The Future of Phytosanitary Risk Management?

39th NAPPO ANNUAL MEETING October 26 – 29, 2015

Memphis, Tennessee, USA

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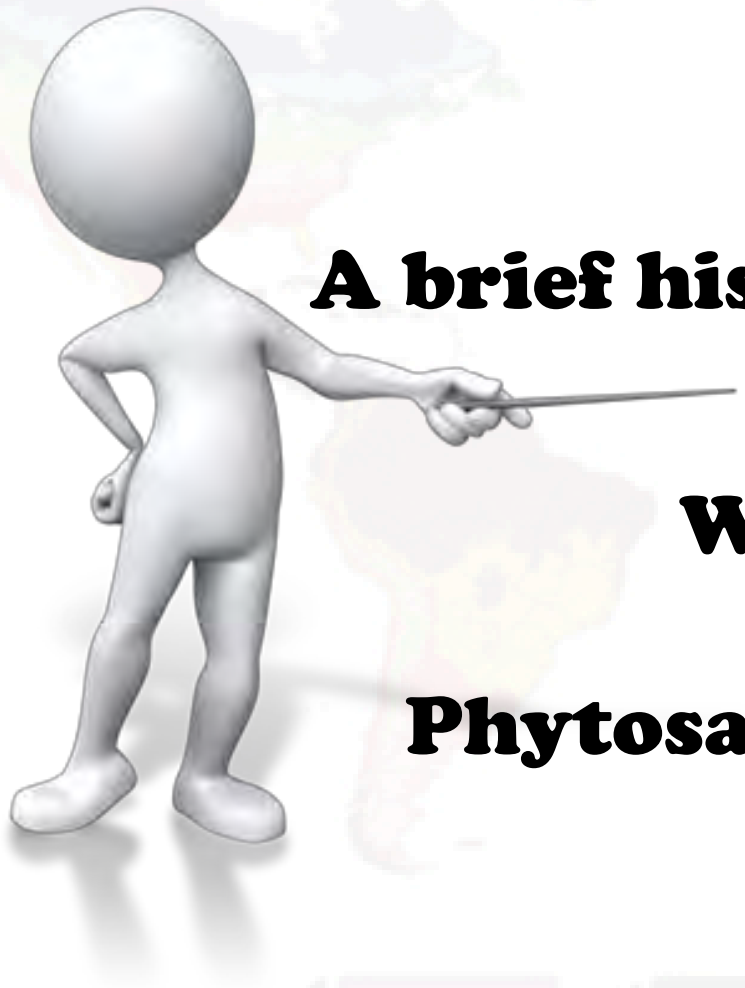
Risk Management According to Dilbert

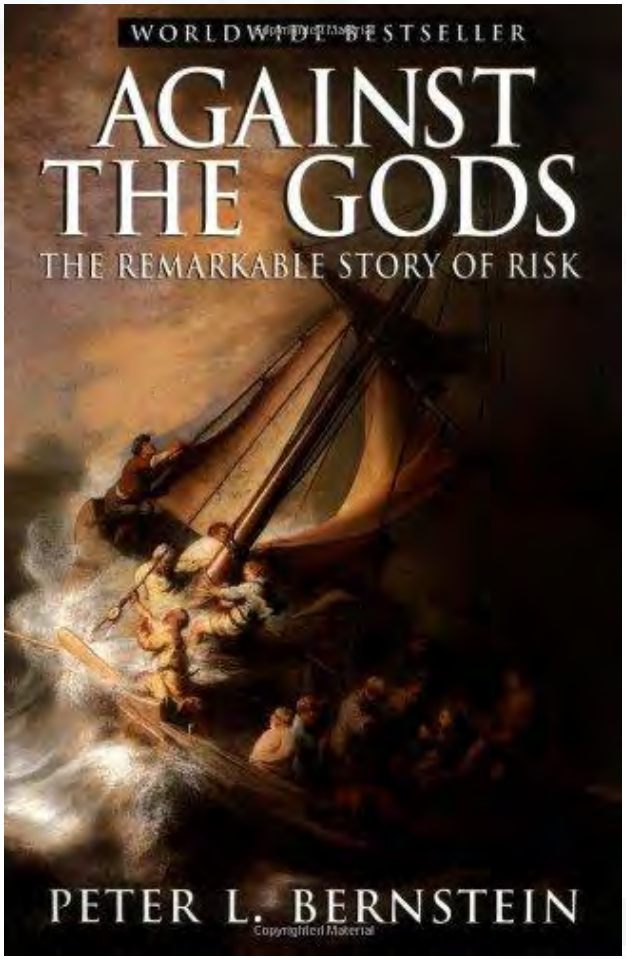


A brief history of risk management

Who is doing it?

