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

*Marrakech, Morocco, 28 – 30 January 2002*

### **TERRORIST THREATS TO FOODS**

#### **CONFERENCE ROOM DOCUMENT**

#### **PROPOSED BY THE WORLD HEALTH ORGANISATION**

#### **SUMMARY**

The potential for terrorists to deliberately contaminate foods must be taken seriously. On 17 January 2002, the WHO Executive Board adopted a resolution (EB109.R5) that recognized the importance of safeguarding food in a global public response to the deliberate use of biological and chemical agents and radionuclear attacks to cause harm. Reducing these threats of sabotage will require an unprecedented degree of co-operation among health, agriculture, and law enforcement agencies of governments; the food industry and others in the private sector; and the public. Public health authorities must not only take the lead in surveillance and incident response for disease and other adverse public health events, they must also strongly support preventive measures along the entire food chain. A substantial involvement of the food industry and others in the private sector in the development and implementation of measures to prevent, detect, and respond to incidents of deliberate contamination is essential. Individual consumers must be aware of the potential for deliberate, as well as inadvertent, contamination in their procurement and preparation of food.

Systems to rapidly and effectively detect and respond to disease outbreaks resulting from contamination and other causes are critical. Efforts to prevent human exposure by increasing security and capabilities to detect the contamination also must be increased. The potential for contamination and interruption of food supplies as acts of terrorism should be considered in the assessment of food safety assurance systems. An improved posture of vigilance will reduce vulnerability to both deliberate and inadvertent contamination.

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Planning must include consideration of communication with the press and the public in order to manage fear and unfounded rumours. Panic and hysteria may result in far more serious consequences to public health, as well as industry and commerce, than the threat itself. On the other hand, withholding information from the public can lead to the loss of confidence in authorities. In view of appropriate cultural considerations, every effort should be made to foster full and frank disclosure.

The threat of terrorism should not drive the food security agenda away from other pressing safety concerns. The potential for deliberate contamination must be an integral part of food safety considerations, and efforts to prevent sabotage should complement, not replace, other critical activities. Existing systems for public health surveillance and food safety should be strengthened; separate systems for terrorism concerns should not be developed. Allocation of resources should be relative to the nature and likelihood of the threats, whether they are inadvertent or deliberate.

FAO and WHO are strengthening their disease surveillance and response operations to include food sabotage and to provide guidance to Member States in the development of their programmes for prevention, detection, and response to terrorist threats to food. Appropriate consideration must be given to the possibility that information on threat agents and system vulnerability could be used by terrorists.

## INTRODUCTION

The deliberate sabotage of civilian food supplies has occurred throughout recorded history associated with military campaigns and more recently to terrorise or otherwise intimidate civilian populations and their governments. Terrorists can have a variety of motives, from settling grudges to political destabilisation. It is not necessary to inflict mass casualties to cause widespread panic and disruption, particularly economic. Extortion threats directed at specific organizations, particularly those in the commercial sector, are far more common than generally recognized. All populations are vulnerable to such actions. While contamination of entire food supplies in most areas is unlikely, pre-existing food shortages could be considerably worsened by deliberate contamination.

Widespread human illnesses have been associated with a variety of foodborne microorganisms and with food products contaminated with toxic chemicals. Large-scale disruptions of food supplies involving illnesses in and contamination of farm animals have occurred. These outbreaks have resulted in the straining or overwhelming of public services, intense media coverage, and adverse economic, social, and political effects. This apparently inadvertent contamination resulted in the loss of public confidence in the safety of the food supply and reorganisations by governments to improve consumer protection. Where terrorists are successful in spreading contamination, the same types of effects are likely to occur.

Systems to rapidly and effectively detect and respond to outbreaks resulting from contamination are critical. Efforts to prevent human exposure by increasing security and capabilities to detect the contamination also must be increased. There is no perfect defence from either conventional sources of contamination or from deliberate introduction of chemical, microbiological, and radiological agents. A determined terrorist with access to the required resources can penetrate virtually any system. Given the large number of potential threat agents, it is impossible to monitor for all of them all of the time. However, adopting sensible precautions is an effective approach to safeguarding public health, whether in complex modern production and distribution systems or in areas where most of the food is locally produced, stored, and consumed.

