



FOOD AND AGRICULTURE  
ORGANIZATION  
OF THE UNITED NATIONS



WORLD  
HEALTH  
ORGANIZATION

**E**

**Agenda Item 4.2 b)**

**GF/CRD FAO-1**

**ORIGINAL LANGUAGE**

## **FAO/WHO GLOBAL FORUM OF FOOD SAFETY REGULATORS**

*Marrakech, Morocco, 28 – 30 January 2002*

**NATIONAL FOOD CONTROL SYSTEMS**

**- ASSURING FOOD SAFETY**

**CONFERENCE ROOM DOCUMENT PROPOSED BY THE FOOD AND  
AGRICULTURE ORGANIZATION OF THE UNITED NATIONS**

*The views expressed in the Global Forum documents are those of the author(s), and do not necessarily reflect the opinions of FAO or WHO. Designations employed and presentation of material do not imply the expression of any opinion on the part of FAO or WHO concerning the legal status of any country, territory, city or area of its authorities, or concerning the delimitation of its frontiers or boundaries.*

## **1. INTRODUCTION**

The term “food safety” is understood by reference to those hazards that may make food injurious to the health of a consumer. There is universal agreement on the need for safe food. “Food Quality” refers to all the attributes that influence the value of a product to the consumer. Quality includes positive attributes such as origin, colour, texture, processing method for food, etc., as well as negative attributes such as adulteration, fraud, spoilage or contamination. Conceptually, food safety is a sub-part and a sine-qua-non element of food quality. However, in practice, food safety and the other aspects of food quality are often considered separately. The distinction between safety and quality has implications for public policy and influences the nature and content of the food control system best suited to meet predetermined objectives. This paper discusses food safety issues only and considers appropriate infrastructures that are necessary to better assist in dealing with these problems at national level, while giving due consideration to international developments in this field. This paper is based on the content of the FAO/WHO publication “Assuring Food Safety and Quality: Guidelines for Strengthening National Food Control Systems” as recently revised following a Joint FAO/WHO Expert Consultation.

In determining the magnitude of the food safety problem and its impact on society, it should be noted that while a vast number of sporadic food-borne disease episodes occur daily, many are seldom noticed or registered by national authorities. Besides direct health consequences, such food-borne illnesses can reduce labour productivity, impose substantial stress on the health care system, and reduce economic output as a result of loss in confidence in the food production and marketing system. Many of the reasons why food safety is becoming a more important issue worldwide are most compelling in developing countries. Increase in population, rapid urbanization, poor sanitation and hygiene, inadequate potable water supplies, and general health and nutrition status, particularly of the vulnerable groups of population, compound with problems of food safety and pose greater challenges in developing countries. Confidence in the safety and integrity of the food supply is a vital need for consumers and an important requirement for international trade in food. In the past few years, a series of food safety alerts, have been instrumental in eroding the confidence of consumers in the food they buy. These alerts have had serious global repercussions. As consumers learn about the health consequences of different food hazards such as, *Escherichia Coli*, *Salmonella*, Bovine Spongiform Encephalopathies (BSE), dioxins and aflatoxins, mainly through the mass media, they become increasingly concerned about the safety of their food supply. This has reduced the public confidence in modern food farming systems, food processing, marketing and distribution, as well as in the general operation of the national food control systems which are meant to protect consumers from unsafe and adulterated food and to provide adequate safeguards for public health. On the one hand, consumers are taking unprecedented interest in the way food is produced, processed and marketed. On the other, they are increasingly calling upon the industry and their governments to accept greater responsibility for food safety, food quality and consumer protection. Action with industry lies in the prevention of food safety problems, and with governments in promoting such activities as well as in better regulatory enforcement and compliance through improved national food control systems.

## **2. PRINCIPLES OF FOOD CONTROL AND ISSUES FOR CONSIDERATION**

Food production, processing, marketing and distribution systems are complex. They are fragmented, involving a large number of intermediaries between the producer and the consumer. Moreover, the problems of food safety and quality are multidisciplinary in nature. At governmental level they may fall under many jurisdictions depending upon the constitutional powers of various ministries. Many activities have been and are being taken at international level to determine suitable cost effective, science-based approaches which would enhance the quality and safety within food supply systems, increase consumer protection, and assist in promoting international trade in

