

International Food Safety Authorities Network (INFOSAN)

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INFOSAN Information Note No. 3/2009 – Implementation of the WHO Global Strategy
for Food Safety

Implementation of the WHO Global Strategy for Food Safety

SUMMARY NOTES

- The WHO Global Strategy for Food Safety was published in 2002 following a World Health Assembly request.
- The Strategy consists of seven approaches developed to reduce the health and social burden of foodborne disease.
- WHO, in collaboration with other United Nations' Agencies, Member States, and other stakeholders, has successfully implemented the Global Strategy for Food Safety. This assists Member States to recognize food safety as an essential public health function and helps reduce the burden of foodborne disease.
- The further implementation of the Strategy will continue as part of WHO's efforts to improve global food safety.

Introduction

The Fifty-third World Health Assembly, held in 2000, requested the Director-General to put in place a global strategy for surveillance of foodborne diseases and to initiate a range of other activities on food safety and health. Following this request, WHO organized a meeting on the strategic planning of food safety (Geneva, 20-22 February 2001). Following further consultation with Member States, WHO published the 'Global Strategy for Food Safety' in 2002.¹

WHO Global Strategy for Food Safety

Goal To reduce the health and social burden of foodborne disease.

Methods The goal will be achieved through three principal lines of action:

- advocating and supporting the development of risk-based, sustainable, integrated food safety systems;
- devising science-based measures along the entire food production chain that will prevent exposure to unacceptable levels of microbiological agents and chemicals in food;
- assessing and managing foodborne risks and communicating information, in cooperation with other sectors and partners.

Approaches The Strategy includes the following approaches:

- I. Strengthening surveillance systems of foodborne diseases;
- II. Improving risk assessments;
- III. Developing methods for assessing the safety of the products of new technologies;
- IV. Enhancing the scientific and public health role of WHO in Codex;
- V. Enhancing risk communication and advocacy;
- VI. Improving international and national cooperation;
- VII. Strengthening capacity building in developing countries.

This INFOSAN Information Note provides information on the implementation of the WHO Global Strategy for Food Safety through a summary of the activities undertaken under each of the

¹ Available in 6 languages at: www.who.int/foodsafety/publications/general/global_strategy/en

Strategic approaches. Please see the WHO Global Strategy for Food Safety for information on the Global Strategy and the approaches developed¹. It should be recognized that important interlinkages exist between the approaches discussed below. General approaches, such as communication and capacity building, are considered not only in their own right but also as important, integrated parts of other specific approaches.

I. Strengthening surveillance systems of foodborne diseases;

The WHO Global Environment Monitoring System (GEMS/Food)² informs the Codex Alimentarius Commission (CAC) and governments on levels, trends and significance of chemical contaminants in food. WHO is working to expand the scope of GEMS/Food to include foodborne pathogens and other food contaminants of concern.

WHO Global Salm-Surv (WHO GSS)³ promotes integrated, laboratory-based surveillance and fosters inter-sectoral collaboration and communication among microbiologists and epidemiologists in human health, veterinary, and food-related disciplines. WHO GSS includes a passive surveillance system that collects annual Salmonella summary data from human and non-human sources from its member institutions. WHO GSS is part of WHO's endeavours to strengthen the capacities of its Member States in the surveillance and control of major foodborne diseases and to contribute to the global effort of containment of antimicrobial resistance in foodborne pathogens.

The newly constituted WHO Advisory Group on Integrated Surveillance of Antimicrobial Resistance (WHO-AGISAR) will define in collaboration with different stakeholders and partner organizations, surveillance needs covering animal, food and human reservoirs. Such needs will be informed by the new WHO list of Critically Important Antimicrobials for Human Health.

The International Food Safety Authorities Network (INFOSAN) is developing partnerships with relevant regional and global food contamination and foodborne disease surveillance networks to ensure a coordinated global approach towards food safety event identification.

II. Improving risk assessments;

Demands for scientific advice from the CAC and Member States have constantly increased in numbers as well as complexity. Besides the regular requests for assessments of chemical and microbiological hazards in food addressed through the Joint FAO/WHO Expert Committee on Food Additives (JECFA)⁴, the Joint FAO/WHO Meeting on Pesticide Residues (JMPR)⁵ and the Joint FAO/WHO Expert Meeting on Microbiological Risk Assessment (JEMRA)⁶, there are increasing requests for ad hoc advice to address questions that are more complex and outside the terms of reference of these expert bodies, for example, risk-benefit assessment. Emergency ad hoc advice is also increasingly requested in response to events of international concern. The 2008 melamine-contamination case is one recent example, where WHO, in collaboration with FAO, was able to provide rapid interim advice to governments and subsequently organized an international expert consultation to provide detailed and updated scientific advice on the issue⁷.

