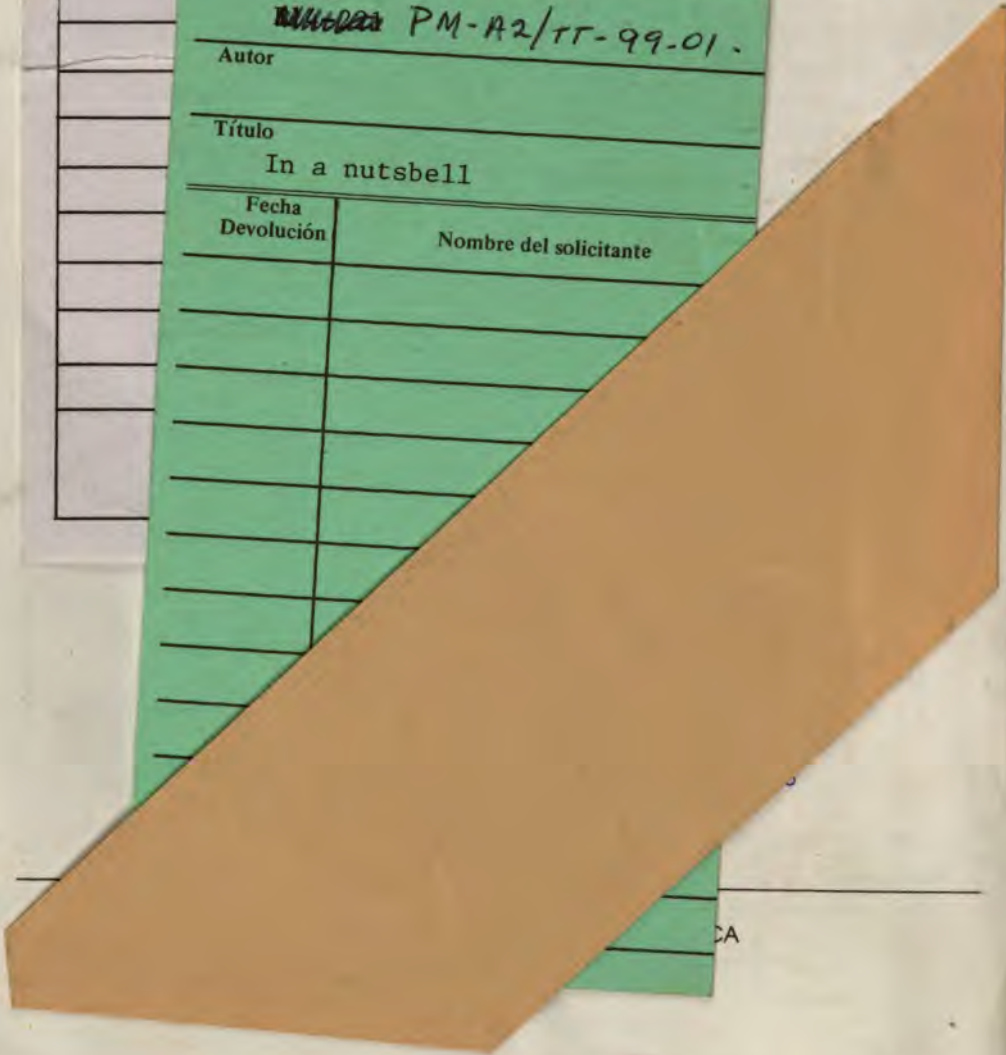
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