food. Major initiatives in this regard have been taken within the intergovernmental fora of the Codex Alimentarius Commission (Codex) engaged in the task of developing international food standards, codes of practices and principles of food inspection, certification, etc. Several FAO/WHO committees of experts give independent advice, based on science only, to the Codex Alimentarius Commission and to member governments. These committees are comprised of experts who are selected on the basis of their scientific qualifications and experience in relevant fields of food safety. The Joint FAO/WHO Expert Committee on Food additives and Contaminants (JECFA), FAO/WHO Joint Meeting of Experts on Pesticide Residues (JMPR) and Expert Consultation on Biotechnology are examples of such committees. Such advice covers safety evaluations of food additives and principles for their use in food; evaluations of environmental contaminants; pesticide residues in food; and microbiological contamination of food. The Sanitary and Phytosanitary Agreement (SPS) and Technical Barriers to Trade Agreement (TBT) of the World Trade Organization (WTO) have further acknowledged and enhanced the role of Codex and of the expert committees by recognizing these standards as the benchmarks for national food regulatory measures. These deliberations by experts and governmental delegates at the international level have resulted in several basic principles and issues that should underpin the design and operations of national food control systems to ensure food safety and consumer protection. These principles and issues are summarized below.

### **INTEGRATED FARM- TO- TABLE CONCEPT**

To achieve optimum consumer protection it is essential that safety be embodied in food products from production through consumption. This calls for an integrated farm-to-table approach in which the producer, processor, transporter, vendor and consumer all play vital roles in ensuring food safety.

In order to ensure adequate consumer protection and to effectively control, reduce or minimize food safety risks, a preventive approach should be developed and appropriate preventive measures introduced at all relevant stages of the farm-to-table continuum. Prevention, control at source, and identification of unsuitable products at an early stage make better scientific and economic sense than the traditional approach to food control which relied mainly on final product inspection and testing. An effective strategy is to charge businesses, from primary production to distribution, with responsibility for food safety. Government regulators are then responsible for elaborating and enforcing legal and regulatory requirements and for auditing performance of the food system through monitoring and surveillance activities.

### **HAZARD ANALYSIS CRITICAL CONTROL POINT SYSTEM**

Besides Good Manufacturing Practices (GMP) and Good Hygienic Practices (GHP), an important approach that can be applied at all stages in the production, processing and handling of food products involves the Hazard Analysis Critical Control Point system (HACCP). The principles of HACCP have been formalized by Codex and provide a systematic structure to the identification and control of potential hazards throughout the food chain. The application of the HACCP approach by industry is recognized as a fundamental tool for improving the safety of food and places the responsibility on food businesses to identify and analyze food hazards in their operational processes and to effectively control these hazards in accordance with the requirements set by national authorities.

### **RISK ANALYSIS**

Food safety control systems should be based on scientific principles and on an assessment of the risk to human health, as appropriate to the circumstances. It is now widely recognized that risk assessment is only one of the components of a wider process denominated "Risk Analysis". A Joint FAO/WHO expert consultation held in 1995, defined risk analysis as a process consisting of three

components: (a) risk assessment - a process of systematic and objective evaluation of all information pertaining to food hazards (consisting of hazard identification, hazard characterization, exposure assessment, and risk characterization); (b) risk management - the process of weighing policy alternatives in light of the results of risk assessment and, if required, selecting and implementing appropriate control options and regulatory measures; and (c) risk communication - the exchange of information and opinions concerning risks and risk management options and actions among risk assessors, risk managers, consumers and other interested parties. These three components are interrelated and cannot function well in isolation. Risk analysis must be the foundation upon which food safety policy and consumer protection measures are based.

At present, FAO and WHO jointly play a vital role in carrying out risk assessments at the international level through JECFA, JMPR, JEMRA and other expert bodies. These assessments form the basis for the elaboration of Codex standards and recommendations taking into consideration the risk assessments carried out at international level are recognized as valid under the SPS Agreement. Hence, their adoption and implementation within national food control systems is encouraged as well as for the development of food safety measures at national level. A risk –based approach to food control can better protect the consumer and be cost effective and efficient in the long run, both for the industry and the government.

### **TRANSPARENCY**

A food control system must be developed and implemented in a transparent manner and the involvement of stakeholders is essential in this regard. All stakeholders in the food chain should be involved and allowed to make effective contributions. The basis for all decisions should be explained. This will provide a mechanism for interactive exchange of information and encourage cooperation and collaboration among all concerned. Stakeholders involvement will also contribute to enhance consumer confidence in the integrity of the food supply which has been shown to depend upon consumer perception of the effectiveness of food control operations and activities by both public and private operators. As a whole, transparency based on stakeholder participation will improve the efficiency of food control systems and contribute an increased rate of compliance with food safety requirements.