Besides performing risk assessments on specific hazards, the continuous improvement and harmonization of risk assessment principles and methods is an important part of WHO's work. The Environmental Health Criteria (EHC) documents EHC 70 and 104, published in 1987 and 1990, lay down the principles for the toxicological and safety assessment of chemicals in food, and still form the basis for chemical risk assessments to date. JECFA and JMPR have over the years continuously updated and improved these principles as new scientific knowledge became available. In 2002 an initiative was started to update the principles and methods for the risk assessment of chemicals in food and harmonize to the extent possible the methods applied to the different types

² Further information is available at: www.who.int/foodsafety/chem/gems/en

³ Further information is available at: www.who.int/salmsurv/en/

⁴ Further information is available at: www.who.int/ipcs/food/jecfa/en/

⁵ Further information is available at: www.who.int/ipcs/food/jmpr/en/

⁶ Further information is available at: www.who.int/foodsafety/micro/jemra/en and www.fao.org/ag/agn/agns/jemra_index_en.asp

⁷ Available at: www.who.int/foodsafety/fs_management/infosan_events/en

of chemical hazards⁸. A detailed guidance document, addressing the hazard, exposure and risk assessments of chemicals has been developed and will be published as an EHC document by the end of this year.

In the area of microbiological risk assessment the new system of JEMRA meetings have provided a framework for development of this new scientific discipline. The work of JEMRA has since 2000 resulted in a significant number of risk assessments for microorganism/commodity combinations, including Salmonella in poultry and eggs, Campylobacter in poultry, Vibrio in sea-food and Enterobacter in powdered infant formula. This development has proven to be a driver for further international developments of methodology for risk assessment relative to microorganisms.

FAO and WHO have engaged in a consultative process to consider ways to improve the independence, transparency and sustainability of the provision of scientific advice to CAC and FAO and WHO member countries. One output of this process is the development of a Framework for the provision of scientific advice,⁹ which will improve the transparency and enhance consistency of such advice. FAO and WHO have also established a Global Initiative for Food-Related Scientific Advice (GIFSA)¹⁰. The specific objectives of the GIFSA are to increase awareness of the FAO and WHO programme of work on the provision of scientific advice, to mobilize technical, financial and human resources to support the provision of scientific advice in food safety and nutrition, and to promote the timeliness of the provision of scientific advice by FAO and WHO, while ensuring the continuation of the highest level of integrity and quality.

III. Developing methods for assessing the safety of the products of new technologies;

Biotechnology –The application of biotechnology to food production presents consumers with new challenges and questions. While noting that the development of genetically modified foods offers the potential for increased agriculture productivity or improved nutritional value that can contribute directly to enhancing human health and development, WHO addresses concern on potential adverse effects on human health associated with consumption of generically modified foods. There is a need for defining a common, evidence based approach at global level for food safety and human health to facilitate a coherent pre-market evaluation of genetically modified foods.

WHO has published a number of scientific reports providing advice to Member States and CAC on the basis of expert meetings, which is then used to define standards for the risk assessment of genetically modified plants, microorganisms and animals. Based on this scientific advice CAC has established two time-limited Task Forces on Foods derived from Biotechnology and has through this process developed relevant standards, guidelines or recommendations for genetically modified food, having regard, where appropriate, to other legitimate factors relevant to the health of consumers and the promotion of fair practices in the food trade.¹¹

In 2005 WHO published a report providing a knowledge base for Member States and international standard-setting bodies in order to achieve transparent and inclusive consensus on the evaluation and application of modern biotechnology in food production.¹² This is aimed at considering the overall impact of this technology on human health and development. The report includes consideration of the significance of this technology for food security, the impact of intellectual property rights on research, national capacity for risk analysis, and the impact on civil societies, considering social and ethical concerns.

