RISK COMMUNICATION APPLIED TO FOOD SAFETY
HANDBOOK

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LIST OF ABBREVIATIONS

BPA	Bisphenol A
CAC	Codex Alimentarius Commission
E. coli	*Escherichia coli*
EFSA	European Food Safety Authority
FAO	Food and Agriculture Organization
FDA	United States Food and Drug Administration
GMO	Genetically modified organism
GMP	Good manufacturing practice
INFOSAN	International Food Safety Authorities Network
LFTB	Lean finely textured beef
NGO	Non-governmental organization
WHO	World Health Organization
PHAC	Public Health Agency of Canada

INTRODUCTION AND PURPOSE

BACKGROUND

Risk communication is defined as the exchange of information and opinions concerning risk and risk-related factors among risk assessors, risk managers, consumers and other interested parties (FAO/WHO, 1998). Risk communication is an essential part of the risk analysis paradigm. The main goal of food safety risk communication is to increase understanding among various food safety stakeholders regarding the rationale behind the decisions taken to assess hazards and manage food safety risks, and to help people to make more informed judgements about the food safety hazards and risks they face in their lives (EFSA, 2012). Food safety risk communication also frequently informs and enhances risk assessment and risk management decisions. For example, risk communication is needed in helping risk managers to understand the likely impact of their different decisions and thereby to assess how effective their decisions would be. To reduce the risk of food safety hazards, food safety risk communication is often ongoing (e.g. promotion of hygiene practices).

The risk management responsibilities of national food safety authorities have increased considerably in recent years. This is due to globalization, extensive movements of people, more widespread agrifood trade and distribution of agrifood products, and ongoing changes in consumer preferences. These factors also frequently result in the re-emergence of known, or the emergence of new or unknown, food safety hazards and risks. At the same time, many national food safety authorities continue to face challenges in establishing or enhancing risk analysis capacity in food safety because of many competing priorities and global economic pressures.

With the responsibility for managing risks comes the responsibility to communicate information about risks to all interested parties at the appropriate level of understanding for each audience. Governments have a fundamental responsibility. Decision-makers and risk managers within governments have an obligation to:

> ensure effective risk communication with interested parties when developing scientific and technical analyses;

> involve the public and other stakeholders when appropriate in the risk analysis process;

> understand and respond to the factors driving public concerns about health risks (FAO/WHO, 1998), as well as technical risk assessments.

RATIONALE FOR DEVELOPING THIS HANDBOOK

Recent global, regional and national food-borne disease outbreaks and/or large food recalls have had adverse impacts on consumer confidence in the safety of the food supply and agrifood production and trade (Sandman & Lanard, 2011). Post-event analysis of such events has indicated the importance of more effective use of risk communication. Countries are encouraged to develop and assess their existing risk communication strategies applied to food safety and to learn from their own or other countries' experiences. As the use of the Internet and social media technologies increases in both developed and developing countries, the public's demand for greater transparency and more salient food safety risk information can be expected. This confirms the importance of effective risk communication strategies in food safety and the broader public health sector.

PURPOSE AND TARGET AUDIENCE

The purpose of this handbook is to support national food safety authorities and food chain stakeholders in establishing or enhancing risk communication practice and capacity in the food safety sector. The target audiences are national food safety authorities, managers, policy-makers and specialists that are:

> already managing or building food risk analysis (including risk communication) units, and/or

> performing or contributing to risk communication functions as part of food safety management (and broader risk analysis).

This handbook also targets agriculture/agrifood (including veterinary) and public health departments and agencies, which frequently share governmental responsibility for food safety at the country and/or regional level.

SCOPE

This handbook focuses on practical principles and best practices of risk communication to support risk management of adverse food safety (including quality) events associated with biological, chemical or physical hazards. Food defence and nutritional aspects are outside the scope. Radiological hazards were excluded because of an ongoing WHO risk communication initiative addressing radiological hazards and emergencies which affect food safety (to be published in 2016). Another focus of this handbook is on the use of risk communication in the process of risk analysis to manage both food safety emergencies (e.g. outbreaks of food-borne illness) and non-emergency or more enduring food safety issues (e.g. food safety and health promotion campaigns). Although the main focus of the handbook is on food safety, many aspects are applicable to effective risk communication in support of feed safety, animal health and zoonotic disease management.

METHOD

Publicly available knowledge on risk communication, existing guides and training materials and ongoing initiatives were carefully reviewed to inform the scope and format of this handbook. The aim was to develop a handbook that is useful for a wide range of countries and regions, with the main focus on the needs of low- and middle-income countries.

The handbook was developed using a highly participatory and technical approach designed and coordinated by FAO in collaboration with WHO. The specialists selected represent different food safety stakeholder groups (national governments, regional organizations, industry, consumers and academia) and regions. The development process included a physical four-day meeting (in Rome, August 2013). The handbook draft was pre-tested at the FAO regional workshop on Enhancing Risk Communication Capacity in Food Safety, organized in collaboration with WHO, in Budapest, Hungary (June 2014). The post-workshop version of the handbook was reviewed by external reviewers who were selected on the basis of referrals from the workshop participants.

FORMAT AND HOW TO USE THE HANDBOOK

There are four technical chapters in this handbook. Although considerable efforts were made to reduce overlap and repetition of information, it was sometimes necessary to repeat some aspects in order to allow transition, or to elaborate on an aspect in more depth or from different perspectives. The handbook begins with a broad overview of the key goals and concepts of risk communication (Chapter 1). The second chapter describes the importance of trust for effective

risk communication, and introduces the principles of good risk communication and the importance of planning for effective risk communication. The last two chapters discuss key considerations for communicating food safety risks (Chapter 3) and provide additional details on 'how to do' risk communication under real-life conditions (Chapter 4). Throughout the handbook, tips are provided and examples from different regions and food safety issues are described to illustrate principles and practices of effective food safety risk communication. Key source references that were used for developing each of the chapters are provided at the end of the appropriate chapter.

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WHAT IS FOOD SAFETY RISK COMMUNICATION, AND WHY IS IT IMPORTANT?

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CHAPTER SUMMARY

> Effective food safety risk communication is defined as the *exchange of information and opinions* among people about the risks and risk-related factors associated with food safety hazards and risks.

> Food safety risk communication is important to the protection of public, animal, plant and environmental health, and people's quality of life, including socio-economic factors such as livelihoods.

> The goals of food safety risk communication are to enable people to protect their health from food safety risks by providing information that enables them to make informed food safety decisions, to facilitate dialogue and understanding among all interested stakeholders, and to improve the overall effectiveness of the risk analysis process.

> Food safety risk communication may involve communication of both risks and benefits. Providing information about both risks and benefits allows people to make informed decisions about food choices.

> It is important to understand and address public perceptions of food safety risks in order to develop effective risk communication messages. How people *perceive* risks serves as the basis of their attitudes, intentions and behaviours.

> Different types of food safety issue require different approaches to risk communication. Emergency food safety events (e.g. outbreaks of food-borne illness) require a rapid response, while enduring food safety problems (e.g. low levels of aflatoxins in food) require ongoing communication with target audiences and stakeholders, including consumers.

PURPOSE

The main purpose of this chapter is to introduce the key goals and concepts of risk communication, and the factors that may influence the success of food safety risk communication. Elaboration is provided on the application of risk communication in food safety, stakeholder dialogue and engagement, a risk–benefit communication approach, and the importance of considering risk perceptions for effective risk communication. The main challenges of effective risk communication are described, as well as the advantages and benefits of developing an effective and inclusive risk communication strategy. Therefore, this chapter also sets the stage for subsequent chapters, in which many of the concepts and factors are elaborated in more detail.

1.1 WHAT IS FOOD SAFETY RISK COMMUNICATION?

The risk analysis framework is widely adopted globally and is applied to food safety in many countries. The framework consists of three interconnected components: risk assessment, risk management and risk communication (Figure 1.1).

FIGURE 1.1 **COMPONENTS OF RISK ANALYSIS**

RISK ASSESSMENT

RISK MANAGEMENT

RISK COMMUNICATION

Source: adapted from FAO/WHO

A plain language summary of the three components is provided below. Please note that the official Codex definitions of the three terms[1] are provided in the Glossary.

> **Risk assessment** is the process that is used to estimate and characterize risk, quantitatively or qualitatively.

> **Risk management** is the weighing and selecting of options, and implementing controls as necessary to ensure an appropriate level of protection.

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[1] The Codex Alimentarius Commission (CAC) has defined these terms differently; however, the essence of these definitions has been retained. The Codex definitions are available at: http://www.codexalimentarius.org/procedures-strategies/procedural-manual/en/ (page 116)

> **Risk communication** is the exchange of information and opinions concerning risk and risk-related factors among risk assessors, risk managers, consumers and other interested parties.

Risk communication is an essential component of risk analysis; in the context of food safety it is utilized to support the exchange of information and opinions on food safety risks and related factors among relevant stakeholders. The stakeholders include governments, consumers, industry, NGOs, academia, media and others. Risk communication can enable people to make informed decisions, facilitate mutual understanding among stakeholders and frequently inform and enhance risk assessment and risk management.

1.2   WHY IS FOOD SAFETY RISK COMMUNICATION IMPORTANT?

Many people are exposed to food safety hazards and risks on a daily basis, in both developing and developed countries. The frequency and extent of exposure depend on the controls implemented across the food chain, the dietary habits of consumers and the access to and availability of food supplies in the local environment. The Report from the World Health Organization (WHO) "WHO estimates of the Global Burden of Foodborne Diseases" (WHO, 2015) shows that some 600 million—or 1 in 10 people in the world—fall ill every year after eating contaminated food. Foodborne diseases also result in death, causing an estimated 420 000 deaths a year. The report includes estimates of the burden of foodborne diseases caused by 31 bacteria, viruses, parasites, toxins and chemicals. The estimates are based on the best available data at the time of reporting.

Effective food safety risk communication can improve:

> people's physical well-being;

> consumers' trust in the food supply and in the regulatory systems;

> the environment in which we live (animal, environment and plant health);

> people's overall quality of life, including socio-economic factors such as livelihoods and psychological factors.

The need for effective food safety risk communication is underpinned by the ethical need to ensure that society is protected from food safety risks to the greatest extent possible.

1.3   THE GOALS OF FOOD SAFETY RISK COMMUNICATION

The overall goal of food safety risk communication is to protect people's health through provision of information that enables them to make informed food safety decisions. Food safety risk information may help people to make decisions about whether to avoid a particular food, how to handle or prepare it in order to reduce risk, or what they can do to protect themselves if they are exposed to the risk.

To enable people to make informed food safety decisions it is important that risk information is conveyed in a compelling manner, is readily understood and perceived to be accurate and trustworthy, takes into account the needs and concerns of the target audience, and helps them to decide how to proceed.

Enabling people to make informed food safety decisions can, in some cases, involve communicating about both risks and benefits associated with particular food choices. This is the case, for instance, when the benefits of a varied diet outweigh certain risks, or when a food that is risky for some consumers may be beneficial to others (see Box 1.1 for an example). In order to enable people to make well-informed decisions about food consumption under these circumstances, it is particularly important to target information about risks to those groups in the population who are most vulnerable to them (e.g. pregnant women, the very young, the elderly, and those with weakened immune systems), and to ensure that information about both risks and benefits is available to all stakeholders.

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BOX 1.1

THE NEED FOR TARGETED RISK–BENEFIT COMMUNICATION

Eating fish may be associated with increased consumption of methyl mercury. At the same time, increased consumption of omega-3 fatty acids, which are found in fish, has health benefits. The benefits and risks of eating fish may also vary across the population. For example, pregnant women or people who are immunocompromised are more at risk from contaminants such as methyl mercury. If everyone eats less fish, however, people who are not vulnerable may be disadvantaged. Similarly, if pregnant women reduce their consumption of *all* fish they may be disadvantaged, because there are also benefits to the developing child (or fetus) of a pregnant woman who consumes fish. The risk information, therefore, needs to address who is at risk, and who will, and who will not, benefit from reduced consumption of certain fish.

(Source: FAO/WHO)

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In certain situations, people have simply to follow science-based health practices (e.g. the use of hot water to sanitize equipment, hand washing, etc.) to protect public health, and the decision to engage in these practices is not theirs to make (e.g. food processors must follow food safety regulations). In these cases, communication about food safety risks is often aimed at increasing people's understanding of *why* they need to engage in these practices, rather than enabling them to make their own risk decisions.

Food safety risk communication is used to facilitate understanding and dialogue among all stakeholders, including consumers, about food safety issues. When possible, food safety risk communication should involve interaction among all those concerned with the risk communication process. It is important to engage in a two-way dialogue with those exposed and vulnerable to the risk, people who may influence and control the risk, other affected or interested stakeholders, and the public in general.

Dialogue with stakeholders offers the chance to obtain relevant information for risk communication decisions. For the development and delivery of effective food

safety risk communication, it is essential to understand the information needs of target audiences. This enables risk communication messages to be tailored to target audiences, thereby maximizing their effectiveness and dissemination.

Dialogue with stakeholders may also provide decision-makers with vital or additional relevant information for risk assessments and/or management, and increase the likelihood that decisions are fit for purpose. For example, stakeholders may provide information on who is exposed to the risk, what are the potential or likely sources of hazard, or the probable effectiveness of various management options in controlling or preventing risks. They may also contribute to the identification of unintended consequences of risk management decisions.

BOX 1.2

LEVELS OF INTERACTIVE INFORMATION EXCHANGE IN THE RISK COMMUNICATION PROCESS

Information
People want to learn about the risk they are exposed to, and what is being done to mitigate it. If possible, information about concrete actions which can be taken in order to improve public health in relation to food safety risks should also be provided (i.e. health promotion).

Dialogue
This is interactive communication, allowing exchange of information and ideas between two different stakeholders, for example between those affected by the food safety risk and the general public, or risk communicators, risk managers and risk assessors.

Engagement
This is the process by which an organization involves stakeholders, and other interested individuals or organizations, in developing policies to manage the food risk (e.g. a consensus conference or citizens' jury where a report is delivered to policy-makers).

(Source: FAO/WHO)

Food safety risk communication is also used to improve the ongoing risk analysis process through societal engagement. Risk assessment results and risk management decisions can be potentially controversial. Different stakeholders (e.g. community members, activists, government officials, scientists and corporate executives) may disagree about the nature, magnitude or severity of the risk in question, or the best way to manage it. Understanding societal priorities for risk assessment, management and communication may contribute to more inclusive decisions about food safety risks and their assessment and management. For this purpose, engagement of stakeholders should begin at the start of the risk analysis process, and not at the end. For example, when risk assessment questions are identified by risk managers, it is recommended that they be posted (e.g. on a Web site) and opened for comments and discussion with stakeholders. Risk assessments conducted with at least some form of stakeholder involvement may result in lower levels of stakeholder opposition, and in enhanced trust in the process and understanding of the results among all stakeholders.

Stakeholder:
an individual or a group of people who may be affected by a particular issue, or who may influence the issue. Examples include government, industry, NGOs, universities and research institutes, the media and consumers.

Target audience:
a group or subgroup of stakeholders towards whom the message or risk communication is specifically aimed. Examples include people who may consume the food, vulnerable populations, businesses that produce, store/distribute and sell food and NGOs with interests in the food safety issue.

1.4   CHALLENGES TO EFFECTIVE RISK COMMUNICATION

There are many challenges to effective food safety risk communication that are addressed and illustrated throughout this handbook (see Box 1.3). Despite these challenges, the benefits of effective risk communication to public health, food safety and agrifood trade clearly make effective risk communication important. Effective food safety risk communication contributes to the development and success of a comprehensive and responsible risk management programme.

Countries may also face institutional challenges that make effective risk communication difficult. For example, low-income countries, and also some higher-income countries, may lack resources and expertise for detecting food hazards and assessing their risks. Lack of reliable data on food hazards and risks impedes the understanding of food safety issues and how to manage and communicate them.

Another challenge in under-resourced, but also higher-income, countries is that there is frequently a lack of clearly defined mandates and responsibilities for relevant government ministries and institutions. For example, it may not be clear which individuals or institutions are responsible for risk assessment, management and communication, or for policy development versus implementation. Furthermore, there is often poor coordination and information sharing among the various food safety institutions. For the successful adoption and implementation of the risk analysis framework, it is important that responsibilities for risk assessment, management and communication are clearly defined, and that different institutions work together and exchange information.

BOX 1.3

CENTRAL CHALLENGES TO EFFECTIVE FOOD SAFETY RISK COMMUNICATION
> To identify all target audiences and understand their risk perceptions, concerns and communication needs.
> To build and maintain trust in sources of food safety risk information, and in those institutions with responsibility for assessing and managing food safety risks.
> To communicate uncertainties, where they exist, and what is being done to reduce and mitigate them.
> To ensure that risk communication is adapted to changes in the external environment so that it always reflects the current state of risk.
> To identify where knowledge gaps/differences exist between scientific experts and target audiences.
> To identify the barriers to communicating effectively with each target audience group (e.g. social exclusion of vulnerable groups, socio-economic or cultural factors, local or regional infrastructure, or unintended consequences of food safety risk communication).
> To coordinate risk communication messages among multiple individuals or institutions who are conveying information about the same food safety issue.
> To communicate clearly and in a timely fashion.
> To minimize unintended consequences of the communication.