### **NATIONAL FOOD CONTROL STRATEGY**

The effective application of a national food safety framework requires knowledge of current food safety problems and their magnitude, adequate socio-economic conditions and the development of an appropriate food control system within the scope of an overall national strategy. Besides socio-economic considerations, the strategy is influenced by current or emerging food safety and quality issues, constitutional roles and responsibilities of various bodies of government, human and financial resources availability, and by the potential for development of the existing food sector including food trade. Such an exercise should also consider international perceptions of food risks, international standards and any international commitments in the area of food protection. Programmes of activities and the necessary infrastructure to achieve these objectives tend to be country specific. It is therefore necessary to periodically examine all factors that may impinge upon the objectives and performance of the system within the framework of the national strategy, and to take appropriate measures to review and update legislation, regulations and/or policies as necessary.

### **3. ELEMENTS OF A NATIONAL FOOD CONTROL SYSTEM**

#### **OBJECTIVES**

The principal objectives of national food control systems are:

- Protecting public health by reducing the risk of foodborne diseases;
- Protecting consumers from unsanitary, unwholesome, mislabelled or adulterated food; and
- Contributing to economic development by maintaining consumer confidence in the food system and providing a sound regulatory foundation for domestic and international trade in food.

#### **ACTIVITIES**

Regardless of its organizational structure, a national food control system should be capable of performing the following core activities:

- Formulation of a national food safety policy
- Provision of a science based foundation using risk analysis
- Development, updating and effective enforcement of food legislation, regulations and standards
- Coordination of food control activities and adequate surveillance, monitoring and audit
- Planning and implementation of food inspection
- Development of education, training and research

#### **BUILDING BLOCKS**

Regulatory food control systems will typically consist of the following basic components:

#### **FOOD LAWS AND REGULATIONS**

Being regulatory in nature, a food control system is based on an appropriate law giving power to the designated authority (or authorities) to enforce its provisions. Traditionally, food control systems have consisted of legal definitions for unsafe or adulterated food; requirements ensuring that only safe food, free from adulteration is placed on the market; and prescriptive tools for enforcement, i.e. removing or confiscating unsafe food from the market and punishing offenders for infringement by way of fines or imprisonment. Usually, there is an enabling legislation giving powers to the concerned minister(s) to prepare detailed regulations prescribing food standards and carry out inspection and sampling as well as other necessary operations. The law may provide for an advisory or consultative body to assist the authority (the minister) concerned in its implementation. The law and accompanying regulations form a basic and essential element of the food control system.

#### **MANAGEMENT.**

Effective food control systems require policy and operational coordination at national level. While the nature and extent of these policy and operational coordination depends on the

organizational structure of the food control system, it is important that the structure provides for a leadership or coordinating function performed by a central management entity. Adequate administrative structures with clearly defined accountability should be responsible for carrying out the activities enumerated in the previous section (3.2). The core responsibility for effective implementation of mandatory regulatory measures normally rests with the management.

### **INSPECTION SERVICES**

Administration and implementation of the food law and its regulations require a qualified and trained food inspection service. The service carries out inspections of food premises; collects food samples for analysis, and undertakes other activities that are necessary to determine compliance with regulations. The service provides the eyes and ears of the system. A food inspector is a key functionary who has day- to- day contact with food industry, food traders, and often the public. The reputation and integrity of the food control system, depends on the integrity and skill of the inspection service to a large extent.

### **LABORATORY SERVICES**

Laboratories play a vital role in the enforcement of regulatory food control measures and are an essential and highly technical component of the system. They are engaged in the physical, microbiological and chemical analysis of food samples sent by the inspector to determine whether there is non-compliance with food standards. They may judge a food to be unsafe and injurious to health. The evidence laboratories provide in this respect is crucial to prosecution of offenders in a court of law. The utmost care is necessary to ensure the efficient and effective performance of the laboratory.

## **4. FOOD CONTROL SYSTEMS – ORGANIZATIONAL STRUCTURE**

Most of the traditional food control systems have a sectorial / fragmented structure, with several administrative structures (e.g. ministries, agencies) being responsible for food control activities (fragmented system). Recently, efforts have been made to re-organize national food control systems and to develop structures favourable to a higher level of coordination. This has resulted at times in the development of one single, unified administrative structure being responsible (unified system). Currently a system based on a national integrated approach (integrated system) is considered as the best structure to meet the present challenges related to food safety and its control.