Another emerging issue is nanotechnology. Research and development on nanoscale-science¹³ has been growing rapidly worldwide with increasing potential for applications of nanotechnologies also in the food and agriculture sector. Given the increased global interest in the use of

⁸ Available at: www.who.int/ipcs/food/principles/

⁹ Available at: www.fao.org/ag/agn/agns/files/Final_Draft_EnglishFramework.pdf

¹⁰ Further information is available at: www.who.int/foodsafety/codex/gifssa/en

¹¹ Available at: www.who.int/foodsafety/biotech/meetings/animals_2007/en

¹² Available at: www.who.int/foodsafety/biotech/who_study/en

¹³ For further information, see the INFOSAN Information Note on Nanotechnology, available in 6 languages at: www.who.int/foodsafety/fs_management/infosan_archives/en

nanotechnology and concerns on the potential food safety implications, FAO and WHO are convening an expert meeting in June 2009¹⁴. The meeting will identify current and potential future applications in food and agriculture, determine appropriate means to address stakeholder concerns, and review current risk assessment methods and procedures for application to nanotechnology and develop global guidance on how to appropriately assess potential food safety risks that may arise from nanoparticles.

IV. Enhancing the scientific and public health role of WHO in Codex;

WHO recognizes the importance of internationally harmonized standards, guidelines and other recommendations of Codex in first and foremost protecting the health of consumers but also to ensure fair practices in food trade. For many years, WHO has been playing a major role in the scientific and public health work of Codex by providing scientifically sound risk assessments for short-term and long-term risks to health related to food. WHO plays a significant role by advocating that the standards set by CAC are based on considerations of public health.

Participating in CAC results in a more equitable and participatory global standard-setting body and a "triple-win" for countries who participate in and benefit from Codex standards through: enhanced trade opportunities; better protection of public health on both ends of the trade chain; enhanced economic development, particularly for developing countries.

In 2002 a major evaluation of the CAC and other FAO and WHO Food Standards work was undertaken, resulting in a series of recommendations.¹⁵

In 2003 FAO and WHO responded to the need to ensure that developing countries and countries with economies in transition participate in the Codex process with the establishment of the FAO and WHO Project and Fund for Enhanced Participation in Codex (Codex Trust Fund¹⁶) which provides support to eligible countries to:

- Prepare for and participate in Codex Committees and related meetings
- Participate in Codex training courses to enhance participation in Codex meetings
- Enable countries to prepare and present scientific/technical positions and data related to the work of Codex

In order to emphasize more the public health aspects, FAO and WHO have implemented prioritization criteria for requests for scientific advice from Codex. Priority working groups in horizontal Codex Committees apply such criteria in their discussions for new work and requests for scientific advice. For further improvement of Codex work with respect to health focus and greater efficiency FAO and WHO have implemented a high level Management group to discuss the Strategic direction of Codex Alimentarius, including an increased focus on public health.

V. Enhancing risk communication and advocacy;

Since the adoption of the Strategy, various activities undertaken by WHO, in collaboration with international and national institutions and other stakeholders, have included risk communication and advocacy. In view of efficiently addressing the specific needs of the Member States, from the policy makers and regulators to the end users, special efforts have been made to communicate with all stakeholders in an open and timely manner, through the provision of clear and transparent scientific information; guidelines for management; and educational messages targeted to the end users. This approach has included the provision of materials which countries can easily use, reproduce and adapt to different target audiences, including consumers. Examples of such activities are outlined below:

As discussed in Section II, FAO and WHO have an on-going programme of food-related risk assessments. The outcome provides a range of data and information to those who need to understand and undertake risk assessments or to manage food safety hazards, including both risk

¹⁴ For further information, see www.who.int/foodsafety/fs_management/meetings/nano_june09/en

¹⁵ Available at: www.fao.org/docrep/meeting/005/y7871e/y7871e00.htm

¹⁶ Further information is available at: www.who.int/foodsafety/codex/trustfund/en

assessors, risk managers, CAC, governments and food regulatory agencies and industries¹⁷. As an example, based on the assessment of *Enterobacter Sakazakii*¹⁸ in powdered infant formula (PIF), WHO in collaboration with FAO, developed materials to educate all those involved with the safe preparation, storage and handling of PIF including risk managers, health educators and consumers.¹⁹

An example of the provision of urgent scientific advice on issues of international concern, is WHO's response to the 2008 melamine-contamination event discussed in Sections II and VI.

As the need to strengthen food safety education programmes for the prevention of foodborne diseases is increasingly being recognized by countries, WHO developed a global health message (The Five Keys to Safer Food)²⁰ and training materials²¹ to communicate a clear message to all food handlers, including consumers. Translated into more than 50 languages, the Five Keys to Safer Food form the basis for educational programmes all over the world. In 2007, WHO extended the Five Keys concept to integrate food safety matters into nutrition education and information programmes for consumers. The 3 Fives - Five keys to safer food²², a healthy diet, and appropriate physical activity - were launched to promote healthy lifestyles during the Beijing Olympics.

