

ISO 22000 is first in family of food safety management system standards

by Roger Frost

ISO 22000, published on 1 September 2005, is a new International Standard designed to ensure safe food supply chains worldwide and the first of a family on food safety management systems.

ISO 22000:2005, *Food safety management systems – Requirements for any organization in the food chain*, provides a framework of internationally harmonized requirements for the global approach that is needed.

The standard has been developed within ISO by experts from the food industry, along with representatives of specialized international organizations and in close cooperation with the Codex Alimentarius Commission, the body jointly established by the United Nations' Food and Agriculture Organization (FAO) and World Health Organization (WHO) to develop food standards.

A major resulting benefit is that ISO 22000 will make it easier for organizations worldwide to implement the Codex HACCP (Hazard Analysis and Critical Control Point) system for food hygiene in a harmonized manner, which does not vary with the country or food product concerned.



Across borders

Food reaches consumers via supply chains that may link many different types of organization and that may stretch across multiple borders. One weak link can result in unsafe food that is dangerous to health – and when this happens, the hazards to consumers can be serious and the cost to food chain suppliers considerable.

As food safety hazards can enter the food chain at any stage, adequate control and communication throughout is essential (see **Figure 1**). Food safety is a joint responsibili-

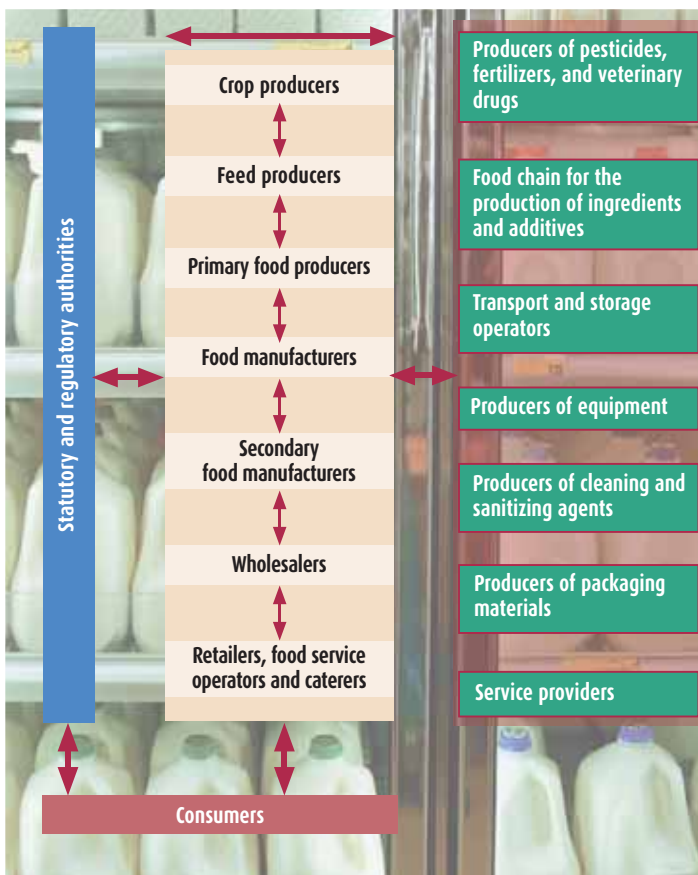


Figure 1: Example for communication within the food chain.

The figure does not show the type of interactive communications along and across the food chain that by-pass immediate suppliers and customers.

ty of all the actors in the food chain and requires their combined efforts.

ISO 22000 is therefore designed to allow all types of organization within the food chain to implement a food safety management system. These range from feed producers, primary producers, food manufacturers, transport and storage operators and subcontractors to retail and food service outlets – together with related organizations such as producers of equipment, packaging material, cleaning agents, additives and ingredients.

The standard has become necessary because of the sig-

nificant increase of illnesses caused by infected food in both developed and developing countries. In addition to the health hazards, food-borne illnesses can give rise to considerable economic costs covering medical treatment, absence from work, insurance payments and legal compensation.

As a result, a number of countries have developed national standards for the supply of safe food and individual companies and groupings in the food sector have developed their own standards or programmes for auditing their suppliers.

The plethora of more than 20 different such schemes worldwide generates risks of uneven levels of food safety, confusion over requirements, and increased cost and complication for suppliers that find themselves obliged to conform to multiple programmes.

Food-borne illnesses can also give rise to considerable economic costs

ISO 22000, backed by international consensus, harmonizes the requirements for systematically managing safety in food supply chains and offers a unique solution for good practice on a worldwide basis.

In addition, food safety management systems that conform to ISO 22000 can be certified – which answers the growing demand in the food sector for the certification of suppliers – although the standard can be implemented without certification of conformity, solely for the benefits it provides.

HACCP

Developed with the participation of food sector experts, ISO 22000 incorporates the principles of HACCP, and covers the requirements of key standards developed by various global food retailer syndicates, in a single document.

“Public sector participation in the development of the ISO 22000 family is also significant,” ISO Secretary-General Alan Bryden commented, “notably that of the FAO/

WHO’s Codex Alimentarius Commission, which is responsible for the well-known HACCP (Hazard Analysis and Critical Control Point) system for food hygiene. Thanks to the strong partnership between ISO and Codex, ISO 22000 will facilitate the implementation of HACCP and the food hygiene principles developed by this pre-eminent body in this field.”