### **FRAGMENTED SYSTEMS**

Such systems have been historically based upon the need for development of a particular sector such as meat and meat products, fisheries, fruits and vegetable, etc. Such systems can be mandatory or voluntary and are put into place through a general law or a sectoral regulation. Examples include export inspection systems; specific commodity based systems implemented by different authorities or ministries given a regulatory mandate; systems for grading and marking of agricultural produce for sale in the market or as raw material for manufacturers.

Sectoral initiatives are taken up at different periods of time in order to meet a particular objective. They have resulted in the establishment of separate food control activities. Under such arrangements the responsibilities for food control are shared typically among government ministries such as Health, Agriculture, Commerce, Trade and Environment reflecting constitutional powers of different segments of government, or among different agencies.

Food control systems, even those meant for public health purposes and for protection of the consumer, may be decentralized or fragmented because responsibilities are shared among national, state and local bodies and the thoroughness of implementation depends upon the capacity and

efficiency at each level. Thus, consumers may not receive the same level of protection throughout the country.

While multiple agencies are the most common feature in many countries, they suffer from serious drawbacks, including:

- Lack of overall coordination at national level and reduction in the confidence of the domestic consumer and the foreign buyer;
- Jurisdictional confusion and overlap, resulting in less efficiencies in performance;
- Lack of coherence leading to avoidable over-regulation;
- Differences in levels of expertise and resources, hence, uneven implementation;
- Conflict between public health objectives and facilitation of trade and industry development;
- Limited capacity for appropriate scientific inputs in decision-making processes.

### **UNIFIED SYSTEMS**

These systems are based upon the consolidation of all responsibilities for protecting consumers and for ensuring food safety under a single ministry or under one single independent agency with clearly defined terms of reference. Such systems highlight the high priority that the government places on food safety issues. The benefits are obvious:

- Uniform application of protection measures;
- Improved cost efficiency;
- Harmonizing of food standards and other measures;
- Capacity to respond quickly to emerging challenges and the demands of domestic and international marketplaces.

While unified systems appear most logical, the fact of the matter is that there are only but very few examples where such food control systems have replaced the fragmented systems, possibly due to the socio-economic and political environment of most countries and the costs of the operation.

### **INTEGRATED SYSTEMS – A WAY AHEAD**

Integrated systems have been proposed with the aim of achieving effective collaboration and coordination among administrative structures which have jurisdiction across the farm-to-table continuum while causing minimum changes within the operation of existing structures.

In reviewing and revising their food control systems, the governments may wish to consider a model which calls for the establishment of an autonomous national food control agency.

The national food control agency must be perceived as a separate and distinct unit with clearly articulated goals and objectives, operating as the interface between Government and the various stakeholders in the food chain. It must be resourced with well-trained staff managing the key food control programmes and provide a transparent means of *controlling food across the whole food chain* i.e. consumer protection, promotion of food trade and industry by ensuring the safety and quality of food, and preventing fraudulent practices.

While the actual structure of a national food control agency will vary from country to country, the following notes describe the role, components and activities of a typical agency:

- Independent of government, the food industry, and specific sectoral interests.
- Governed by a management board with a Chairperson and Directors.
- Management Board has wide ranging powers, including the formulation of food control policy and the provision of advice to government.
- Provides a coordinating mechanism for uniform implementation of food control activities.
- Adopts a strategic view across the whole food chain and consults widely with all sectors of the food chain and all interest groups to ensure public involvement in the policy making process.
- Utilizes an open and transparent decision-making process able to make public its views on issues related to food safety, public health, and food control.
- Operates under the principle of protecting the health status of the consuming public, and providing information and advice that enables consumers to make informed choices.
- Responsibilities include the identification of legislative needs; monitoring the efficiency and effectiveness of law enforcement and food surveillance activities; commissioning research; etc.
- Statutory powers to coordinate, monitor and audit local agency and provincial food control activities, including food analysis, inspection, enforcement, and education.
- Possesses reserve powers that can be brought into effect in the event that enforcement bodies default or are negligent in their duties.

Existing agencies would usually retain responsibilities for food inspection as well as for education and training.