Phytosanitary risk management

Risk Management and Trade

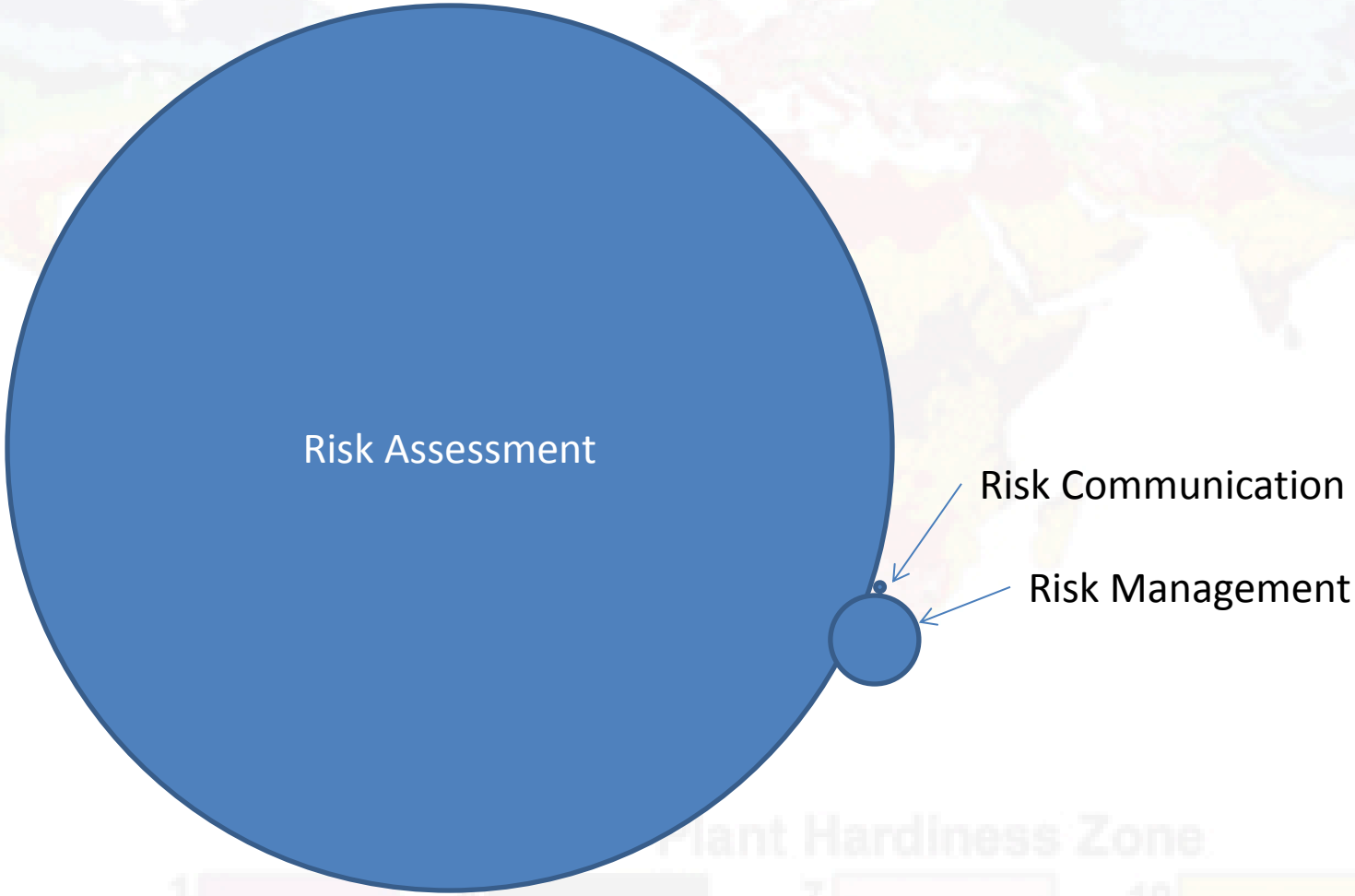


- Edward Lloyd's Tower St. coffeehouse 1687
- Lloyd's List 1696
- Underwriters
  - House-breaking, highway robbery, death by gin-drinking, death of horses, assurance of female chastity
- Society of Lloyd's 1771
- Shipments of goods

