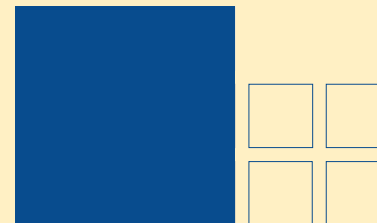
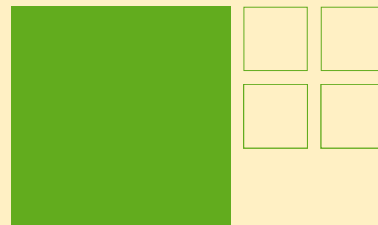
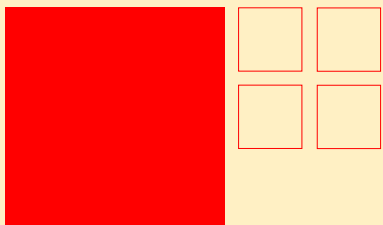
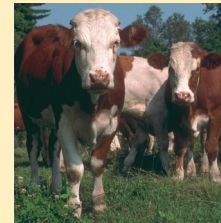
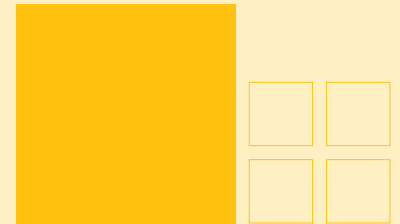


September 2003



Canadian On-Farm Food Safety Risk Management Planning Guide





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Agriculture and Agri-Food Canada (AAFC) is pleased to participate in the production of this publication. AAFC is committed to working with our industry partners to increase public awareness of the importance of the agri-food industry to Canada. Opinions expressed in this document are those of the authors and not necessarily the Department's.

Canadian ON-FARM FOOD SAFETY PROGRAM
Programme canadien DE SALUBRITÉ DES ALIMENTS À LA FERME



THE CANADIAN
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MARSH



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ADDENDUM A - RISK SCENARIO REGISTER

ADDENDUM B - RISK ANALYSIS WORKSHEET

ADDENDUM C - ILLUSTRATIVE CASE STUDY

ADDENDUM D – CRISIS MANAGEMENT GUIDELINES

This guide is intended as an exemplar of best practices and procedures. As such, it should be viewed as a methodology and not an explicit guarantee of risk improvement or compliance to organizational governance/standards.



I. Objective

This Guide provides a model and a process to facilitate a consistent approach for each of the commodity groups involved in the Canadian On-Farm Food Safety Program, to follow in discharging their responsibilities for the development of on-farm food safety (OFFS) programs. The Guide is intended to be a simple and practical tool to assist users in effectively identifying, prioritizing and managing / mitigating potential risks. Applying the outlined process will serve to broaden the knowledge and understanding of risk, not only by the commodity groups, but also by their key stakeholders who influence risk management decisions. In addition, using a consistent approach will support the sharing of risk management strategies and best practices between commodity groups.



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2. Background – “Why Risk Management”

*Risk management
framework relevant
to all commodity
groups*

This Risk Management Planning Guide has been produced by Marsh Risk Consulting to support the activities of the respective commodity groups and the strategists /decision makers (both individuals and associations) responsible for design and delivery of National On-Farm Food Safety (OFFS) Programs. The development process included seeking input on scope and performance aspects of the tool, as well as consultation with a number of associations. The Guide provides a consistent reference framework for risk management - recognizing that to be successful, all stakeholders to the OFFS process risk management need to be involved. This Guide is also designed with a process emphasis, hence is structured to be applicable at any level of the OFFS design and delivery process - including in particular the scope of responsibilities at the national design and development, and regional or provincial delivery levels.

*Effective Risk
Communication
with Stakeholders*

Effective communication with stakeholders, both to solicit and understand their needs, as well as to inform them of evolving issues of interest, is integral to the overall success of the risk management process. The development of the OFFS process is a collaborative venture involving various representative commodity groups from the agricultural production sector and related government partners. Considering this, and the associated complex supply chain and public perception issues, a common thread throughout this Guide is risk communication.

*Complementary
to OFFS &
HACCP*

The commodity-specific OFFS program requirements (i.e. good management practices, critical control points, etc.) have been designed based on Hazard Analysis Critical Control Point (HACCP) principles. HACCP has evolved and is accepted globally as the leading systematic approach for food safety strategies. The HACCP based programs are an excellent risk-based mechanism that represents an important platform in the overall management of food safety risks. However these programs, in themselves do not address the full range of food safety related risks to a commodity group. For example, financial, reputational, system performance, governance and technical risks beyond the scope of those intended by the producer program procedures, are a few. Therefore, the risk management process is complementary to the operational and administrative programs that have been, or are being developed, as part of the Canadian On Farm Food Safety initiative. Risk management can effectively act as an umbrella process to all others - continually “testing” the efficacy of strategies and processes against potential unwanted threats. Being proactive in identifying prioritizing and reducing potential threats serves to pre-empt serious incidents that could otherwise materially threaten the success of programs. Risk management also serves as a key platform for continuous improvement as the risk control processes in place are challenged and enhanced to assure that they will effectively deal with both the key risks that are identified, as well as new or emerging



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Framework for risk-based decision

risks that might arise. Finally, should a loss or unwanted event occur, an effective risk management process ideally will have anticipated the eventuality and assure the organization and its key stakeholders are protected and prepared, by having mitigation processes in place (for example risk financing programs and crisis management plans).

This Guide provides a framework for risk-based decision-making to proactively reduce the likelihood or impact of potentially serious and disruptive losses, through preventive and mitigative strategies. It provides a means of qualifying / measuring risk, thereby facilitating the ability to monitor exposures and the effectiveness of risk control initiatives to address them.

Food safety and risk management

In short, risk management is an integral component to developing a strong and credible food safety system, and when implemented will bring several key benefits to the Canadian approach to on farm food safety:

1. A proactive and consistent approach to risk management.
2. Improved assurance that the full range of on-farm food safety related risks are considered and addressed.
3. Through a consultative process and by drawing on the collective expertise available from stakeholders, improved quality of decision-making.
4. Enhanced awareness and communication of risks throughout the industry and amongst stakeholders.
5. Sharing of risk management best practices
6. An important support for governance for national associations.
7. Through effective risk prioritization, efforts can be focused to maximum the benefit realized, thereby improving both resource utilization, and the risk profile
8. An improved state of readiness to respond to crises.



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*Success is
contingent upon
commitment by the
organization's
Leaders*

As with any important program or initiative, a successful risk management process is contingent on appropriate time, resources and expertise being committed to it. In a cost-conscious business environment, with already fully committed resources, there is a danger that risk management may be viewed as a “nice-to have” issue to be addressed as time permits. Yet, as noted previously, effective risk management can provide significant benefits to participants in the OFFS program. Perhaps more importantly, the consequences of not effectively managing risks can be catastrophic. Therefore, it is incumbent on leaders of the organizations responsible to develop and implement OFFS programs to provide their full support for risk management to assure these benefits are realized, and their industry and its constituents are protected.



Canadian On-Farm Food Safety Risk Management Planning Guide



3. Using This Guide

This Guide is organized to provide the user a baseline grounding in risk management, and to provide a working tool that will directly facilitate an effective risk management process. The user will be directed on how to perform specific aspects with the aid of the tools and references provided. A CD-ROM containing worksheets and support materials has been developed to accompany The Guide.

*Rigorous &
systematic approach*

Considering the potential industry and public implications associated with on farm food safety, and the range of stakeholders involved in the process, the risk issues are complex. It is unrealistic to expect that the risks can be solved simply, therefore, this Guide endeavors to provide the user with a systematic step-by-step process. This process, will require a rigorous approach to the identification and analysis of risks, and an effective and prioritized plan to implement the risk treatment strategies required for those risks judged as being particularly significant.

*Continuous &
long-term
perspective*

As the models presented in the Guide demonstrate, risk management is, of necessity, a continuous process. Risks are inherently dynamic as science evolves, stakeholder perception's change, new regulations are introduced and the world learns from its experiences – both good and bad. Therefore, as users identify resource requirements and plan the process and systems to help manage the risks of their commodity groups, they should do so with a long term horizon; one which assures that identification, assessment and control of risks becomes an integral part of the overall planning, strategies and activities of the organization.

User of the Guide

Throughout the Guide, reference is frequently made to “the user”, to whom this Guide is directed. “User” is intended to be the person and / or team responsible for development and coordination of risk management activities for their respective organizations – whether a national association charged with development of OFFS programs for their commodity group, provincial delivery agents, and / or other groups or associations having a role in the OFFS program. The Guide itself has been designed to be as flexible and scalable as possible to assure it can be used by all Commodity groups for risks that are common to all, or unique to a particular group. In this respect, the scope of the areas of “risk” to be managed can be as broad (i.e. financial, strategic, process/operational, business environment) as needed by the user.



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Navigating through the Guide

Throughout the Guide, the page margins are used both as a navigational aid and to stress key concepts. Models are colour coded wherever possible, to assist the user in keeping track of where they are in the process. For example, the following is the colour legend used for core risk management action steps.

Planning	Risk Identification	Risk Assessment	Risk Treatment	Implementation	Monitor

Figure 1. Colour legend used throughout this Guide for the stages of the risk management process.



4. Risk Management Principles and Process

“The essence of risk management lies in maximizing the areas where we have some control over the outcome while minimizing the areas where we have absolutely no control over the outcome and the linkage between effect and cause is hidden from us.”

Peter L. Bernstein “Against the Gods” (1996)

Introduction

***Risk
Management...
creating the ability
to meet objectives
– no matter what.***

***Maintaining a
long-term
perspective***

Risk is all about uncertainty. The ability to effectively manage risk will improve the reliability of an organization being able to meet its broad objectives – no matter what.

However, managing risk is challenging in that decisions must be made about processes, activities and investments for potential outcomes that may never arise. In addition, changes over time, new processes, shifting responsibilities, and so on, can inherently create new sources of risk. Despite best efforts to manage and control risks, unforeseen events – sometimes out of the control of the organization – can occur without warning. Therefore, when developing risk management programs, it is important to maintain a long-term perspective to, wherever possible: anticipate potential threats and take action to reduce their likelihood of occurring; be continually vigilant to respond effectively to mitigate events that do occur; and maintain adequate response and financial recovery mechanisms to assure the long term viability of the organization.

This section is intended as a brief overview of risk management principles to provide the user with a baseline understanding and rationale of the processes and tools that are presented as part of this Guide.



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Risk Terminology

When a broad range of users adopt a general process there should be a common language and understanding of terminology. The following are definitions of some common terms used in this Guide.

Risk: There are numerous definitions of “Risk” with the following being contextually relevant to the purpose of this Guide:

“Risk” Definition #1... Risk = Likelihood x Impact (+ Perception)

This is the commonly accepted combination of the likelihood of an event occurring, and the impact if it does occur. The term “likelihood” is used, rather than terms such as “probability” or “frequency” as those terms tend to have a mathematical or statistical connotation. For the vast majority of OFFS risk issues there is no objective data to support projecting the probability of a particular event with any certainty or credibility. Similarly “impact” is used to describe the collective consequences of an event – those that are measurable in financial terms, as well as those that are more difficult to quantify, such as loss of reputation. Again, a term like “severity” is felt to have a more numerical connotation. This definition of risk also introduces the additional consideration of risk perception and the notion of “perception as reality”. There can be circumstances where the **perception** of a risk far overshadows the **actual** risk. This concept is particularly relevant to this Guide as society in general has a close personal stake in food safety and tends to be intolerant of any risk – real or perceived. This also reinforces the importance of planning risk communication to stakeholders so that the message is both delivered and received as intended.

“Risk” Definition #2... The threat of an event which adversely affects the organization’s ability to achieve its objectives.

This definition is felt to be particularly helpful in broadening the view of risk as being anything whatsoever that is unplanned, unwanted and prevents the organization to fulfill its objectives – whether they be strategic, financial, educational, and so on.

*Risk and
perception*



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Risk Management... *The process of systematically and comprehensively identifying risks, quantifying their impacts and implementing risk management strategies that reduce their likelihood and/or consequences of occurrence of critical risks.*

This definition purposefully includes some specific terms that reinforce many of the principles and processes that form this Guide:

Systematically - The approach should be a regular process, not a one-time event

Comprehensively - Risks should be considered on a broad basis including financial, process and operational, or a business environment risk.

Risks - Uncertainties where actual outcomes may differ from expected outcomes

Quantifying - Individual risks and their impacts should be measured to help establish treatment priorities and considered on a portfolio basis to understand and appreciate correlation's among risks.

Implementing - The organization should develop and execute strategies to avoid, mitigate and finance risks.

Strategies - Organizational strategies include mitigation of risks through process design, organization structure, communication, and contingency planning; financial strategies include design and placement of financial transactions including but not limited to structured finance, insurance, and other custom vehicles.

Critical - Not all risks are material – their importance depends on the relative potential impacts on the goals and objectives of the organization and its key stakeholders.

Risk Communication: *Any two-way communication between stakeholders about the existence, nature, form, severity or acceptability of risks.*

Risk Identification: *The process of determining, from a risk context, what can happen and why.*

Risk Scenario: *A defined sequence of events with associated impacts and basic causation factors.*



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Loss: *Any negative consequence – including injury or damage to health, property, the environment, or something else of value.*

Hazard (or threat): *A source of potential harm or a situation with a potential to cause a loss.*

Risk Assessment: *The overall process of using information to estimate the potential likelihood and impact of potential threats and evaluate them in terms of acceptability of risk.*

Risk Control: *Any measure that reduces the likelihood or impact of a risk.*

Risk Treatment: *The selection and implementation of appropriate options for dealing with risk.*

Monitor: *To check, supervise, observe critically, or record the progress of an activity, action or system on a regular basis in order to identify change.*



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Risk Management Process

The process suggested in this Guide is based on broadly accepted risk management models. The Guide is consistent with, for example, the processes outlined in CAN/CSA – Q850 – 97 “Risk Management: Guide for Decision-Makers” and CAN/CSA-Q634-M91 “Risk Analysis Requirements and Guidelines”– each of which were used as a reference for the development of the Guide.

