



# EMPRES Food Safety

Emergency Prevention System for Food Safety

## Strategic Plan



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# Elements of EMPRES Food Safety Strategic Plan





# Foreword

**AN ESTIMATED THREE MILLION PEOPLE AROUND THE WORLD**, in developed and developing countries, die every year from food and water-borne disease, with millions more becoming sick. Occurrence of such disease can easily escalate to a food safety emergency situation, which can adversely impact national economies and livelihoods through reduced availability of food for national consumption, closure of export markets, and/or the high cost of addressing the effects of the threat.

To contribute to the efforts to reduce this adverse impact of food safety emergencies on global food security and public health, and at the request of its members, The Food and Agriculture Organization of the United Nations (FAO) has established an Emergency Prevention System for Food Safety (EMPRES Food Safety). EMPRES Food Safety will complement and enhance FAO's ongoing work in food safety, as well as in animal health and plant health emergencies.

In this regard, and as the first step toward the development and implementation of EMPRES Food Safety, the Nutrition and Consumer Protection Division (AGN) of FAO, in collaboration with other concerned technical divisions and units, has prepared this Strategic Plan, which aims at making full use of relevant available expertise along the food chain within FAO.

With this background, I am pleased to present the Strategic Plan of EMPRES Food Safety.

The plan reflects FAO's comparative advantages of having a mandate covering the entire food chain, its status as a neutral international forum and its linkages with national governments, regional bodies, other international agencies, universities, research centres and the donor community. The Plan will be regularly updated to reflect the ever-changing nature of food safety emergencies.

FAO looks forward to working with the numerous partners in effectively implementing this Strategic Plan, to contribute to improved consumer protection and global food security.



May 2010  
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Director, Nutrition and Consumer Protection Division  
Food and Agriculture Organization of the United Nations



# Introduction

**THE SAFETY AND WHOLESOMENESS OF FOOD** has always been important for humankind. Given the intimate relationship between human health and food, the resolve to keep it protected has given rise to ways which ensure that food has never been safer than it is today. Yet, food safety is an increasingly important global issue. This is not due solely to a rise in the number of reported food safety events, but is also due to the increasing globalization and complexity of the food chain. Trade of food and agricultural products around the world continues to increase, with worldwide food and agricultural exports more than doubling from US\$400 billion in 2000 to US\$900 billion in 2007. This growth in international trade means that food safety hazards which may have previously been confined in a relatively small area can now disseminate with ease across countries and continents. Accordingly, reacting to food safety events in isolation and after their occurrence is inadequate. Anticipation, prevention, and timely action should be the principal means to counter food safety threats.

Therefore, FAO has established an Emergency Prevention System for Food Safety (EMPRES Food Safety) to serve as a key international system to assist in the prevention and management of global food safety emergencies, including the three pillars of early warning, emergency prevention and rapid response. This paper describes EMPRES Food Safety's strategic plan to deal with global food safety emergencies to contribute towards protecting human health and ensuring the safe trade of food.





# Key factors surrounding food safety emergencies

## Globalization of trade and changes in food consumption patterns

**IN THE PAST FEW DECADES**, the rising movement of people and food across national borders has changed food consumption and production patterns. Food products are increasingly produced and/or consumed in areas where they were not present before. Also, foods intended for a particular use are now consumed differently depending on the location. For instance, vegetables may be typically cooked before eating in the place where they are grown, but the same vegetables may be consumed raw after being transported across the globe. This expansion of food trade has facilitated better access to and increased the availability of food worldwide. But this free movement across borders has also given rise to new concerns about food safety. FAO is frequently requested by member states to assist in dealing with various food safety events, many of which are closely linked with the trans-boundary movement of food. This assumes particular importance in the context of securing the world's food supply.



## Interaction with food security

**FOOD SAFETY IS AN IMPORTANT COMPONENT** of food security, which is also a growing world-wide concern. The Secretary General of the United Nations, Ban Ki-Moon, in his address to the World Summit for Food Security in November 2009<sup>1</sup>, underscored the importance of food security when he said “*This day more than 17,000 children will die of hunger. One every five seconds. 6 million children a year. The world has more than enough food. Yet, today, more than one billion people are hungry.*” Food scarcity can coerce populations to consume whatever food is available even if it is unsafe or contaminated. Further, a food safety scare in a country already facing food scarcity can severely disrupt the food supply and cause wastage of the available food. Moreover, any marked increase in food production by application of additional inputs such as fertilizers, pesticides and veterinary medicines predisposes potential risks due to their misuse. Therefore, the development of systems to prevent food safety threats and a swift response to urgent food safety situations would also have an enormous positive impact on food security.

