



Executive summary

Assessment of Food Quality and Safety and ICT Methodologies and Systems

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Public concerns about food safety and worries about the apparent lack of transparency in the production and processing of food mean that consumers' demands have never been more stringent. As medical knowledge grows and dietary education improves, consumers are becoming harder to satisfy: they want foods that are not only safe but also good for them. Major food scares, from BSE (Bovine Spongiform Encephalopathy) to bioterrorism, continue to affect consumer trust in the food industry. If producers and retailers want to survive in this increasingly competitive market, they must keep up with consumers' demands for accurate and transparent tracking and traceability systems. MoniQA is evaluating the potential of ICT (Information and Communication Technologies) for monitoring food quality and safety along the food chain – initial findings are summarised below.

In order to satisfy modern consumers **quality management is of paramount importance at all stages of agro-food production**. Therefore, several food quality and distribution systems have been developed in response to challenges such as food market globalization and food scandals in particular. The agro-food industry will continue to implement and develop these systems. The key aspect, however, is the **effective organisation of information and communication amongst the different participants in the food chain** so as to ensure a supply of safe products of high quality. In this context, the **traceability** concept allows us to analyse the movement of shipments and the origin of goods and, as a consequence, the tracking of foodstuff and their components at all stages. In fact European Commission Directive EC/178/2002 determines the importance of traceability as the instrument to ensure food safety. Successful food policy defines the role of traceability for animal feeds and food components by implementing appropriate procedures.

The global standardization of barcodes, for instance, effectively enables us to place food products in time and space, and to identify the sender and the destination within the food chain. The twin principles of **consistency and transparency** in data and information exchange among the participants in the food chain create conditions for the effective and efficient operation of food quality and supply systems. The potential to react in a flexible way to changes in the market leads to improved safety and quality.

Clearly **Information and Communication Technologies (ICT) have an important role to play** in the context of traceability. Applications of ICT tools in the food supply chain (FSC) include:



- **databases** that contain information on the number of producers, providing the clients with information on products, processes and cooperation with other food supply chain and network partners
- **a consistent system for coding and information transfer** that enables the **automation of communication** among business partners within the FSC. This is based on the international standard EAN-UCC (European Article Number Association/Uniform Code Council), which was transformed into the Global Standard GS1 in 2005
- development of **infrastructure and equipment** that include appropriate computer networks and software and personnel employed, which enables the effective use of databases and effective communication within the food supply chain network (FSC)
- defining an **organizational infrastructure** covering all internal activities of the organization and the FSC and separating the entity dealing with making those resources available and, as a consequence, the diffusion of innovation based ICT along the supply chain.

In a nutshell, the **traceability concept is the key to effective and efficient use of information and communication technologies** in food supply chain network management. But, Information and Communication Technologies also play an important role in an effective food control systems by **increasing awareness and knowledge about food safety and quality issues** among key stakeholders such as consumers and their organizations, food producers, processors, traders, food enterprises, industry associations and others. ICT can empower these groups to either enhance food safety and quality themselves or for those who consume the food they produce and/or market.

About MoniQA – www.moniqua.org

MoniQA ("Monitoring and Quality Assurance in the Food Supply Chain") is a Network of Excellence (NoE) funded by the European Commission under the 6th Framework Programme. The Network aims to make food safer by harmonising methods for food analyses. The project is coordinated by the Vienna-based International Association for Cereal Science and Technology (ICC). More than 155 researchers and scientist from 33 international partners from 20 countries are involved in MoniQA.

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MoniQA offers associated partnerships for interested organisations, SMEs and institutions. For more information see the FAQ section on the MoniQA homepage www.moniqua.org or contact

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