The INFOSAN network, outlined in Section VI., publishes Information Notes to provide Member States with key information on emerging or topical issues²³. WHO also publishes a Food Safety Newsletter promote information exchange and food safety in Member States²⁴.

VI. Improving international and national cooperation;

INFOSAN, currently made up of 177 member countries, was developed by WHO in 2004 in collaboration with FAO. INFOSAN's key objectives are to disseminate important global food safety information, and improve national and international collaboration²⁵. INFOSAN promotes the cooperation between authorities with food safety responsibilities at a national level. This collaboration is achieved through the nomination of focal points by relevant national authorities, including health, food safety, trade, and agricultural authorities. The focal points are encouraged to work together on various food safety issues, including INFOSAN activities. Focal points also provide a point of contact for each agency which can be used nationally and internationally as a means in making initial contact.

INFOSAN provides a secure communication platform for country members to interact and learn from other countries, leading to improved international cooperation. During food safety events of international concern, critical information such as the international distribution of contaminated foods; possible public health consequences and risk management options, is shared from one country to many through INFOSAN processes. Recent examples include; melamine-contamination of milk and other food and feed products, dioxin contamination of pork products, Ebola Reston-like virus in pigs, and peanuts and peanut products contaminated with *Salmonella* Typhimurium.

Additionally, the newly adopted INFOSAN Strategic Plan includes the aim of improving coordination and support of activities occurring at a national level undertaken by international bodies. This new approach will be developed further and trialled this year.

¹⁷ Available at: www.who.int/foodsafety/micro/jemra/assessment/en and www.fao.org/documents/advanced_s_result.asp?FORM_C=AND&SERIES=314 (Microbiological Risk Assessments) www.who.int/ipcs/publications/iecf/a/en and www.who.int/ipcs/publications/jmpr/en/ (Chemical Risk Assessments)

¹⁸ Available in 3 languages at: www.who.int/foodsafety/publications/micro/mra6/en

¹⁹ Available in 6 languages at: www.who.int/foodsafety/publications/micro/pif2007/en

²⁰ Available in 51 languages at: www.who.int/foodsafety/publications/consumer/5keys/en

²¹ Available in 8 languages at: www.who.int/foodsafety/consumer/5keysmanual/en

²² Available in 2 languages at: www.who.int/foodsafety/consumer/3_fives_Beijing/en

²³ INFOSAN Information Notes are available in 6 languages at www.who.int/foodsafety/fs_management/infosan_archives/en

²⁴ Available in 3 languages at: www.who.int/foodsafety/publications/newsletter/en

²⁵ Further information is available in 6 languages, in the INFOSAN Information Note on GLEWS at: www.who.int/foodsafety/fs_management/infosan_archives/en

As discussed in Section I. above, WHO GSS also fosters intersectoral cooperation at national and international levels during capacity building activities.

Internationally, inter-agency collaboration has developed further between all of the agencies listed in the 2002 Strategic Plan. Collaborative programmes include the FAO and WHO Food Standards Programme (Codex Alimentarius) discussed in Sections II and IV and the INFOSAN network as discussed above. Additional examples are as follows:

The FAO, World Organisation for Animal Health (OIE) and WHO Global Early Warning System for Major Animal Diseases, including zoonoses (GLEWS)²⁶ initiated in 2006, shares emergency information between the animal and human health sectors at the international level. GLEWS is a joint system that builds on the added value of combining and coordinating the alert mechanisms of FAO, OIE and WHO for the international community and stakeholders to assist in the prediction, prevention and control of animal disease threats, including zoonoses, through sharing of information, epidemiological analysis and contributes to joint field missions to assess and control the outbreak.

In responding to the needs of the Stockholm Convention on Persistent Organic Pollutants (POPs)²⁷, WHO's GEMS/Food (see Section I.) developed a new protocol for a Global Survey of Human Milk for POPs in order to meet the health, food safety and environmental objectives of WHO, United Nations Environment Programme and their member countries. This survey is being led by the health sector as it involves human subjects, but collaboration with the environmental and other sectors is strongly encouraged.

The Standards and Trade Development Facility²⁸ (STDF) is a global programme in capacity building and technical cooperation established by FAO, OIE, the World Bank, WHO and the World Trade Organization (WTO). The strategic aims of the STDF are to assist developing countries enhance their expertise and capacity to analyse and to implement international sanitary and phytosanitary (SPS) standards, improving their human, animal and plant health situation, and thus ability to gain and maintain market access; and to act as a vehicle for coordination among technical cooperation providers, the mobilization of funds, the exchange of experience and the dissemination of good practice in relation to the provision and receipt of SPS-related technical cooperation.