- By placing the management of the safety of the food supply chain under a competent, autonomous agency, it is possible to fundamentally change the way food control is managed and food safety assured. The advantages of such a system include:
- Providing coherence in the national food control system with a flexible balance between prevention and enforcement.
- Politically more acceptable as it does not disturb the day to day inspection and enforcement role of other agencies.
- Promoting uniform application of prevention and control measures across the whole food chain throughout the country.
- Allowing for the functional separation between risk assessment and risk management functions resulting in objective consumer protection measures, while facilitating the development of an effective risk analysis approach.
- Promoting risk-based approaches toward implementation, therefore, becoming more cost-effective in the long run.
- Encouraging transparency in decision-making processes and accountability in enforcement
- Improving confidence among domestic consumers and credibility with foreign buyers.
- Better equipping the government to deal with international dimensions of food control i.e. Codex, SPS and TBT Agreements, etc.



Such an autonomous national integrated food control agency should address the entire food chain from farm-to-table, bring about the cooperation of various stakeholders, pursue risk-based approaches and have the mandate to transfer resources to high priority areas. It should establish national food safety goals and put into effect flexible and effective strategic and operational activities to achieve these goals. The establishment of such an agency need not necessarily involve day-to-day food inspection functions. These activities could continue to lie with existing agencies at national, state or local body levels, each one functioning within the overall strategic and policy framework. Auditing and monitoring would rest with the central national agency. The management board or a similar body of the agency must be assisted through appropriate scientific and coordinating committees.

The agency should give priority to developing consumer education and community-outreach initiatives and promote their implementation. It should encourage industry to apply preventive approaches towards food safety such as HACCP. It should establish quality assurance schemes for industry and assist in their implementation. The agency should be involved in supporting research and development, particularly in areas of risk assessment and risk management.

Several governments, particularly in the industrialized world, have over the past few years, responded to the urgent need for better ensuring the safety and quality of food. This applies from each stage of production and throughout the entire food chain. They are bringing their food control systems in line with the scientifically determined principles discussed earlier. They have recognized the need for the application of the science-based principles of risk analysis in ensuring food safety as well as the need for cooperation of various stakeholders in undertaking preventive measures to achieve this objective. Many of these governments have established, or are in the process of creating, such an integrated system of food control. This will provide for an overall policy making and coordinating mechanism at the national level. Some industrialized countries have introduced new legislation creating such a top body. Others have made, or are in the process of making, changes in the existing legislation to drastically overhaul their systems as well as the infrastructure to meet the present day needs of prevention and mandatory control measures within an overall policy framework. Some of the countries, which have acted recently in this regard, include, Australia, Canada, France, Ireland, Japan, New Zealand and United Kingdom.

## **5. SPECIFIC ISSUES FOR DEVELOPING COUNTRIES**

### **CAPACITY OF TRADITIONAL SYSTEMS TO MEET CURRENT FOOD SAFETY CONCERNS**

In general, the traditional food control systems in most developing countries do not provide the concerned agencies with a clear mandate and authority to prevent food safety problems. They lack an overall food safety framework and the necessary flexibility to take appropriate preventive measures. The result is that implementation of food control for ensuring food safety has been reactive and enforcement-oriented rather than preventive and holistic in its approach to reduce the risk of food-borne illness. The major thrust of the food safety programmes has been on sampling and analysis of the food in the marketplace. An integrated farm-to-table concept for prevention of food safety problems has been non-existent. Most of the activities carried out are not risk-based approaches, as there have been no risk assessments of various food hazards. Only minimal use has been made of international recommendations from Codex, or other international expert committees engaged in this task. There has been a lack of transparency and quite often the stakeholders felt left out of the decision-making processes. This has affected the confidence of the consumer in the safety of the national food supply.

While taking into consideration the basic principles and essential components, food control systems must be established specifically for each country's requirements and resources. Developing

countries can benefit from a study of some of the above new developments taking place around the world and use that information for appropriate actions at their national levels.

With limited scientific resources for risk analysis, developing countries can make better use of international recommendations from Codex and FAO/WHO expert committees. They should take a more active part in Codex deliberations so that their particular problems in food safety and consumer protection areas are considered at that level and their food safety concerns and economic interests are not ignored.

The need for technical assistance to developing countries in strengthening national food control systems is well- recognized. Over the past several decades both FAO and WHO have been actively involved in cooperating with developing countries in this field. The more recent SPS and TBT Agreements refer to the need for such assistance to developing countries. In light of the current thinking on assuring food safety for the consumer and further assisting countries in reviewing and strengthening their food control systems, FAO and WHO are jointly bringing out a publication, *Assuring Food Safety And Quality: Guidelines For Strengthening National Food control Systems*. The publication will be printed shortly and will become available within the next few months.