Risk Assessment

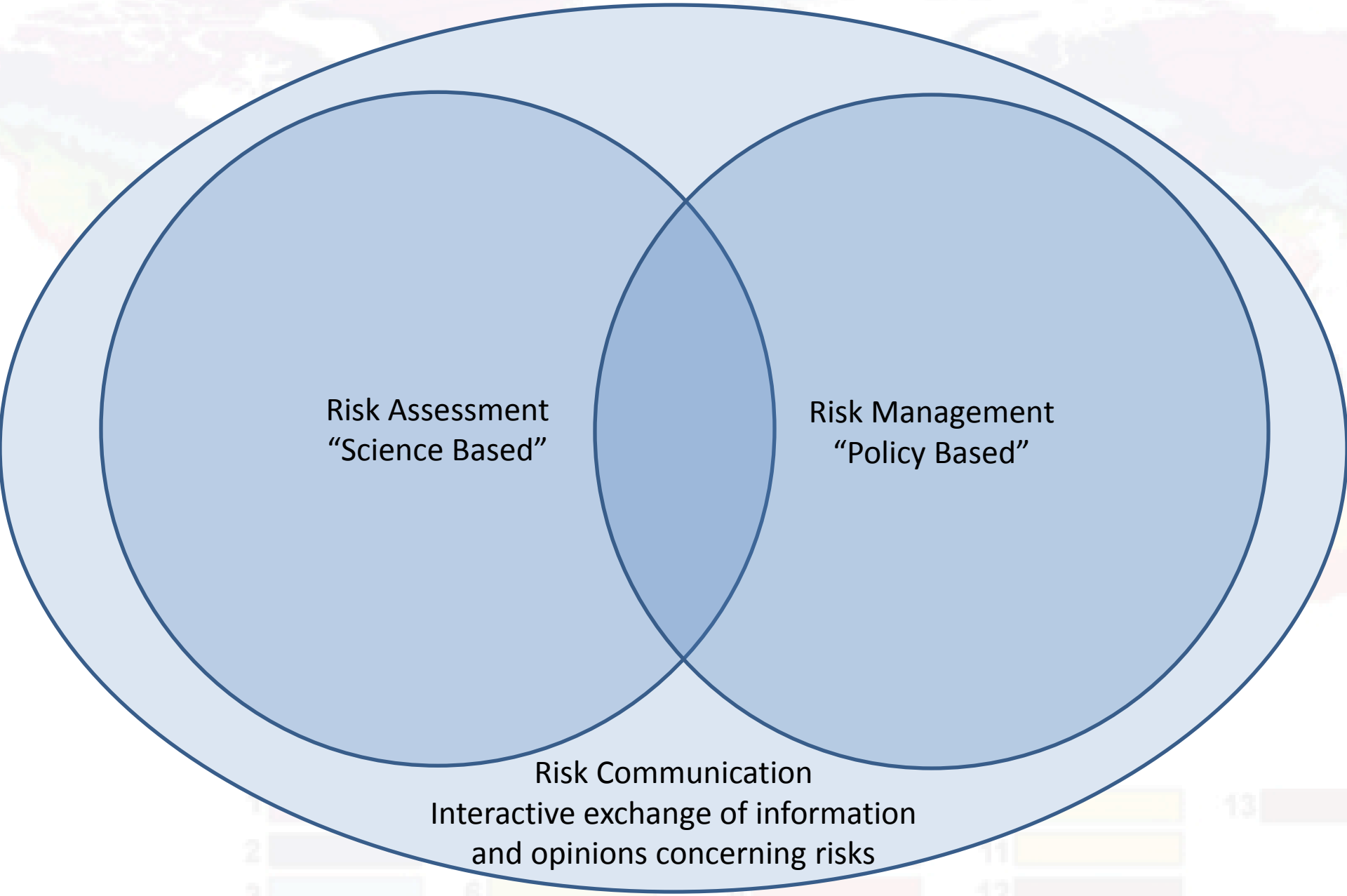
What is this risk communication and what does it mean?

YOE'S HISTORY OF RISK MANAGEMENT



YOE'S HISTORY OF RISK MANAGEMENT

RISK ANALYSIS

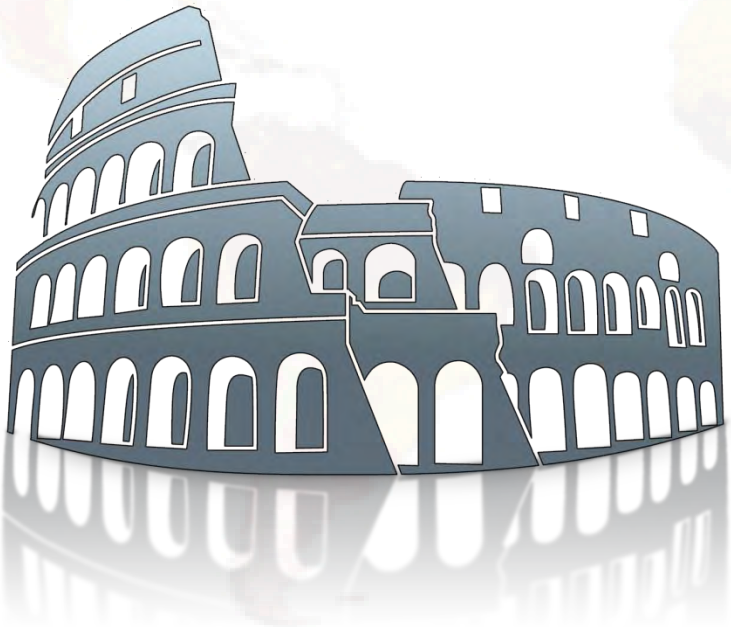

Risk Assessment
"Science Based"
Risk Management
"Policy Based"
Risk Communication
Interactive exchange of information
and opinions concerning risks

Uruguay Round on Multilateral Trade Negotiations 1986 -1994

Agreement on Sanitary and Phytosanitary Measures

Agreement on Technical Barriers to Trade

Global Agreement to Use Risk



- FAO/WHO Conference on Food Standards 1991 recommends risk assessment principles
- CODEX Agrees to use them 1993
- New Revised Text of the IPPC 1997
- OIE Terrestrial and Aquatic Animal Health Codes

Risk management is betting on an outcome that will result from a decision we have made, when we don't know for sure what the outcome will be.