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<sup>1</sup> <http://www.fao.org/wsfs/world-summit/en/>



## Internationalisation of food safety emergencies

**THE INCREASING GEOGRAPHICAL** and temporal spread of the food production, processing and consumption chain opens up vulnerabilities at multiple points. The various ingredients of a food product are increasingly grown, processed and consumed in different locations around the globe. Therefore, food safety events at any point in the chain no longer have only a limited local impact, but may affect multiple markets worldwide, in patterns that could be haphazard or systematic. Similarly, misgivings about universal or specific practices employed in the food chain can lead to trade restrictions and market losses for all participants in the chain. For example, concern may be expressed over the use of certain pesticides in vegetable production. These vegetables may be sold to another country and used as an ingredient in another food product, also including a number of other ingredients produced in other countries. If the final food product causes illness in any consumers, the ingredient which was already suspect may face import restrictions, even though the cause of the illness may be from another food ingredient. Countries with robust food safety emergency early warning and response systems in place that face this situation would likely not be severely affected. However, in countries where food control systems are weak and strengthening is needed, the consequences of facing such a food safety emergency situation are felt strongly.



## Socio-economic impact

**FOOD SAFETY EVENTS** can cause global concern regardless of the source, type, scientific relevance, and severity of the incident. The actual risk to public health and the economy varies depending on the magnitude of the events. However, consumers may perceive any such occurrence, irrespective of its magnitude and cause, as extremely serious. This may have significant socio-economic consequences, such as a loss of confidence in some food products, their sources or their producers. The resulting impact in terms of loss of livelihoods and productivity could have long-term consequences on the economy and the sustainability of the food supply in the affected countries, which in turn impacts human development.



Panel of speakers seated at a long table with microphones and nameplates.

Audience members seated at long tables, facing the panel, with microphones and water bottles on the tables.



## Policy and capacity issues

**COUNTRIES AROUND THE WORLD** have diverse food policy and food control systems, and the priorities relating to food safety differ in the various systems. The perception of the severity, as well as the capacity to handle and prevent food safety events varies in different countries. A serious food safety crisis for one country may be considered a routine situation in another with a more well-developed system. Harmonization of food safety policies in general, as well as defining common parameters for applying preventative or emergency measures, is a challenge. However, as global trade is built on supply chains, it is not in the economic interest of any country to be the weak link in the chain. Food safety threats must be anticipated and addressed before they become larger problems. Supporting countries to achieve internationally accepted food safety and quality standards from farm to the table is necessary to prevent and deal with global food safety emergencies.



## Innovative technologies

**ADVANCES IN FOOD TECHNOLOGY** have contributed to the development of novel food products and the use of improved methods in food processing. While this is a result of innovation in the food processing industry and growing consumer demand, this can be another area of challenge for food safety. To address the concerns that countries have raised in various fora, increased research and expert scientific advice may be required to analyse possible hazards arising from the use of new technologies in agriculture and food production. At the same time, new technologies are increasingly being utilized for the analysis of various components and contaminants such as pathogens and toxins in food. Use of these innovative analytical technologies will likely aid in early warning and emergency response systems.



## Impact of emerging issues

**CLIMATE CHANGE IS LIKELY** to have a considerable effect on the occurrence of food safety hazards. Rapid industrialisation of many areas in the developing world could further accentuate the dynamics of climate change and its effects on crop yields, biofuel production, soil quality, water availability, food contaminants, animal diseases patterns including zoonoses and pesticide use. Changes in cropping patterns and a reduction in crop biodiversity may create shifts in food distribution and consumption. New unforeseen issues, as they arise, may have to be considered in developing the framework of a horizon scanning and early warning system.