1.5   WHY IS RISK PERCEPTION IMPORTANT?

Effective food safety risk communication must take into account both risk perception and the risks identified in the risk assessment. When discussing risk perception, it is important to distinguish clearly among a hazard, a risk, and risk perception.

For some hazards, the risk to people may be very low because of limited exposure. However, public risk perception and societal concern may be high as a consequence of the way other characteristics of the food safety issue are perceived. For example, people may be concerned about a food hazard when they are exposed to it involuntarily or have no personal control over their exposure to the hazard. Given the same objective level of risk and consequences, there are a number of factors that influence risk perception (see Box 1.4).

Hazard: a biological, chemical or physical agent in, or condition of, food with the potential to cause an adverse health effect.

Risk: a function of the probability of an adverse effect resulting from a hazard in food and the severity of that effect.

Risk perception: the judgement that people make about the characteristics, likelihood and severity of a specific risk.

BOX 1.4

FACTORS INFLUENCING RISK PERCEPTION

Factor	Increase perceived risk	Decrease perceived risk
Perceived naturalness	Unnatural/human-made	Natural hazard
Perceived controllability	Uncontrollable	Personal controllability
Scientific knowledge	Risks are unknown to science	Risks are known to science
Familiarity	New risk	Familiar risk
Voluntariness of exposure	Involuntary exposure	Choice about exposure
Perceived catastrophic potential	Many people are affected at the same time	People are affected over a greater period of time
Severity of consequences	Severe consequence (regardless of likelihood of occurrence)	Consequences not severe
Immediacy of consequences	Consequences are immediate	Consequences are delayed
Who is affected	Vulnerable people (e.g. children, infants and pregnant women)	Not vulnerable people
Perceived distribution of risks and benefits	Unequal distribution of risks and benefits	Equal distribution of risks and benefits
Ethical and moral concerns	Risk is seen as ethically or morally wrong (e.g. fraudulent acts)	No ethical or moral concerns

The most important principle in risk perception is that, regardless of technical risk estimates, how people *perceive* risks serves as the basis of their attitudes, intentions and behaviours. As a result, it is critically important in effective risk communication to identify and address people's perceptions as part of the risk communication process (see Box 1.5 for an example). *Food safety risk communication should not only focus on the findings of technical risk assessments, but also address the factors*

that influence risk perception. To do this, risk communicators should actively seek to understand how the characteristics of the food safety issue influence how it is perceived by people, before developing risk communication messages.

BOX 1.5

ARSENIC IN RICE AND RICE PRODUCTS IN THE UNITED STATES

Background summary

In September 2012, the American consumer advocacy magazine *Consumer Reports* reported finding significant levels of inorganic arsenic, a carcinogen, in 200 samples of 60 rice and rice products available on grocery shelves, including popular staples eaten by both adults and children.

The report received extensive media attention and significant public interest.

On the same day, the United States Food and Drug Administration (FDA) published the results for 200 samples of rice and rice products tested for the presence of inorganic arsenic. These preliminary test data comprised a subset of approximately 1 300 samples collected as part of the agency's ongoing work to understand and manage possible arsenic-related risks associated with food consumption in the United States. The results were largely consistent with those published in *Consumer Reports*, but received less attention.

Key risk communication challenge

> To communicate information about a chemical food hazard when there are insufficient scientific data to assess the long-term risk, and public concern is high.

Actions and outcomes

While the FDA and *Consumer Reports* found comparable levels of inorganic arsenic among the products tested, their recommendations to consumers differed significantly. In its publication and press releases, *Consumer Reports* provided specific advice regarding how to limit one's exposure to inorganic arsenic in rice and rice products, differentiating among infants, children and adults.

In contrast, the FDA stated that it would be premature to recommend dietary changes related to the consumption of rice and rice products until a more thorough analysis was completed. Instead, the agency advised consumers that they should continue to eat a well-balanced diet, including a wide variety of grains. The agency also announced that it would test additional samples, an important step given the large number of products that contain rice and rice derivatives, such as rice flour and brown rice syrup, which are ingredients in many of the foods that people routinely eat. The FDA further explained that it was committed to using the data to conduct a risk assessment of the effects of long-term exposure to inorganic arsenic. In opting not to make more specific recommendations concerning the consumption of rice and rice products, the FDA stated that it was important not to "get ahead of the science", as a senior official of the agency explained.

While the FDA has a responsibility not to go beyond the scientific evidence, its approach led some critics to argue that, in waiting for a rigorous risk assessment, the agency may have been too cautious. The FDA did not address at the time the potential increased risk to those either medically or culturally dependent on a rice-based diet, they insufficiently acknowledged the potential risks to infants, and they did not address the risk during pregnancy. Further, the FDA's approach led some critics to argue that it was too cautious, in view of the high rates of consumption of rice and rice products by certain ethnic and vulnerable populations in the United States. It also failed to address how people could take action to limit their exposures.

The FDA's approach and the media coverage that followed may have led consumers to turn to the specific guidance in *Consumer Reports* for authoritative advice.

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Lessons learned

In situations with high public concern, it is important to be very sensitive to the factors influencing public risk perception. Risk communicators need to acknowledge and address public concerns in their communications. Unresponsiveness to public concerns may lead people to turn to other sources for information.

People tend to be more concerned about risks when those seen as most vulnerable are exposed to them. Even when there is lack of knowledge about the risks, it is important in the communication to refer openly to those who are more vulnerable to the hazard and its consequences than others.

It is important to give consumers explicit information about the strategies that may be effective in reducing exposure to a hazard, while taking care to inform them about what is known and not known about the effectiveness of these strategies.

Effective personal control over risks is also important. In this case, the FDA could have explained that it did not have a scientific basis on which to make specific dietary recommendations, but that if consumers wished to do so, they could take steps to reduce their exposure to inorganic arsenic in rice and rice products.

How people view the acceptability of the risks and benefits associated with various foods and practices involves a set of personal and societal value judgements. However, many risk communicators focus primarily on the scientific information related to the risk. The problem is that science provides no special insights into what various individuals, cultures or societies may consider to be an acceptable risk, or an acceptable trade-off between risks and benefits.

In addition, technical risk messages are sometimes associated with value judgements made by those developing them; for example, qualitative risk rankings made by experts may be used to prioritize risk mitigation activities. The degree to which the communicators' values influence the message needs to be made transparent.

1.6   USE OF FOOD SAFETY RISK COMMUNICATION

Risk communication may be applied to all food safety risks. However, different types of food safety issue require different communication strategies and methods. The important implication is that risk communicators need to adapt their communication strategy to address the specifics of each food safety issue. The case studies included throughout this handbook will provide useful insight and guidance.

An important distinction to consider is whether one needs to communicate about an emergency food safety risk or a more enduring food safety problem. During an *emergency food safety incident*, messages are often direct, and are delivered frequently and urgently. For example, data may indicate the presence of an outbreak of food-borne illness, or testing of food products may suggest potentially health-threatening microbiological or physical contamination of foods. An emergency food safety risk requires a rapid response, and there may not be enough time to consult fully with all relevant target audiences and stakeholders to inform development of the message. There may be incomplete information

about the extent and impact of the risk or who is affected; this will need to be addressed in the communication. In addition, the coordination of communication among various stakeholders becomes increasingly important in order to avoid contradictory messages and public confusion.

In contrast, *enduring food safety problems* often require sustained communication, and more detailed information about the risk may be available. For example, communication might focus on stakeholders' roles in proper food handling, storage, preparation and consumption, and on improving the infrastructure necessary for this (see Box 1.6 for an example). In these cases, messages are often developed, refined and distributed over time or at specific high-risk periods (e.g. in the summer months on proper cooking of hamburgers, and during the holiday season on cooking turkey or handling leftovers).

BOX 1.6

AFLATOXIN CONTAMINATION OF STAPLES IN AFRICA[2]

Background summary

Aflatoxins pose serious health risks to humans and domestic animals in Africa, because they frequently contaminate agricultural commodities. Aflatoxin contamination incidents have a direct bearing on food security because dietary staples such as maize and groundnuts are usually highly contaminated with aflatoxins in most African countries, thus increasing people's exposure to the toxins. Other commonly consumed crops such as cassava are also prone to aflatoxin contamination. In addition, aflatoxin contamination is a major cause of pre- and post-harvest losses that further reduce the amount of food reaching markets and households across the continent. It can also result in loss of revenue and profit from domestic, regional and international trade.

A major challenge for better control of aflatoxin is the generally low level of awareness of the problem. Further, because the toxin can be unobservable and its health consequences (e.g. cancer) are often delayed, people generally believe that there is no risk.

Key risk communication challenge

> To raise awareness of the aflatoxin problem and its mitigation measures among stakeholders such as farmers, consumers, other stakeholders along the food chain, agriculture extension workers, health professionals and researchers, as well as policy- and decision-makers.

Actions

A sustained aflatoxin awareness campaign was implemented in Benin, Ghana and Togo by Rotary Clubs and the International Institute of Tropical Agriculture from 2001 to 2004. The campaign was targeted at farmers, traders, processors, grain millers and consumers.

The Rotary Clubs involved many different stakeholders in the development of the messages and promotional materials:

> A public opinion survey was conducted to provide insights into people's knowledge of the toxin, the risks it poses and practices to limit contamination of grain by the toxin. The results helped to identify perceptions and information needs, and guided the development of the campaign theme, messages and approach.

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2   This case has been kindly provided by Ms Rose Omari, EatSafe Ghana.

> > To develop key messages, a stakeholder workshop was conducted with representatives of the target audiences, media houses, scientists, regulatory authorities, farmers, industry, exporters, civil society, and other relevant government institutions and development partners.

In order to increase people's belief that aflatoxins pose a threat, location-specific data on aflatoxin incidence and management strategies were incorporated in the messages.

A large variety of communication channels and tools was used to reach various target audiences, including role-play at market centres, community workshops and interpersonal contacts at various locations, a national aflatoxin quiz competition in schools, television documentaries and radio jingles.

Lessons learned

In food safety situations that require ongoing communication, messages are often developed, refined and provided to target audiences over time.

When addressing enduring food safety problems which are associated with low public concern, sustained communication may be required that is actively designed to persuade stakeholders and members of the public to take appropriate action.

Ongoing food safety issues that generate societal interest or concern also require sustained communication. For example, communication may address the potential risks and benefits of food biotechnology, genetically modified organisms (GMOs) applied to agrifood production, or nanotechnology in food. When the level of risk is unknown and the actions to be taken are uncertain, the communicator may have the responsibility to engage with stakeholders to identify the societal priorities for risk management. Communication will also need to be updated continually as new scientific knowledge about the risks becomes available.

1.7 STAKEHOLDERS AND TARGET AUDIENCES

Stakeholders are central to food safety risk communication for the reasons already given above (Section 1.3), and for each of the goals it is essential that all stakeholders and target audiences are identified. When possible, all interested stakeholders should have access to the food safety risk communication process.

There are many potential benefits to including stakeholders in food safety risk communication efforts. Dialogue with stakeholders helps communicators to:

> identify gaps in knowledge about the food safety risks that are under consideration;
> understand stakeholders' risk perceptions and concerns;
> identify potential communication barriers and the preferred and most appropriate information sources and channels of communication;
> identify and address any *unintended* consequences of the communication.

In addition, a collaborative process with stakeholders will, for example:

> generate more ideas;

> identify concerns not otherwise recognized;

> include different perspectives;

> potentially create buy-in and build broad support for the communication effort;

> facilitate the coordination of communication efforts among various governmental departments (e.g. health, agriculture and trade) and other stakeholders sharing responsibility for food safety at the national or other levels.

For all of these reasons, identifying stakeholders and target audiences and engaging them in a dialogue to inform risk communication decisions increases the opportunity for successful food safety risk communication and enhanced risk management.

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PRINCIPLES OF
GOOD RISK COMMUNICATION

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CHAPTER SUMMARY

> ***Trust*** in information and governing institutions is essential for effective food safety risk communication. People who distrust food safety risk messages are unlikely to believe or act upon the information and this can have severe implications for health, the environment, agrifood trade and economics.

> Food safety risk communication among all stakeholders in the food chain should be founded on good communication principles. These include *transparency*, *openness*, *responsiveness* and *timeliness*, which all contribute to the development and maintenance of trust.

> It is important to be open and transparent about the decision-making process. In food safety risk analysis, this specifically applies to the interface of risk assessment, management and communication of decisions, and should include timely opportunities for *dialogue* with stakeholders when appropriate and feasible, and for ***public inspection*** of the process.

> Communicating in a responsive and timely manner, even in the presence of uncertainty or gaps in knowledge about the risk, is instrumental in protecting public health and in building and maintaining trust. Adequate planning enables organizations to develop a timely, well-coordinated and effective response to food safety risks.

PURPOSE

The main purpose of this chapter is to discuss the importance of trust in effective food safety risk communication. The key principles of good food safety risk communication include *openness*, *transparency*, *timeliness* and *responsiveness*. The steps involved in planning (and coordinating) food safety risk communication are described.

2.1 TRUST IN INFORMATION AND REGULATORY INSTITUTIONS

Trust: a belief in the honesty, fairness and goodwill of a source or institution to assess, manage and communicate about food safety risks in a manner consistent with the public good.

Credibility: the extent to which a source or institution is perceived to have the knowledge and expertise to assess, manage and communicate about a risk.

Trust is important for effective risk communication. People may not believe or follow information which they distrust and this can result in ineffective risk management and potentially severe consequences for health, the environment, agrifood trade and economics.

People are more inclined to trust credible information sources or institutions that they perceive to have the necessary knowledge and expertise relevant to the topic of communication, and to have a demonstrated record of appropriate integrity and skills. People need to have confidence in the abilities of those responsible for assessing, managing and communicating about food safety risks.

However, expertise alone is not sufficient to ensure trust. In assessing trustworthiness, people also consider the various motivations that sources of information may have for communicating particular messages. For example, a source may be distrusted if it is perceived to be biased and to have vested interests when communicating about a food safety risk. The food safety risk messages communicated by a company that is simply asserting the safety of their product may be received with public scepticism. People are much more willing to believe sources of information that:

> do not have obvious reasons for possibly biased or self-serving conclusions or advice,

> share people's values and concerns, and

> are able to demonstrate that their decisions are in the interest of protecting the health of the public.

For example, the first federal press conference to inform the public about the outbreak of listeriosis in Canada (discussed in more detail in Box 2.3, below) was led by the Minister of Agriculture, not the Minister of Health. This gave an impression that the issue was primarily handled as an agrifood safety issue, rather than a public health issue. The emphasis on agriculture rather than public health during the outbreak was inconsistent with the public's view and probably contributed to the erosion of trust.

TIPS

Risk communicators should not expect people to trust or listen to them just because they are a food safety expert or in a position of authority. To increase trustworthiness, they should work actively to demonstrate honesty, empathy and a sense of shared values, and to demonstrate that decisions and recommendations are aimed at protecting public health.

People also tend to trust information sources that are perceived to be honest because they convey information about a risk in an open, truthful and transparent way. Distrust is often associated with a history of exaggeration, denial or distortion.

It is important that people trust that institutions responsible for food safety are working in the public interest, and will take definitive actions to put the health of humans, animals and the environment above the economic, political or personal interests of specific individuals, companies or political organizations. This is sometimes referred to as "social trust".

Honesty: the extent to which a source or institution conveys information about a risk in an open, truthful and transparent way.

BOX 2.1

RISK COMMUNICATION ABOUT PESTICIDES ON FRUITS AND VEGETABLES IN THE UNITED STATES[3]

Summary

Every year, in the United States, the Environmental Working Group (EWG) publishes its Dirty Dozen list. This is a list of 12 fresh fruits and vegetables that are comparatively high in pesticide residue levels. The key messages are that any level of pesticide residue is too much, and for the 12 items on the list, people should buy organic produce if possible.

The annual publication of the Dirty Dozen list results in negative consumer perceptions of these fruits and vegetables, a message that goes against dietary advice to increase fruit and vegetable consumption, because the benefits of a diet rich in fruits and vegetables outweigh the risks of regulated pesticide exposure.

Key risk communication challenge

> To address negative consumer perceptions of the 12 fruits and vegetables published in the EWG's Dirty Dozen list.

Actions

> The Alliance for Food & Farming (Alliance), representing agricultural associations, commodity groups and individual growers/shippers of both organic and conventionally grown produce, has launched an ongoing campaign to address negative consumer perceptions.