If we let that orange into the country we are betting that nothing bad will happen for doing so.

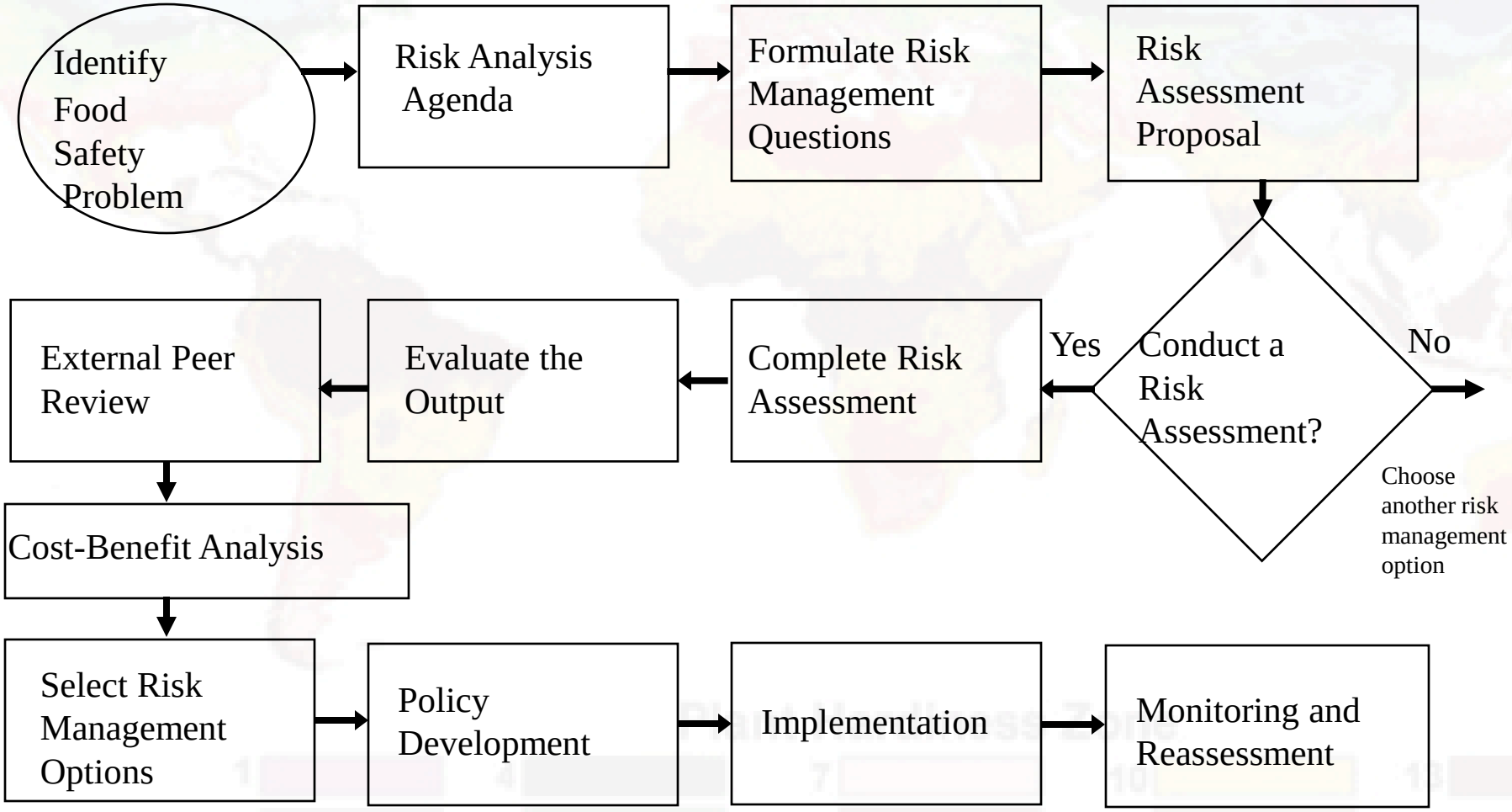
If we , do <u>not</u> let that orange into the country we are betting that something bad would have happened if we did.

Who Is Doing Risk Management?