# Why EMPRES Food Safety was established

**EMPRES FOOD SAFETY** was established following requests from FAO members to develop conceptual approaches and strategies to tackle international food safety emergency events. It was endorsed during the 21st Committee on Agriculture (COAG) session in April 2009, as a key unit result of FAO's internal Strategic Objective D in the area of food quality and safety<sup>2</sup> and was confirmed at the FAO Conference in November 2009. EMPRES Food Safety aims to contribute towards fulfilling FAO's mandate of ensuring a safe and affordable food supply for the world's population. EMPRES Food Safety complements FAO's well-established EMPRES systems in animal and plant health.

EMPRES Food Safety is a part of FAO's Nutrition and Consumer Protection Division (AGN), which has a more than 50 year history of work in international food safety matters, including: the provision of scientific advice, delivering food safety capacity building activities, hosting the Codex Alimentarius Commission secretariat, and collaborating with key international food safety partners (World Health Organization- WHO, World Trade Organization- WTO, World Organization for Animal Health- OIE and others). EMPRES Food Safety is a fundamental component of FAO's Food Chain Crisis Management Framework (FCC) which addresses, in an integrated way, all food chain threats, including in animal health and plant protection. Leveraging FAO's position as the premier intergovernmental organization on food, EMPRES Food Safety works with various national agencies with food safety-related responsibilities in an integrated, transparent and neutral manner. EMPRES Food Safety complements related activities of the Division by strategically providing member countries with services and activities in three important areas related to food safety emergencies: early warning, emergency prevention and rapid response.

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<sup>2</sup> FAO's new draft Strategic Objective D (SO D) entitled "Improved quality and safety of food at all stages of the food chain" has an Organizational Result (OR) "National/regional authorities are effectively designing and implementing programmes of food safety and quality management and control, according to international norms" which includes an Unit Result (UR) for EMPRES Food Safety, that is "Provision of guidance, information and other support to promote improved food safety emergency preparedness and response at national and international levels" (as of April 2010).



MONTEREY SEA FOOD PASTA 22.95

LOCAL MONTEREY BAY CRAB WHOLE 24.95



# Elements of EMPRES Food Safety Strategic Plan

**EMPRES FOOD SAFETY** is a holistic and multidisciplinary programme that aims to prevent and deal with food safety emergencies at a global level by partnering with international, regional and national agencies, as well as FAO decentralized offices. Its broad approach is to work with existing initiatives to prevent, mitigate, and manage food safety threats.

EMPRES Food Safety has defined 8 major elements of its strategic plan to achieve the programme's aim. These elements have been grouped under the three (3) pillars of EMPRES Food safety: "early warning", "emergency prevention" and "rapid response", as presented in Figure 1.

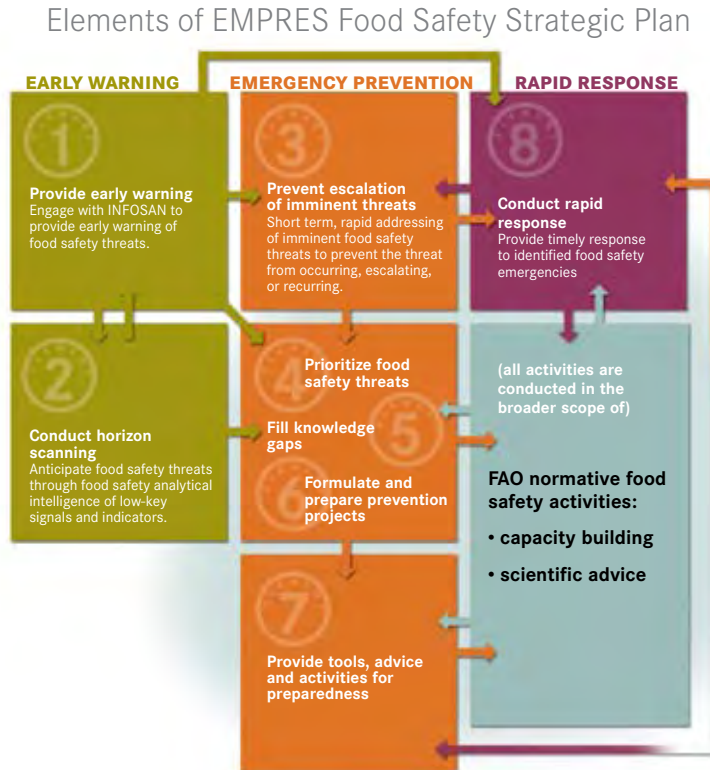


Figure 1



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TOLONG  
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BARANG  
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## Provide early warning:

Engage with INFOSAN to provide early warning of food safety threats.