The following is a simplified version of the model designed for the OFFS risk management process. In subsequent sections, a description of each phase of the process and how to implement it is addressed in detail.

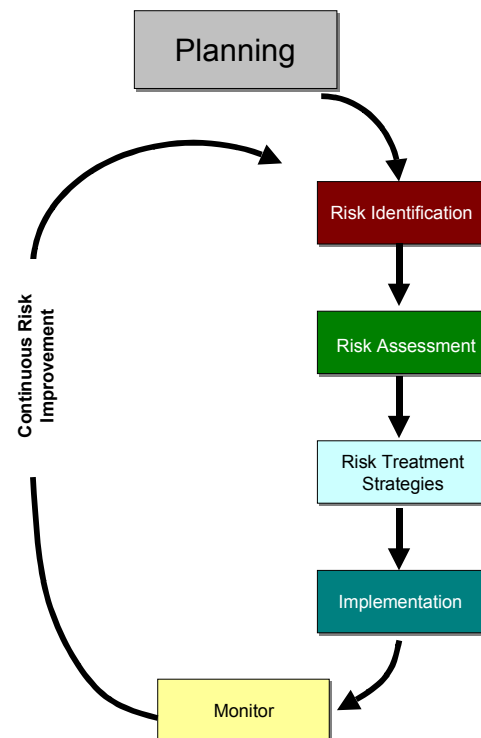


Figure 2. Risk Management Process



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Complex risks are not always easily and readily solved, and unwanted upsets or losses can be caused or exacerbated by anyone or anything related to the operation. Successful risk management demands an ongoing process, which should be both systematic and continuous. It begins with planning the risk management infrastructure and resources and continues through the identification and assessment of risks, their treatment and ongoing monitoring. The overall long-term goal is continuous risk improvement.



Risk Communication - Stakeholder Influences

For a process as far-reaching and involved as the development of national OFFS systems, it is vital to recognize the importance of effective collaboration and communication with stakeholders. As the following diagram illustrates, this should be done throughout all stages of the risk management process.

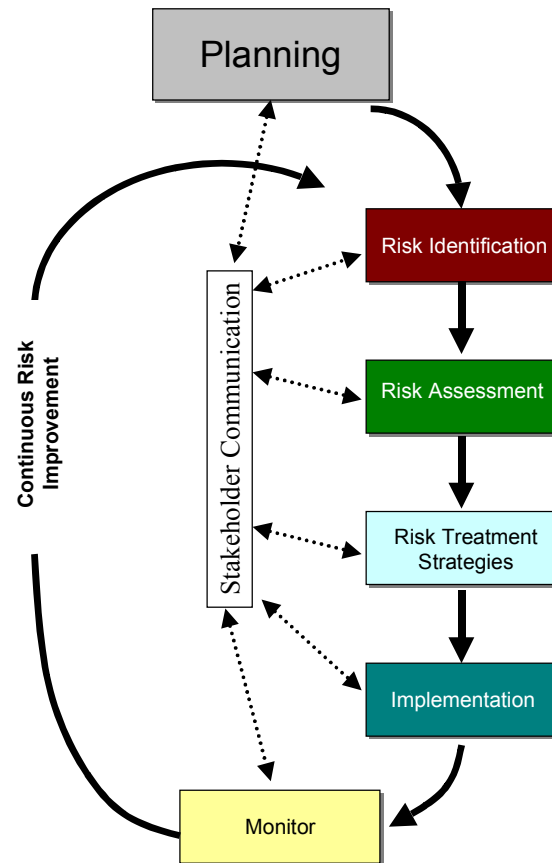


Figure 3. Risk Management Process, Stakeholder Communication



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In planning risk management processes, users are encouraged to identify and qualify key stakeholders. Risk management stakeholders are those who:

- Are, or sense themselves to be, affected by a risk, decision or activity.
- Are entitled to participate in the risk management decision process.
- Can influence the risk management process or the decisions made.

Well-planned risk communication strategies will assure the organization's important messages about risk are delivered and received, as intended, by the target stakeholders.

Continuous Improvement (Risk Treatment)

As an ongoing process, risk management requires continuous identification, evaluation and implementation of appropriate treatment strategies for important risks. The process also suggests that the key factors influencing risk, and risk management systems in place are continuously monitored. As a result, when implemented successfully, risk management serves as an important mechanism for continuous improvement. For organizations involved in the development and implementation of OFFS programs, this means risk management can enhance the quality and completeness of the program and improve the certainty of successful implementation.

Risk improvement is primarily achieved through effecting "risk treatments". As defined previously, risk treatment is the "*The selection and implementation of appropriate options for dealing with risk.*" There are various types of strategies to "treat" risks, including, for example:

- **Risk avoidance** by making a conscious decision to not be involved in a certain activity.



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- **Risk Control**, through **prevention** to reduce the likelihood of a potential event, or **reduction**, to mitigate the potential impacts if the event occurs. Typical risk control strategies include:
 - Policies, standards and procedures (A Producer Manual would be an example).
 - Training and awareness programs,
 - Auditing and other validation or monitoring processes.
 - Crisis management and business continuity plans
- **Duplication** of assets (e.g. backup of critical computer records, redundancy of approved suppliers)
- **Contractual risk transfer** of an activity or asset to shift / define legal or functional responsibility for risk.
- **Financial risk transfer** via insurance or other financial vehicle, through financial counterparties.
- **Risk financing** - funding for losses using structured financial planning tools, or **risk retention**, by evaluating and making a conscious decision to accept the consequences of a risk

Inevitably, for each risk, a combination of many of these strategies will be utilized.

Users must decide which potential risk treatment alternatives to move forward with, and in which order. However, the inherent difficulty of quantifying risk challenges conventional cost / benefit decision-making where returns on investment are typically easier and more precisely projected. Investments in risk management are made with the comfort that the organization is better protected, but without the complete assurance of a financial payback. In other words, questions like “how much money was saved by the unwanted incidents that did not occur?” may be of interest to discuss but challenging to translate in specific financial terms.



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The organization's risk philosophy will tend to be the main driver of investments in additional risk treatment. In reality the tone is set by a combination of the:

- Degree to which the Board and leadership is risk averse versus risk aggressive.
- Financial position of the organization.
- Realities of the business environment
- Perception of the risk, and
- The influence of key stakeholders.

From a more structured risk management perspective, decisions on risk treatment distil down to determining the greatest return of risk reduction that can be realistically achieved per unit of investment.



5. National OFFS Program - Risk Management Program Implementation

"The concept of risk and relative risk is a difficult and complex subject, and risk analysis is still evolving in Canada and at the international level. To be credible, risk analysis must be supported by a rigorous and systematic approach."

Canadian Food Inspection Agency, Report of the Auditor General, 2000

For the purposes of implementing a risk management process in support of the OFFS initiative, the activities around the risk management process model have been grouped into three phases:

Phase I: Planning

This initial phase sets the essential groundwork that assures the process will move forward in an organized, effective and sustainable manner. This involves:

- Identifying the team / resources required,
- Defining the responsibilities of those involved,
- Identifying the key stakeholders to be considered or consulted,
- Developing policies goals and objectives, and
- Establishing timetables for implementation.

Phase II: Risk Identification

The Guide provides tools to assist with conducting an initial risk identification process, considering the broadest spectrum of food safety related risks possible. This “screening”, typically conducted as a group exercise, will help develop an initial indication of the most significant potential food-safety related threats to the commodity group.



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Phase III: Risk Assessment, Treatment Strategies, Implementation and Monitoring

The final phase is an ongoing process of in-depth analysis of the identified critical risk scenarios (a “Risk Analysis Worksheet” tool has been provided to assist), developing strategies to deal with them, managing the implementation, and monitoring the continuously evolving risk environment.

Figure 4 illustrates the phasing of the process with additional details and guidance provided in the subsequent pages.

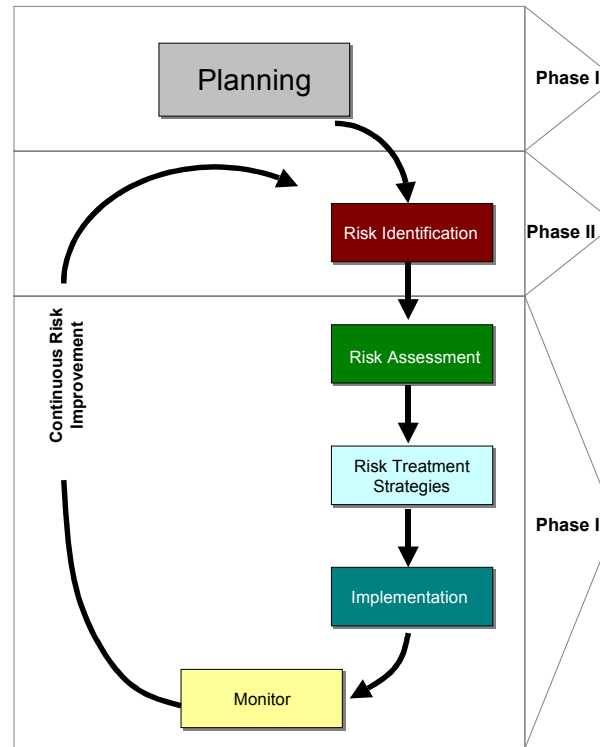


Figure 4. OFFS Risk Management Model - Phases for Implementation



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Planning (Phase I)

Authority and responsibilities

A risk management program can affect overall policy and strategy and requires a long term and sustained commitment. Therefore, involvement, commitment and authority from the organizations' Board and senior executive is essential. Pragmatically, they must assure the operational functions responsible for the design and implementation of the risk management programs are provided with sufficient resources to discharge these important responsibilities.

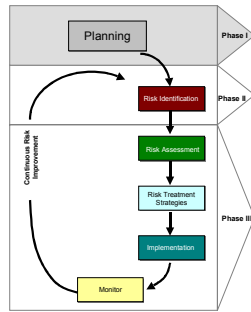
While each user organization may designate one person specifically to coordinate the risk management program, using a team approach can significantly enhance the overall quality and rigor of the process. Stakeholders and technical specialists (for example personnel from production, technical, marketing, regulatory and legal, economics and finance, and so on) should be involved to provide expertise and more "rounded" perspectives. A designated core team, with backups identified, will help maintain continuity through the process. A facilitator should manage the project, focus resources, and maintain a timetable to assure required remedial actions are implemented.

An effective way to define and communicate responsibility and authority is by issuing a **Risk Management Policy Statement**. This can include, for example:

- The organization's philosophy towards risk and the importance of risk management to broader mandates, objectives and strategies.
- The overall objectives and commitment to risk management of the organization.
- Specific goals and targets to achieve.
- Responsibilities for risk management

Establishing a "game plan"

The risk management process for many commodity groups could produce a significant task list over an extended time period and involve a wide network of people and organizations required for consultation and information sharing. Effective planning and project management will help to keep the process on track.





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In planning the implementation of a risk management process, users should establish timetables and assign responsibilities that are commensurate with the overall risk management objectives and resources available. A “task list” at the end of this section can serve as a summary checklist for the core activities to be established.

Developing Risk Management Goals and Objectives

Risk management goals and objectives should be established to provide a direction and grounding for the program and help drive improvement. The following are some representative examples of risk management objectives a commodity group should establish:

- Put in place an effective, robust and sustainable risk management process in conjunction with the development of the OFFS program.
- Assure all potential material threats are identified and documented.
- Continuously improve practices to measurably reduce risk.
- Develop and maintain crisis / business resumption plans to assure the organization can effectively respond to and mitigate the impact of any significant unwanted event.
- Enhance stakeholder confidence in the safety of the industry, by including key stakeholders in a consultative process and implementing effective risk communication strategies.
- Develop financial protection strategies that assure the entity’s viability is not threatened by any food safety related losses.

Goals and objectives should be specific, realistic and achievable, with timelines and measurable targets established wherever feasible.

*Recommended
risk management
goals and
objectives.*



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Stakeholders – part of the “extended” risk management team

Risk Management Stakeholders

The user should develop a stakeholder profile, from a risk context, to assure stakeholder needs, concerns and issues are appropriately considered in the risk management process. This profile will help to identify both those groups who would benefit from information on the organizations’ risks and risk management initiatives, as well as those who would be of value to consult on risk issues, as part of the “extended” risk management team. This qualification of stakeholders could, consider, for example, persons or entities that:

- Have a vested financial or other tangible interest.
- Require a high level of awareness of the industry’s pertinent risk issues.
- Require ongoing reporting for compliance or corporate governance purposes.
- Can affect the risk management decisions made.
- Can influence public opinion.

Effective involvement of stakeholders will improve the quality of the risk management process. Figure 5 is a representative list of stakeholders to be considered, but each user should develop a complete list specific to their commodity group. A structured approach, as illustrated in Table 1, can assure each stakeholders required role in the organization’s risk management program is carefully considered and planned.