The key messages are:

> pesticides are heavily regulated and controlled by the government;
> with few exceptions, the residue levels of the items on the list are still within the safety tolerances set by the government and are safe;
> the EWG is using fear, not facts.

The Alliance cited research studies on their Web site, and included video interviews and testimonials from independent researchers and health experts, as well as farmers. This is likely to have increased the credibility of the Alliance. Stating that they have organic producers supporting their message could have further reduced potential perceptions that the Alliance is promoting their own vested interests. The communication strategies of the Alliance may have facilitated the public's perception of the Alliance as a trustworthy source of information and may have undermined the trustworthiness of the EWG as an information source.

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[3]   This case has been kindly provided by Ms Amy Philpott, Watson Green LLC.

> **Lessons learned**
> When there are conflicting messages, people often rely heavily on personal trust in the messenger when deciding which message to believe.
>   To increase the trustworthiness of an information source, it is recommended to use credible and independent scientific expertise, to be honest, and openly to address potential perceptions of promoting the interests of the source.

Trust can be easily eroded or lost through ineffective or inappropriate communication. Losing the public's trust can have severe consequences for many sectors. Frequently, it results in interruptions to or bans on agrifood trade, and has severe economic results. Mechanisms of *transparency*, *openness*, *responsiveness* and *timeliness* are not only essential to establishing and maintaining trust, but also contribute to the frequently slow process of rebuilding trust when it is low.

2.2   PRINCIPLES OF GOOD FOOD SAFETY RISK COMMUNICATION

Food safety risk communication should be founded on the good communication principles, which are essential to the development and maintenance of trust.
   Key principles of good risk communication include:

> **openness**

> **transparency**

> **timeliness**

> **responsiveness**

2.2.1 Openness and transparency

Openness refers to the opportunity for engagement with all food safety stakeholders, including those affected by the risk and those potentially responsible for it. Risk assessment, management and communication should be performed in an open manner, including opportunities for dialogue with stakeholders at appropriate points. For example, stakeholders may be invited to submit evidence, to participate in a meeting where risk management options are discussed, and/or to comment on draft messages before they are finalized.

   Engaging stakeholders and the public on issues of concern in relation to a food safety risk may increase trust in the process of risk analysis in general, and in risk communication in particular. While stakeholder engagement is important and worthy, it must be undertaken in a way that minimizes stakeholder fatigue associated with the growing number of issues being made the subject of public consultations. It is therefore important to provide concise and accurate information regarding the food safety issue and why it should be of interest to the stakeholder to participate

in the process. An important part of engagement is also to ensure that the outcomes are considered for inclusion in the policy- or decision-making process. Dialogue and engagement do not always imply joint risk management and decision-making. However, they should determine *what* gets considered in the decisions and it should be clearly stated how stakeholder inputs have been considered and addressed.

Transparency implies a set of policies, practices and procedures that enable stakeholders and the interested public to understand how decisions on risk assessment, management and communication have been made. This means that information on which decisions are made, and documentation about the decision-making process, should be made accessible to stakeholders and the public. For example, research reports and minutes of meetings can be published on Web sites or be made available on request.

Transparency allows public inspection of decision-making processes and may help to build trust in the institutions and organizations involved in risk assessment, management and communication. Complete disclosure of information can sometimes be problematic, however, because of legitimate concerns about confidentiality and proprietary information. Being clear and consistent with regard to the rules relating to transparency is usually well tolerated, provided the rules are justified. However, if limits to transparency are seen as excuses for unnecessary secrecy, the likely result will be a loss of public trust.

BOX 2.2

OPENNESS AND TRANSPARENCY
Openness and transparency are not interchangeable.

An institution or a risk communicator can be open without being transparent and *vice versa*. To illustrate, an institution or risk communicator may be transparent and have a willingness to publish everything on a Web site, but not allow interested parties to be part of the decision-making process. By contrast, an open organization may invite many stakeholders to participate in an interactive process, but then not share decisions on how the input has been used. To ensure best practice in risk communication, it is strongly recommended to implement both openness and transparency.

Allowing high-profile critics to scrutinize, watch and/or participate in decision-making may increase trust and, ultimately, the positive impact of risk communication. Openness and transparency alone cannot ensure trust, however. The public must also judge that decisions are made competently and in the interests of protecting public health.

TIPS

Given the diversity of stakeholder opinions, consensus about how to assess, manage or communicate about food safety risks may not always be reached. It is important to make sure that lack of consensus is made transparent.

2.2.2 Timeliness and responsiveness

Communicating in a timely manner is essential for the protection of public health, contributes to building and maintaining trust, and can prevent the development of rumours and misinformation. Communicating early is also important to prevent disruption of agrifood trade and the consequent negative economic impact, which may result from rumours and misinformation.

Many controversies become focused on the question "Why didn't you tell us sooner?", rather than on the risk itself. *Even when there is little information to offer, it is recommended to communicate how the authorities are investigating the event and when more information will be available.*

In order to be timely and transparent, it is often necessary to communicate about uncertainties around the food safety risk. Food safety situations that require urgent communication to prevent or reduce the risks of significant harm are often associated with many gaps in knowledge. *Where there is uncertainty, this should be acknowledged and explained, together with what is being done by risk assessors and managers to address the uncertainty, and the implications for target audiences* (see Box 2.3 for an example). How to deal with uncertainty is discussed in detail in Chapter 4 of this handbook.

BOX 2.3

RISK COMMUNICATION DURING THE 2008 OUTBREAK OF LISTERIOSIS ASSOCIATED WITH PROCESSED MEAT IN CANADA[4]

Background summary
A listeriosis outbreak of 57 cases killed 23 people in Canada in 2008. When the issue first emerged, several cases were found to have been caused by listeria with matching genetic fingerprints, which suggested they may have been linked to a common source. While evidence pointed to processed meats, the source of the outbreak was not confirmed until four weeks after the first illnesses were identified, and 10 days after the evidence had begun to indicate a national outbreak of listeriosis.

Key risk communication challenge
> Informing the public about a potential health hazard when there is uncertainty about the source.

Actions and outcomes
The Public Health Agency of Canada chose not to communicate about the outbreak until the source of the illness was laboratory confirmed, which happened 10 days after the national outbreak was first identified.

Although the source was uncertain, the government could have informed the public about the investigation when it began, and shared general food safety advice about listeriosis and how people can protect themselves from infection to help prevent further illnesses. This could have prevented some of the cases.

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4   This case has been kindly provided by Mr Ryan Baker, the Public Health Agency of Canada.

The delay in communicating about the outbreak also drew wide criticism that hurt the government's credibility, and coloured much of the media coverage and parliamentary discussions throughout the outbreak. The media questioned the government's competence in managing the outbreak and accused it of putting the manufacturer's interests above those of the public. The public's trust in the government was undermined and all subsequent communications were less effective.

Lesson learned
When faced with a significant public health risk, communicating in a timely and transparent manner, even when all the facts are not known, is essential to protect people from the risk and maintain the public's trust.

Given the rapid circulation of food safety information and communication on the Internet and social media, it is important to communicate early and often. If an organization does not communicate in a timely manner, others will, and this could compromise the ability of the organization to achieve its communication objectives.

Responsiveness is the extent to which those responsible for food safety address the risk communication needs and expectations of target audiences in their communication activities. For example, people may distrust risk messages if they do not address their concerns and perceptions but contain only technical information about risk assessments. For responsive risk communication it is therefore important to understand target audiences' information needs and communication expectations and to address these in the communication activities.

Risk communicators should also be responsive to changes in the external environment, including unplanned and unforeseen events (e.g. misinformation, emerging questions and concerns, misconceptions), and revise or reinforce messages accordingly.

TIPS

Risk communicators need to build, maintain and sometimes restore trust to ensure that stakeholders listen and act on risk communication messages. For this purpose it is useful to:
> Create opportunities for dialogue with stakeholders at appropriate times throughout the risk analysis process.
> Make documents publicly available that enable stakeholders to understand and scrutinize the decision-making process.
> Communicate in a timely manner, even when there are uncertainties. Timeliness is essential.
> Be responsive to the needs and concerns of those potentially affected by the risk. Dialogue with stakeholders and monitoring risk communication while a food safety issue is being addressed can help communicators to be responsive to stakeholder needs and changes in the external environment.

2.3 THE IMPORTANCE OF PLANNING

Planning is central to the process of developing effective food safety risk communication (see Box 2.4 for an example). Although it is impossible to anticipate, prepare and plan for every possible food safety issue, prioritizing and planning ahead should result in a faster and more effective communication response, which may in turn reduce the negative impacts on the public and other stakeholders.

BOX 2.4

RISK COMMUNICATION DURING RECURRING CHOLERA OUTBREAKS IN GHANA[5]

Background summary
Cholera occurs regularly in many parts of Ghana, and Africa as a whole, and leads to many human illnesses and deaths. The number of people infected can rise extremely quickly, and occasional large outbreaks or epidemics continue to be a major public health problem.

An epidemic of cholera can be controlled more quickly when the public understands how to help to limit the spread. Education on preventive measures (such as food safety, water safety and hygiene) is therefore crucial in addressing cholera epidemics.

Key risk communication challenge
> To develop a well-coordinated, timely and effective risk communication response to recurring cholera outbreaks.

Actions
In response to the cholera outbreaks, an extensive risk communication strategy has been developed in Ghana. For example:
> A multistakeholder network has been set up to collaborate in providing information about cholera prevention and personal hygiene during outbreaks.
> Volunteers are trained to communicate about cholera prevention measures.
> Food vendors and drinking water producers are educated to improve the safety of products.
> All regions and districts are alerted to intensify diarrhoea surveillance.
> Health education materials on cholera awareness and prevention, and personal hygiene, are distributed to the affected areas.
> Press releases are sent to media outlets to promote public awareness.
> Different communication channels and methods are used to reach different target audiences, including house-to-house visits, and role playing and community sessions organized in markets, schools and places of worship.

Lesson learned
Risk communication can involve many different activities. This case illustrates the importance of developing a risk communication plan for a well-coordinated, timely and effective response to food safety risks.

At its most basic level, the food safety risk communication plan should clearly identify who will do what, and how, before, during and after a food safety issue has occurred. Some aspects of planning risk communication differ between emergency

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[5]   This case has been kindly provided by Ms Rose Omari, EatSafe Ghana.

An extension worker in El Salvador teaching farmers how to vaccinate poultry against cholera.

and non-emergency situations. For example, during an emergency food safety incident, risk messages often need to be developed in a very short time frame and in consultation with a wider range of agencies than in normal situations.

Planning food safety risk communication is important to all food-chain stakeholders and, although some aspects are generic, many plans are organization specific. General planning principles are briefly elaborated below. The following chapters in this handbook will help with the different steps involved in planning risk communication.

In preparing for communicating about a food safety issue, the risk communication team should:

1. Prioritize food safety issues and gather information

A list of possible food safety issues should be made and these should be ranked in terms of how likely it is that they will occur, and according to the estimated negative impact on stakeholders if they did occur. It is impossible to predict every possible food safety issue. However, high probability and/or high impact food safety issues can be identified. These are the food safety issues for which risk communicators should gather information.

2. Identify the risk communication activities required

The next step is to identify all communication activities that need to be completed in order to communicate effectively the risks from the priority food safety issues (e.g. engaging in dialogue with stakeholders, developing messages, testing messages, disseminating messages and coordinating communication).

3. Gather information about people and resources available for communication activities, and identify gaps in capacity and other resources

It is useful to identify the people, skills and knowledge that are available to assist in carrying out the communication activities (see Box 2.5). This may include colleagues in the same organization or involve external experts (scientists, subject matter experts, public relations experts and others), depending on the skills and knowledge needed. Identifying gaps in capacity or resources is also important.

BOX 2.5

PLANNING: IDENTIFYING RESOURCES AND CAPABILITIES TO CARRY OUT DIFFERENT COMMUNICATION ACTIVITIES

In planning food safety risk communication, it can be useful to create an inventory of the internal and external resources and capabilities available to support communication activities. This includes an assessment of financial resources necessary to carry out communication activities or to hire external expertise. It also includes the identification of people that are available to assist in carrying out different communication activities, and their skills and knowledge. The table below provides some examples.

Communication activity	Examples of resources and capabilities
Listening through dialogue	People who can monitor traditional and non-traditional media for emerging questions, confusions, circulating rumours, etc.; consumer research firms
Message development	Experienced writers; editors; people who can help to communicate in multiple languages; public relations experts
Message approval	Those who can rapidly approve warnings and advisories for public distribution in the event of a (potential) public health risk
Information dissemination	Trained media spokesperson(s); people who can assist in communicating through different dissemination channels (e.g. social media, telephone helplines); people or organizations who can reach vulnerable "hard to reach" populations; structured and regular means of disseminating information to the public and media (e.g. Web sites, press releases, press and stakeholder briefings)
Communication coordination	Lead spokesperson(s), communication coordination protocols

A rapid response during an emergency food safety event requires special resources and capabilities. A tool that can be used to assess an organization's abilities to respond rapidly, coordinate messages with other organizations, disseminate information and engage in dialogue with stakeholders during a food safety emergency is provided in Appendix 1.

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4. Identify and understand target audiences, and work with stakeholders

For the development and delivery of effective food safety risk communication it is essential to identify, understand and work with target audiences and stakeholders. Food safety issues affect multiple stakeholders, and identifying all stakeholders can

be quite challenging. A template that can be used to identify multiple stakeholders is shown in Box 2.6.

5. Develop and disseminate messages

A good understanding of the nature of the food safety issue and the target audiences' communication needs leads to the development of messages addressing these needs and providing relevant information about the risk.

6. Monitor and evaluate

It is important to identify and reflect on the impact that risk communication activities have had or are having on behaviour. This provides opportunities to learn from experience, as well as to update communication messages, review channels and adapt to changing perceptions. Evaluation outcomes should be incorporated into the planning document so that they can be taken into account next time the plan is needed.

BOX 2.6

STAKEHOLDER MAPPING

Food safety issues affect multiple stakeholders, including vulnerable populations, frontline health care workers, industry and primary producers, and government partners. It is challenging to identify all these stakeholders, particularly as some may not be close to the organization. The template below can help to identify these multiple stakeholders.
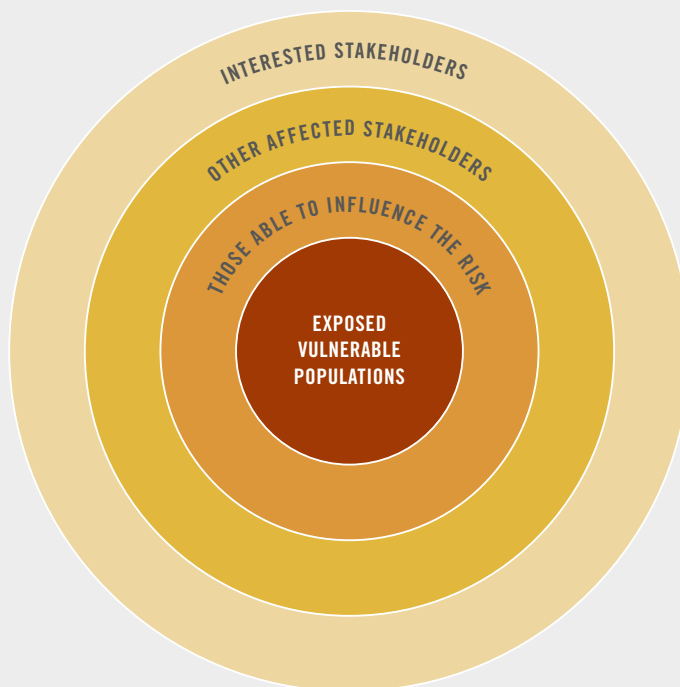
List stakeholders in each group (circle), beginning with the smallest circle (exposed vulnerable populations), and work outwards.

(Source [with modifications]: Health Canada and the Public Health Agency of Canada)

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CHAPTER 3

KEY FACTORS TO CONSIDER BEFORE COMMUNICATING ABOUT FOOD SAFETY RISKS

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CHAPTER SUMMARY

> Understanding the *nature of the food safety issue* is critical to determining appropriate communication methods and approaches. This includes an understanding of the nature of the risks, benefits and hazards involved, and the quality/certainty of the available data. It also involves an understanding of what can be done about the risk, who has the ability to do it, and the unintended consequences that may arise in addressing the risk.

> Understanding of the *target audiences* is essential for successful food safety risk communication. Communicators need to understand what the target audiences already know about the risk, any gaps in knowledge that may need to be addressed, and the specific concerns and perceptions they have about the risk. Understanding these aspects helps inform *where* target audiences need to be better informed and the *type of information* they need.

> To be effective, risk communicators must take into account the *cultural and socio-economic background* of target audiences when developing risk messages. It is important to understand the unique role of food in cultures and societies, the gender roles in specific cultures and societies, and the language needs and reading abilities of different populations.