### **1.1 THERE ARE TWO MAIN CONSIDERATIONS IN THE DEVELOPMENT OF PROGRAMMES AGAINST THE SABOTAGE OF FOOD SUPPLIES :**

- *Prevention*
- *Response*
- *Prevention*

#### *A. Improve security.*

Organizations involved in food production, processing, and distribution should

- develop security and response plans, including establishing points of contact;
- safeguard sources of raw materials, including storage facilities and transport systems;
- restrict and document access to all critical areas, including processing, storage, and transport;
- screen employees to ensure that their qualifications and background are compatible with the work and responsibilities undertaken
- screen other personnel (including sanitation, maintenance, and inspection personnel) with access to critical areas;
- minimise opportunities to contaminate the final product;
- improve the capability to trace the product through the supply chain if it is believed or shown to be contaminated; and
- report threats and suspicious behaviour and activities to the proper authorities.

A systems approach, examining the main stages in the production process from raw materials to end-user, can be used to assess vulnerabilities and precautions that can be implemented to improve food safety related to sabotage. A general food production system includes:

- agricultural production and harvesting;
- storage and transport of the raw materials;
- processing;
- storage and transport of processed products; and
- wholesale and retail distribution
- food service and individual home food preparation.

These systems range from farms that produce and market to near-by communities to organizations with global production and distribution systems. Many foods, such as fish, meat, poultry, fruit, and vegetables, are consumed with minimal processing. In these systems, there may be a limited number of points at which contamination can be detected before the food is consumed. Other foods, such as most cereal products, cooking oils, and sweeteners, have undergone considerable processing prior to reaching the consumer. Such systems may have more points at which contamination may occur, but also present more opportunities to monitor and control for contamination.

Preventive approaches do not all require high technology. Increased awareness of potential problems and vigilance are among the effective measures that can be taken. The wax seal as a tamper-evident device has been used for several thousand years. A variety of such devices can be used to provide evidence of access to critical areas. Increasing security measures cannot guarantee security. Threats, both inadvertent and deliberate, will change. However, a culture of secure operations and quality control will deter contamination by creating robust and pro-active systems that will be harder to penetrate and where the likelihood of detection will be improved.

#### *B. Reduce availability of potential threat agents.*

International efforts to reduce or eliminate chemical and biological weapons should be strongly supported. While some of the chemical and biological agents that have been developed as weapons by military forces can be used to contaminate food supplies, significant threats are also posed by toxic chemicals and microbiological pathogens that can be found on food. Government and commercial organizations must increase the security of stores of toxic drugs, pesticides, radiological materials, and other chemicals and report any theft or other unauthorised diversion to the proper authorities immediately. Increased efforts to control the availability of microbiological pathogens for terrorist activities should also be undertaken. It is critical that clinical, research, and food control laboratories are aware of this potential and take appropriate security measures in order to minimise the risk of their materials being diverted for such purposes.

#### *C. Improve safety and quality assurance*

The potential for contamination and interruption of food supplies as acts of terrorism should be considered in the assessment of food safety assurance systems, such as Hazard Analysis and Critical Control Point (HACCP). Proactive risk analysis approaches are needed to reduce the vulnerabilities in the same manner as for inadvertent contamination risks. The allocation of available resources should be proportional to the likelihood of the threat, the magnitude and severity of the consequences, and the vulnerability of the system. The potential for deliberate contamination must be an integral part of food safety considerations, and efforts to prevent sabotage should complement, not replace, other critical activities.

All operations involved in the production of food should monitor for contamination as part of their quality control systems. Monitoring programmes can include a range of approaches, from careful visual examination to high technology in-line detection systems. As is the case with inadvertent contamination, it is virtually impossible, both technically and economically, to carry out analyses for all agents all of the time. In many cases there may be indicators of non-specific variations in product quality. Allocation of available resources for routine monitoring should therefore be appropriate for the specific product, process, and handling situation. Rapid follow-up actions are essential for variances in product quality that could indicate contamination. Public health officials should work closely with commercial and other private sector organizations and, where possible, assist in the development of appropriate monitoring programmes and develop information on background levels of contaminants.