The International Food Safety Authorities Network (INFOSAN), established in 2004, is a joint FAO/WHO initiative. This global network includes most FAO and WHO member countries. INFOSAN monitors food safety events, promotes and coordinates information exchange, and advises countries on potential food safety threats.

EMPRES Food Safety engages with INFOSAN, which alerts its members of imminent food safety threats based on credible indicators. This process includes incident scanning, identification and verification. WHO's access to public health information facilitates obtaining and disseminating food safety information from/to government public health agencies. FAO is in a unique position to obtain production-oriented information related to foods implicated in foodborne disease or food contamination incidents, to contribute to the assessment of events. FAO also has strong experience, and decentralized offices around the world, to disseminate key information to agriculture-related government agencies that deal with food safety issues.

INFOSAN carries out food-borne disease outbreak and food safety event surveillance and receives information from network members and other partners on possible international food safety emergencies with potential public health impact. FAO, through EMPRES Food Safety, strengthens this network by ensuring the inclusion of appropriate members from sectors other than public health, such as food safety and agriculture. National INFOSAN members engage their national decision makers and relevant partners in collecting information and acting on early warning signals.

EMPRES Food Safety proactively engages with INFOSAN to ensure that an emphasis on a preventive approach that focuses on intelligence gathering, as opposed to a reactive approach, is instilled among all INFOSAN members. The outputs from this element can be utilized to implement short-term, rapid prevention efforts (in element 3), to prioritize food safety concerns for development of longer-term prevention projects (in elements 4-6), and to respond to food safety emergencies that are already occurring (in element 8).





## Conduct horizon scanning:

Anticipate food safety threats through food safety analytical intelligence of low-key signals and indicators.

EMPRES Food Safety undertakes horizon scanning to detect and analyze early, and possibly low-key, signals that could suggest a food safety threat at the food production and processing levels. This process complements the food safety incident scanning activities of INFOSAN (in element 1). The signals may include changes in plant pest and disease patterns, alterations in food consumption trends, shifts in climate or cropping patterns, or identified vulnerabilities in the food chain (including high-risk food handling practices). Data and intelligence are collected, trends are analysed and information synthesised that can be used as input to identify and then prioritize food safety threats (in element 4) followed by filling of knowledge gaps (in element 5) and development of projects to prevent these threats from becoming emergencies (in element 6). This information also feeds into INFOSAN to provide early warning of imminent food safety threats, as necessary and appropriate, and may trigger rapid response to existing food safety threats (in element 8).

Strong partnerships and information sharing are essential for effectively conducting horizon scanning for food safety threats. EMPRES Food Safety utilizes the experiences of FAO's Global **Information and Early Warning System** on Food and Agriculture (GIEWS), Food Insecurity and Vulnerability Information Systems (FIVIMS) and other horizon scanning efforts of FAO to improve its horizon scanning approach and methods. EMPRES Food Safety will develop an international network to gather information and intelligence to conduct horizon scanning, including other FAO units and decentralized offices, other UN agencies, national and regional government bodies, universities, research institutes and related groups. EMPRES Animal Health, EMPRES Plant Protection, and other relevant FAO units such as Fisheries and Land and Water will be included in the network, as well as the other international agencies including the Organisation for Economic Co-operation and Development (OECD), OIE, WHO, the World Food Programme (WFP), and WTO.





### **Prevent escalation of imminent threats:**

Short term, rapid addressing of imminent food safety threats to prevent the threat from occurring, escalating, or recurring.

EMPRES Food Safety utilizes early warning information from INFOSAN, from rapid response missions to current food safety emergencies (in element 8) and other credible sources to identify countries that require short term, immediate action to prevent food safety threats from occurring, escalating or recurring. When a food safety emergency event is occurring, EMPRES Food Safety will determine if actions are required within that country, or in neighbouring and trading-partner countries, to prevent such an event from occurring again in the future and to prevent worsening of the situation. The short-term, rapid actions needed for timely prevention of such an emergency will also be identified.