Representative Risk Management Stakeholders

- Individuals inside the organization, such as employees, management, senior management, and volunteers
- Producers
- Customers (processors, distributors, etc.)
- Delivery Agents (national, provincial, multi-commodity)
- Business or commercial counterparties
- Employee / Trade / Union groups
- Financial institutions
- Insurance organizations
- Government officials / Regulators, including:
 - Departments of Agriculture
 - Canadian Food Inspection Agency
 - Health Canada
 - Provincial & Regional Health Authorities
- Elected officials (at all levels of government) who may have an electoral or portfolio interest
- Non-government organizations such as environmental groups and public interest groups
- Consumers
- Suppliers, service providers and contractors
- Media, both as potential stakeholders and conduits of information to other stakeholders
- Other individuals or groups who are “interested parties”
- Local communities

Figure 5. Sample List of Stakeholders in Risk Management



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National On-Farm Food Safety Program – Stakeholder Review

Stakeholder Review and Qualification (sample)		
Stakeholder	Risk Relationship	Involvement Required
CFIA	<ul style="list-style-type: none"> Regulatory Lead agency, official recognition of on-farm food safety programs Technical expertise via CFIA internal specialists. 	High degree of consultation throughout; Report / advise at key milestones.
Lenders	<ul style="list-style-type: none"> XYZ Bank is prime lender to approximately 40% of producers in sector. Catastrophic loss affecting trade would impact credit position to lenders to sector. 	Advise on initiatives and key milestones. Potential role in long term risk financing solutions.
Producers	<ul style="list-style-type: none"> Prime constituent base 	High degree of involvement throughout.
Etc.	Etc.	
Etc.		

Table 1. Suggested Approach to Cataloguing and Qualifying Stakeholders

Over time, the mix and respective influence of a given stakeholder on risk management decision-making may change; hence stakeholder evaluation should be an ongoing process.



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Record Keeping & Documentation

Record keeping is important - regardless of the specific activities undertaken as part of the risk management process- to provide evidence that the process has been systematic and effective. Systems should be in place to assure key decisions; their rationale and supporting activities are documented. Many of the tools provided as part of this Guide were designed to support the documentation of the risk management program, facilitate continuing monitoring and review, and to provide future reference.

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
BUSINESS ENVIRONMENT RISKS		
Competitor	Competitors entering the Canadian marketplace, with less stringent controls on food safety than an accredited OFFS participant, potentially gain competitive (cost) advantage.	
	Competitor that is unaccredited or has lower quality of safety programs increases overall food safety risk to commodity.	
Customer Expectation	OFFS system does not keep up with customer demands for demonstrative standard of food safety.	
Technology Innovation	Breach or failure of critical technology	
	Scientific innovation introduced to man drugs, Genetically Modified Food	
	Technological changes (e.g. commodity safety risks).	
BUSINESS ENVIRONMENT RISKS		

MARSH
COFFS Risk Scenario Register.doc

National On-Farm Food Safety Program – Stakeholder Review

Stakeholder Review and Qualification (sample)		
Stakeholder	Risk Relationship	Involvement Required
CFIA	<ul style="list-style-type: none"> Regulatory Lead agency, official recognition of on-farm food safety programs Technical expertise via CFIA 	High degree of consultation throughout; Report / advise at key milestones.
		Advise on initiatives and key milestones. Potential role in long term risk financing solutions.
		High degree of involvement throughout.

On Farm Food Safety - Risk Analysis Worksheet

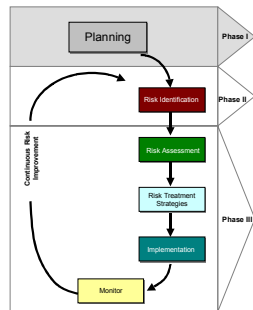
#	RISK SCENARIO (THREAT/EVENT)					Risk Ranking			By When	Status
	Cause(s)	Potential Consequences	Controls In Place	Risk Improvement Opportunities	Improvement Priority	Likelihood	Impact	Resulting Risk		
						Task	Resp	Cons		
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										

Scenario completion date: _____ Revised Risk Ranking & Criticality Date: _____ Comment: _____

Figure 6. Examples of Risk Management Documentation



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Phase I - Task Summary

Overall: The strategic organizational and risk management context has been established for the implementation of the process.

At the end of this phase, the following should be in place to set the groundwork for future activities:

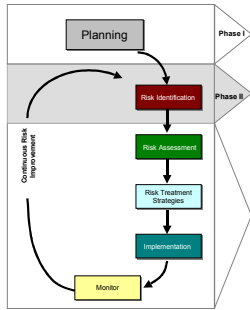
- ✓ Board / senior management endorsement obtained
- ✓ A policy statement has been developed and communicated
- ✓ A facilitator / coordinator has been selected to oversee the risk management process, and coordinate resources
- ✓ A multidiscipline group is formed as the overall project team. A list of technical specialists is available
- ✓ A list of key stakeholders, and their required involvement has been developed
- ✓ Specific goals and objectives have been established and communicated
- ✓ A means of record keeping has been established
- ✓ A timetable has been established for the risk management team to meet for a structured risk identification process (Phase 2)



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Risk Identification (Phase II)

A risk cannot be effectively managed until it is identified; therefore risk identification is arguably the most important stage of the risk management process.

Risk identification can be done via many structured methodologies, including a team-oriented brainstorming process, research or soliciting input from recognized experts, drawing from past experiences (including examining loss information) and even through personal observation.

Using the following “Four Quadrants of Risk” approach and the Risk Scenario Register (*Addendum A*) will assist in completing this phase. This advocates a multi-disciplined team approach.

The “Four Quadrants of Risk”

Risk can be viewed based on the source of risk, which can be divided into four quadrants: financial, process and operational, or a business environment risk (as shown below).



This Guide is designed to be broadly applicable to any type or category of on farm food safety risk deemed relevant by the user. This “four quadrant” model is used as a general basis for the initial risk identification process outlined in this phase. In practice, each risk category will tend to have specific tools, analytical processes and solution types that are more risk-specific.

Figure 7. Four Quadrants of Risk



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The following process is the suggested approach to identify and prioritize potential risks. This process should be used in conjunction with the “Risk Scenario Register”.

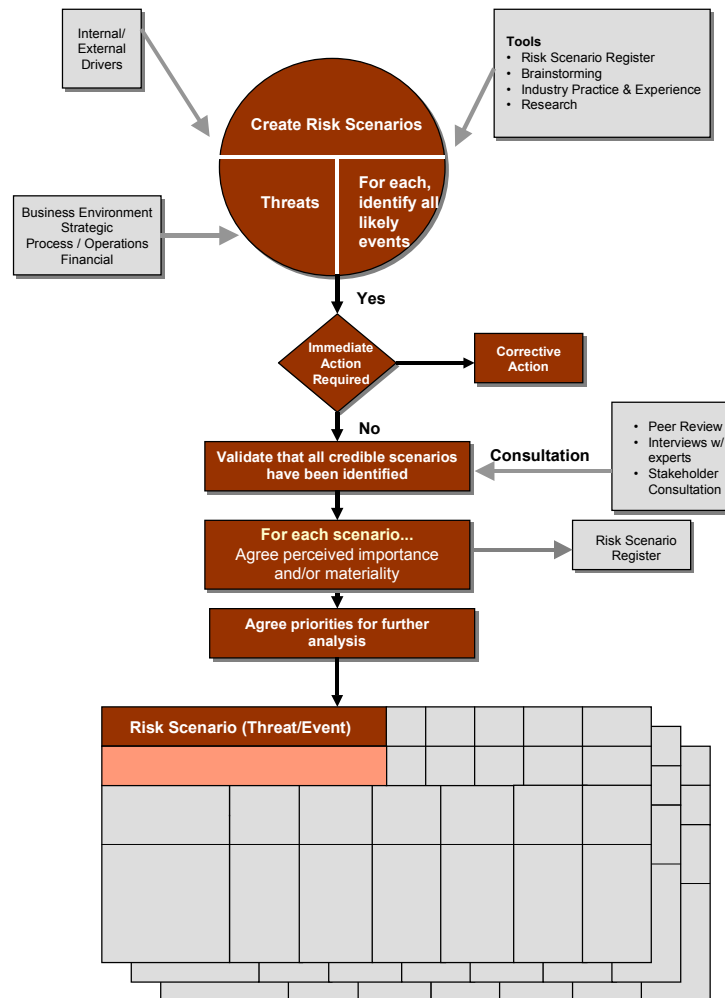


Figure 8. Risk Identification Process Flowsheet



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Frequently risks are expressed in terms of “scenarios”. Scenarios can be a helpful way of describing and communicating a specific risk, enabling the source of the risk and the risk itself to be captioned.

The initial risk identification process should consider, as systematically and comprehensively as possible, the potential on-farm food safety related threats or scenarios that are relevant to the commodity group. The “Risk Scenario Register” in *Addendum A* will assist by enabling the user to draw from an inventory of sample scenarios, and round out this by generating additional scenarios that are specific to their industry and commodity group.

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
BUSINESS ENVIRONMENT RISKS		
Competitor	Competitors entering the Canadian marketplace, with less stringent controls on food safety than an accredited OFPS participant, potentially gain competitive (cost) advantage.	
	Competitor that is unaccredited or has lower quality of safety programs increases overall food safety risk to commodity.	
Customer Expectation	OFPS system does not keep up with customer demands for demonstrative standard of food safety.	
Technology Innovation	Breach or failure of critical technology and information systems.	
	Scientific innovation introduced to market subsequently determined not to be safe (e.g. new drugs, Genetically Modified Food)	
	Technological changes (e.g. commodity production, monitoring systems) introduces new food safety risks.	
BUSINESS ENVIRONMENT RISKS		

MARSH
OFPS Risk Scenario Register.doc

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Figure 9. Risk Scenario Register

The scenarios created in the Risk Scenario Register are organized consistent with the structure of the “Four Quadrant” model.



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Validate that all credible scenarios have been identified

For each scenario... Agree perceived importance and/or materiality

While this list, may at first seem onerous, from a governance perspective, it is preferable that the broadest range of risks possible be at least considered, rather than not considering, or immediately discounting a potentially serious threat.

The Risk Scenario Register in *Addendum A* also includes a provision to preliminarily rate the appropriate perceived importance or materiality of each scenario. Figure 10 below suggests some typical considerations for the user to consider in categorizing each scenario according to its importance / materiality.

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>TERRAT AND SYRIS (FOR TO...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
BUSINESS ENVIRONMENT RISKS		
Competition	Competitor entering the Canadian marketplace, with less stringent controls on food safety than an accredited OFPS participant, potentially gain competitive cost advantages. Competitor that is unaccredited or has lower quality of safety programs increases overall food safety risk to consumers.	
Customer Expectations	OFPS system does not keep up with customer demands for demonstrate standard of food safety.	
Technology Innovation	Breaks or failures of critical technology and information systems. Scientific innovation introduced to market subsequently determined not to be safe (e.g. new drug, Genetically Modified Food). Technological changes (e.g. continuous production, monitoring systems) introduce new food safety risks.	
BUSINESS ENVIRONMENT RISKS		

MARSH
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Perceived Importance / Materiality	Typical Considerations
"HIGH"	National/International level ramifications; Serious impacts on stakeholder relationships; Integrity of food supply seriously affected; Issues typically requiring high level of continuous vigilance and control; Incident would invoke crisis response procedures; Imminent / high likelihood threat potential.
"MEDIUM"	Primarily Provincial or Regional level issue; Serious concern to some key stakeholders; Integrity of food supply in question; Moderate likelihood of threat potential, or higher likelihood of less material threats.
"LOW"	Local level issue; Affects primarily a single Producer; Broader confidence in food supply not questioned; Potentially high frequency, but low impact incidents.

Figure 10. Risk Scenarios – Assigning Importance and / or Materiality



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The effectiveness and quality of risk identification process are significantly enhanced in a team setting. Having a team of multi-disciplined individuals from within the organization, can stimulate thinking on a broader basis, hence improve the overall completeness and quality of the scenarios listed. Teams may also benefit from using a facilitator to help assure the process is objective and complete.

Agree priorities for further
analysis



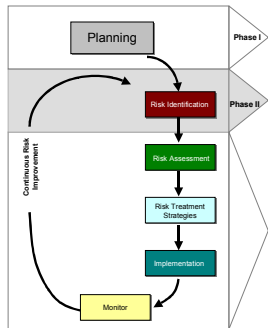
Once these risk scenarios have been identified and initial priorities set, those deemed as most material can be evaluated and analyzed in detail (see risk assessment - next section).

During this initial identification process, if an item or risk issue warrants immediate action (e.g. a serious non-compliance, imminent hazard, etc.), appropriate measures should be implemented as soon as practical.

In subsequent stages, more detailed analysis will “drill down” to better understand critical risks and develop strategies for risk improvement.



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Phase 2 Task Summary

Overall: This phase initially identifies the broad spectrum of risks faced by the organization.

Key tool - Risk Scenario Register

At the end of this Phase the following should be completed:

- ✓ Stakeholder qualification has been conducted and refined through dialogue
- ✓ A multi-disciplinary group has met and established and documented all risk scenarios for the commodity group (using the Risk Scenario Register). Technical specialists and key stakeholders provided input.
- ✓ Corrective actions have been assigned for any risks / issues that are of immediate concern
- ✓ Risks judged to have the highest materiality are prioritized for further assessment, risk treatment and implementation in the next phase
- ✓ A timeline for Phase 3 is established



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Identify Potential Causes

Causes of Potential Losses

For each risk scenario developed, the potential underlying causes should be identified. A particular risk scenario can result from a number of causes (for example, gaps in the program caused by inefficiency or delay in implementation, lack of training, insufficient resources, and so on). Measures to reduce risk are typically aligned as cause-specific; therefore, all possible potential loss sources should be identified to assure broad, integrated risk treatment strategies are subsequently developed.

Describe Potential Consequences

Consequences of Potential Losses

Describing the consequences of each scenario is also helpful to assure the full range of risk treatments are considered and subsequently developed. This is particularly important for post-loss mitigation strategies such as crisis and contingency plans, and risk financing programs.

The range of consequences for each scenario can be described in terms of, for example:

- The extent to which a particular event could impact overall safety of the food supply.
- The potential for illnesses or death to occur.
- How stakeholder relationships could be negatively impacted.
- The resulting financial loss (to the industry, trade, producers, national and provincial associations, etc.).
- Environmental consequences.
- Community impacts.
- Erosion of reputation, and product safety goodwill.