> To determine how to reach target audiences, it is essential to understand which *information sources* are *trusted*, *frequently used* and *accessible* to the target audiences, and which *communication channels* are *used* and *accessible*.

> Food safety risks must be discussed within the particular *historical*, *political and media environment* in which they occur. Understanding these aspects helps determine the type of information necessary to address a particular food safety issue.

> To determine the level of intervention and effort required to address a food safety issue, it is important to consider both the level of human health impact and the level of public concern associated with a food safety issue.

PURPOSE

The purpose of this chapter is to outline and discuss key factors that should be considered when selecting the most feasible approaches and practices for communicating risk information on a particular food safety issue. The importance of understanding the *nature of the particular food safety issue* and the *target audiences* that need to be reached are explained in more depth. The reasons why it is essential to consider the *historical, political and media environment* in which a food safety issue occurs are elaborated and illustrated. As such, the chapter provides more in-depth information to give a better understanding of the key concepts and principles introduced or briefly covered in Chapters 1 and 2.

3.1   UNDERSTANDING THE NATURE OF THE FOOD SAFETY ISSUE

To be effective, risk communicators must have a clear understanding of the nature of the food safety issue that they need to communicate about, and a good understanding of how to adapt communication efforts accordingly.

Without such an understanding, the messages developed and necessary interactions with stakeholders and target audiences are likely to be unproductive. Even worse, because they may be based on faulty information or not responsive to target audiences' needs, they may lead to misunderstanding, mistrust and damage to organizational credibility. This may ultimately result in a failure to protect public health, the environment, or safe food production and the agrifood trade.

3.1.1 What is the nature of the risks and benefits involved?

It is important to have a good understanding of the particular risks (and benefits) that are associated with the specific food safety issue. At its most basic level, this involves collecting essential information regarding:

> Who and what are likely to be affected?

> To what extent?

> With what consequences?

> With what probability?

> In what time frame (i.e. immediate or delayed effects)?

For example, when consequences are immediate and severe, communication needs to be delivered with urgency and often differs from communication addressing non-emergency food safety risks (see Box 3.1. on *E. coli*).

In reality, the urgency with which it is necessary to communicate typically falls along a continuum. Indeed, food safety risk issues are often initially addressed as the result of unanticipated public health emergencies that require immediate responses. Later, however, risk communication efforts regarding those same risks may become part of ongoing overall strategies designed to prevent future emergencies of the same type.

BOX 3.1

THE 2006 *E. COLI* O157:H7 OUTBREAK IN FRESH SPINACH IN THE UNITED STATES[6]

Background summary

In 2006, there was an outbreak of food-borne illness in the United States caused by *E. coli* O157:H7. By the time the outbreak and the hazard had been identified, 50 people had become ill and one had died. An investigation by the US Food and Drug Administration (FDA), the public health agency responsible for overseeing the safety of fresh fruits and vegetables in the United States, had pointed to spinach as a possible cause of the outbreak.

Key risk communication challenge

> To communicate about a food safety risk, the cause of which is uncertain but which is perceived to have an immediate threat with severe consequences.

Actions

The FDA issued a consumer alert not to eat bagged fresh spinach and notified national industry associations a few hours in advance. This permitted the industry to respond immediately and to halt all harvesting, shipping and selling of spinach.

Food retailers and the produce industry provided the FDA with feedback about public concerns and shoppers' confusion about which products to avoid, which enabled the FDA to modify its messages to provide clarification, and to address public concerns.

The FDA issued daily news releases. In addition to using the media to communicate with consumers, the FDA used its Web site to provide information updates and consumer information phone lines.

The FDA held regular conference calls with media and industry. Relevant political officials were also briefed during face-to-face meetings.

Lessons learned

Communication during emergency food safety risks differs from communication addressing more enduring food safety problems.

> Direct and more frequent communication with key stakeholders is often required because there is usually an urgent demand from various stakeholders for timely updates (e.g. from industry, media and government officials, as well the public).

> Messages need to be developed in a short time frame, and may need to change and be updated rapidly as new information becomes available, or as risk management actions are changed. Communication also often needs to be modified to address emerging concerns and any evident confusion among stakeholders and target audiences.

Owing to the urgency of the situation, there is often insufficient time to engage fully in dialogue with all relevant target audiences and stakeholders to inform message development. However, a generic crisis communication plan developed in advance in consultation with stakeholders can provide the opportunity to think through and develop messages and risk communication strategies before they are needed to respond to emergency situations.

Communication channels need to be used that enable rapid dissemination and direct exchange of information with various stakeholders. It is important that two-way communication channels are put in place to provide stakeholders and target audiences with opportunities to seek or provide information, and to receive feedback on specific concerns and broader communication needs.

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[6]   This case has been kindly provided by Ms Amy Philpott, Watson Green LLC.

Understanding the probability and severity of the effects of a food safety risk is important for determining risk communication strategies with different stakeholders. For example, when the probability of adverse effects is very low but the potential consequences are severe, providing risk information on the organizations' Web site may be adequate for communication with the general public when public concern is not high. Increased risk communication efforts and different messages may be needed, however, to communicate with stakeholders who can help monitor the hazard and minimize the probability of adverse effects (e.g. food safety inspectors, lawmakers, industry).

Understanding who and/or what is affected is important when determining at whom communication may need to be targeted. Of particular importance is identifying vulnerable populations and their potential exposure levels, remembering that many of the most vulnerable in every society are the very young, the very old, pregnant women and those with weakened immune systems as the result of illness or inadequate nutrition. Information will need to be targeted to these groups, who may have very specific communication needs.

Risk communicators should investigate the presence of diverse levels of risk tolerance, and acknowledge these where they exist (for an example, see Box 1.5 on arsenic in rice and rice products, in Chapter 1). To prevent unwanted changes in consumption behaviours, it is also important to evaluate whether the benefits of a particular food outweigh the risks, and whether this differs among people (for an example, see Box 1.1 on the importance of targeted risk–benefit communication, in Chapter 1).

Understanding of the nature of the risks involved with a particular food safety issue can be increased by gathering information from stakeholders (e.g. market figures, distribution systems, tracing of ingredients) and consumers (e.g. dietary intakes).

3.1.2 What is the nature of the hazard?

Risk communicators must have a clear scientific understanding of the nature of the hazard involved with a particular food safety issue, as well as how people may respond to different hazards. Examples include the levels of exposure to the hazard (in what amount and over what time), and whether the risk is posed by a chemical or biological hazard.

In the case of biological hazards, an understanding of the amount of pathogen that must be consumed to create illness (the infective dose) is critical when assessing the potential risk. Healthy adults can be exposed to limited levels of hazards through the consumption of contaminated raw agrifood products (e.g. vegetables or fish) or improperly processed, handled or cooked foods, without becoming clinically ill. Raw meats, fish, poultry, fruits, vegetables and other food products are rarely sterile. Exposure to high levels of the hazard, however, could result in serious illness. Importantly, people tend be concerned about a food hazard when many people are exposed (e.g. the hazard is present in commonly used products, or in a wide range of products), when those seen as most vulnerable are exposed, when a hazard is perceived

as unnatural (e.g. chemical hazards) or when a hazard can have severe health effects, irrespective of the *level* of exposure. Under these circumstances, it is particularly important to incorporate and address these concerns in the communication, and sometimes it may be necessary to communicate clearly the significance of the hazard and the actual level of risk involved with a food safety issue.

With some hazards, such as certain types of *E. coli*, any amount of contamination may lead to illness. If these hazards are discovered, they may result in the immediate recall and destruction of the foods that are affected. In these cases, rapid communication is obviously needed.

The consequences of long-term exposure to certain chemical hazards in foods also need to be considered and addressed in the communication. For example, exposure to small amounts of certain toxins (such as lead) may result in accumulation in the body over time and create long-term problems. Often these long-term effects are not well understood. This should be acknowledged in the communication in order to be transparent and enable people to make well-informed decisions.

When the hazard is still unknown or the level of risk unquantified, collecting information from stakeholders can be helpful (e.g. access to [international] experts may be useful for rapid risk assessment). Sometimes scientific knowledge cannot provide a clear understanding about the nature of a hazard (e.g. with novel risks such as prion diseases). Dealing with uncertainty or lack of knowledge then becomes important in risk communication. Guidelines on how to deal with uncertainty are discussed in Chapter 4.

3.1.3 Assessing the quality/certainty of the available data

Sometimes the data needed to address the nature of the risks and benefits involved with a food safety issue are available within the regular risk analysis process. However, particularly in situations where urgent communication is required to prevent or reduce the risks of significant harm, incomplete and uncertain data are common.

To communicate effectively under conditions where risk information is associated with uncertainty, risk communicators need to have an adequate understanding of the uncertainties regarding the food safety risk. This requires risk assessors to document uncertainties that arise during risk assessment, and to communicate these properly to risk managers and risk communicators.

The limitations of the risk assessment may also need to be expressed in a way that can be understood by a non-technical audience in order to increase transparency and enable interested stakeholders to comprehend the decision-making process and make informed choices as the situation evolves.

3.1.4 Understanding what can be done about the risk

Risk communicators need to understand what the public can do to limit their exposure to a hazard. Personal control is very important to people, and risk communication should address what steps they can take to reduce their risk. When people do not

have personal control over a risk, it is particularly important to communicate about other measures that are being taken to reduce the risk on their behalf.

Dialogue with stakeholders may be useful in informing risk management decisions. To manage a food safety risk effectively, it is critical for risk managers to have a good understanding of what can be done to mitigate the risk, and who has the ability to do it. For example, an information campaign designed to encourage food handlers to wash their hands will obviously be ineffective if they do not have easy access to clean water. Gaining such access is likely to be beyond the control, authority and resources of individual workers, and instead depends on those who own or control the infrastructure. Communication should therefore also be targeted to those who own or control the places where the food handlers work.

In addition to understanding who is able to do what, it is necessary for risk managers to understand what available motivations or incentives may be needed to implement risk mitigation measures successfully. For example, if farmers and traders are not motivated to adopt good practices to improve on-farm agrifood production control because of the costs incurred, positive or negative incentives may be necessary to promote behaviour change (e.g. compensation, enforcement of laws).

Dialogue with stakeholders can provide risk managers with insights on who has the ability to minimize the risk effectively, and the motivations or incentives that may be needed to implement the risk mitigation measures successfully (see Box 3.2).

BOX 3.2

RISK COMMUNICATION ABOUT CHAGAS' DISEASE IN BRAZIL[7]

Background summary

Chagas' disease is common in Brazil, and in Latin America as a whole, and leads to many illnesses and deaths in humans. Chagas' disease is caused by a parasite and is often transmitted through consumption of contaminated raw vegetables or fruits. To reduce the risk of Chagas' disease transmitted by consumption of contaminated produce, the Brazilian Government introduced a compulsory programme prescribing good manufacturing practice (GMP) to all stakeholders marketing food and beverages made from raw vegetables and fruits. However, they recognize that enforcement of these measures is often difficult.

A risk communication campaign was developed and implemented to increase awareness among street vendors and food producers about the risks of transmission, and to provide information about good control practices for reducing the transmission of Chagas' disease through a fruit that is commonly consumed in the Amazon basin: the acai berry. A promotional campaign was also targeted to the general public to increase understanding of the potential risks related to the consumption of acai products.

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[7] This case has been kindly provided by Mr Enrique Pérez Gutiérrez, Ph.D., Pan-American Health Organization/World Health Organization.

Key risk communication challenge
> To implement GMP among street vendors and food producers handling and marketing the acai berry, with the aim of eliminating or reducing the health risks from Chagas' disease through consumption of contaminated acai berry products.

Actions and outcomes
Dialogue with stakeholders was used to identify perceptions of risk and health concerns related to Chagas' disease from consuming contaminated acai berry products.

Educational campaigns were targeted to street vendors and food producers. These included demonstrations about the stages of processing the acai berry, and educational material about GMP for the acai berry.

To motivate street vendors and food producers to comply with the GMP, messages were developed to increase food producers' risk perceptions on the health consequences of not complying with GMP.

The campaign has increased food producers' awareness of the importance of GMP in reducing the risk of contamination of products, has led to an increase in the safety of acai berry products and is expected to lead to a reduction in the transmission of Chagas' disease through consumption of contaminated products.

Lesson learned
Dialogue with stakeholders can provide useful insights on the motivations necessary for the successful implementation of risk mitigation measures.

3.1.5 Anticipating and addressing unintended consequences

It is important to go through a deliberative process to identify, anticipate and lessen any potential unintended consequences. These include those associated with both the communication that brings attention to the risks and the efforts that are designed to address them. For example, alerting affected low-income populations to the fact that their staple foods may be contaminated or unhealthy, without providing suitable alternatives, may simply create anxiety without producing any gains in protecting public health.

It is also important to consider unintended changes in food consumption resulting from ineffective food safety risk communication (see for an example the case study in Box 3.3, and the targeted risk–benefit information in Box 1.1 in Chapter 1).

BOX 3.3

ARSENIC IN THE FOOD AND WATER SUPPLY

Background summary
Arsenic is a chemical commonly present in the food and water supply. The more dangerous form, inorganic arsenic (a carcinogen), is prevalent in the environment, and present at some level in rice and vegetables. Organic arsenic, which is less harmful, is prevalent in seafood.

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Key risk communication challenge

> Chemicals in food are often perceived as unnatural and people tend to be more concerned about a food safety risk from chemicals in their food. Given that any communication about arsenic may elevate risk perceptions, communicators need to be careful to ensure that people continue to eat seafood and do not stop eating vegetables and unaffected rice, because reduced consumption of these products may have negative effects on health.

The risk information therefore needs to provide clear advice on what people can do to reduce their exposure to inorganic arsenic, as well as what they should do to maintain a healthy diet, in order to prevent changes in food choice behaviours which will be detrimental to health.

TIPS

Dialogue with stakeholders and target audiences in the message development phase, and testing messages with target audiences, can help to identify in advance any potential unintended consequences of the communication.

3.2 UNDERSTANDING TARGET AUDIENCE NEEDS

While having an adequate understanding of the nature of the food safety issue is critically important, it is only half of the information necessary to plan and implement successful risk communication efforts. Equally essential is an understanding of the target audiences that need to be reached.

To develop insights about *where target audiences need to be better informed* and *the type of information* they need, the following aspects are important to identify:

> What do target audiences already know about the risk?

> How do they act on this knowledge?

> Which gaps in knowledge need to be addressed?

> What are the target audiences' specific concerns and perceptions about the risk?

3.2.1 The cultural and socio-economic background of target audiences

To determine risk communication needs, communicators must respect and take into consideration the culture, beliefs and socio-economic status of the target audiences.

The unique role of food in culture and society

When developing food safety risk messages, risk communicators must take into account the unique roles that food and food preparation practices play in cultures and society (see Box 3.4.). Food preparation and consumption practices are often rooted in specific food cultures and culinary traditions. Suggesting problems

with these food preparation or consumption practices (what people do), may be perceived as criticism of their identities (who people are). As a result, such beliefs, traditions and practices are difficult to change simply by providing food safety risk information. For example, in some cultures, bare hand contact with the food is perceived as an essential part of preparing the food in the traditional, "authentic" way. The mere suggestion that food preparers should wear gloves may be interpreted as an accusation that they, and their culturally determined cooking practices, are unclean. Instead of simply communicating risk information, messages may be more effective if they provide information about methods for reducing the risk that do not fundamentally change the meaning of the food or practice (e.g. information about how to cook traditional foods to achieve minimum safe temperatures).

BOX 3.4

THE ROLE OF FOOD IN CULTURE AND SOCIETY

Food and food preparation practices play a unique role in cultures and society and this must be taken into account when developing food safety risk messages.

> Foods are part of religious, cultural and traditional practices (e.g. the ritual preparation and consumption of certain foods).

> Food choices are a way to communicate one's personal identity or cultural membership, or may be an expression of ideological viewpoints (e.g. not eating [certain] meat products).

> Some foods have special symbolic importance (e.g. milk, honey, fruit and vegetables can be associated with health, purity and wholesomeness). Adulteration of such products may be seen as particularly objectionable, and the risks connected with the contamination of these foods may also be perceived as much greater because of their symbolic value.

Food safety risks cannot be avoided completely, and in some circumstances decisions on the acceptability of food safety risks are driven by simple economic realities. In the absence of the availability of affordable alternatives, many individuals may have little choice but to consume foods that are to some varying extent unsafe. For such populations, communicating only about the risks associated with these products, without providing information or resources necessary to minimize the risk or enable different food choices, is unlikely to advance public health.

What are the gender roles?

Specific gender roles and responsibilities related to the acquisition and preparation of food, control over resources, access to education and rates of literacy may also differ significantly across societies and cultures. In many cultures, women are the principal gatekeepers who determine which foods the family will eat and how they will be prepared. In many countries women also bear the primary responsibility for growing food. Safe (and unsafe) food selection and preparation practices are often shared among women, and are typically taught by mothers to their daughters.