Individual consumers have a significant role in monitoring for deliberate and inadvertent contamination. If the packaging of the product is not intact or if the product has an abnormal appearance, odour, or taste, it should not be consumed. If tampering is suspected, the retailer or supplier and appropriate public health and law enforcement authorities should be notified.

- **Response**

*A. Include appropriate considerations related to food in surveillance in response to outbreaks of disease and other adverse public health events.*

Response activities for outbreaks of illness associated with infectious diseases and food and drinking water borne pathogens can be used for the identification of outbreaks associated with the deliberate chemical and biological contamination of food. In general, separate systems should not be developed for either terrorism or food safety concerns. Public health surveillance activities should be strengthened to meet the needs for disease outbreaks and other adverse public health events from all causes. Questionnaires used for surveillance associated with outbreaks should include metrics that would readily identify the hazard route (for example, air, drinking water, or food), levels of contamination, and the specific source of the contamination. Public health authorities should co-ordinate these activities with the appropriate agricultural authorities to make certain that trace-back and market withdrawal are initiated as rapidly as possible. In the event deliberate contamination is suspected, appropriate law enforcement authorities should be notified.

*B. Carry out monitoring of food for suspected contamination.*

In response to suspected contamination, threats, or outbreaks involving food, food safety authorities and the affected industry should focus available analytical and investigative resources on preventing contaminated products from reaching consumers. Response plans should include mechanisms for the notification of appropriate officials of government and private sector organizations to carry out surveillance of food and considerations for determining the scope of the contamination and for implementing market withdrawal options. Public health authorities should develop inventories of analytical resources and competencies available at international organizations and governmental, commercial, and academic laboratories.

*C. Improve trace-back and market withdrawal capabilities.*

Trace-back and market withdrawal or recall are critical needs in responding to food contamination, whether from deliberate acts or inadvertent causes. However, trace-back of problems and trace-forward of contaminated products are not always simple, as evidenced in the Belgian dioxin crisis. Many agriculture production systems are not currently suited to adopt

mechanisms for recall. Where raw agricultural products are produced on small farms, these products are usually commingled and these lots are combined with other commingled lots to form larger shipments. In most cases, it is very difficult to identify a contaminated shipment with an individual producer. For raw materials, the extent of trace-back efforts must depend on considerations of the resources required for the trace-back and recall compared to expending resources for analysis and other measures to determine the safety of the raw materials at the critical control point of entering the processing stream. Many foods are produced at centralized facilities and distributed over large geographic areas, often globally. Contamination at such facilities can affect large numbers of people, and the exposure can be very wide spread before the outbreak is detected. Rapid determination of the source of the contamination and location of contaminated product could greatly reduce the number of casualties by facilitating the rapid removal of contaminated products from the market. Market withdrawal capabilities from the point of processing are essential.

*D. Develop incidence response communications plans.*

The potential for fear and unfounded rumours associated with a threat or terrorist attack directed at food must be considered in risk management and risk communication. Social and political dislocation and sense of vulnerability are likely to persist long after the incident, whether or not an outbreak resulted. Consequently, some perpetrators may regard the publicity and disruption of society to promote their 'message' as more important than the number of people infected or killed. Examples of this are bombing incidents in busy places where warnings are given to avoid injuries and deaths. Accordingly, it is unwise to regard that the only purpose of terrorist threats of release of biological, radiological, and chemical agents is to cause numerous public injuries or illnesses. Economic and social disruption may well be a more significant intention. This makes food supplies attractive targets for deliberate contamination. Achieving sufficient contamination to cause ill health may be less important than ensuring that some physical evidence of a contaminating agent is present, discovered and made public.

Public safety and law enforcement authorities, industry and other private sector organizations, and the media must develop and apply communication approaches that give necessary information for public safety but that do not contribute to panic. Cultural sensitivities should be considered. These plans must include communicating incidents that do not result in outbreaks. Such events are much more common and can contribute to public health concerns. These plans should contain approaches to providing useful guidance to the public on avoiding exposure and medical advice in the event that exposure occurs or is suspected.