Identify Controls in Place

Controls in Place

The existing control mechanisms that are in place and designed to prevent, monitor or respond to the risk should be identified and catalogued. These controls could be administrative / financial, physical or procedural in nature. See Table 4 page 46.



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The next section of the Guide addresses the concept of having a complete “system” of controls and how to develop action plans for additional risk reduction measures that may be needed. However, when evaluating the existing controls, potential gaps in current systems should be noted for subsequent further improvement. A “gap” could mean there is simply no control in place, or that existing controls fall short of fully addressing the potential risk. For example, do the controls address the full range of potential causes? Are they reliable and expected to fully perform as intended? Are responsibilities for the controls fully assigned and understood? Scrutinizing and challenging current controls can often lead to incremental, but important, improvements that should be included in remedial action plans.

Risk Quantification – Ranking Using A Deductive Empirical Approach

Assign Risk Ranking	
Likelihood	Impact

As suggested in the introduction to this section, measuring risk is inherently difficult, and in the absence of objective data a subjective, more deductive approach, with the aid of empirical measurement criteria, is proposed. For both likelihood and impact parameters, a “5 point” qualitative scale is suggested with “5” representing a relatively high likelihood / impact and “1” being relatively low. The scales should be based on a consistent set of criteria, established by the user, with each given a numerical value. The number allocated to each description does not have to bear an accurate relationship to the actual magnitude of consequences or likelihood. The objective is to consistently rank risks to establish priorities rather than suggest absolute values for risk (as is attempted in true quantitative analysis).

Given that risk is the combination of the likelihood of an unwanted event occurring and its resulting impacts, in trying to “measure” the potential risk a scenario represents, it is helpful to consider each of these two parameters individually. The following outlines the recommended approach.

Likelihood Criteria

The “likelihood” of a particular event occurring is particularly challenging to quantify. It is logical; however, to assume the likelihood of a loss occurring correlates closely to the inherent hazard or threat that is, or may be present, and the quality of the controls in place (or the ability to exert control over the hazard). As hazards are introduced, the likelihood a loss occurring will increase. If controls intended / needed to address the hazard are inadequate, it also follows the likelihood of a loss will occur. This relationship is illustrated in Figure 13 as follows.



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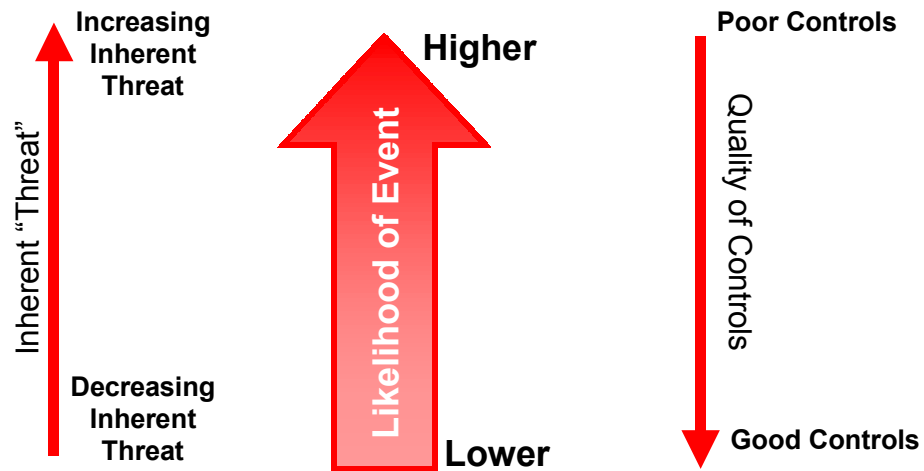


Figure 13. Likelihood – The Link with Threats and Controls



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Based on this concept, the following is a suggested framework that can be used to develop criteria to rank the relative likelihood of each risk scenario:

A set of criteria that define the relative likelihood of each scenario should be developed and used consistently

LIKELIHOOD	DESCRIPTION	CONSIDER
5. "Frequent"	High frequency of loss likely (assume the event has a high likelihood occurring within current planning horizon.)	Degree of inherent threat.
4. "Probable"	Moderate to high frequency.	The extent to which factors that could cause or contribute to a loss are present (i.e. not present, present on an intermittent basis, always present).
3. "Occasional"	Moderate frequency of occurring within current planning horizon.	The importance that controls are in place and effective.
2. "Remote"	Low to moderate frequency	How complete and robust the existing control systems (administrative / financial, procedural, physical) are.
1. "Improbable"	Low to very low frequency (assume the event is unlikely to ever occur).	

Table 2. Suggested Framework for Developing "Likelihood" Criteria.

Again, this approach is a suggested guideline and some users may determine that more (e.g. 10) or fewer (e.g. 3) categories better suit their needs. Regardless of the number of categories used, definitions for likelihood should be developed as a standard frame of reference for all involved in the commodity group's risk management process, and be used consistently throughout the risk assessment stage.



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Impact Criteria

As with “likelihood”, users are encouraged to develop a standard set of criteria by which to define degrees of impact for each scenario to be evaluated. A series of definitions, each assigned a ranking number, should be established to measure the relative impacts of the various potential risk scenarios. Again, a scale of “1 to 5” is suggested.

In developing the criteria it is important to consider the broad range of potential impacts that could result from a given scenario. For example, a very serious food safety event could result in:

- Illness (or in a worst case death) to multiple consumers
- Litigation by those directly affected
- Direct and immediate financial impacts as products are recalled
- Trade impacts, pending satisfactory resolution
- Significant negative media attention on a national / international scale
- Lost public confidence in the safety of the commodity, and so on.

Table 3 illustrates a framework for how users would develop definitions to describe the various levels of impacts each scenario could be rated against.

A set of criteria that define the relative impact of each scenario should be developed and used consistently



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IMPACT SCALE	DESCRIPTION	CONSIDER (IMPACT ON)
5. Catastrophic	National/International level ramifications; Serious impacts on stakeholder relationships; Integrity of food supply seriously affected; Issues typically requiring high level of continuous vigilance and control; Incident would invoke crisis response procedures	Integrity of the food supply
4. Very Serious		Number of illnesses, deaths
3. Serious	Primarily Provincial or Regional level issue; Serious concern to some key stakeholders; Integrity of food supply in question.	Stakeholder relations
2. Minor		Financial loss
1. Light		Environmental consequences
		Community impact
		Reputation
	Local level issue; Affects primarily a single Producer; Broader confidence in food supply not questioned.	

Table 3. Suggested Framework for Developing “Impact” Criteria.

The use of these empirical scales enables those involved in making decisions about risk to prioritize the extent of further analysis and decisions about risk improvements, based upon the relative materiality of each scenario.



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Risk "Mapping"

Risk mapping is a simple graphical technique that users of this guide may find effective in communicating the collective set of risk scenarios that have been considered. Once risks have been ranked using the likelihood and impact scales developed, they can be represented pictorially on a "map" or grid as shown below (note: each circled number represents one scenario).

Using risk maps to graphically represent the relative ranking of risk scenarios

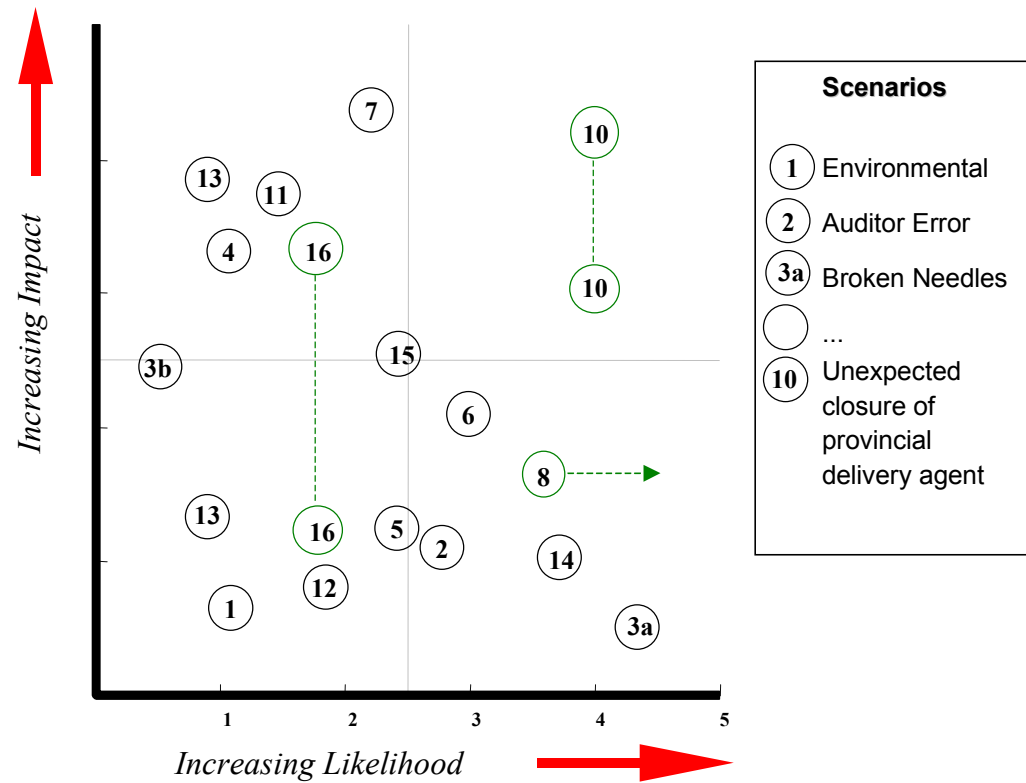


Figure 14. Typical Risk Map



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The resulting risk rankings are plotted on the grid using likelihood and impact as coordinates as illustrated on figure 14. Risk mapping can be an effective tool in presenting and communicating the findings of risk assessment work. Risk maps enable all of the organization's risk scenarios to be illustrated, relative to each other, on a single exhibit, with clear delineation of importance (i.e., the most significant risks being those rated as being high likelihood / high impact).

Assign Criticality

Risk "Tolerance"

In ranking the relative materiality of risk scenarios, at some point decisions need to be made as to what delineates a risk as being "acceptable" versus "unacceptable".

Stratifying the risk scenarios supports decision-making by helping focus subsequent efforts and resources on the most significant risk issues. As illustrated below, depending upon their relative rankings, risk scenarios could be categorized as (for example) "critical", "important", and "consider". Each user organization must determine the relative "shape" of these bands, hence the relative importance of each scenario. For example, in figure 15a an organization may have a bias towards high impact scenarios in judging criticality. In this case, risk scenarios that represent very serious impact potential can still be deemed "critical", regardless of low likelihood - even with good control systems in place.

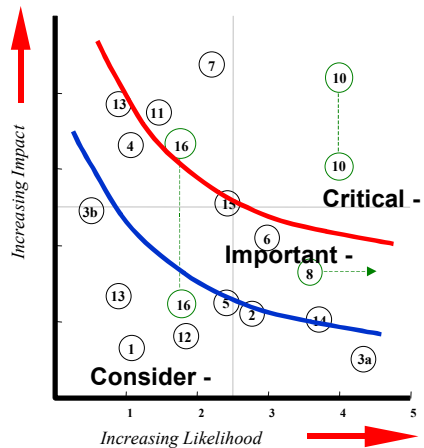


Fig. 15a - "Impact" Criteria Bias

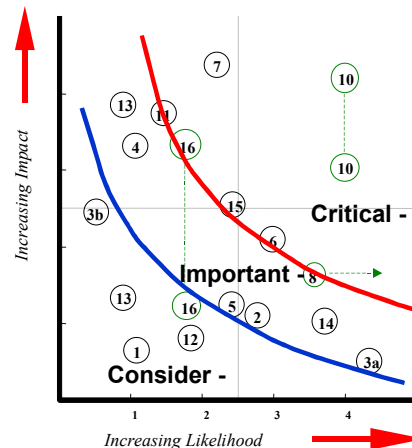


Fig. 15b - Balanced

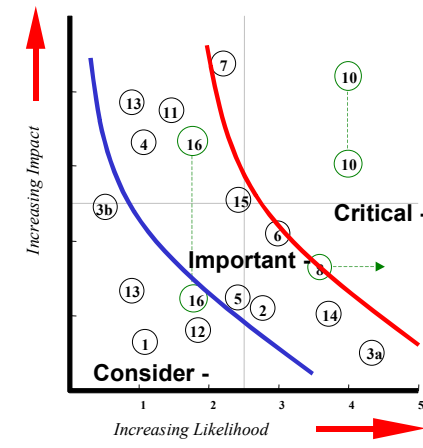
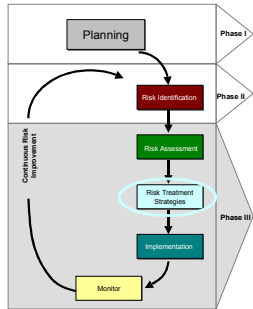


Fig. 15c - Likelihood Bias

Figure 15. Examples of Categorizing Risk Scenario Criticality



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Risk Treatment Strategies

Once risks have been quantified and prioritized, the appropriate treatment strategies need to be determined, using the process suggested in the following visual:

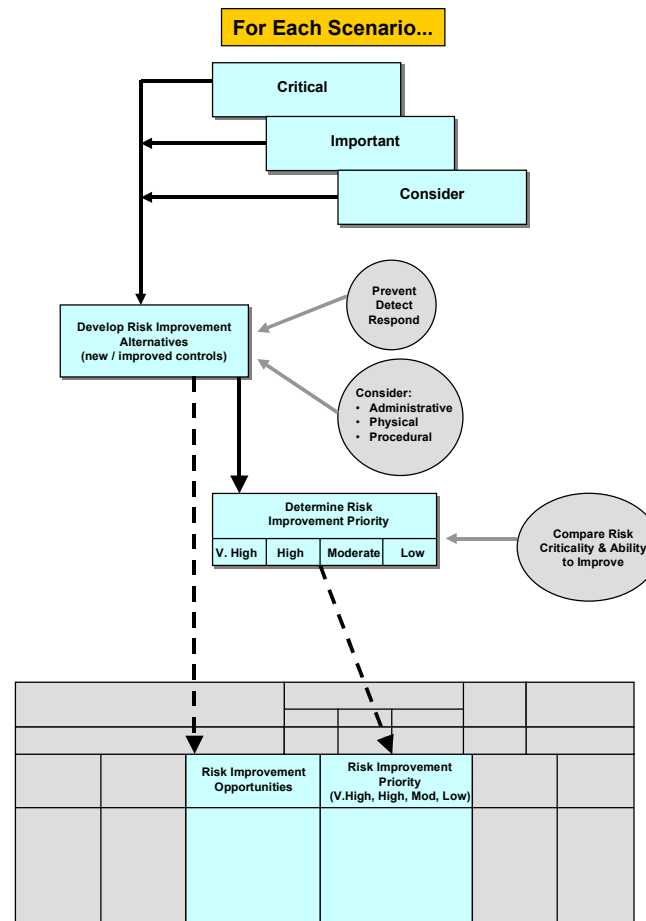


Figure 16. Process to Develop Risk Treatment Strategies



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Risk Mitigation & Control – A “Systems” Approach.