WHO raising awareness on food safety at the 2015 Food Expo Milano.

Therefore, because many food safety risks are under their control, specific food safety risk communication efforts may logically be targeted to women.

In contrast, cultural or religious traditions in some countries create expectations that men will be the principal decision-makers, even if the responsibility for feeding the family falls to the women. In other cultures and families, food selection and food preparation practices are shared decisions, and in some cases men may be the principal purchasers (or growers) and preparers of food.

The key is that specific risk communication strategies, messages, channels and methods of interaction require consideration of whether the target audiences are primarily composed of men, women or both, and what the cultural norms and expectations define as appropriate gender roles.

Language needs

Multicultural, multilingual societies require multicultural, multilingual risk communication efforts. Unfortunately, because of the additional skills and resources that are required to communicate in multiple languages, the default for many risk communicators is to interact with target audiences in the dominant language. However, communicating essential food safety risk information in a single language may unintentionally:

> have detrimental effects on the health of those who do not speak that language;

> send the message to those who do not speak the dominant language that the communicator does not care about their health.

In the event of food-borne illness outbreaks or contamination incidents in which an affected food product is consumed in villages, neighbourhoods or regions where a particular language or dialect is spoken, efforts to alert the public about those products must be made in that language or dialect.

Reading ability

Access to written notices about food safety risks and the ability to read them may vary among populations because of problems with distribution, vision and/or literacy. As a result, communicating about food safety risks in written form only is unlikely to meet the needs of many audiences, even in affluent countries. For these people, risk information needs to be delivered in ways that do not rely on the ability to read (e.g. radio, video/television, podcasts, word-of-mouth, images, stories, songs or acted out in plays or other performances).

FIGURE 3.1   **TAILORING FOOD SAFETY INFORMATION TO DIFFERENT TARGET AUDIENCES**

3.2.2 How to reach target audiences

Food safety risk communication can only be effective when the delivery mechanisms used are appropriate for the intended audiences. For each of the target audiences, it is important to understand the preferred and most appropriate information sources, channels and methods of communication.

Information sources and spokespersons
To determine which information sources can help to communicate food safety risks, risk communicators must understand which sources of information each of the target audiences sees as trustworthy, credible and reliable. This is discussed in Chapter 2. It is important to note that the most trusted information sources are not necessarily the most frequently used information sources. *In addition to understanding levels of trust in sources of information about food safety risks, it is therefore important to understand which sources are frequently used, and which sources can best reach the target audiences.* Risk communicators should collaborate with credible and accessible information sources to deliver food safety risk information to target audiences.

For example, in countries where the population is diverse and some people are difficult to reach and likely to be excluded from receiving risk communication, it may be important to engage grassroots or community-based organizations to reach all target audiences. Community-based risk communication programmes have proven their effectiveness, but they are also time, capital and labour intensive. NGOs, international organizations and community-based organizations are often useful for conducting these programmes, and governments may benefit from supporting and collaborating with these organizations.

Organizations must also choose a spokesperson to communicate with the public. Effective risk communication depends on being both understood and believed. Therefore, in choosing the right person to communicate about food safety risks, it is important to select someone who is technically competent and clearly knows the issues related to the risk, is confident in his or her ability to talk about them and, through their demeanour and actions, is able to ensure the trust and confidence of others.

To ensure trust, the communicator (and the communications) should demonstrate evidence of knowledge and expertise, genuine openness and honesty, and sincere concern, care and empathy. Identifying technical experts who can demonstrate the requisite knowledge and expertise regarding food safety risks is usually not difficult. Yet, while technical expertise is critical to establishing trust and credibility, it is only a part of what is needed. Demonstrating substantial expertise without an accompanying ability to connect with ordinary people may simply suggest the communicator's detachment from "normal" people, reducing both their trustworthiness and their effectiveness.

Therefore, in addition to using communicators with good technical expertise, it is important that they are able to talk with people easily and honestly, understand their concerns and be able to respond appropriately. Good communicators adapt their communication approaches to meet the needs of their audience. They are also willing to acknowledge when they don't have all the answers, and they know how to adjust their communication accordingly.

It can be difficult to find a single person who has the necessary technical expertise and communication skills, so it may be necessary to assemble teams of people who, in combination, have the required skills. Sometimes this means choosing a lead communicator who possesses good communication skills and expertise, and who is then supported by a group of technical experts. It may also be beneficial to provide the technical experts with training in important social issues and risk communication, so that they can communicate about risks more effectively.

Having a trusted and well-trained spokesperson is particularly important during emergency food safety events. However, use of a spokesperson is not restricted to emergency situations. For example, celebrities can be asked to promote food safety risk awareness campaigns.

Information channels and methods
Use of the appropriate communication channels and methods for communication about a food safety risk is essential for reaching target audiences. Communicators must understand which communication channels and methods (e.g. print media, Web sites, community meetings) are most appropriate for communication with each of the target audiences. Not all target audiences will have access to, or want to use, the same communication channels. Web sites, for example, may be of little use in developing countries where the majority of the target audience has limited access to the Internet. However, Web sites are often used by professionals (food businesses, environmental health officers, health workers and the media) who may disseminate the information to consumers. Channels and methods are elaborated in more detail in Chapter 4.

3.3   WHAT IS THE HISTORY OF THE RISK, AND THE POLITICAL AND MEDIA ENVIRONMENTS SURROUNDING IT?

To determine the type of information necessary to address a particular food safety issue, communicators also need to consider the historical, political and media environment in which a food safety issue occurs. Food-based safety risks must be discussed within the particular context in which they arise.

To understand more fully the context of a food safety issue, it is essential to be aware of the history of the food safety risk. For example, if a company has recurring food safety issues that affect its products, existing levels of public trust in that company are likely to be low. When that company has another food safety problem,

risk communicators will not only have to communicate about the food safety risk itself, but will also need to address public trust and explain *why* the same problem has happened again, and *what is being done to prevent it* from happening in the future. Approaches to communicating about a food safety risk may also be different if it is the subject of controversy, such as with diverging political opinions, diverging scientific opinions, or strong or diverging opinions of advocacy groups or other NGOs. Sustained communication is often required and communicators will need to consider when and how to address and respond to the opinions of other stakeholders who are communicating about the risk (see Box 3.5 for an example).

Similarly, the type, tone and/or amount of media coverage that has been given to a particular food safety issue can determine what and how to communicate. How food safety issues are being portrayed in the media is likely to influence what people know about the risk, and how they think about it. To determine which topics may need to be addressed in the communication, it is particularly important to understand what narrative is being used to explain the nature of the risk, what has happened to cause it and who is responsible for causing the problem and for solving it.

BOX 3.5

BISPHENOL A IN BABY BOTTLES[8]

Background summary

Bisphenol A (BPA) is a human-made chemical often incorporated into plastic packaging materials for food and beverages. Researchers in the 1990s realized that the chemical was migrating from plastics into water, raising concern that BPA might be unintentionally consumed and could have serious health effects (e.g. reproductive abnormalities, breast and prostate cancer, and neurobehavioural problems).

Key risk communication challenge

> **To communicate about BPA when strong diverging expert opinions exist about the risk to consumers, and how to handle it.**

Actions and outcomes

Many regulatory agencies around the world conducted experiments to evaluate the risks associated with BPA. Advocacy groups and agents for change in academia, politics and public policy circles communicated in the media and were highly critical of the use of BPA, which elevated public concern.

This was followed by a series of contradictory or confusing actions by government agencies, health authorities, media and key stakeholders around the globe, which further increased public concern.

For example, Health Canada (the Canadian food and health regulatory agency) decided to ban BPA from baby bottles, after which a large company in the United States announced that it would not sell baby bottles containing BPA.

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[8] This case has been kindly provided by Ms Elizabeth L. Petrun, Ph.D., University of Maryland, and Mr Andrew P. Benson, International Food Information Council and Foundation. The full description can be accessed at http://www.foodinsight.org/case-study-Bisphenol-A-in-baby-bottles

The United States FDA began to look more closely at BPA again and chose not to ban the chemical because their evaluation of the scientific evidence indicated that BPA is not a significant risk to consumers. Since this decision, advocates at both the state and the national level in the United States have continued to press for action, and several states have banned the use of BPA in baby bottles and other children's packaging.

How the potential risk was managed also differed internationally. Some countries around the globe decided to ban the use of BPA in food packaging materials, while others did not.

Lessons learned

Diverging opinions and inconsistent consensus about how to handle a potential risk can elevate levels of public concern and leave people wondering what to believe and whom they should trust.

When communicating in situations where there are diverging opinions, risk communicators will need to address and respond to the diverging opinions of other stakeholders who are communicating about the risk, and must work actively to demonstrate honesty, expertise and a sense of shared values, to increase trustworthiness. Communication of the results of risk assessments should include clarification on why risk assessments addressing the same or similar questions may differ, to prevent confusion among various stakeholders.

Demonstration of communication among the different actors presenting "contradictory" evidence, and what is being done to resolve lack of consensus, is also important.

To prevent conflicting messages and public confusion, (inter)national collaboration on risk communication issues among different governmental agencies, as well as with other stakeholders such as consumer associations and industry groups, is important.

3.4 UNDERSTANDING THE COMMUNICATOR'S RESPONSIBILITIES FOR FOOD SAFETY RISK COMMUNICATION

Risk communicators need to define their responsibilities with regard to a particular food safety situation. Given that risk communicators have limited resources, they must decide what level of intervention and effort are appropriate when addressing a particular food safety issue. Much of this is informed by the level of public health impact and the level of public concern.

In some circumstances, the communicator's responsibilities are clear. For example, in cases where there is an immediate threat that is likely to have serious consequences, there is an ethical duty and probably a regulatory obligation rapidly and widely to communicate appropriate warnings and other information designed to motivate people to take necessary actions to protect their health. The discovery that a product has been seriously contaminated by food-borne pathogens would certainly fall into this category (see Box 3.1 on *E. coli*). In contrast, in situations when the evidence suggests that the risks to public health are quite low, and people are not alarmed or upset, the appropriate response may be simply to make information available to those who might seek it, for example by issuing a press release or putting information on a Web site.

One of the most difficult issues to address is what communicators should do when technical risk estimates do not align with public risk perceptions. When addressing food safety problems where the impact on public health is high but public concern is low, communicators have an ethical obligation to protect public health. To do so, they may have to go beyond simply providing information and engage in activities designed to increase public concern and awareness, and actively persuade stakeholders and members of the public to take appropriate action.

On the other hand, in situations where public concerns significantly exceed the impact on public health, communicators may have difficult choices to make. In some cases, they may have a responsibility to put the risk into context, while appropriately addressing the underlying reasons for the concern. However, it is important to remember that the fact that people's perceptions of risk exceed those identified in the technical risk assessments does not automatically mean that public attitudes need to be "corrected" so that they align with scientific assessments of the risk or with the views of experts. For example, the fact that a particular food safety risk results in very few illnesses or deaths does not necessarily mean that the risk is culturally acceptable. Similarly, even a small risk may be seen as unacceptable if it is controlled by or imposed by others on the public, or has other associated factors that increase perceived risk. Nevertheless, clarifying the level of risk involved, while acknowledging public concerns, can help consumers make more informed decisions about safety when they make their own food choices (see Box 3.6 for an example of how risk communication can be used to acknowledge public concerns).

The identification of a food risk, or a perceived food risk, could result in those foods, or other foods produced in the affected region, being "stigmatized", with significant economic consequences and a negative impact on the livelihoods of local producers. Food safety risk communication should put the risk in context and provide people with accurate information about risk. This can minimize the unwarranted stigmatization.

BOX 3.6

COMMUNICATING ABOUT THE USE OF AMMONIA IN "LEAN FINELY TEXTURED BEEF"[9]

Background summary

In 2012, the production and use of "lean finely textured beef" (LFTB) was negatively portrayed by the media in the United States.

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[9] This case has been kindly provided by Mr Andrew P. Benson, International Food Information Council and Foundation, with assistance of Ms Deborah Sellnow, Wayne State University, & Mr Timothy Sellnow, University of Kentucky. The full description can be accessed at http://www.foodinsight.org/case-study-communicating-about-the-use-of-ammonia-in-lean-finely-textured-beef

LFTB is produced by capturing the remaining meat from stripped beef carcasses. It is then sprayed with ammonia to reduce the potential incidence of pathogens and microbial contamination, and is included as a filler in meat products such as hamburgers. LFTB is a source of lean and inexpensive protein for consumers, and the process reduces food waste by capturing meat that otherwise would be discarded.

The use of ammonia during the production of LFTB was approved by the US Department of Agriculture. However, the negative media portrayal questioned the safety of LFTB, increased public risk perception and had a negative impact on acceptability. While the level of public health impact from consuming LFTB was unchanged, and likely to be low, the potential negative economic impact from the media portrayal could be large.

Key risk communication challenge
The company involved needed to respond to the elevated public risk perception and low acceptability resulting from the negative media portrayal to prevent economic disruption, and the loss of an inexpensive source of lean protein for consumers.

Actions and outcomes
The initial response by the company was largely scientific in nature and did not address public risk perceptions. Later in the crisis, the company addressed public risk perceptions in a number of ways.
To address the fact that chemicals in food are perceived by many people as *unnatural*, the company explained that ammonia is naturally present in the food supply, and argued that slightly increasing the level of ammonia already present in beef actually improves food safety. By suggesting that the small dose of ammonia used to kill dangerous bacteria during the processing of LFTB is no more dangerous than the food consumers eat on a daily basis, the company tried to put the risk in context.
They addressed the fact that consumers had not been aware of the fact that LFTB was regularly added to ground beef sold in grocery stores (*involuntary exposure*) by announcing their commitment to voluntary labelling of beef products containing LFTB, which enables consumers personally to control their exposure.

These messages came later in the crisis than is desirable, however, and were disseminated through the company's Web site, which made the information accessible only to those who had access to a computer and were willing to spend time on the company's Web site.

After the media portrayal, consumer demand for LFTB reduced drastically and very quickly, with a large financial impact on the principal company involved, the loss of many jobs due to the closure of processing plants, and higher cost and higher fat content in the ground beef remaining available for purchase.

Lessons learned
In situations in which public concerns significantly exceed the impact on public health, communicators may have to put the risk into context, while appropriately addressing the underlying reasons for the public's concern.
Crises of risk perception require *rapid* and *wide* risk communication to prevent negative economic impacts, and communication should be particularly sensitive to the factors influencing public perception of risk. Risk communicators are most effective when they acknowledge public perceptions and craft messages to address them.

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A tool is provided in Appendix 2 that can be used to help identify non-emergency situations that may require an emergency-like communication response because the public has a high risk perception about a particular issue, even if the actual health impact is low.

In cases in which the impact on public health is unknown and the actions to be taken are uncertain, the communicator's role may be to make people aware that a potential risk exists, and to provide information about what is currently known about it and what options are being considered to address it. The communicator may also have the responsibility to engage with stakeholders to characterize the nature of the hazard and to reach a consensus about how best to control it.

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PUTTING FOOD SAFETY RISK COMMUNICATION INTO ACTION

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CHAPTER SUMMARY

> Coordination of communication efforts should be an integral part of the response plan. Effective coordination of communication efforts among various stakeholders promotes consistent messages that foster clarity, and avoids confusion among target audiences.

> Stakeholder relations require continuous investment and need to be managed carefully. Communicators need to build and maintain good working relationships with relevant stakeholders.

> When it is necessary to communicate about a food safety risk where information is uncertain and/or incomplete, communicators should clearly indicate what is known, what is relevant but uncertain, and what is being done to reduce uncertainty and respond more effectively.

> Effective risk communication messages provide target audiences with accurate information tailored to their needs, describe the risk, and provide information on what is being done to reduce it and what steps people can take to reduce their risk.

> To develop effective risk messages, communicators need always to inform and whenever possible to engage in dialogue with stakeholders in the development of messages, pre-test messages with target audiences, and monitor and adjust messages as the food safety issue evolves.

> Monitoring and evaluating the effectiveness of communication can be valuable for informing both current and future food safety risk communication. It is important to evaluate whether the audiences received, understood and responded appropriately to the messages.

PURPOSE

The purpose of this chapter is to integrate key messages from the previous chapters to form practical guidance for the conduct of effective food safety risk communication. This includes continuous promotion of the coordination of communication efforts, practical approaches on how to identify and understand target audiences and their information needs, and how to engage and interact with stakeholders effectively. A decision-making aid on when and what to communicate on food safety risks in the presence of uncertainty is provided, as well as a guide for developing food safety risk messages and monitoring and evaluating risk communication activities.

4.1   Knowing the target audience

Risk communication is about people, therefore it is critical to know and understand the target audiences prior to the development of the message (see Box 4.1 for examples of different target audiences).

The identification of target audiences depends on the purpose of the food safety risk communication, which may include:

> providing information to allow informed decisions;

> persuading people to adopt a particular approach (i.e. health promotion);

> initiating dialogue and engagement to arrive at the best approach.