FAO, OIE, WHO and the Industry Council for Development (ICD) have developed a capacity building initiative. The initiative has identified four key areas which will be developed in 2009: training tools on risk analysis; briefing material for decision makers; high-level round table discussions; and a mentoring programme for food systems leadership.

VII. Strengthening capacity building in developing countries.

Since the adoption of the food safety strategy in 2002, various activities of WHO, in collaboration with WHO Collaborating Centres and key technical partners, have been aimed at building the capacity of Member States to effectively respond to existing and emerging food safety problems. Under the leadership of WHO, technical support, educational tools and training has been provided to address regional and national needs within the constraints of limited resources. Some examples, in addition to examples discussed above (i.e. WHO GSS (Section I.)), Five Keys to Safer Food (Section V.), and INFOSAN (Section VI.)), are mentioned below:

For millions of urban dwellers, food markets have become an important source of affordable food. As such markets have been associated with major foodborne disease outbreaks, WHO developed the Healthy Food Markets²⁹ approach which has been applied in pilot projects around the world to improve the safety and nutritional quality of foods sold in urban markets.

²⁶ Further information is available at www.who.int/zoonoses/outbreaks/glews/en

²⁷ Further information is available in 6 languages, in the INFOSAN Information Note on POP's at: www.who.int/foodsafety/fs_management/infosan/en

²⁸ Further information is available at: www.standardsfacility.org/index.htm

²⁹ Further information is available at: www.who.int/foodsafety/capacity/healthy_marketplaces/en

The FAO and WHO Codex Trust Fund¹⁶ collaborates with relevant partners to provide eligible countries with training to enhance their participation in Codex. To date 85% of the countries eligible for Codex Trust Fund support have benefited from Codex training for at least one official involved in Codex/food safety activities in the country. A total of 181 participants have been supported by the Trust Fund to attend Codex trainings. Codex training can be accessed on-line through an e-learning course on Codex developed by FAO and WHO.³⁰

While guidelines for strengthening national food control systems³¹ and for strengthening prevention and response systems in the context of terrorist threats to food³² have been made available to Member States, a new FOS Policy Project will soon work on providing further guidance in the area of effective food safety policy-making based on scientific evidence.

WHO Initiative to Estimate the Global Burden of Foodborne Diseases

The Initiative to Estimate the Global Burden of Foodborne Diseases³³ assists in the implementation of each of the seven approaches discussed above.

The WHO Initiative to Estimate the Global Burden of Foodborne Diseases will provide reliable information on the burden and cost of disease which is needed to guide food safety management in countries, and to also inform the development and implementation of Codex Alimentarius food safety standards. In addition, burden estimates could provide a baseline for monitoring and impact assessment of food safety measures. An integral part of this initiative is the Foodborne Disease Burden Epidemiology Reference Group (FERG)³³ which assembles burden of disease estimates using summary measures of population health (DALYs). The FERG is a multi-sectoral and multi-disciplinary group of global experts in foodborne diseases and representatives from numerous international agencies. In 2009, a new FERG Task Force will take up its work - the Country Studies Task Force. While the FERG is considering all existing scientific evidence, including surveillance data, the full picture of the global burden can only be established if national-level estimates of the health burden caused by contaminated food are collected. It aims to achieve this by strengthening the capacity of countries to undertake national burden of foodborne disease assessments in connection with simultaneous food safety policy situation analyses. The data generated by these studies will complement the global estimates, assist countries to analyse the cost associated with food contamination and permit countries to translate the evidence from the burden studies into policy.

INFOSAN serves as a vehicle for food safety authorities and other relevant agencies to exchange food safety information and to improve collaboration among food safety authorities at both the national and international level.

INFOSAN Emergency, embedded in INFOSAN, links official national contact points to address outbreaks and emergencies of international importance and allows for the rapid exchange of information. INFOSAN Emergency is intended to complement and support the existing WHO Global Outbreak Alert and Response Network (GOARN).

INFOSAN is operated/managed by WHO, Geneva. It currently includes 177 Member States.

More information is available at: www.who.int/foodsafety

³⁰ Available in 3 languages at: www.fao.org/ag/agn/agns/capacity_elearning_codex_en.asp.

³¹ Available at: www.who.int/foodsafety/publications/fs_management/guidelines_foodcontrol/en

³² Available at: www.who.int/foodsafety/publications/fs_management/terrorism/en

³³ Further information is available at: www.who.int/foodsafety/foodborne_disease/ferg/en