What do you think of when I say risk management?
Risk mitigation = id risk reduction methods and and select the ones appropriate to include in a given PRA
Risk management = operational actions taken by field personnel to reduce risk, e.g., fumigations or other treatments, pre-clearance programs, commodity inspection, and so on


It’s a lot more than that.

FSIS Risk Analysis Process

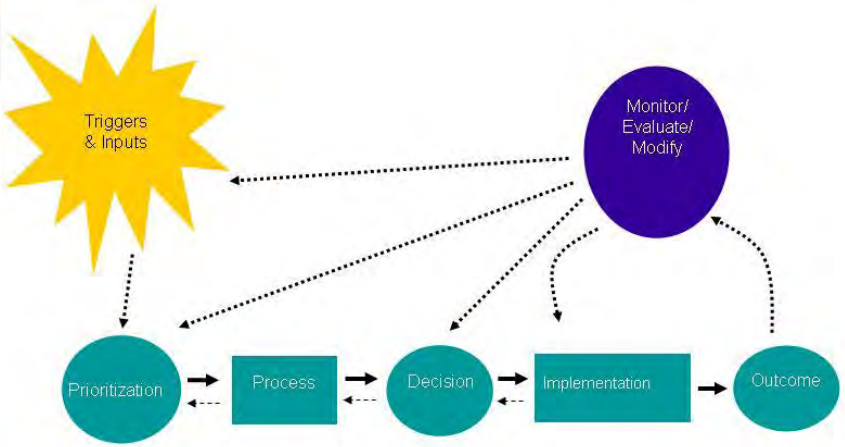


Center for Food Safety and Applied Nutrition

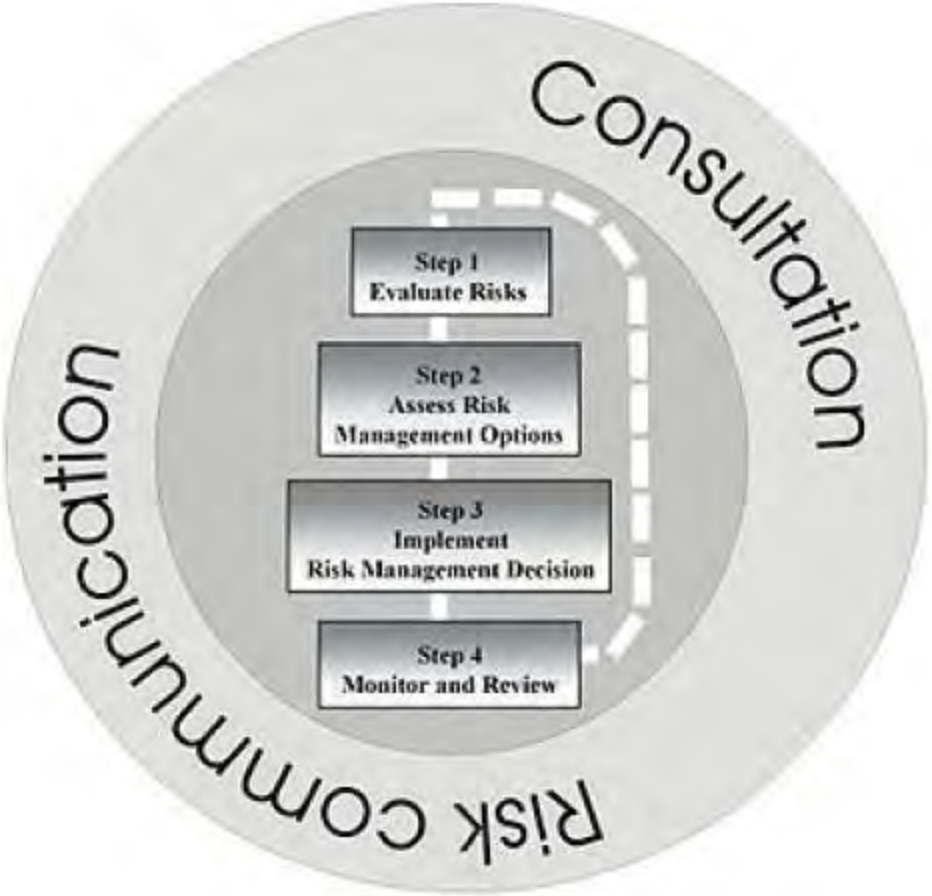
The Center for Food Safety and Applied Nutrition
Food and Drug Administration
US Department of Health and Human Services

FDA

CFSAN's Risk Management Framework



New Zealand Food Safety Authority



Risk Assessment vs Risk Management

What's the difference?