The identification of target audiences should be informed by dialogue with stakeholders, and it is important to consider:

> Who and/or what is directly affected by the risk?

> Who can influence the issue, both positively and negatively (e.g. who can effectively minimize the risk and provide solutions)?

> Who is indirectly affected by the issue and needs to know about the risk (e.g. caregivers, governments)?

For example, if an outbreak of listeriosis is identified and confirmed to affect consumers above a certain age, communication aimed at reducing the risk would require reaching out to different target audiences through different channels. Different messages will need to be developed to communicate with:

> elderly consumers living independently at home, about the importance of good hygiene practices in the preparation and storage of food (possibly through large-print leaflets to be delivered at home);

> caregivers of elderly people, about the importance of good hygiene practices when looking after vulnerable consumers (letters to family and registered carers including tips on how to handle and store food);

> catering staff in care homes, about their responsibilities and best practices in such environments (posters to be placed in food preparation areas);

> hospitals and their food suppliers, about best practices (consider the development of new or update of existing guidance).

WHO ARE THE TARGET AUDIENCES?
The target audiences for risk communication can vary, depending on the purpose of the food safety risk communication, the type of risk and socio-cultural factors.
Examples of different target audiences include:
> the public, including groups that are at greatest risk (vulnerable populations);
> women, as the main food handlers/buyers;
> policy-makers;
> food safety regulators;
> public health practitioners;
> farmers/primary producers;
> registered large/medium/small food manufacturers;
> informal food producers;
> retailers/food vendors;
> food brokers and handlers;
> agro-chemical dealers;
> food industry and service employers/employees.

4.2   How to understand target audiences

As discussed in Chapter 3, each target audience has different information requirements and needs to be addressed by a spokesperson/source they trust and in a language that they understand (see Box 4.2 for examples of communication methods used to communicate with vulnerable populations).

It is important to understand what target audiences already know about the risk, any gaps in knowledge that may need to be addressed, and specific concerns and perceptions people have about the risk. It is also important to respect and take into consideration their culture, beliefs and socio-economic status.

Depending on the time and resources available, information on how best to tailor and deliver messages can be gained via face-to-face discussions with target audiences, meetings with target audiences to test proposed messages with a selected group, qualitative research (e.g. focus groups) or quantitative research (e.g. surveys). See Box 4.3 for a detailed list of sources that can help to map different populations and information requirements in the context of a food safety risk communication.

Some useful questions to ask are the following:

> What do the target audiences understand about this food safety risk?

> What misconceptions do they have?

> What do the target audiences want to know about this food safety risk?

> Do the target audiences consider the risk to be high or low?

> What are the target audiences' specific concerns and perceptions? For example, who do they perceive to be most vulnerable to the hazard?

> How do the target audiences prefer to receive information about food safety risks? Is it through scientists, NGOs, the media, or from an authoritative government official or spokesperson?

> What sources of information do the target audiences trust? Is it the media, scientists, food safety risk managers and communicators, or NGOs?

> Are the planned information sources and channels accessible to the target audiences?

> Who are the opinion leaders that are likely to influence the target audiences?

Answers to these questions will help to determine which knowledge gaps and concerns need to be addressed, and which information sources and channels can help in communicating about the risk to the target audiences.

BOX 4.2

HOW TO REACH VULNERABLE POPULATIONS
BA target audience may be a very specific subgroup of the population that, because of its characteristics or current situation, is particularly vulnerable to a food safety risk and/or is difficult to reach through more conventional communication methods.

It is important to consider whether a vulnerable group has very specific communication needs that can be addressed through existing or specifically developed networks. The following table lists some examples of the many ways to communicate with vulnerable populations.

Group	Examples of communication networks
Pregnant women	Health practitioners, social media, specialized media
Immunocompromised patients	Health practitioners, specialist nurses, patients' associations, caregivers, peer educators
Visually impaired people	Associations for the blind, schools for the blind, braille publications
People with speech and hearing disabilities	Associations, sign language interpreters
Elderly people	Community nurses, visiting services, large-print leaflets, media (local radio, publications for the elderly), community meetings
Rural or isolated communities	Community meetings, chiefs, community media, community opinion leaders
Isolated individuals	Social services
Children	Teachers, parents' organizations, television, social media
People with learning disabilities	Carers, teachers
Those living in poverty	Social services, food banks, missions, shelters, etc.

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Target audience "Elderly People": woman from the Huaves ethnic group in Mexico.

BOX 4.3

PLANNING: HOW TO GET TO KNOW THE TARGET AUDIENCES

A good understanding of the characteristics of different sectors of the population (e.g. what they eat, attitudes to risk, trust in institutions, cultural and social norms), their representatives (e.g. trade bodies, community leaders, influential bloggers) and their information requirements and preferences (e.g. literacy levels, languages spoken, access to information) can help prepare for a wide range of risk communication scenarios.

Some sources that can help map different population and information requirements in the context of food safety risk communication include:

> conversation with and feedback from stakeholder groups;
> small focus group research with representatives from target audiences;
> qualitative and quantitative consumer research (what consumers know, don't know, specific concerns and perceptions about the risk, trust and use of information sources) – more often employed for ongoing food safety issues, but can be employed for a larger-scale, complex crisis response if and when needed;
> media monitoring to ascertain what news and information is already reaching the public and, if possible, how the public appears to be reacting;
> most recent census (demographics, ethnic and religious backgrounds that can affect food consumption habits);
> nutrition and dietary surveys (consumption patterns, information about possible food substitutions);
> market research surveys (shopping and food handling habits);
> Web sites and social networks (identification of online communities and their use of language, e.g. mothers, specific age groups, ethnic minority channels);
> consumer organizations, special interest groups (e.g. allergy sufferers, religious groups), trade associations.

4.3 STAKEHOLDER INTERACTIONS

Most risk communication issues that involve food safety directly involve and have implications for different government departments, individual businesses and industry groups, consumer organizations and individuals. The coordination of communication efforts among these stakeholder groups is just as important as the coordination of other response efforts, and should be an essential, integral part of the response plan. This is particularly important and challenging during emergency situations, when messages often need to be changed frequently and developed in a very short time frame, in consultation with a wider range of agencies and stakeholders than in normal situations (see Box 4.4 for an example).

> **TIPS**
>
> During emergency food safety situations, it is often useful to identify one government agency to coordinate communication efforts, and to appoint one or more appropriate spokespersons on behalf of multiple governmental agencies, to ensure consistency of government messages and to avoid confusion.

Failure to coordinate responses increases the possibility that communication resources will be wasted, does not take advantage of the stakeholders' knowledge and distinct dissemination channels, and increases the likelihood of providing confusing and even contradictory public information. Each organization's credibility is jeopardized and its effectiveness put at risk when its communication is not consistent and coordinated with that of its stakeholders.

For example, in a case of aflatoxin contamination, scientists involved in assessing the risk shared their findings within the scientific community, but did not share them with those responsible for managing the risk and communicating it to the public (see also http://www.modernghana.com/news/18385/1/shock-scientific-reportkenkey-causes-cancer.html). When the news media reported on the findings, the scientists and risk managers communicated different messages about the risk, which led to confusion and probably an erosion of trust.

In addition to promoting consistent messages, coordinating communication and collaborating with relevant stakeholders offers the chance to:

> better understand the situation;

> obtain feedback about target audiences' concerns;

> benefit from the communication capacity and credibility of other organizations to help disseminate information if needed.

Greater stakeholder involvement in the issue often results in higher public trust and a greater willingness among target audiences to accept the messages and take steps to protect themselves.

BOX 4.4

THE 2006 *E. COLI* O157:H7 OUTBREAK IN FRESH SPINACH IN THE UNITED STATES[10]
(This case study is also discussed in Chapter 3, but some additional points are addressed here that illustrate the benefits of a coordinated delivery of messages)

Background summary
In 2006, there was an outbreak of food-borne illness in the United States caused by *E. coli* O157:H7. By the time the outbreak and the hazard had been identified, 50 people had become ill and one person had died. An investigation by the United States Food and Drug Administration (FDA) had pointed to spinach as a possible cause of the outbreak.

Key risk communication challenge
> To collaborate with stakeholders in the coordinated delivery of messages during an emergency food safety situation that requires a rapid response.

Actions
Communication among stakeholders was coordinated in a number of ways:
> The FDA notified national industry associations a few hours in advance that it was going to issue a consumer alert not to eat bagged fresh spinach. This permitted the industry to respond immediately and halt all harvesting, shipping and selling of all spinach.
> In order to minimize public confusion, the fresh produce industry collaborated with the FDA by using the same food safety risk communication messages. Industry also reinforced the FDA's credibility by advising consumers to follow the advice of the FDA and in encouraging companies to cooperate with the FDA in order to resolve the issue.
> Food retailers provided the FDA with feedback about public concerns and shoppers' confusion about which products to avoid, which enabled the FDA to modify its risk communication to provide clarification and to address public concerns and perceptions.
> National and regional associations in the fresh produce industry used coordinated messages, spoke to the media, and issued regular email updates to fruit and vegetable growers, shippers, retailers, wholesalers, foodservice distributors and others.
> The FDA held regular calls with industry association representatives and the media. However, the initial timing of these calls hampered effective message dissemination. The FDA held media calls one hour before its regular industry call. Immediately following the FDA media calls, reporters would call industry association executives asking questions about what the FDA had said. However, industry had not yet been briefed and could not respond.

Lesson learned
Collaboration with stakeholders in the coordinated delivery of messages is important for effective food safety risk communication. It is important that all stakeholders involved in a food safety issue collaborate in the dissemination of messages to the extent that is possible.

Working effectively with stakeholders on the coordination of risk communication requires strong relationships, which cannot be easily established while managing a risk issue that demands a rapid response. It is therefore important to identify, build and maintain working relationships with relevant stakeholders in advance.

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[10] This case has been kindly provided by Ms Amy Philpott, Watson Green LLC.

Establishing relationships and making them part of routine business makes coordination and collaboration easier when a food safety risk needs to be addressed.

It is useful to consider developing plans and protocols jointly with stakeholders that guide how the organizations will work together during a food safety issue. Testing and exercising these plans and protocols can further strengthen the relationships and future coordination. Stakeholder relations require continuous investment, and mechanisms for stakeholder engagement should be in place to facilitate exchange of information when needed.

It is important to identify the most appropriate stakeholders to work with when addressing a food safety issue. Prioritizing the relevant stakeholders can help to ensure the most value for the effort expended. Which stakeholders are most relevant depends on the purpose of engaging the stakeholders. To identify priority stakeholders it is useful to organize them into categories. For example:

> decision-makers whose decisions will reduce/increase the risk (e.g. food processors);

> those most affected by the risk and those organizations that represent them;

> those who have the greatest influence (trust and reach);

> those who could help the organization meet its communication objectives;

> those who could hinder the organization in meeting its communication objectives.

TIPS

Principles for building good relationships with stakeholders:
> being open and transparent (e.g. not concealing meetings, sharing minutes);
> respecting stakeholder interests;
> communicating early and often on matters of common interest;
> listening and seeking to understand stakeholder needs and perspectives;
> promising only what can be delivered, and following through.

Practices for understanding and engaging stakeholders include the following.
> Establishing and maintaining contact lists so information can be shared and stakeholders engaged quickly when needed.
> Sharing information with stakeholders on a regular basis to maintain the relationships. This is important when there is a risk issue and when there is not. For example, sharing ongoing research, explaining how food safety issues are managed and outlining the organization's role in them could be worthwhile to ensure stakeholders are well informed and can communicate more accurately when a food safety risk needs to be addressed.
> Meeting with stakeholders regularly to exchange information, gain intelligence on target audiences, seek feedback on approaches and negotiate partnerships to improve communication.
> Using meeting formats (e.g. bilateral conversations, group briefings by teleconference, town halls, citizen panels, online consultations) that stakeholders are comfortable with.
> Finding common ground and leverage opportunities to develop, implement and test mutually agreeable communication plans and protocols.

Where possible, communicators should use priority stakeholders to help inform their communication planning and message development. It is important to use the appropriate approaches when working with each of these stakeholders. By working with these stakeholders, risk communicators can obtain valuable information about target audiences, get help distributing messages to those target audiences, and reduce the risk that stakeholders might hinder the organization's communication objectives.

Stakeholder views and expertise can help in the development and dissemination of effective messages but they should never exert undue influence on decision-makers. Even the perception of undue influence can have negative effects on people's trust in an organization and its messages.

4.4 DEALING WITH UNCERTAINTY

Risk issues evolve, sometimes rapidly, and often involve uncertain or incomplete information. Communicating in a timely way is essential for effective risk communication, and often requires communication to be made about uncertainty.

Risk managers are often reluctant to communicate about a risk issue until its uncertainty has been resolved and all the facts are clear. There are a number of reasons risk managers cite for why they will not communicate uncertain information.

> *Fear of panic:* The fear is that uncertain information about a risk will raise public anxiety to the level of panic, resulting in irrational behaviours. In fact, research shows that panic is rare, and that providing information, even limited or uncertain information, reduces the likelihood of fear.

> *Fear of losing control:* This is based on the false notion that organizations, by keeping their risk analyses away from the public, can control the issue. The reality is that risk issues are often beyond such control, and not communicating about them because of uncertainty can lead to the public losing trust in the organization. It is better to communicate the uncertainty in order to demonstrate leadership and establish trust among audiences.

> *Fear of economic loss:* This is based on the often legitimate concern that communicating uncertain information (e.g. the suspected food source in a food-borne illness outbreak) could create an unavoidable negative economic impact on the business sector. However, research shows that, in fact, huge economic costs can be prevented by early communication, as long as the information is robust and the best available to date. By mitigating the spread of illness, health care costs are reduced, as are the potential costs incurred by legal actions against businesses and governments.

> *Lack of dietary alternatives:* This refers to situations in which no other foods are available or affordable, and if people stop eating the food associated with the risk, it could have significant health consequences.

Communicating even under conditions of uncertainty empowers target audiences to take action to protect themselves, increases the organization's ability to communicate

effectively about (future) food safety risk issues by fostering trust among target audiences, and can mitigate the long-term financial cost of the risk issue to the community (see Box 4.5).

During an outbreak of food-borne illness, the decision to communicate when things are uncertain can have a significant impact on the spread of illness and severity of the outbreak. It can take a long time from the first emergence of illness to laboratory confirmation of its source. During that time, it is likely that more and more people will continue to become ill (see for example the listeriosis case in Box 2.3 in Chapter 2).

The opportunity to protect more people from becoming ill is missed if the decision is taken to wait for laboratory confirmation of the source. It is much better to communicate early about the possibility of an outbreak, acknowledge that the source is unknown and under investigation, and provide advice to consumers and vulnerable populations about general food safety precautions they can take to protect themselves.

BOX 4.5

COMMUNICATING UNCERTAINTY

When communicating about a food safety issue under conditions where risk information is associated with uncertainty, or where there are gaps in knowledge, it is important to:
> acknowledge areas of uncertainty;
> communicate about what is being done to reduce uncertainties;
> communicate the implications of remaining uncertainties for food safety;
> provide advice about what people can do to protect themselves.

In addition, it is important to:
> acknowledge that early messages may change as further information is gathered and/or verified;
> release and discuss more complete information when it becomes available, together with its implications and any revised course of action that may further increase food safety and prevent illness.

Box 4.6 provides an example of a decision-making aid that can be used to help decide whether or not to release risk information.

BOX 4.6

COMMUNICATING EARLY: AN EXAMPLE OF A DECISION-MAKING AID

In every emergency, there is debate on what information to release, and when to release the information to the public. Risk communication requires transparency and early announcements to establish and maintain public trust, even when complete scientific information is unavailable.

What to communicate and when?

In deciding whether or not to recommend the release of risk information, officials can ask several questions to help guide decision-making:

1. Is the information needed by those at-risk to avoid illness, reduce the spread of a disease and/or to protect themselves and their loved ones from a health threat?

If YES, the information should be communicated publicly in a timely, accessible and proactive manner

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Women's community leader in Senegal engaging communities to improve food hygiene.

2. Would release of the information help to promote trust in citizens and partners by:
>   Providing further context for the situation?
>   Giving detail of the basis for decision-making to date?
>   Acknowledging uncertainties?
>   Indicating what could happen next, to encourage practical and emotional preparation?
If YES to one or more, the information should be communicated publicly in a timely, accessible and proactive manner

3. Is there a valid reason to consider withholding risk information? For example:
>   **Release of the information could compromise national security or an ongoing investigation.**
>   **Release of the information could violate privacy laws or confidentiality policies.**
>   **Release of the information could result in stigmatization of specific ethnic groups.**
>   **Release of the information could expose the organization to legal risk.**
If YES, the risk information may be justifiably withheld; however, in all such cases informing those at risk must take priority.