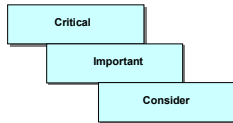
As risk scenarios are ranked and the systems needed to effectively manage the risks are identified, the team will begin to develop a list of risk treatment alternatives to be considered. This should start with “critical” scenarios then move to those that are “important” and eventually to “consider”.

On-farm food safety risk issues can be complex, challenging to control, and represent a very significant loss potential. Even a minor breakdown or lapse in procedures can result in a significant unwanted incident. As a result, it’s important that an effective “system” of risk controls be in place that:

- First and foremost, work to prevent a potential loss
- Assure awareness mechanisms are in place to detect and alert on the emergence of the incident, and
- When losses happen, adequate response mechanisms will effectively contain and mitigate losses to the extent possible.

Control measures can be categorized as either administrative / financial, physical and operational in nature.

Administrative controls include practices, standards and procedures along with adequate allocation of resources and delegation of responsibility for implementation. Physical controls include design features of facilities and equipment and other devices to reduce the frequency and severity of losses. Operational controls include procedures, training and validation processes. Table 4 illustrates this “systems” approach by listing some representative types of risk management controls in a simple matrix. This type of matrix can be very helpful in verifying that the full range of required controls are in place and effective. Where significant gaps are identified, they should be noted as opportunities for remedial action.



Develop Risk Improvement
Alternatives
(new / improved controls)



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	Prevention	Detection / Awareness	Response
Financial/Administrative	<ul style="list-style-type: none"> • Policies • Contractual agreements • Program funding 	<ul style="list-style-type: none"> • Audits and other proactive validation. 	<ul style="list-style-type: none"> • Financial transfer and risk treatment. • Insurance policies • Contractual agreements
Physical	<ul style="list-style-type: none"> • Facilities constructed to appropriate standards 	<ul style="list-style-type: none"> • Technological monitoring equipment. 	<ul style="list-style-type: none"> • Facility design and construction.
Operational	<ul style="list-style-type: none"> • HACCP – based procedures. • Communiqués and Newsletters • Inoculation • Preventive maintenance 	<ul style="list-style-type: none"> • Testing and sampling 	<ul style="list-style-type: none"> • Crisis management plans

Table 4. Representative Risk Treatment Mechanisms

Establishing Priorities for Risk Improvement

As outlined in Section 4 – Risk Management Process, establishing priorities for improvement via additional risk treatment is challenging and will be driven in part by the organization’s risk philosophy. Day to day, however, logical and defensible decisions on risk management initiatives need to be made to seek the greatest return of risk improvement that can be realistically achieved for the investments (both time and financial).

As noted, in ranking the risk scenarios, they should be tiered based on their criticality (i.e. “critical”, “important”, and “consider”). This type of classification can provide important direction for risk treatment decision making. Table 5 outlines a simple model to assist the user in establishing priorities for risk treatment. This model considers the degree of improvement achieved by the specific treatment, and the ability to implement the improvement. “Ability to implement” is subjective, and the user should factor in costs, complexity, timeframes, etc. to decide if the improvement is relatively

Determine Risk Improvement Priority			
V. High	High	Moderate	Low



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“Difficult”, “Moderate”, or “Easy” to implement. Using this relationship, Table 5 provides direction for establishing priorities for individual improvement measures, from “Very Low” to “Very High”.

(Resulting) DEGREE OF RISK IMPROVEMENT		ABILITY TO IMPLEMENT THE IMPROVEMENT		
From	To	Difficult	Moderate	Easy
Critical	<i>"Consider"</i>	Medium	High	Very High
	<i>"Important"</i>	Medium	Medium	Very High
	<i>"Critical"</i>	Low	Medium	High
Important	<i>"Consider"</i>	Medium	Medium	High
	<i>"Important"</i>	Low	Low	Medium
Consider	<i>"Consider"</i>	Very Low	Low	Medium

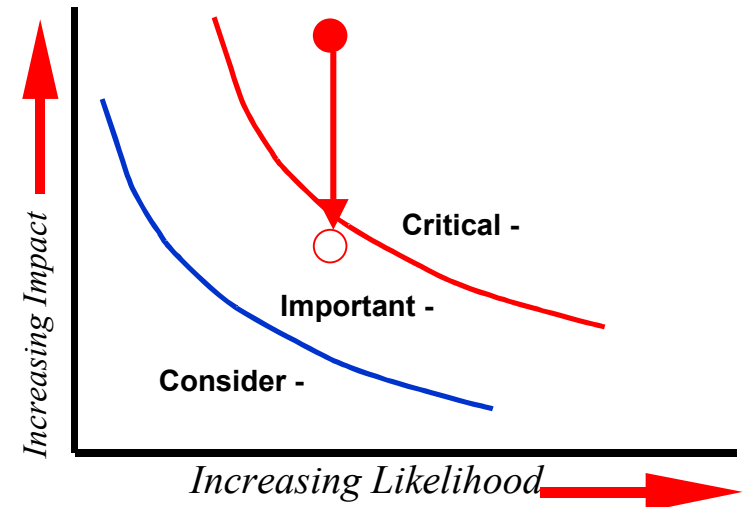
Table 5. Establishing Risk Improvement Priorities



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Example of Using the Model in Table 5

A particular risk scenario was ranked as Impact = “5”, and Likelihood = “3” and deemed by the team to be a “Critical” risk. The team felt expanding the organizations crisis management capabilities would significantly improve the response and incident mitigation at an early stage. With a more effective crisis plan, and trained people in place, the team felt the resulting Impact ranking would improve to “3”, shifting the risk from “Critical” to “Important”. While improving the crisis plan would take time and add to the responsibilities of some key individuals, incremental costs would not be high. In addition, the team felt strongly the improved crisis response capabilities would have broader collateral benefits hence should be done regardless. They judged the ability to implement to be “Easy”. The result, using Table 5, was this was tabled as a “Very High” priority.



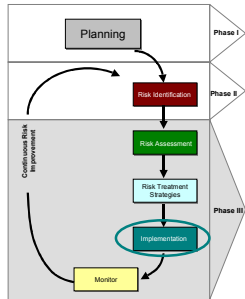
(Resulting) DEGREE OF RISK IMPROVEMENT		ABILITY TO IMPLEMENT THE IMPROVEMENT		
From	To	Difficult	Moderate	Easy
Critical	"Consider"	Medium	High	Very High
	"Important"	Medium	High	Very High
Important	"Critical"	Low	Medium	High
	"Consider"	Medium	Medium	High
	"Important"	Low	Low	Medium
Consider	"Consider"	Very Low	Low	Medium



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Implementation – Effecting Change

The following is a suggested process to facilitate the planning and execution of the risk improvements to be made:

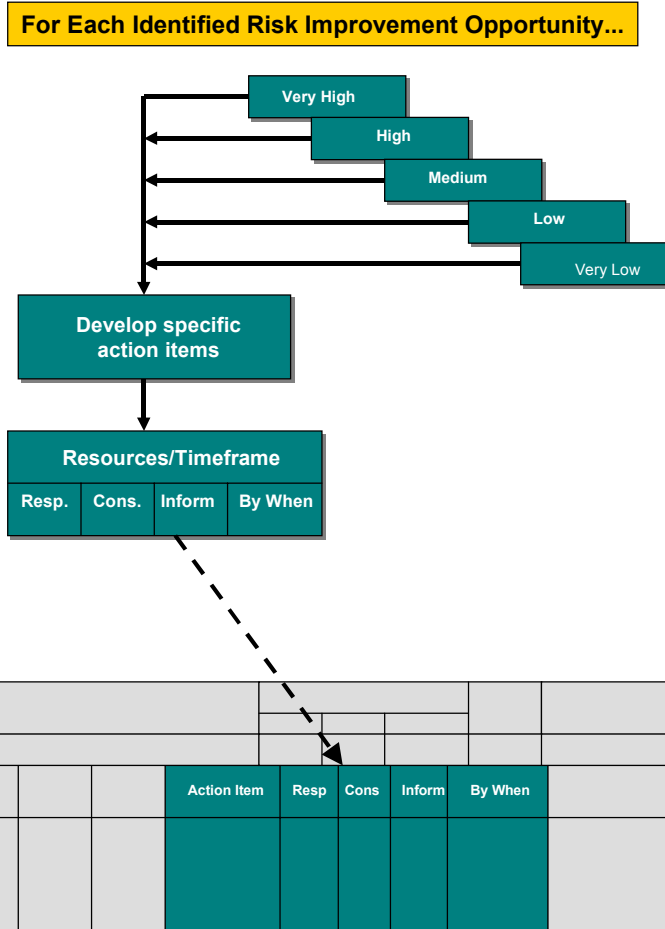


Figure 17. Planning and Implementing Risk Improvements Flowsheet



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Develop specific action items



Resources/Timeframe			
Resp.	Cons.	Inform	By When

When developing and implementing risk improvement action plans, it is logical to prioritize by those ranked as “Very High”, and progress through “High”, “Medium, and so on. A disciplined project management approach assures for each identified risk treatment, a series of practical and effective tasks to complete are identified, prioritized and responsibilities and timelines for each are laid out. Provisions to catalogue this process are included in the Risk Analysis Worksheet template.

In addition to the person(s) specifically assigned for completion of the task, consideration should also be given as to the additional expertise or resources to be consulted in completing each task, and also to which stakeholders should be informed of certain aspects during the process. Documenting the following elements of the action plan will help ensure appropriate responsibilities are delineated and an achievable timeframe is set:

Responsibility - The individual assigned to oversee the action plan, and ensure its completion.

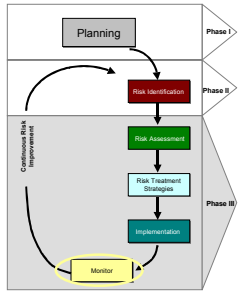
Consulting - Those stakeholders that should be consulted, or their input is needed, prior to or during implementation of the action plan.

Informing - Those individuals (internally or externally) that need to be informed of the developments.

By When - The timeframe or required date of completion of the action item.



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Monitoring & Reporting

The following is a suggested process to facilitate the monitoring of the risk improvement process as well as the risk environment on an ongoing basis.

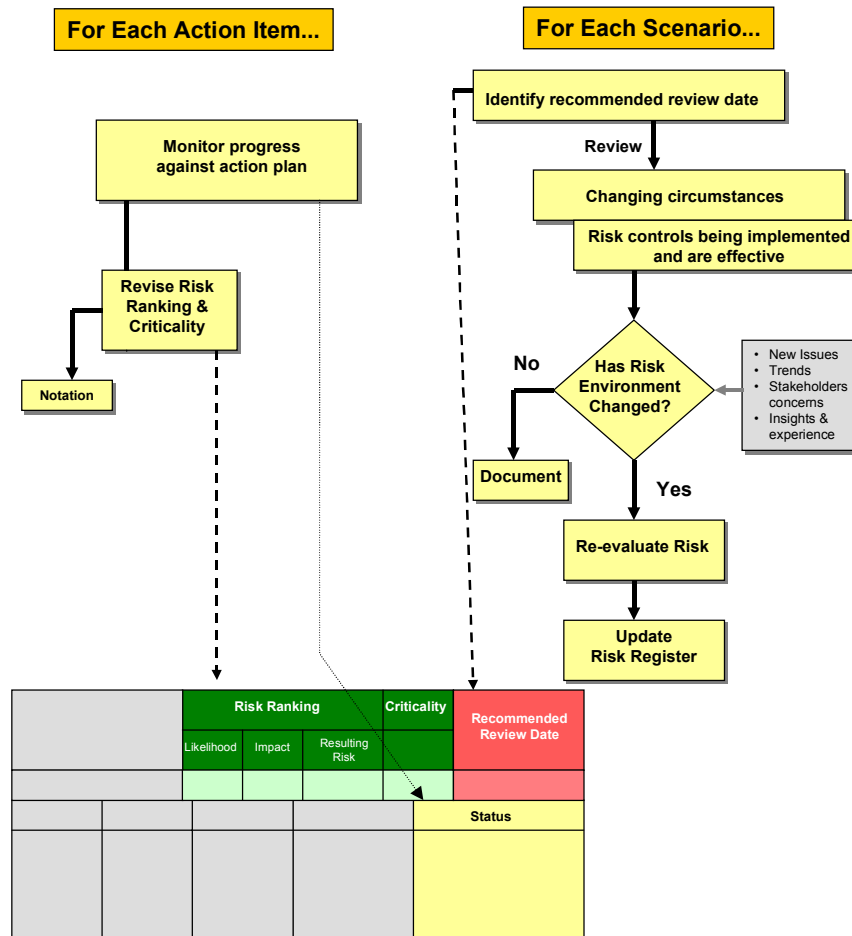


Figure 18 – Monitoring & Reporting



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Monitor progress
against action plan

Monitoring of Progress & Performance

At the outset, goals and objectives were established for the risk management process. These should provide a high level check against which the progress and results generated by the initiatives can be measured.