EMPRES Food Safety works closely with FAO's capacity building team to share expertise and to implement the needed short-term actions. These two groups work in the relevant activities of the other, to provide optimum benefit to target countries and to also develop national capacity for such preventive actions in the future. Those issues that are identified as requiring longer-term, sustainable follow-up are prioritized (in element 4) for eventual development of larger-scale projects to prevent these threats from becoming food safety emergencies (in element 6).







## **Prioritize food safety threats:**

Prioritize food safety threats at international, regional, and national levels.

Numerous food safety threats are identified through the previously mentioned INFOSAN early warnings, horizon scanning, and rapid investigation of imminent food safety threats. In addition, information on food safety threats and gaps in capacities of food safety systems comes to FAO through other means, such as requests from member countries. Although all these threats are important, some threats require more immediate and larger-scale action than others. Therefore, these threats must be prioritized at the international, regional, and eventually at the national level, so that appropriate longer-term projects can be developed to prevent these threats from becoming an emergency (in element 6) and so that countries can better prepare themselves to deal with food safety threats and emergency situations (in element 7).

In order to conduct this prioritization, an appropriate tool/methodology should

be developed to list, classify and rank these threats. This tool, which will be based on existing related FAO tools, will assist officials at international, regional, and national levels to make appropriate decisions to prevent food safety threats from becoming emergencies. The tool will also enable regions and individual countries to analyze critical vulnerabilities in the capacity of their food safety systems, and will highlight gaps in knowledge about food safety threats (to be filled in element 5). The development of this tool, including the criteria for prioritization and the nature of data required for this tool to deliver meaningful results will be further developed through consultations with experts. EMPRES Food Safety partners with the various initiatives related to such prioritization already occurring in other agencies, as appropriate.





## Fill knowledge gaps:

Hold expert consultations and publish lists of research needs to fill knowledge gaps to better prevent food safety threats from occurring.

Through the recognition and prioritization of food safety threats, critical gaps in the knowledge about these food safety threats will be identified. These knowledge gaps must be filled so that these threats can be more effectively prevented (in element 6) and so that countries can better prepare themselves for food safety emergencies (in element 7). Some of these gaps in knowledge should be addressed by a formal risk assessment or risk management exercise at the international level. EMPRES Food Safety works with the FAO/WHO Provision of Scientific

Advice group to hold the relevant expert meetings on issues that require immediate attention. In addition to those addressed by FAO's Provision of Scientific Advice process, a list of other gaps in knowledge related to food safety threats will be widely advertised to scientists around the world. In this way, scientists can gain ideas of critical research needs and FAO can encourage scientists to conduct research to fill these knowledge gaps to better prevent and control these urgent food safety threats.





## **Formulate and prepare prevention projects:**

Based on the prioritization of food safety threats, develop multi-faceted projects to provide long-term, sustainable prevention of these key threats.

Some food safety threats require longer-term, multi-faceted, and multi-disciplinary projects to prevent them from escalating to an emergency situation. Many of these threats exist at a regional and even international level, so would also be best addressed at these levels. Based on the identification and prioritization of these threats and capacity gaps in the previously outlined strategies, effective projects can be developed, upon request from countries/regions, to provide long-term, sustainable prevention of the threats identified as most critical. The increased knowledge of food safety threats provided through element 5 is also utilized in the

formulation of these projects, which will address specific thematic areas and regions.

EMPRES Food Safety works with FAO's food safety capacity building team, in consultation with member countries and FAO decentralized offices, to plan the technical aspects of such projects, and with the Technical Cooperation Department (TC) of FAO to refine the projects and to secure funding from donors. FAO's food safety capacity building team and respective decentralized offices can then implement such projects in collaboration with both internal and external partners.



€ 4.20/kg

€ 4.20/kg

€ 8.00/kg

€ 5.70/kg

€ 10.00/kg

€ 12.00/kg

€ 12.90/kg

€ 10.00/kg

OFFERTA  
€ 6.50  
GRATO  
GREEN

OFFERTA  
€ 6.50



## **Provide tools, advice and activities for preparedness:**

Develop and provide tools, and provide advice and assistance to member countries to implement food safety emergency preparedness plans.

One of the key aspects of preventing food safety emergencies is for countries to establish a state of constant preparedness against current and future threats. This preparedness will be enhanced by information from the prioritization of food safety threats (element 4), as well as the filling of knowledge gaps on these threats (element 5). Strengthening preparedness also entails incorporating lessons learned from the response to past food safety emergency situations (such as that described in element 8).