Risk Assessor

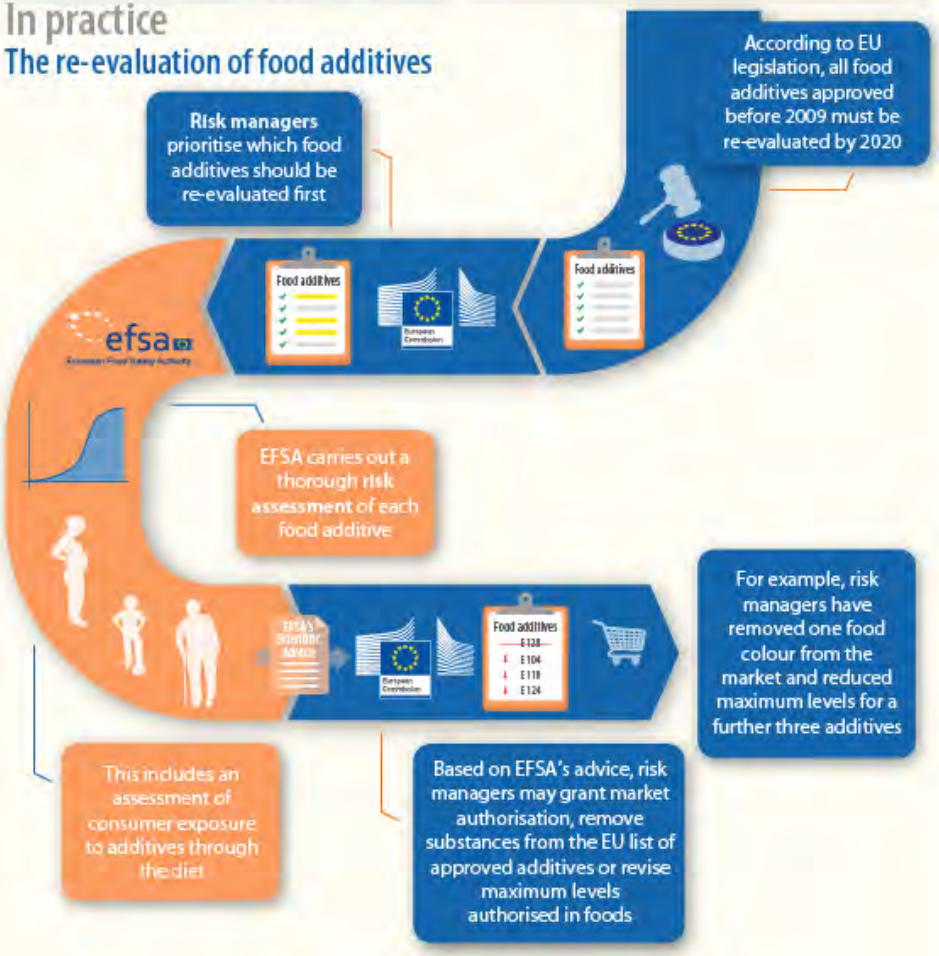
EFSA is the risk assessor, evaluating risks associated with the food chain. EFSA doesn't have scientific laboratories, nor does it generate new scientific research. It collects and analyses existing research and data and provides scientific advice to support decision-making by risk managers.

Risk Manager

Risk managers are the European Commission, Member State authorities and the European Parliament. They are responsible for making decisions or setting legislation about food safety.