The risk management program coordinator should specifically establish mechanisms to manage and monitor the implementation of risk improvement initiatives. As items are completed, the relative effect on risk improvement can be documented and tracked where remedial measures positively impact risk rankings. The Risk Analysis Worksheet provides for capturing file notes on modifications to risk rankings.

The coordinator should develop a regular reporting regime and other mechanisms for feedback on progress to the Board, senior management, and selective stakeholders.

The team may decide that a particular item should be revisited formally on a prescribed basis. These milestones should also be captured as action items on the Risk Analysis Worksheet.

The Changing Risk Environment

Few risks remain static. The risk management team should monitor the risk environment for evolving issues and changing circumstances, such as, for example:

- Change in the environment in which operations take place, such as a change in regulations
- Factors exposed to loss (i.e. health, property, income, the environment)
- Hazard / risk potentially causing the loss, such as natural, economic, technical and human effects
- The acceptability of risk (function of needs, issues, concerns)
- Stakeholders
- New technology
- Incidents within and beyond the industry that can provide valuable insights.

Has Risk
Environment
Changed?

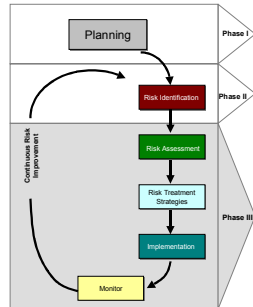


Canadian On-Farm Food Safety Risk Management Planning Guide

Shifts in these or other elements can mean the associated risks have changed. This should trigger a review and re-evaluation of how risk control systems can deal with the changing risk profile. Again, the Risk Analysis Worksheet provides for capturing notes on modifications, changes in risk rankings, etc.



Canadian On-Farm Food Safety Risk Management Planning Guide



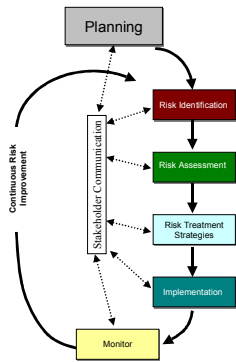
Phase 3 Task Summary

Overall: The risks initially flagged as being the most significant have been analyzed in terms of their likelihood and impact, and risk treatment action plans developed. Further analysis of all risks is a planned and ongoing process.

Tools: Flowsheets for Risk Assessment; Risk Treatment Strategies; and Implementation. Risk Analysis Worksheet.

To successfully complete this phase, the group has:

- ✓ “Drilled down” on all risks of perceived high materiality, as identified in Phase 2. Assistance was obtained from technical specialists and key stakeholders. All causes, consequences and controls, and the relative likelihood and impact of each risk scenario was established, leading to decisions regarding their criticality to the organization.
- ✓ The detailed evaluation process has been fully documented using Risk Analysis Worksheets.
- ✓ Communications with key stakeholders has commenced in terms of action plans, and awareness of issues.
- ✓ Risk treatment alternatives have been developed and prioritized.
- ✓ Action plans are established for implementation of risk improvement initiatives. Resources and timelines have been assigned to each action item.
- ✓ A process to manage and monitor the implementation of risk improvements is in place. Documentation, including revisions to risk rankings, is kept up to date.
- ✓ A regular reporting regime to The Board, senior management, and key stakeholders is in place.
- ✓ A system to assure the risk environment is continuously monitored is in effect.



6. The Path to Successful Risk Management

Few risks remain static and factors that can affect the likelihood and impact of a particular event can change at any time. Therefore, risk management must be a continuous process, having sustained commitment, to produce the desired long-term results.

The risk management process is strategic and works alongside existing programs and processes. It is also an important support platform for governance for all organizations involved in directing on farm food safety programs.

A structured risk management process helps assure that the full range of risks has been identified, and prioritizes efforts to deal with them based on risk improvement. This process, as outlined in this Guide, should be proactive, collaborative, and have a high degree of communication and sharing of best practices to reap the maximum benefits.



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Ongoing Tasks

To ensure long-term success the following are considered essential:

- ✓ Continuing Board / senior management commitment to the risk management process. Over time, ensuring that risk management is an integral part of the overall planning and strategy of the organization.
- ✓ Updating the policies, goals and objectives as needed.
- ✓ Succession planning to assure continuity of the risk management process and functional responsibilities.
- ✓ Ensuring that appropriate time, resources and expertise continue to be allocated to risk management.
- ✓ Ongoing discipline in executing the process, from risk identification through to treatment and monitoring.
- ✓ Maintaining documentation
- ✓ Communication of successes. Positive and measurable results will help drive change.
- ✓ Adapting to changes in the risk environment (scientific developments, shifts in stakeholder perception, new regulations etc.)

Through use of this structured process the path to development and implementation of risk management strategies will be rewarding and successful.



Canadian On-Farm Food Safety Risk Management Planning Guide

Addendum A - Risk Scenario Register

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
BUSINESS ENVIRONMENT RISKS		
Competitor	Competitors entering the Canadian marketplace, with less stringent controls on food safety than an accredited OFFS participant, potentially gain competitive (cost) advantage.	
	Competitor that is unaccredited or has lower quality of safety programs increases overall food safety risk to commodity.	
Customer Expectation	OFFS system does not keep up with customer demands for demonstrative standard of food safety.	
Technology Innovation	Breach or failure of critical technology and information systems.	
	Scientific innovation introduced to market subsequently determined not to be safe (e.g. new drugs, Genetically Modified Food)	
	Technological changes (e.g. commodity production, monitoring systems) introduce new food safety risks.	

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
BUSINESS ENVIRONMENT RISKS		
Resource Allocation	Failure to adequately resource for future growth and stakeholder expectations of OFFS.	
Stakeholder Relations	Decline in stakeholder confidence in the OFFS system, threatens the ability to fully execute strategic plan.	
Capital Availability	Insufficient funding to fully implement OFFS systems and programs.	
	Insufficient funding and resources to implement the Commodity Group Risk Management process (national/provincial/local level)	

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
BUSINESS ENVIRONMENT RISKS		
Political	Government action in a key export market segment, introduces barriers or cessation of trade due to perceived concerns over safety of Canadian industry/commodity.	
	Domestic regulator curtails or interferes with market, due to perceived concerns over food safety.	
	Changes in government(s) shifts policy and reduces level of support for OFFS initiatives.	
Legal	Changes to Trade Agreements affect OFFS programs (standards, economics).	
	Evolving court precedents “raise the bar” of safety and quality standards.	
	Class action suit (e.g. claims of long-term health issues due to products, medications in food, etc.)	
Regulatory	Jurisdictions introduce bans on key medications or feed product due to concerns over public safety (potentially alternate products are not as effective).	
	Regulators introduce changes to marketplace, which reduces the ability of the entity to control food safety program implementation.	

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
BUSINESS ENVIRONMENT RISKS		
Social/Cultural	Consumer trends negatively affect perceptions and demand for commodity.	
Natural Disaster	Natural disaster (e.g. icestorm, earthquake) or environmental incident (e.g. airborne contaminates, water supply) creates significant regional impacts, subsequently affecting the reliability and integrity of food safety systems.	
	Environmental incident (e.g. airborne contaminates, water supply) creates significant regional impacts, and subsequently affect the reliability and integrity of food safety systems.	

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
STRATEGIC RISKS		
Marketplace	Failure to monitor, and stay in touch with consumer food safety expectations, results in obsolete food safety strategies and systems.	
Business Model	OFFS program costs exceed perceived value, thereby diminishing Producer support.	
	Insufficient or ineffective information (e.g. the effectiveness of OFFS programs) drives less than optimal strategic decisions.	
Organizational Structure	Organization's size, structure and resources available threatens ability to effectively implement OFFS.	
	The commodity group's organizational structure and delineation of responsibility (National/Provincial) impedes the effective ability to achieve OFFS program objectives and manage food safety risks.	
Measurement	Wrong or ineffective performance measures lead to inaccurate views on actual level of food safety.	

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
STRATEGIC RISKS		
Resource Allocation	Inadequate allocation of resources to OFFS and Risk Management programs preclude the commodity group from establishing and sustaining the expected stakeholder returns.	
Planning	Planning process fails to obtain the full and relevant input from all stakeholders, thus potentially leaving gaps in Food Safety and Risk Management systems (e.g. failure to identify critical threat).	
Life Cycle	Lack of relevant and reliable information to manage and monitor the evolution of the full life cycle of OFFS issues.	
Reputation	Willful or inadvertent misuse of brands and trademarks, potentially leads to misrepresentation of product (i.e. with respect to safety)	
	Food safety assertions, branding, certification marks, etc. negatively affected (e.g. by unfounded / unsubstantiated allegations of food safety, actions by special interest group).	
	Integrity of food safety related programs is eroded by misrepresentation or sensationalist reporting by the media.	

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
PROCESS/OPERATIONS RISKS – GENERAL <i>* Note: the category of Process/Operations Risks is segmented into three categories – those that are “General” and relevant to any Commodity Group, and those that specifically pertain to “Animal/Livestock” commodities, and “Horticulture” commodities.</i>		
Human Resources	Failure to attract and retain personnel (e.g. scientists, validators, farm workers, etc.) with adequate skills and qualifications to develop, implement or maintain OFFS programs.	
Knowledge Capital	Lack of knowledge of and/or experience of National Organizations in designing and implementing OFFS Process (due to _____).	
	Lack of knowledge and/or experience of Delivery Agent in implementing OFFS process (due to _____).	
	Lack of knowledge and/or experience of on-farm auditors in OFFS process (due to _____).	
	Lack of knowledge and/or experience of Producers in implementing OFFS process (due to _____).	
	On-farm auditor decision is in disagreement with the farmer, leads to legal action.	
	Product tainted by improper use of chemicals.	
	A contaminant is detected, however the product is not withdrawn from the market in a timely fashion due to lack of procedures/training.	
	A contaminant is found in the food, however can not be traced back to a particular farm (e.g. GMP paperwork is available at the farm, but does not match current practices)	
Contaminated product in the marketplace with lack of traceability, paperwork as per current practices for traceability		

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
PROCESS/OPERATIONS RISKS – GENERAL		
Knowledge Capital		
Product Development	Product priced at uncompetitive levels due to incremental costs of OFFS program.	
	Products are introduced to the market by non-participating entities, and are marketed as safer, thus diminishing the importance of OFFS program.	
Efficiency	Inefficiency in implementing OFFS programs leads to gaps in the program.	
	Inefficiency in implementing OFFS lead to unacceptable increased cost of the program.	
Capacity	Low participation rate by producers increases the per-participant costs of the program.	
	OFFS program cannot be implemented as quickly and comprehensively enough to meet stakeholder expectations.	
Performance Gap	System performance is substandard due to gaps in design of practices (results in lower quality product and potential food safety issues).	

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
PROCESS/OPERATIONS RISKS – GENERAL		
Performance Gap		
Cycle Time	Additional activities associated with food safety systems threaten the ability to produce quality products in a timely manner (Canadian or export market).	
Sourcing	Limitations on sourcing key raw materials threaten the ability to produce product; substitutes create a food safety issue.	
	A key supply is no longer available (i.e. banned, source no longer produces).	
Supply Chain	Poorly performing distribution channels threaten the delivery of product (e.g. trucking strike), hence “shelf life” related food safety issues result.	
	Delay in shipments/transportation results in a back-up of the supply chain and threatens food safety.	
	Inability of Processor to accept product, results in back-up of the supply chain and threatens food safety.	

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
PROCESS/OPERATIONS RISKS – GENERAL		
Partnering	Industry Partners (e.g. another association) not at the same quality of food safety, decreases the ability to fulfil food safety objectives.	
	Failure to leverage knowledge within the industry, of procedures and best practices, results in a gap in food safety knowledge, or processes.	
Compliance	OFFS program is not fully aligned with customer requirements/needs related to food safety.	
	OFFS program is not fully aligned with laws and regulations pertaining to food safety.	
	OFFS program does not adequately adjust to changing requirements (i.e. customer, regulatory).	
Business Interruption	Loss of critical systems (i.e. power, water supply to a Region) threatens food safety.	
	Loss of suppliers of key raw materials results in need to find substitutions – potentially with increased food safety risk.	
	Loss of computer systems or data at a National/Provincial level creates key food safety information gaps.	
Product/Service Failure	Product liability due to unsafe food claims threatens market share and reputation of the commodity/OFFS program.	

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
PROCESS/OPERATIONS RISKS – GENERAL		
Product/Service Failure		
Environmental	Perception of food safety compromised, if hazardous waste found at a Producer site.	
	Use of particular chemical/fertilizer/feed at farms throughout the country revealed to be environmentally harmful, due to newly available research.	
	Lack of procedures for waste disposal (at farms), results in widespread contamination of farms/water supplies.	
	Water contamination by pesticides, herbicides, manure, etc.	
Health and Safety	Lack of effective procedures for farm workers results in a health and safety issue (physical injuries, inhalation of chemicals) and brings effectiveness of programs into question.	
	Piece of equipment, widely used by industry, causes illness/injury/death to worker, and brings effectiveness of programs into question.	

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
PROCESS/OPERATIONS RISKS – GENERAL		
Leadership	Ineffective direction as pertaining to food safety (e.g. dissemination of information).	
	Lack of feedback/communication/credibility with various stakeholders, leads to regulatory/food safety/perceptual issues of industry handling of food safety related items.	
	Unauthorized decisions/actions leads to food safety crisis.	
Authority/Limit	Entity acts outside their boundaries, resulting in greater food safety risk to the public, and subsequent action against leadership.	
	Entity fails to act which results in greater food safety risk to the public, and subsequent actions against leadership.	
Outsourcing	Key service provider does not adhere to agreed standards for food safety, resulting in a food safety issue.	