(Source: Health Canada and the Public Health Agency of Canada)

4.5 MESSAGE DEVELOPMENT

A good understanding of the nature of the food safety issue and the target audiences' communication needs leads to the development of messages addressing these needs and providing relevant information about the risk.

In designing messages, the following questions are important to consider in relation to the target audiences:

> What is the food safety issue?

> What is the risk to the target audience(s)?

> Which concerns and perceptions does the target audience(s) have about the risk?

> What can the target audience(s) do about the risk to protect themselves?

> What is not known or uncertain about the risk?

> What is being done to reduce the uncertainty?

> What is being done to manage the risk?

> What other context is relevant to the target audience(s)?

It is also important to develop key messages that summarize the issues that need to be communicated. The following steps can be useful in developing key messages:

1. Identify specific concerns.
2. Analyse the concerns to identify recurring themes and general concepts to be addressed.
3. Develop key messages for those concerns (both general and specific) that need to be addressed.
4. For each key message, identify facts and the information to support them.
5. Test messages with the participation of the target audience(s) to whom they are directed.
6. Plan for the delivery of messages (including identifying suitable dissemination channels for the target audiences).

It can be helpful to convene an interdisciplinary team of stakeholders to assess the concerns and priorities of the different target audiences and develop key messages (for an example, see the Aflatoxin case study in Box 1.6. in Chapter 1).

To avoid distortion or misrepresentation of scientific information, it is important to present the information to the target audience in a language that is understandable, and in a user-friendly manner. For public audiences, for example, well-targeted messages that use non-technical language are most effective. Consumers are especially interested in specific information on the nature, form, severity or magnitude of the risk and what actions they can take if they are exposed to the risk. The messages should be Simple, Timely (up-to-date), Accurate, Repeated and Consistent (STARC).

It is important always to include and prominently feature the steps people can take to reduce their risk. Messages should not only point out the severity of the risk and the audience's vulnerability to it, or what is being done to manage the risk, but also empower them to avoid the risk where possible.

TEMPLATE FOR A RISK COMMUNICATION MESSAGE

> **DESCRIPTION** OF THE RISK

> THE **ADVICE** TO CONSUMERS

> **QUOTE** (FROM REPUTABLE AND TRUSTED SOURCE, E.G. OFFICIAL FROM A NATIONAL AUTHORITY, INDEPENDENT EXPERT) REITERATING THE ADVICE TO CONSUMERS

> **EXPLAIN** WHAT IS BEING DONE TO REDUCE THE RISK

> ADDITIONAL **RELEVANT CONTEXT**

For some examples of risk communication messages see:
> Public Health Notice (source: Public Health Agency of Canada): *E. coli* O157:H7 illness related to cheese produced by Gort's Gouda Cheese Farm
http://www.phac-aspc.gc.ca/fs-sa/phn-asp/2013/ecoli-0913-eng.php

> Public Health Notice (source: Public Health Agency of Canada)*: E. coli O157:H7* illness related to frozen beef burgers http://www.phac-aspc.gc.ca/fs-sa/phn-asp/ecoli-1212-eng.php

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When developing messages it is important to consider whether visual aids (e.g. diagrams, illustrations) can be used to capture the target audience's attention, reach out to parts of the population that would be more receptive to pictures than words, or explain facts that would be otherwise difficult to put into words. Visuals are often appropriate when communicating with immigrant populations unfamiliar with the language, and with people with low literacy levels.

Generally, the messages can be supported with:

> simple graphic representations (bar or pie charts);

> true stories that illustrate key message points and that the target audience can identify with;

> images that depict the nature of the risk;

> recommendations from authoritative bodies;

> best practices.

It is also important to mention the source of the evidence provided in the message to increase credibility of the message.

It is particularly important to consider the needs of visually impaired audiences, those with speech, hearing and other disabilities, and all those disadvantaged in ways that could affect how they receive and process information. The message must reach all target audiences and must meet their information needs. Appendix 3 contains recommendations on how to write messages for stakeholders with low levels of literacy.

Considering potential unintended consequences of messages and monitoring for them when managing a risk issue is critical for effective risk communication. Validating messages with relevant stakeholders during message development, and

the testing of messages with target audiences, helps to identify potential unintended consequences of the risk communication in advance.

If it is not possible to engage stakeholders during message development, relevant stakeholders should be informed of the messages ahead of a broader audience, especially if they are expected to help with the dissemination of these messages or to answer questions related to the risk or its mitigation (see Box 4.7 for an example).

BOX 4.7

RISK COMMUNICATION DURING A SUSPECTED OUTBREAK OF HEPATITIS A IN THE UNITED KINGDOM[11]

Background summary
In 2011 there was a suspected outbreak of hepatitis A in the United Kingdom. While the Health Protection Agency (HPA) suspected sun-dried tomatoes as the source of the outbreak, the Food Standards Agency (FSA) concluded that no definitive link between the suspected outbreak and a specific food source could be made.

Key risk communication challenge
> Informing the public about a possible outbreak of hepatitis A.

Actions and outcomes
The HPA reported the suspected outbreak and included in their report a strong supposed link between the suspected outbreak and jars of sun-dried tomatoes.

The media were informed about the HPA report and ran the story, causing alarm among consumers, who contacted food manufacturers asking if they needed to return the jars and products of sun-dried tomatoes they had in their homes.

Manufacturers of jars of sun-dried tomatoes were not informed about the report and called the FSA asking for more information about the source of the outbreak, so that they could use their traceability systems to check whether their products were implicated.

They were told that no definitive link had been found between sun-dried tomatoes and the suspected outbreak, so there was nothing to indicate that any specific product was to blame or needed to be investigated. This left manufacturers baffled and consumers confused.

If best practice had been followed, HPA and FSA would have called a scoping meeting with industry ahead of the publication of the report, explaining their assessment of the situation and clarifying the areas of disagreement between the agencies. This would have increased understanding of potential unintended consequences of the communication. Given that the evidence was insufficient to suggest any remedial action, engaging with industry would probably have resulted in the removal of any mention of the supposed link between the suspected outbreak and a specific food commodity from the report, which could have prevented the confusion among manufacturers and consumers.

Lessons learned
It is important to consider unintended consequences of a risk communication. Dialogue with relevant stakeholders during message development will give an adequate understanding of potential unintended consequences.

Communication should be coordinated with relevant stakeholders so that they can prepare themselves to answer any questions or take appropriate actions. Relevant stakeholders should be informed of the communication activity before it occurs.

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[11] This case has been kindly provided by Ms Barbara Gallani, the Food and Drink Federation of the UK.

FIGURE 4.1   **EXAMPLE OF A GOOD USE OF VISUAL MATERIAL FOR EFFECTIVE COMMUNICATION OF FOOD SAFETY RISK INFORMATION**

Source: WHO

4.6   CHOOSING COMMUNICATION CHANNELS/TOOLS/METHODS

The effectiveness of different communication channels is influenced by the *goal of the risk communication*, the *content or nature of the message* (e.g. the urgency), and their *accessibility and use* by target audiences (this is discussed in Chapter 3).

Web sites, for example, may be good for communicating to a broad audience where feedback is not a priority. However, they are inappropriate when a risk communicator wants to engage the audience and receive feedback, unless accompanied by special applications that allow users to provide feedback to very specific questions (e.g. online public consultations).

For food advice, for example during emergency food safety risks, provision of information through the media is usually the most *rapid* means of disseminating information. For more examples of communication channels and the situations where they are most appropriate see the EFSA risk communication guide, Chapter IV (EFSA, 2012).

A single channel of communication may be inadequate for getting a message to all target audiences or achieving the goal of the risk communication. Therefore, it is important to combine various methods as far as possible (see for an example Box 1.5 in Chapter 1, on communicating about aflatoxin contamination, or Box 2.4 in Chapter 2, on risk communication during cholera outbreaks).

Examples of communication methods and channels include:

> Media (electronic and print)

> Websites

> E-mails

> Printed materials (publications, fact sheets, t-shirts and caps, car stickers, key holders, posters, billboards, etc.)

> Digital publications

> Meetings, workshops, focus groups

> Public consultations

> Partners/stakeholder network

> Social media (Facebook, Twitter, LinkedIn, etc.; see Box 4.8)

> Blogging

> Podcasts

> Webinars

> Information days/meetings

Other communication channels that may be of particular relevance to low- and middle-income countries include:

> Drama and live role-play by traditional groups in the communities

> Documentaries

> Community workshops/town meetings

> Information services (e.g. using information vans)

> Talks at religious gatherings or festivals

> Community meetings

> Demonstrations

> Focus group talks with opinion leaders

> Quiz competitions

> Extension programmes (food safety, nutrition, agriculture, health)

BOX 4.8

USING SOCIAL MEDIA TO COMMUNICATE ABOUT FOOD SAFETY RISKS

Social media play an important role in how people and organizations share food safety risk information. This is a communication channel with many benefits, although it has some limitations.

Advantages:

1. Social media channels (e.g. Twitter, Facebook, Weibo) reach an enormous and still-growing audience around the world. Over a billion people use social media regularly every month.
2. They are valuable in helping to identify target audiences and stakeholders affected by the issue.
3. They can be used to respond to questions, concerns and misinformation on the issue, and inform communication plans and messages.
4. Building a following on social media before a risk issue occurs and communicating proactively through these channels when a risk needs to be addressed can help position an organization as a credible source of information on the issue.
5. They can be used to share information in formats that can be repurposed, such as podcasts (radio), videos (television), tweets and updates (print).

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Limitations:
1. Social media comprises a channel that reaches only people who are online and who subscribe to such services. Many vulnerable groups are not online and so other methods are needed to ensure that these target audiences are reached.
2. In an emergency, the infrastructure to use social media may not be available (e.g. no electricity or Internet service).
3. Usage patterns change continually and real-time assessment is needed to determine whether messages will reach target audiences.
4. Current research shows that the impact of messages shared through social media on changing behaviour is limited.

(Source: Health Canada and the Public Health Agency of Canada)

4.7 INTERACTING WITH THE MEDIA

Interacting with the media is an essential part of most food safety risk communication strategies. To interact effectively with the media, it is important to be aware of some of the key factors that drive media coverage of risk issues, including:

> Fear

> Conflict

> Blame

> Cover-ups

> David *versus* Goliath (i.e. a conflict between imbalanced competing interests, where the underdog overcomes the odds and triumphs over the stronger opponent)

> Visual impact

> High-profile issues or personalities

Preparing for media interactions will help in working effectively with the media when faced with a food safety issue. Practices for preparing media interactions include:

> Identifying, building and maintaining relationships with journalists who regularly cover food safety issues. It is important to target both those journalists that drive high profile media coverage and those that reach the target audiences.

> Identifying and training spokespersons who can speak to the media, remembering that communication skills are more important that scientific expertise.

> Preparing background materials for the media about common food safety risk issues and about how the organization works with others to respond to them.

> Working with key stakeholders to plan how to coordinate media responses in the event of a food safety risk.

When a food safety risk issue needs to be addressed, the following practices will increase effectiveness of the media approach:

> Being proactive: leading voices often influence the tone of coverage better than trailing ones.

> Identifying and targeting the media outlets that serve the target audiences, and tailoring media materials for them.

> Coordinating the media responses with stakeholders whenever possible.

> Considering various methods for reaching media stakeholders (e.g. regular news conferences, teleconferences, webcasts, news releases, online content, social media channels, etc.).

> Detecting and correcting: monitoring media coverage closely and correcting errors or misleading coverage as quickly as possible will help to ensure that errors are not repeated.

Evaluating media interactions after a food safety issue has been addressed will provide useful insights for future interactions. This may include:

> Reviewing and analysing the media coverage of the food safety issue to measure the effectiveness of the media approach. For example, were the messages reflected accurately? Were they covered in the targeted media outlets?

> Working with stakeholders to refine coordination, based on lessons learned.

> Consulting key journalists for feedback on the approach.

4.8 INTERACTING WITH OTHER COUNTRIES AND BEYOND

Communication with international stakeholders early in an emergency can provide national food safety authorities with the opportunity to discuss the emergency and to work through approaches to risk assessment prior to their implementation. This may allow countries to combine resources, determine ways to address the emergency collectively and support countries that may not have the capacity to undertake comprehensive risk assessments.

Communicating in advance of risk management decision-making may facilitate agreement on the risk assessment and risk management approaches and lead to greater consistency in the emergency response (including the recommendations for consumers). In cases that appear to be isolated to domestic products, it may still be helpful to notify international counterparts because products may be exported, even through informal channels (e.g. Internet purchases). Further recommendations for exchange of information between countries are outlined in the Codex document CAC/GL 19-1995, entitled "Principles and guidelines for the exchange of information in food safety emergency situations" (revision of this document is in process).

When contaminated food enters the global market, it is essential that national food safety authorities communicate with all countries involved, as well as relevant international counterparts. In considering outreach to the international community, existing systems for information exchange should be used.

INFOSAN can help to facilitate information exchange between members during the risk assessment, management and communication stages of a food safety event and may be a key information resource during food safety emergencies.

The INFOSAN Community Website is a members-only online platform that allows members to build and exchange knowledge related to food safety (see Box 4.9). This opportunity to share information, experiences and advice, and to ask questions of colleagues and provide mutual support, including in relation to the development of risk communication messages, strengthens the INFOSAN community of practice. Through this process of sharing, INFOSAN members can learn from each other and develop professionally.

BOX 4.9

INFOSAN

The International Food Safety Authorities Network (INFOSAN) is a network, managed jointly by FAO and WHO, that is used for the global dissemination of important information about food safety issues.

The INFOSAN Secretariat maintains the contact details for Emergency Contact Points and other Focal Points in member countries. During food safety emergencies, the INFOSAN Secretariat liaises with Emergency Contact Points to collect and share factual information at the international level to inform risk management actions. Information reported to INFOSAN is subject to validation with the relevant countries before Alerts are formulated and subsequently shared on the INFOSAN Community Website, which is a secure online platform.

INFOSAN can also facilitate compliance with International Health Regulations (IHR, 2005), which require food safety emergencies with international implications to be reported to WHO.

The INFOSAN Emergency Contact Points should work in close collaboration with the National IHR Focal Point to facilitate compliance with the International Health Regulations (IHR, 2005).

4.9   MONITORING AND EVALUATION

Food safety risk communication is a two-way process. It is not merely a question of transmitting a message, but more a question of determining what target audiences want to know, determining what the organization needs to tell them, and then checking to be sure that the message is well received and understood and leads to optimal decisions that protect and enhance food safety and public health.

Developing a risk communication approach that includes research as well as stakeholder engagement is likely to increase its effectiveness. In addition, monitoring of risk communication and evaluation of communication efforts, both during and after implementation, allow meaningful adjustments to be made while the food safety issue is being addressed, and valuable lessons to be learned for addressing food safety risks in the future.

Risk issues evolve constantly, and those related to food safety often evolve rapidly. A comprehensive and systematic approach involving ongoing monitoring and evaluation is essential to making risk communication activities as effective as possible. For example, monitoring for unintended consequences of the communication, and for emerging questions, concerns and misconceptions, allows an organization to address these in a timely and responsive manner. Box 4.10 lists types of questions to ask when monitoring and evaluating risk communication. Box 4.11 lists some methods that can be used to monitor and evaluate risk communication.

Effective monitoring and evaluation of risk communication will not only inform what, how and with whom an organization needs to communicate on a food safety issue, but can also offer valuable insight into how the risk itself should be managed. Monitoring and evaluation of risk communication will collect feedback from target audiences that can offer valuable insight into how the risk itself should be managed.

BOX 4.10

MONITORING AND EVALUATING RISK COMMUNICATION

Monitoring risk communication and evaluating risk communication efforts, both during a food safety event and after it has been addressed, are essential to making risk communication activities as effective as possible. Organizations must commit to doing monitoring and evaluation, and must invest accordingly.

Types of questions to ask when monitoring food safety risk communication:
1. Are target audiences receiving the messages?
   a. If not, why not?
2. Are target audiences responding to the messages?
   a. If so, are they responding as intended?
   b. If not, why not?
   c. Are there any emerging questions or concerns?
3. What are stakeholders communicating about the food safety risk?
   a. Are there significant differences from other stakeholders in the information being communicated?
4. Is there a change in target audiences' risk perception?
   a. Are there any new issues emerging that may shape risk perception about the food safety risk?
5. How many media outlets cover the organization's messages, and how frequently?

Types of questions to ask when evaluating food safety risk communication efforts:
1. Have the communication needs of the target audiences changed?
2. Do the messages need to be adjusted?
   a. If so, how?
3. Are different communication channels needed?
   a. If so, which?
4. Were, or are, stakeholders included in the development and dissemination of the messages?
   a. If not, why not, and how can they be included in future?
   b. If so, are the right stakeholders involved?
5. Is the media reporting the organization's messages accurately?
6. Is the media being used effectively?
7. Is progress being made towards the communication goals?