In practice

The re-evaluation of food additives

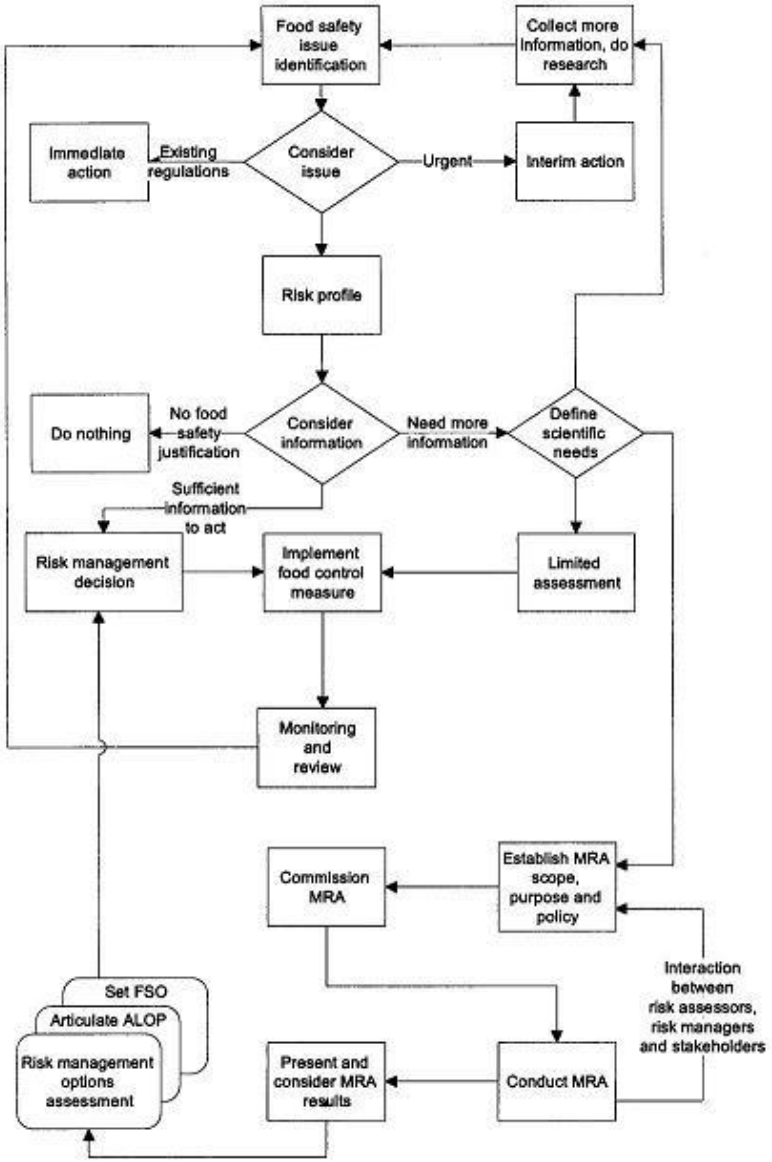


efsa

European Food Safety Authority

Food and Agriculture Organization of the United Nations

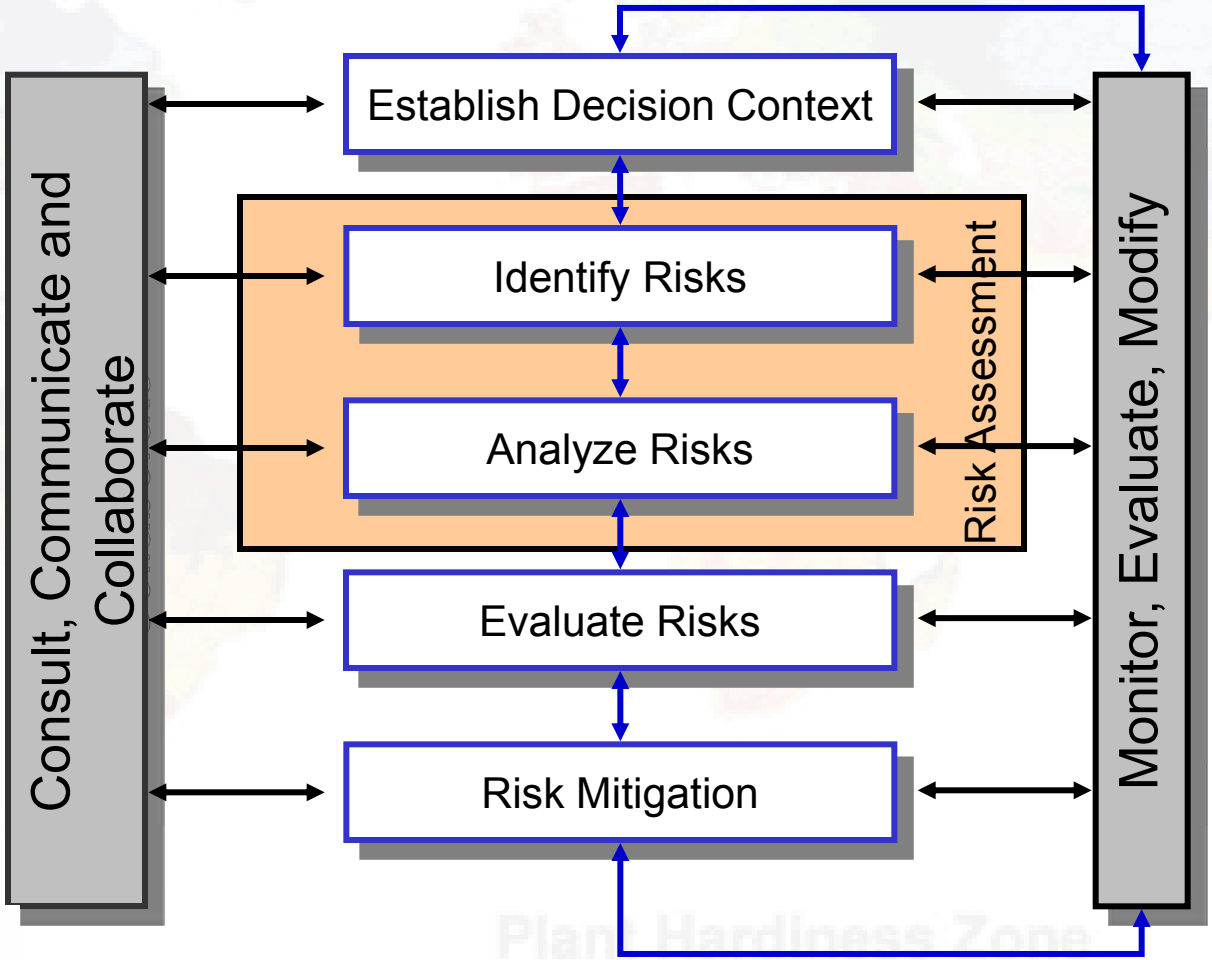
Guidelines for Microbiological Risk Management