To assist countries to improve their preparedness, FAO and WHO developed a Framework document for developing Food Safety Emergency Response (FSER) plans. This document provides useful guidance for establishing and strengthening cross-sectoral cooperation across national ministries and agencies with responsibilities for food safety, such as Agriculture and Public Health, which is crucial for addressing potential food safety emergencies, as well as routine food safety issues. EMPRES Food Safety continues to develop this framework document, in addition to developing further guidance documents and training materials to assist countries in implementing food safety emergency preparedness plans.

Regional collaboration mechanisms

will also be identified and strengthened to address food safety emergencies, utilising FAO's network of decentralized offices. EMPRES Food Safety, together with relevant FAO initiatives, will organize regional seminars, as well as national workshops, to raise awareness of the need for preparedness planning and for information exchange in this regard. At the national level, EMPRES Food Safety will provide advice, through FAO staff and through regional and international experts, on the development, implementation, and updating of food safety emergency preparedness plans. Once countries develop these plans, they will have a better understand the importance of prevention activities, and the need for better providing (and heeding) early warning of food safety emergency situations. They will also be more likely to identify food safety emergency situations that require timely response (in element 8), will be more aware of the available international assistance and should be able to better formulate a request for such assistance.

EMPRES Food Safety works closely with the FAO capacity building team to gain input into the process of improving member countries' preparedness for food safety emergencies, as well as to provide input to the capacity building teams' other activities.







## **Conduct rapid response:**

Within FAO's Food Chain Crisis Management Framework (FCC), in collaboration with the FAO emergency operations group and the relevant national food safety authorities, provide timely response to identified food safety emergencies.

Despite strong efforts to prevent their occurrence, it is recognized that some food safety emergency situations will inevitably occur, which must be dealt with in a timely, effective manner. Such situations may be identified through INFOSAN early warnings (element 1), horizon scanning (element 2), through FAO's normative capacity building activities, or by direct request from member countries – particularly after they have implemented food safety emergency preparedness plans (element 7).

After identification of such a situation, EMPRES Food Safety works with national food safety authorities to conduct an urgent appraisal of the event and mobilize the needed experts, in full consultation with relevant members of the FCC. EMPRES Food Safety develops and manages a roster of food safety experts, based on the information technology platform utilized by the EMPRES Animal Health programme and/or other relevant initiatives. The input of experts in public health is also sought through WHO.

EMPRES Food Safety assumes technical leadership in the provision of emergency response, with operational support from the emergency operations and rehabilitation group (TCE) of FAO, who have the structure to rapidly mobilise human and financial resources to respond to emergencies. EMPRES Food Safety collates and provides the background information and determines the best possible emergency responses. The mission activities are conducted with the active involvement of relevant national food safety authorities, are multi-disciplinary in nature and tailored to the situation. Assistance can include problem identification, testing (sampling and analysis), validation of actions undertaken, technical and financial resource mobilization, monitoring of preparedness for future emergencies, as well as expert guidance on risk assessment, risk management and risk communication. The risk communication may be within the country or with other countries, particularly trade partners and neighbouring countries.



# Conclusion

**AS NOTED IN EACH** of the relevant strategies, all EMPRES Food Safety activities are conducted in the broader scope of the food safety capacity building and provision of scientific advice activities of the Division. EMPRES Food Safety complements and enhances the existing FAO competence in food safety and in animal health and plant protection emergency situations. Through the implementation of this strategic plan, EMPRES Food Safety assists member countries in their efforts to effectively prevent and manage global food safety emergencies, thus contributing to FAO's Strategic Objective D<sup>3</sup> and towards ensuring the safe trade of food, protecting human health and contributing to global food security.

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<sup>3</sup> See footnote 2 on page 18

The FAO Emergency Prevention System for Food Safety (EMPRES Food Safety) unit works with FAO members and other partners to prevent food safety emergencies. It is a fundamental component of FAO's Food Chain Crisis Management Framework (FCC). The FCC addresses, in an integrated way, all food chain threats from production to consumption, including in animal health, plant protection and food safety.

[www.fao.org/foodchain](http://www.fao.org/foodchain)

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