BOX 4.11

HOW TO MONITOR AND EVALUATE RISK COMMUNICATION MESSAGES AND APPROACHES

There are many ways to monitor risk communication and evaluate the effectiveness of risk communication messages and approaches, including those listed below.

Method	Description and purposes
Stakeholder dialogue	Consulting with stakeholders during and after a food safety risk has been addressed, to learn what works and what does not, to adjust the current approach and to learn lessons for the future.
Monitoring social media	Monitoring social media chatter regularly to identify emerging questions and concerns among the general public and target audiences. This information will help to adjust the approach and messages.
Media monitoring and analysis	Reviewing and analysing media coverage of the risk to adjust the approach and messages as the food safety issue evolves, and to evaluate the overall effectiveness of the approach and messages after the issue has been addressed. For example, it can be useful to examine whether messages were reflected accurately, and whether they were covered in the targeted media outlets.
Web analysis	Tracking how the organization's materials are used online (e.g. number viewed, downloaded, shared, etc.) and reviewing comments received from users, in order to adjust the communication approach and materials as the food safety issue evolves and after it has been addressed.
Targeted surveys	Tracking the opinions of target audiences over time to identify who, and estimate how many people, received and accepted the key messages. This kind of research can also provide insight into what communication methods are most appropriate for given target audiences. This research can be done regularly and is typically contracted out to public opinion firms.
Update risk assessment	Tracking for example the actual health risk, number of illnesses and levels of contamination, to determine whether the risk is increasing or decreasing and therefore whether the communication efforts are having an effect.

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World Health Organization. 2015. *Five keys to safer food* (educational video). Geneva, WHO. https://www.youtube.com/watch?v=ONkKy68HEIM

APPENDICES
SUPPLEMENTARY MATERIAL

THE TOOLS PROVIDED HERE ARE EXAMPLES GENEROUSLY PROVIDED BY HEALTH CANADA AND THE PUBLIC HEALTH AGENCY OF CANADA, WHICH ARE ADAPTABLE TO OTHER COUNTRIES. THEY SHOULD BE USED AS GENERAL GUIDELINES.

IN THE FUTURE, THE SUPPLEMENTARY MATERIAL OF THE HANDBOOK MAY BE UPDATED TO INCLUDE MORE GENERIC GUIDELINES AND/OR ADDITIONAL EXAMPLES FROM DIFFERENT COUNTRIES.

APPENDIX 1
RAPID ASSESSMENT OF RISK COMMUNICATION CAPACITY

The purpose of this tool is to help organizations to identify areas that represent ongoing challenges for risk communication. The identification of gaps in the capability to carry out different communication activities is discussed in Section 2.3 of Chapter 2: The importance of planning.

RISK COMMUNICATION RAPID ASSESSMENT
(Adapted from the model developed by Health Canada and the Public Health Agency of Canada)

The following rapid assessment tool builds on the required risk communication capacities of the WHO International Health Regulations. It is intended to help you to identify areas that represent ongoing challenges in your organization and to facilitate discussion with other workshop participants on how capabilities could be improved.

Please note: Your responses are unofficial, and only for personal use

Instructions: For each required ability, assign a number from 1 to 10 based on your experience and opinion. On this scale, "1" is weak and "10" is strong.

For example: "3, we could probably do this but there's nothing written down or formalized." Or "8, we do this well most of the time, the required systems and processes are in place and have been tried and tested."

1. Transparency and first announcement of a real or potential risk:

The management of information related to a food safety (public health) emergency, including the first announcement warning a population of a potential risk and ongoing transparency of decision-making, helping to ensure that those at real or potential risk can protect themselves and that trust among the authorities, populations and stakeholders is maintained and strengthened.

The following abilities ensure the success of this component:	National capacity 1 to 10
1. The ability to approve rapidly, for public distribution, warnings and advisories in the event of a real or potential public health risk.	
2. The ability to issue warnings or advisories of a real or potential risk during non-business hours, for example evenings and holidays, and to ensure that hard to reach and minority populations are informed of warnings or advisories through translated and tailored materials.	

3. The ability to adhere to decision-making principles – enshrined in a regulation, policy or formal guideline – on the timely public release of information associated with a real or potential public health risk.

4. The ability to ensure that decision-making and actions related to transparency are evaluated after the event against agreed principles.

2. Public communication coordination:

The cross-jurisdictional nature of food safety (public health) emergencies demands that food safety and public health authorities be able to engage effectively and coordinate public communication with other involved organizations, including designating roles and responsibilities of lead and supporting agencies. This capacity helps take advantage of available public communication resources, allows coordinated messaging, to reduce the possibility of confusion and overlap, and strengthens the reach and influence of the advice provided.

The following abilities ensure the success of this component:	National capacity 1 to 10
1. The ability to identify public communication focal points among likely public health emergency partner organizations, including their likely roles and responsibilities.	
2. The ability to establish a formalized communication coordination structure among public health emergency partner organizations.	
3. The ability to share public communication messages and strategies during a serious public health event among partner organizations and institutions, with the endorsement of the emergency management team.	
4. The ability to access emergency risk communication capacity among public health emergency partners, including such key elements as translation ability and distribution through external communication networks.	
5. The ability to engage community networks that can access distinct language and cultural groups.	

3. Information dissemination, including media relations:

The extreme time pressure associated with emergencies, high demand for information and the crucial role of advice and warning to minimize a threat make the rapid and effective dissemination of information crucial during serious food safety (public health) events. Mass media relations remain a pillar of effective information sharing; however, it is increasingly important to access other information sources trusted by the population group at risk, including new media channels, existing information-sharing networks and non-traditional media.

The following abilities ensure the success of this component:	National capacity 1 to 10
1. The ability to ensure that qualified and trained public spokespersons are available to speak to journalists during public health emergencies.	
2. The ability to respond effectively to the high demands of emergency mass media relations through protocols to manage high information demand, the volume of media queries and the frequency of mass media briefings.	

3. The ability efficiently and effectively to access other dissemination channels including the Internet, short message service (SMS), telephone helplines, social media, email listservs, formal and informal partner networks, village criers and public address systems.

4. The ability to conduct rapid assessments of target audiences among population groups at risk and quickly reach vulnerable, "hard to reach", disadvantaged or minority populations with accessible and relevant emergency information tailored for language use, literacy rate and socio-economic conditions.

5. The ability to ensure that basic information/education/communication materials and messages on common emergency response elements such as personal hygiene, safe food handling and home care of the ill, have been developed and translated into appropriate languages.

4. Listening through dialogue:

Listening to those affected and involved, in an organized, purposeful manner, is crucial to ensuring that communication efforts are effective and support sound emergency management decision-making. Understanding community perceptions of risk, and then acting upon that understanding by adapting communication messages, materials and strategies, demands a meaningful engagement with those affected and involved.

The following abilities ensure the success of this component:	National capacity 1 to 10
1. The ability to gather and process the views and perceptions of individuals, partners and communities affected by a serious public health event, as well as to adapt communication strategies as required.	
2. The ability to monitor traditional and non-traditional media, including the tracking of outstanding questions, information needs, points of confusion and circulating rumours.	
3. The ability to use simplified and emergency-specific information by gathering templates already in place to facilitate efficient dialogue during an event.	
4. The ability to reflect findings of the listening and evaluation processes back into emergency management decision-making.	

APPENDIX 2:
RISK PERCEPTION ASSESSMENT TOOL

This tool can be used to identify non-emergency situations that may require an emergency communication response because the public has a high risk perception of a particular issue, even if the actual health impact is low. This topic is discussed in Section 3.4 of Chapter 3: Understanding the communicator's responsibilities for food safety risk communication.

RISK PERCEPTION ASSESSMENT TOOL
(Adapted from the model developed by Health Canada and the Public Health Agency of Canada)

Sometimes the public has a high risk perception of a particular issue, even if its actual risk is low. In these cases, maintaining trust with the public and other stakeholders may require a risk communication strategy as intense as those needed during an actual emergency. Identifying non-emergency situations that may require an emergency-like public communication response is a difficult challenge. These questions are intended to guide a discussion.

1. Are there signs of a high level of interest in this issue in the public environment?

☐ **Have there been any media calls on this (or a related) issue?**
☐ **Has there been mass media coverage on this issue?**
   ☐ If yes, what was the time frame and tone of the coverage?
☐ **Has there been significant social media activity on this or any related issue?**
   ☐ If yes, what was the time frame and tone of the discussion?
☐ **Are advocacy groups/other NGOs communicating on this issue now, or have they done so in the recent past?**
   ☐ If yes, what are they saying?

2. Are there signs of a likely high profile in the public environment?

☐ **Has this issue been addressed or discussed publicly in other countries?**
   ☐ If yes, what was the time frame and tone of the activity and coverage?
☐ **Is there evidence of a significant spike in public enquiries on the issue?**
☐ **Is the risk linked to an upcoming significant event, e.g. a specific holiday or time of year?**
☐ **Does the perceived risk affect many citizens/regions of the country?**

3. Does the issue have any characteristics likely to heighten risk perception?

☐ **Is the perceived risk thought to affect children or infants?**
☐ **Is the perceived risk of a particularly dreaded nature (e.g. death or serious injury)?**
☐ **In the past, did the risk or a similar risk have a high profile?**
☐ **Does the origin of the perceived risk – be it a company or country – have existing low levels of public trust?**
☐ **Is the perceived risk specific to a group of already vulnerable consumers?**

APPENDIX 3:
ACCESSIBLE WRITING – LOW LITERACY GUIDELINES

The purpose of this tool is to help in writing messages for stakeholders with low levels of literacy, which is discussed in Section 4.5 of Chapter 4: Message development.

ACCESSIBLE WRITING – LOW LITERACY GUIDELINES
(Source: Health Canada and the Public Health Agency of Canada)

There are some simple guidelines for ensuring that a message reaches audiences with low literacy levels:

> Give the most important information first. Engage the audience with the information they need to know, what actions they need to take and why it is important to them.
> Limit the number of messages. Focus on what the audience needs to know and to do.
> Focus on one idea at a time. Avoid jumping back and forth between different ideas.
> Choose words carefully.
>> Use short words; aim for one or two syllables.
>> Limit the use of jargon, and technical or scientific words.
>> Be consistent with word choice.
>> Use conversational language (e.g. "It could make you sick" versus "It could cause adverse health effects").
> Keep sentences short. Aim for 8–10 words when possible.
> Stick to one idea per sentence.
> Try to use the active voice. Keep the focus on the subject of the sentence doing the action (e.g. "Smoking causes heart disease", not "Heart disease is caused by smoking").
> Avoid lists when possible. Try using bullets instead of ideas separated by commas.

Questions for reflection

The following questions help to determine whether the text is easy to understand:

> Would this text be understood by an elderly relative?
> Would this text be understood by a 12 year old?
> Is plain language used and scientific jargon avoided, when possible?
> Are sentences short, with roughly 8–10 words per sentence?
> Are longer words avoided when shorter words would do?
> Are one- or two-syllable words used?
> Does this text provide the reader with the information on the immediate health risk and what they need to know?
> Does this text provide the reader with actions they can take and why it is important to them?

FURTHER READING

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WEB SITES
WITH RELEVANT TRAINING MATERIALS

FoodRisc Resource Centre. A resource centre for food risk and benefit communication:
http://resourcecentre.foodrisc.org/

International Center of Excellence in Food Risk Communication:
http://www.foodriskcommunications.org/

International Food Information Council Foundation:
www.foodinsight.org

WHO Web site on Risk Communication:
http://www.who.int/risk-communication/en/

GLOSSARY

This glossary includes working definitions for selected terms which are frequently used in the handbook. Where possible the definitions include or extend existing and internationally accepted terminology. The objective of this glossary is to provide a common terminology in the context of food safety risk communication, using existing relevant definitions where available.

APPROPRIATE LEVEL OF PROTECTION: The level of protection deemed appropriate by the Member establishing a sanitary or phytosanitary measure to protect human, animal or plant life or health within its territory[12].

COMMUNICATION CHANNEL: The medium used to exchange information between people, for example the print media or community meetings.

CONSUMERS: Those who are the purchasers or final users of food products.

CREDIBILITY: The extent to which a source or institution is perceived to have the knowledge and expertise to assess, manage and communicate about a risk.

DIALOGUE: An interactive exchange of ideas or information among people.

ENGAGEMENT: The process by which an organization involves stakeholders, and other interested individuals or agencies, in developing policies to manage the food risk.

FOOD SAFETY: The assurance that food will not cause harm to the consumer when it is prepared and/or eaten according to its intended use[13]. For the purpose of this handbook, the nutritional values of food are not treated as food safety factors.

FOOD SECURITY: When all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life[14].

FOOD QUALITY: Attributes that influence a product's value to the consumer. This includes subjective variables such as colour, size, smell, flavour, texture, freshness, cleanliness and overall appearance.

Sources:

[12] The WTO Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement). http://www.wto.org/english/tratop_e/sps_e/spsagr_e.htm

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HAZARD: A biological, chemical or physical agent in, or condition of, food with the potential to cause an adverse health effect[15].

HEALTH PROMOTION: The provision of information about concrete actions which can be taken in order to improve public health in relation to food safety risks.

HONESTY: The extent to which a source or institution conveys information about a risk in an open, truthful and transparent way[16].

OPENNESS: The opportunity for dialogue and engagement with all stakeholders of food safety risk communication, including those affected by the risk and those potentially responsible for it.

RESPONSIVENESS: The extent to which those responsible for food safety address the target audiences' risk communication needs and expectations in their communication activities.

RISK: A function of the probability of an adverse health effect and the severity of that effect, consequential to a hazard(s) in food[17].

RISK ANALYSIS: A process consisting of three components: risk assessment, risk management and risk communication[18].

RISK ASSESSMENT: A scientifically based process consisting of the following steps: (i) hazard identification, (ii) hazard characterization, (iii) exposure assessment and (iv) risk characterization[19].

RISK COMMUNICATION: The interactive exchange of information and opinions throughout the risk analysis process, concerning risk, risk-related factors and risk perceptions, among risk assessors, risk managers, consumers, industry, the academic community and other interested parties, including the explanation of risk assessment findings and the basis of risk management decisions[20].

RISK COMMUNICATOR: A person who communicates about a risk.

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[15] FAO/WHO. 2013. Codex Alimentarius Commission. Procedural Manual, 21st edition. ftp://ftp.fao.org/codex/Publications/ProcManuals/Manual_21e.pdf

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[19] FAO/WHO. 2015. Codex Alimentarius Commission. Procedural Manual, 23rd edition. ftp://ftp.fao.org/codex/Publications/ProcManuals/Manual_23e.pdf

[20] FAO/WHO. 2015. Codex Alimentarius Commission. Procedural Manual, 23rd edition. ftp://ftp.fao.org/codex/Publications/ProcManuals/Manual_23e.pdf

RISK MANAGEMENT: The process, distinct from risk assessment, of weighing policy alternatives, in consultation with all interested parties, considering risk assessment and other factors relevant for the health protection of consumers and for the promotion of fair trade practices and, if needed, selecting appropriate prevention and control options[21].

RISK PERCEPTION: The judgement that people make about the characteristics, likelihood and severity of a specific risk.

SOCIAL TRUST: The belief that institutions responsible for food safety will act to optimize human and environmental protection, and do no deliberate harm to humans or the environment[22].

STAKEHOLDER: An individual or group of people who may be affected by a particular issue, or who may influence the issue.

TARGET AUDIENCE: A group or subgroup of stakeholders to whom the message or risk communication is specifically targeted.

TRANSPARENCY: A set of policies, practices and procedures that enable stakeholders and the interested public to understand how decisions on risk assessment, management and communication have been made.

TRUST: Belief in the honesty, fairness and goodwill of a source or institution to assess, manage and communicate about food safety risks, consistent with the public good.

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[21] FAO/WHO. 2015. Codex Alimentarius Commission. Procedural Manual, 23rd edition. ftp://ftp.fao.org/codex/Publications/ProcManuals/Manual_23e.pdf

[22] Delhey, J. & Newton, K. 2005. Predicting cross-national levels of social trust: global pattern or Nordic exceptionalism? European Sociological Review, 21(4): 311–327.

RISK COMMUNICATION APPLIED TO FOOD SAFETY HANDBOOOK

This FAO/WHO handbook on risk communication was developed to support national food safety authorities and food chain stakeholders in establishing or enhancing risk communication practice and capacity on food safety. It further targets agriculture/agrifood and public health institutions, which frequently share governmental responsibility for food safety at the country and/or regional level.

This handbook focuses on practical principles and best practices of risk communication to support risk management of adverse food safety events associated with biological, chemical or physical hazards. It addresses the use of risk communication in the process of risk analysis to manage both food safety emergencies as well as recurring food safety issues such as health promotion campaigns. Many aspects are applicable to effective risk communication in support of feed 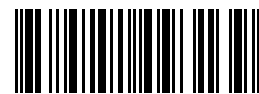safety, animal health and zoonotic disease management.