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
PROCESS/OPERATIONS RISKS – GENERAL		
Performance Incentive	Incentive for producers to follow OFFS does not offset production demands, hence compromises result in operations inconsistent with OFFS objectives.	
Change Readiness	Resistance to implementing OFFS programs results in not keeping up with marketplace demands for food safety.	
	Adequate tools are not available to assist Producers and other Stakeholders in changing at the pace needed to adopt OFFS programs.	
Communication	Ineffective communication of programs established leads to inconsistent implementation.	
	Ineffective communication to key stakeholders exacerbates a food safety related crisis situation.	
Information Relevance	Information/data collected is inaccurate/misleading and leads to incorrect decision making (food safety related).	

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
PROCESS/OPERATIONS RISKS – GENERAL		
Information Integrity	Inadequate system access controls results in invalid (food safety) data being entered/collected.	
	Inadequate information leads to incorrect/ineffective decisions made (e.g. dated information).	
	Poor system integrity and backup results in the loss of key food safety related information.	
Information Access	Unauthorized access to information results in disclosure of confidential or sensitive food safety related information.	
	Unauthorized access to information and tampering leads to inaccurate/misleading information being disclosed, or used as a basis for decision making.	
Information Availability	Information system failure results in lack of system access during problematic time.	
	Loss of critical food safety-related information due to physical disruption to systems (i.e. cut cables, telephone system outage, fire, flood, electrical outage) with short-term disruption in information systems.	
	Loss of critical food safety-related information due to physical disruption to systems (without a contingency plan) with <u>long term</u> disruption in information systems.	

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
PROCESS/OPERATIONS RISKS – GENERAL		
Information Infrastructure	Lack of integration of information management strategies, with strategic implementation of OFFS programs.	
Management	Misrepresentation of entities’ capabilities to effectively implement food safety (OFFS) initiatives.	
Employee/Third Party Fraud	Fraudulent activities by employees, customers, suppliers, agents for personal gain (e.g. financial or information) exposes the entity to loss. Fraudulent activity may directly impact food safety, and or perception of food safety due to lack of controls.	
Illegal Acts	Illegal acts within the organization, or key stakeholders leads to loss of customers, public confidence, or reputation; indirect perceptual impact on food safety.	

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
PROCESS/OPERATIONS RISKS – GENERAL		
Unauthorized Use	Use of assets (including intellectual property) for unethical purposes potentially compromises integrity of programs.	
	Confidential information is compromised, resulting in loss of competitive advantage for marketing.	
Reputation	Reputation of the OFFS program is damaged due to (for example): <ul style="list-style-type: none"> • Systematic failures • Lack of improvement in overall OFFS • Media misreporting or sensationalism 	
	Reputation of the Commodity Group is damaged due to a major incident affecting another commodity group.	
Product Service Pricing	Pricing models do not fully include the costs/resources needed to implement effective OFFS systems.	
Contractual Commitment	Contracted commitments impede the ability to effect OFFS procedures properly.	

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
PROCESS/OPERATIONS RISKS – GENERAL		
Measurement/ Alignment	Measurements used from a business perspective misaligned with measurements for continuous improvement (OFFS, Risk Management).	
Budget and Planning	Budget/resources allocated are insufficient to assure effective implementation and maintenance of OFFS programs.	
Accounting Information	Inability of financial accounting, or other economic measures to delineate customer food quality/safety objectives.	
Financial Reporting	Mistaken or inappropriate financial reports affect the reputation of the industry and indirectly, food safety/OFFS reputation and public confidence.	

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
PROCESS/OPERATIONS RISKS – ANIMAL / LIVESTOCK SPECIFIC		
Knowledge Capital/ Business Interruption/ Product Failure/ Environmental Risks/ Health and Safety	Known disease, virus, etc. enters the Canadian market (i.e. having previous affected trade in other jurisdictions).	
	Known disease at farm (which impacts farm level production).	
	Product contaminated with veterinary drug residues exceeding Health Canada’s tolerances (e.g. producer uses wrong product, incorrect withdrawal time, extra-off label medication without prescription) sold to consumers.	
	Product contaminated with antimicrobial resistant pathogens, which are traced back to the use of antibiotics by Producer (e.g. Improper use of antimicrobials at the farm level, or antimicrobial resistance develops).	
	Bio-terrorism – A radical group introduces a contaminant into the product.	
	Product contaminated with other chemicals (other than medication), such as heavy metals or dioxins, due to (for exampl): <ul style="list-style-type: none"> • Contaminated feed • Contaminated water • Willful tampering 	
	Broken medication needle discovered (i.e. by Processor, consumer).	
	Product contaminated with pathogens (e.g. salmonella).	
	Contamination scenario at farm which was not identified as a potential risk by the OFFS program.	
	Contamination found in product, despite Producers following OFFS procedures (e.g. due to Processor, or consumer handling).	

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
PROCESS/OPERATIONS RISKS – ANIMAL / LIVESTOCK SPECIFIC		
Knowledge Capital/ Business Interruption/ Product Failure/ Environmental Risks/ Health and Safety	A new disease in Canada affects livestock, with disease or biosecurity measures not anticipated by OFFS.	
	Inspection/quality sampling failure at Processor.	
	Mixture of incompatible products, due to not following Procedures.	

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
PROCESS/OPERATIONS RISKS – ANIMAL / LIVESTOCK SPECIFIC		
Feed	By products in feed.	
By-Products	Secondary products (rendering).	

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
PROCESS/OPERATIONS RISKS – HORTICULTURE		
Knowledge Capital/ Business Interruption/ Product Failure/ Environmental Risks/ Health and Safety	Contaminated site used for crops (e.g. due to lack of knowledge of site history).	
	Contamination of site/product from feces, due to wide animal and livestock access to site	
	Contamination of product/site, due to manure application too close to harvesting season	
	Contamination of product/site, due to drainage/run-off from adjacent properties.	
	Contamination of product with a pesticide which is not registered, due to change in pesticide (registration not consulted).	
	Contamination of product with chemical or other residue from environmental/airborne contaminants.	
	Contamination of water; post harvest water is reintroduced into the water supply.	
	Contamination due to improper drainage/storage of waste.	
	Irrigation water contaminated with undetected coliforms.	
	Pathogens absorbed into produce during washing or other processing.	
	Contamination due to improper handling or improper labeling of chemical.	
	Harvesting equipment improperly or not cleaned (i.e. not rinsed/sanitized) and contaminates product.	
	Improper (excessive) amount of fertilizer introduced to produce due to lack of calibration of equipment.	
	Improper maintenance/sanitation of harvesting container (foreign material contaminates product).	
Contaminated product due to improper hygiene practices.		

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
PROCESS/OPERATIONS RISKS – HORTICULTURE		
Knowledge Capital/		
Business Interruption/		
Product Failure/		
Environmental Risks/		
Health and Safety		
Knowledge Capital/	Contaminated product due to worker having a communicable disease.	
Business Interruption/	Contaminated product due to worker working with an open wound.	
Product Failure/	Contaminated product due to use of pest control product.	
Environmental Risks/	Product Recall	
Health and Safety	<ul style="list-style-type: none"> • Inefficient due to lack of ability to track lot number • Ineffective communication to all parties • Recall of a lot (when more lots were involved) • Inadequate assessment and control of crisis of the situation 	
	Inaccurate records to detect contamination (e.g. water sources and quality, pesticide spraying, fertilizer application, training for seasonal work, treatment of recycled water).	
	Provisions for G.M. contamination.	

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
PROCESS/OPERATIONS RISKS – HORTICULTURE		
Knowledge Capital/ Business Interruption/ Product Failure/ Environmental Risks/ Health and Safety		

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
FINANCIAL RISK		
Interest Rate	Higher interest rates increases producers costs, thus impacting ability to implement/maintain OFFS programs.	
Currency/Foreign Exchange Rates	Exchange rates change import/export balance, thus impacting ability to implement/maintain OFFS programs.	
Commodity Pricing	Commodity price reductions reduces Producers margins, thus impacting the ability to implement/maintain OFFS.	
Cash Flow	Changes to overall government farm funding programs, thus diminishing Producers' cash flow and impacting ability to implement OFFS programs.	

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
FINANCIAL RISK		
Default	Default in collecting funds owed from third parties creates cash flow problems and impacts ability to implement OFFS program.	
	Failure of a risk financing mechanism (e.g. insufficient funding, insurer default, etc.) following a major food safety related claim.	
Collateral	Major food safety related loss results in decline in underlying business value within sector.	



Canadian On-Farm Food Safety Risk Management Planning Guide





Canadian On-Farm Food Safety Risk Management Planning Guide

Addendum B - Risk Analysis Worksheet

On-Farm Food Safety - Risk Analysis Worksheet

RISK SCENARIO (THREAT/EVENT)						Risk Ranking			Criticality	Recommended Review Date	
						Likelihood	Impact	Resulting Risk			
#	Cause(s)	Potential Consequences	Controls in Place	Risk Improvement Opportunities	Improvement Priority	Task	Resp	Cons	Inform	By When	Status
1.											
2.											
3.											
4.											
5.											
6.											
7.											
8.											
9.											
10.											
11.											
12.											
13.											
14.											
15.											
16.											
17.											
18.											
19.											
20.											
Scenario completion date:			Revised Risk Ranking & Criticality Date:			Comment:					



Canadian On-Farm Food Safety Risk Management Planning Guide





Canadian On-Farm Food Safety Risk Management Planning Guide

Addendum C - Illustrative Case Study



Canadian On-Farm Food Safety Risk Management Planning Guide



Illustrative Case Study

This case study is intended to provide an illustrative example of how to use this Guide. It simulates a process whereby a designated team has conducted an initial risk identification screening and determined one of their key issues is bioterrorism. Based on a scenario of a radical special interest group introducing a contaminant into the product, they then use the Risk Analysis Worksheet (Figure 11 in The Guide) to "bore down" to better qualify this issue and establish action plans for further risk reduction.

To facilitate clearer explanation of the process, some assumptions are made in presenting this case study:

- A "generic" commodity involving animals or livestock is represented. This is not meant to imply that the potential causes of the scenario and the controls and risk improvements listed on the sample Risk Analysis Worksheets are exhaustive and relevant to any specific commodity group.
- The commodity group represented has been through all of the requisite planning processes and have developed a philosophy and working strategy for implementation of a risk management process.
- Key stakeholders have been identified and their interests are represented in the process and team (as per Table 1 of The Guide).
- The team arrived at this as an important risk issue after working through the Risk Scenario Register (Figures 9 & 10 in The Guide).



Canadian On-Farm Food Safety Risk Management Planning Guide

Risk Scenario - Bio-terrorism

COMMODITY GROUP - Risk Scenario Register

CATEGORY	SCENARIO <i>THREAT AND EVENT (DUE TO ...)</i>	PERCEIVED IMPORTANCE/MATERIALITY <i>(HIGH, MEDIUM, LOW, NOT APPLICABLE)</i>
PROCESS/OPERATIONS RISKS – ANIMAL / LIVESTOCK SPECIFIC		
Knowledge Capital/	Known disease, virus, etc. enters the Canadian market (i.e. having previous affected trade in other jurisdictions).	Medium
Business Interruption/	Known disease at farm (which impacts farm level production).	Low
Product Failure/	Product contaminated with veterinary drug residues exceeding Health Canada's tolerances (e.g. producer uses wrong product, incorrect withdrawal time, extra-off label medication without prescription) sold to consumers.	Medium
Environmental Risks/	Product contaminated with antimicrobial resistant pathogens, which are traced back to the use of antibiotics by Producer (e.g. Improper use of antimicrobials at the farm level, or antimicrobial resistance develops)	Medium
Health and Safety	BIO-TERRORISM – A RADICAL GROUP INTRODUCES A CONTAMINANT INTO THE PRODUCT.	HIGH
	Product contaminated with other contaminants (other than medication) such as heavy metals, dioxins, due to (for example): <ul style="list-style-type: none"> ▪ Contaminated feed ▪ Contaminated water ▪ Willful tampering 	Low
	Broken medication needle discovered (i.e. by Processor, consumer).	



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Case Study - defining scenario and identifying all potential causes

On-Farm Food Safety - Risk Analysis Worksheet

RISK SCENARIO (THREAT/EVENT)					
Bio-terrorism – A radical group introduces a contaminant into the product.					
#	Cause(s)	Potential Consequences	Controls in Place	Risk Improvement Opportunities	Improvement Priority
1.	Contaminant introduced via supplies purchased by Producer <ul style="list-style-type: none"> • Feed • Medication Livestock / breeding stock				
	Contaminant illicitly introduced at Producer facility (via feed, medication, water, injection, etc.).				
	Contamination of Producer facilities and / or equipment.				
	Transportation- cross contamination of product.				
	False assertion of on-farm contamination (contaminant was introduced "downstream")				
	False assertion of contamination.				
Scenario completion date:			Revised Risk Ranking & Criticality Date:		Comments

Each scenario may have multiple causes. These should all be identified and documented (Reference: Figure 12)

In brainstorming session, during the Risk Identification phase, this scenario had a high perceived importance/materiality (Reference: Figures 8, 9, 10). A separate scenario may be considered whereby a contaminant is threatened but not actually introduced (e.g. for purposes of sensationalism,



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Case Study - identify potential consequences & cataloguing the risk controls that are in place

On-Farm Food Safety - Risk Analysis Worksheet

RISK SCENARIO (THREAT/EVENT)					Likelihood
Bacteria - A random group of bacteria is contaminated into the product.					2
Cause(s)	Potential Consequences	Controls in Place	Risk Improvement Opportunities	Improvement Priority	Tax
	<p>Human health risk (depending on contaminant) ranging from illness to death, to multiple deaths. Children particularly vulnerable to lower doses.</p> <p>Potential for litigation against Producer and Provincial / National Association</p> <p>Significant loss of public confidence in safety of product and OFFS program.</p> <p>Loss of reputation</p> <p>Reduced regional / national, demand for product (beyond immediately affected area); potential cessation of trade</p> <p>Loss of / quarantine of animals.</p>	<p>Crisis management plans at Provincial / National level.</p> <p>Producer Q.A. (e.g. receiving procedures, procurement record keeping, etc)</p> <p>Ongoing communication of "issues" to Producers via Provincial Association.</p> <p>Traceability systems, incl. sampling and testing.</p> <p>Quality programs of suppliers.</p> <p>Risk finance / Insurance</p>			

For each cause (contaminant introduced to feed or medication, for example), identify potential consequences (reference figure 12).