Another benefit of ISO 22000 is that it extends the successful management system approach of the ISO 9001:2000 quality management system standard which is widely implemented in all sectors but does not itself specifically address food safety.

The development of ISO 22000 was based on the assumption that the most effective food safety systems are designed, operated and continually improved within the framework of a structured management system, and incorporated into the overall management activities of the organization.

While ISO 22000 can be implemented on its own, it is designed to be fully compatible with ISO 9001:2000 and companies already certified to ISO 9001 will find it easy to extend this to certification to ISO 22000. To help users to do

Key elements and benefits of ISO 22000

by **Jacob Færgemand** and **Dorte Jespersen**

ISO 22000 combines generally recognized key elements to ensure food safety along the food chain:

Interactive communication

Clear communication along the food chain is essential to ensure that all relevant food safety hazards are identified and adequately controlled at each step. This implies communication of the needs of the organization to organizations both upstream and downstream in the food chain.

Communication with customers and suppliers, based on the information generated through systematic hazard analysis, will also assist in establishing customer and supplier requirements in terms of feasibility, need and impact on the end product.

System management

The most effective food safety systems are designed, operated and updated within the framework of a structured management system and incorporated into the overall management activities of the organization. This provides maximum benefit for the organization and interested parties. ISO 22000 is aligned with the requirements of ISO 9001:2000 in order to enhance the compatibility of

the two standards and to ease their joint or integrated implementation.

Hazard control

ISO 22000 combines the Codex Alimentarius HACCP (Hazard Analysis and Critical Control Points) principles and application steps, developed by Codex Alimentarius, with prerequisite programmes¹⁾. It uses the hazard analysis to determine the strategy for hazard control.

Benefits for users

Organizations implementing the standard will benefit from:

- organized and targeted communication among trade partners;
- optimization of resources (internally and along the food chain);
- improved documentation;
- better planning, less post-process verification;
- more efficient and dynamic control of food safety hazards;
- all control measures subjected to hazard analysis;
- systematic management of prerequisite programmes;
- wide application because it is focused on end results;
- valid basis for taking decisions;



Jacob Færgemand is convener and project leader of the ISO working group that is developing ISO 22000. He works for BVQI Denmark.

E-mail jacob.faergemand@dk.bureauveritas.com

Web www.bvqi.dk



Dorte Jespersen is secretary of the working group and works for the Danish Standards Association

E-mail dj@ds.dk

Web www.ds.dk

- increased due diligence;
- control focused on what is necessary, and
- saving resources by reducing overlapping system audits

Benefit for other stakeholders

Other stakeholders will benefit from

- confidence that the organizations which are implementing ISO 22000 have the ability to identify and control food safety hazards.

Value-adding features

- it is an auditable standard with clear requirements;
- it is internationally accepted;
- it integrates and harmonizes various existing national and industry-based certification schemes;

- food processing industries are waiting for this standard;
- it is aligned with both ISO 9001:2000 and HACCP
- it contributes to a better understanding and further development of HACCP.

An ISO 22000 check-list for small businesses and developing countries will be available

1) A prerequisite programme is a specified procedure(s) or instruction(s), specific to the nature and size of the operation, that enhances and/or maintains operational conditions to enable more effective control of food safety hazards and/or that controls the likelihood of introducing food safety hazards and their contamination of or proliferation in the product(s) and product processing environment.

so, ISO 22000 includes a table showing the correspondence of its requirements with those of ISO 9001:2000.

Family

ISO 22000:2005 is the first in a family of standards that will include the following documents:

- ISO/TS 22004, *Food safety management systems – Guidance on the application of ISO 22000:2005*, which will be published by November 2005, provides important guidance that can assist organizations including small and medium-sized enterprises around the world.
- ISO/TS 22003, *Food safety management systems – Requirements for bodies providing audit and certification of food safety management systems*, will give harmonized guidance for the accreditation (approval) of ISO 22000 certification bodies and define the rules for auditing a food safety management system as conforming to the standard. It will be published in the first quarter of 2006.
- ISO 22005, *Traceability in the feed and food chain – General principles and guidance for system design and development*, will shortly be circulated as a Draft International Standard.

In partnership with the International Trade Centre (ITC) – the technical cooperation agency of the United Nations Conference on Trade and Development

(UNCTAD) and the World Trade Organization (WTO) – ISO is also preparing an easy-to-use check-list for small businesses and developing countries, entitled *ISO 22000: Are you ready?*

ISO 22000 and ISO/TS 22004 are the output of working group WG 8, *Food safety management systems*, of ISO technical committee ISO/TC 34, *Food products*. Experts from 23 countries participated in the working group, together with international organizations with liaison status.

ISO 22000 is fully compatible with ISO 9001:2000

In addition to the Codex Alimentarius Commission, these included the Confederation of the Food and Drink Industries of the European Union (CIAA), and the World Food Safety Organization (WFSO). They have been joined for the development of ISO/TS 22003 by experts from the ISO committee on conformity assessment, ISO/CASCO, the International Accreditation Forum (IAF) and the IQNet international certification network.

ISO 22000:2005, *Food safety management systems – Requirements for any organization in the food chain*, costs 118 Swiss francs and is available from ISO national member institutes (listed with contact details on the ISO Web site: www.iso.org) and from ISO Central Secretariat (sales@iso.org).