Types of consequences could include financial, trade, liability, reputation and so on.

Similar consequences would result from analysis of other causes, however some additional consequences

The controls that are in place are catalogued. The completeness & effectiveness of these controls to address the risk, and each cause, should be scrutinized and tested.

The process is repeated for each identified potential



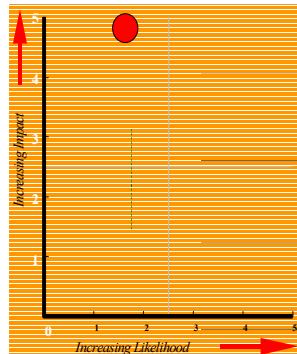
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Case Study - assigning relative rankings of likelihood and impact to the scenario

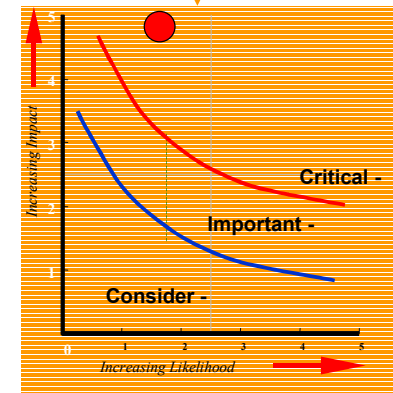
s Worksheet

	Risk Ranking			Criticality	
	Likelihood	Impact	Resulting Risk		
	2	5	10	Critical	
Improvement Priority	Task	Resp	Costs	Inform	By When

Based on the team's view that "high impact" scenarios receive priority attention, and the overall resulting risk ranking of "10", this scenario was categorized as being a critical risk. (Reference: figure 12.



Using pre-established criteria (tables 2&3 of the Guide, the relative likelihood of occurrence and the subsequent impact is assigned a numerical value. The team will plot this on a





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Case Study - identifying opportunities for risk improvement

On-Farm Food Safety - Risk Analysis Worksheet

Based on a review of existing controls, and group discussion and brainstorming, a number of additional opportunities for risk improvement are identified. The team used Table 4 in the Guide to help prompt ideas to assure a complete "system" of controls was considered. Again, this process is completed for each potential cause of the loss scenario.

Location	Risk Improvement Opportunities	Improvement Priority
	Current status and effectiveness of Provincial Association plans uncertain. Establish a national coordination strategy for crisis management that establishes and maintains minimum standard and assures coordination at the regional / Provincial / National level.	High
	In next issuance of Producer Manual, recognize supplies as a key control point and include expanded guidelines for: <ul style="list-style-type: none"> Inspection of materials Document retention 	Medium
	Consider a more formalized "OFFS Approved Supplier" program that would dovetail with commodity group – specific technical guidelines. Criteria to specifically include: <ul style="list-style-type: none"> product integrity security packaging transportation standardized contracts and indemnities. 	Low
	Complete insurance review initiative.	Medium
	Ongoing review of protocols for screening and testing toxins and contaminants. Review advances in technology. (Recognize inherent risk that some contaminants are not screened for, thus would go undetected).	High

Using a cost benefit approach (Table 5 of the Guide), the improvement priority was deemed to be "high". While the improved effectiveness in overall crisis management capabilities would help reduce impact, the team felt the resulting risk would still be deemed "critical". This process is repeated for each risk improvement opportunity.

(Resulting) DEGREE OF RISK IMPROVEMENT		ABILITY TO IMPLEMENT THE IMPROVEMENT		
From	To	Difficult	Moderate	Easy
Critical	"Consider"	Medium	High	Very High
	"Important"	Medium	Medium	Very High
"Critical"	"Consider"	Medium	Medium	High
	"Important"	Low	Low	Medium
Consider	"Consider"	Very Low	Low	Medium



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Case Study - developing action plans for risk improvement

Worksheet

This represents a high level check of the progress of the implementation of risk controls (Reference: Figure 18)

The team felt significant progress should be made by April 2004 and agreed the scenario should be revisited at that time.

For each risk improvement opportunity identified, a series of tasks or action plans is developed. Given the potentially significant number of scenarios and subsequent risk improvements to consider, action plans can be developed based on the improvement priority established (i.e. "Very High" priority first, then "High", then "Medium", and so forth.

Improvement priority	Risk Ranking		Resp	Cons	Inform	By When	Status
	Likelihood	Impact					
Very High	7	5	JWC	Marsh	Prov. Exec.	Design by 06/03 Issue by 07/03 Responses and findings by 10/03	Pending approval to free sufficient time for JWC to take on project.
High			JWC / SO	CFIA		01/04	
			JWC			03/04	
Medium							

The team used the integrated planning tool to assign responsibilities and set target dates for each of the individual tasks. (In this case, for instance, Jody Cann - "JWC" - has National Association responsibility for crisis planning, and has taken the lead role on the initiative.)



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Addendum D – Crisis Management Guidelines



Guidelines for Developing A Crisis Management Plan

Introduction

Despite all best efforts at prevention and control, unwanted incidents or losses can occur. When they do, having pre-planned strategies in place to respond, in the event of any contingency can significantly mitigate the resulting impacts. In the extreme, effective contingency plans can mean the difference between life and death or business survival and extinction.

In considering planning for the broad spectrum of business continuity management, it is helpful to recognize that there are various phases to an incident, with each requiring unique, but co-ordinated, response strategies. This is illustrated as follows.

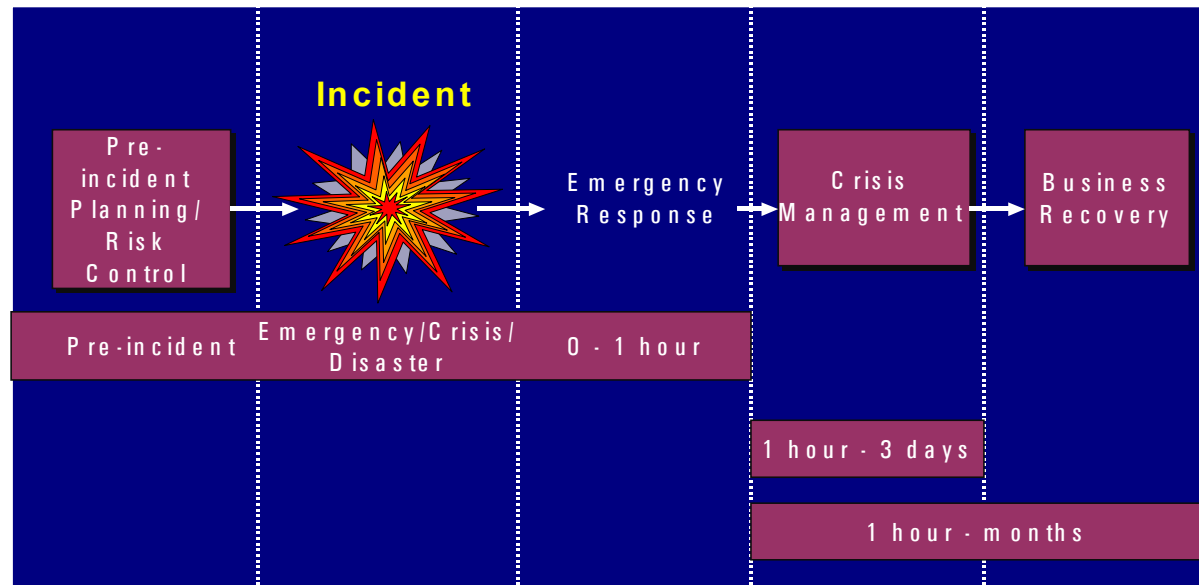


Figure D – 1 Business Continuity Management Process



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Within the context of this Guide, and its intended users, crisis management is arguably the most important phase to focus planning on. Emergency response, by its immediacy is the purview of the producer. If not already in place, commodity groups could assist constituent producers through the provision of emergency response guidelines or templates – either via integration with OFFS technical standards, or through stand-alone resource materials. The business recovery phase is by nature longer term and will tend to require extensive and sustained resources that are scenario-specific, and is likely to be led by stakeholders with the most significant economic interests. Therefore, the crisis management phase is likely the most important for the users of this Guide, in helping them to assist their commodity groups through effective crisis communication strategies and prompt and responsive tactical advice and support to bring an urgent crisis situation under control.

Crisis management defines how strategic issues, stemming from an organizational crisis, are to be addressed and managed. That is, it establishes the command, control and co-ordination of the crisis. In doing so crisis management plans must consider the critical internal and external communications needed along with the key decision-making processes, which are to be in effect during a crisis and in the subsequent days after the precipitating event. Leadership, use of available resources, communicating with emergency services and key stakeholders (including regulators, customers, suppliers, the financial community and the media) are all part of this key activity.

Effective crisis management is also consistent with good corporate governance, as evidenced by its principal objectives:

- Survival of the entity.
- Minimizing the impact of any significant incident
- Safeguarding people, stakeholders, property, business operations and the environment
- Restoring critical operations
- Compliance.

To successfully establish crisis management plans, a project management approach is necessary. Some of the key components to consider in developing the plan should include:



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- I - Project Initiation – Obtain the requisite support from leadership and management support including issuance of a policy statement. Appoint a project manager and project team(s) to develop the crisis plan.
- II – Emergency Response Procedures – Identify ‘state of readiness’ capabilities and provide whatever guidance possible to producers, and other relevant stakeholders with respect to development of plans to deal with all potential emergencies, natural or man-made.
- III – Identify Roles and Responsibilities – The crisis management plan should identify key roles and responsibilities including:
 - An individual to have overall responsibility and effectively take “ownership” for the management of the crisis. This person would assure the organization, and its stakeholders (including the board) are aware of the crisis status and chair the crisis management steering committee.
 - A crisis management steering committee made up of senior management personnel, to provide crisis management strategy and decision making. This group would manage outgoing communications (i.e. statements to the media), as well as manage any legal and/or regulatory issues, which may arise.
 - An individual to oversee the implementation aspect of any of the decisions or strategies set out by the steering committee. This would include dealing with the media and regulatory bodies, as well as being responsible for the establishment and activities of the crisis management team and the command centre.
 - A crisis management team to work with the steering committee and the individual in charge, in order to implement the plan as established.
 - Appropriate back-up’s for all functions.
- IV – Notification and Escalation Procedures – Development of procedures for triggering the crisis management and notification process, as well as provisions for the escalation of an incident to “crisis” status.
- V – Command Centre – Establishment of appropriate command centre(s), along with the identification of materials and equipment to be needed.



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- VI – Communications - Establish a process for communication with both internal and external contacts. It is important that when delivering outside communications there is a single clear and accurate message delivered by a designated media-trained spokesperson.

- VII – Training and Testing – To assure the efficacy of the plan a regime of defined training and testing (e.g. via simulation exercises) should be established.

When they are needed, effective crisis management procedures become critical to an organization. Therefore, it is vital that persons involved in the planning and response process have a clear understanding of their roles and responsibilities prior to any incident and they receive the requisite tools and training to enable them to carry out these responsibilities.

This is intended only as a brief primer on crisis management. There are many excellent resources available that can provide the user with more comprehensive insights and guidelines on this important subject. A number of these are listed in the following section.



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Resources

The following links contain documents related to food safety crisis management which can aid the Commodity Groups in developing their own Crisis Management planning endeavours.

Canadian Sources

Planning for and Responding to Disasters in Canada – An Approach for Farmers and Farm Organizations ©2001
Canadian Farm Business Management Council, Canadian Federation of Agriculture

Business Continuity Institute

www.thebci.org

Canadian Centre for Emergency Preparedness

www.ccep.ca

Disaster Recovery Information Exchange Canada

www.drie.org

Office Of Critical Infrastructure Protection And Emergency Preparedness (Canadian Government)

Self-Help Advice for Businesses and Institutions

Business Resumption Planning: A Guide

http://www.ocipep-bpiepc.gc.ca/info_pro/self_help_ad/general/book_busi_e.asp

OMAF Food and Agriculture Emergency Management System (Ontario) - includes manual and workbook

<http://www.gov.on.ca/OMAFRA/english/research/risk/emergency.html>

Food Safety Network

Crisis Response & Communication Planning Manual



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<http://www.foodsafetynetwork.ca/crisis/crisis-manual.htm>



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Crisis Response & Communication Planning Workbook

<http://www.foodsafetynetwork.ca/crisis/crisis-workbook.htm>

Lessons from the Ice Storm

<http://www.gov.on.ca/OMAFRA/english/engineer/generators/media/lessons.htm>

U.S. Sources

<http://www.usda.gov/da/ocpm/>

International Sources

Food And Agriculture Organization Of The United Nations

Animal Disease Emergency Preparedness Plans

<http://www.fao.org/DOCREP/004/X2096E/X2096E00.HTM>

Good Emergency Management Practices

http://www.fao.org/ag/AGA/AGAH/EMPRES/e_gemp.htm

Feed and Food Safety Gateway

<http://www.fao.org/ag/AGA/AGAP/FRG/Feedsafety/feedsafety.htm>