DOA

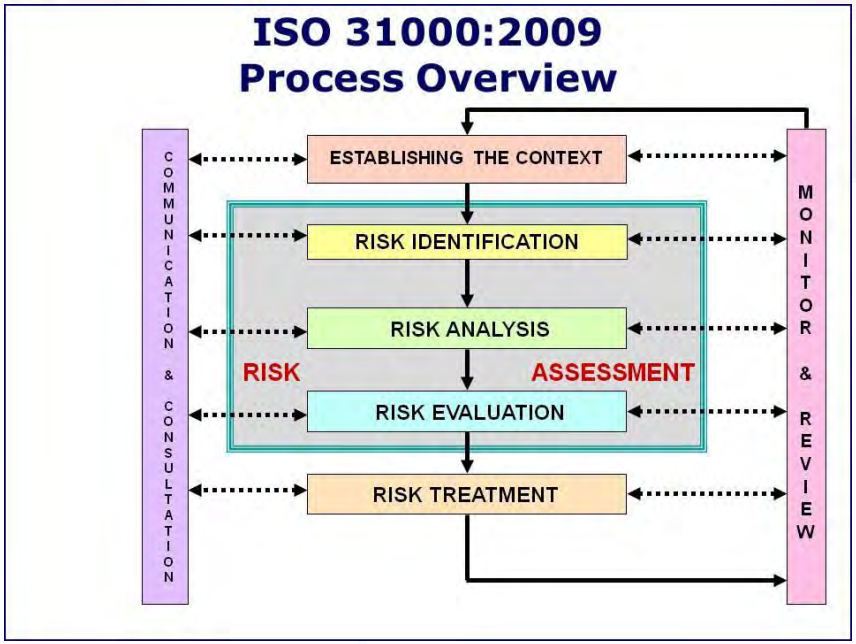

1 Identify Hazards
2 Assess Hazards
3 Develop Controls & Make Decisions
4 Implement Controls
5 Supervise & Evaluate
Composite Risk Management (CRM)

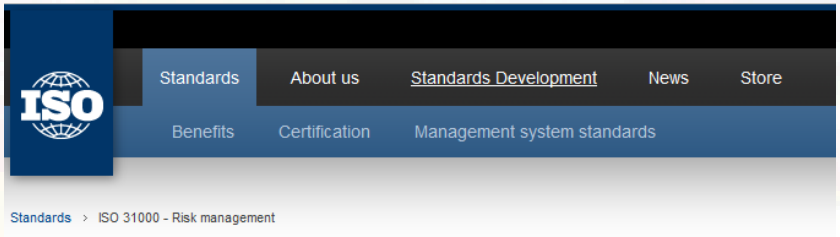
USACE Risk Management



US Army Corps of Engineers®

International Organization for Standardization





ISO 31000 - Risk management

Risks affecting organizations can have consequences in terms of economic performance and professional reputation, as well as environmental, safety and societal outcomes. Therefore, managing risk effectively helps organizations to perform well in an environment full of uncertainty.

ISO 31000:2009

ISO 31000:2009, *Risk management – Principles and guidelines*, provides principles, framework and a process for managing risk. It can be used by any organization regardless of its size, activity or sector. Using ISO 31000 can help organizations increase the likelihood of achieving objectives, improve the identification of opportunities and threats and effectively allocate and use resources for risk treatment. However, ISO 31000 cannot be used for certification purposes, but does provide guidance for internal or external audit programmes. Organizations using it can compare their risk management practices with an internationally recognised benchmark, providing sound principles for effective management and corporate governance.

Related Standards

A number of other standards also relate to risk management.

- ISO Guide 73:2009, *Risk management - Vocabulary* complements ISO 31000 by providing a collection of terms and definitions relating to the management of risk.
- ISO/IEC 31010:2009, *Risk management – Risk assessment techniques* focuses on risk assessment. Risk assessment helps decision makers understand the risks that could affect the achievement of objectives as well as the adequacy of the controls already in place. ISO/IEC 31010:2009 focuses on risk assessment concepts, processes and the selection of risk assessment techniques.

Enterprise Risk Management

Internal Environment
Risk Management Philosophy – Risk Appetite – Board of Directors – Integrity and Ethical Values – Commitment to Competence –Organizational Structure – Assignment of Authority and Responsibility – Human Resource Standards

Objective Setting
Strategic Objectives – Related Objectives – Selected Objectives – Risk Appetite – Risk Tolerances

Event Identification
Events – Influencing Factors – Event Identification Techniques – Event Interdependencies – Event Categories – Distinguishing Risks and Opportunities

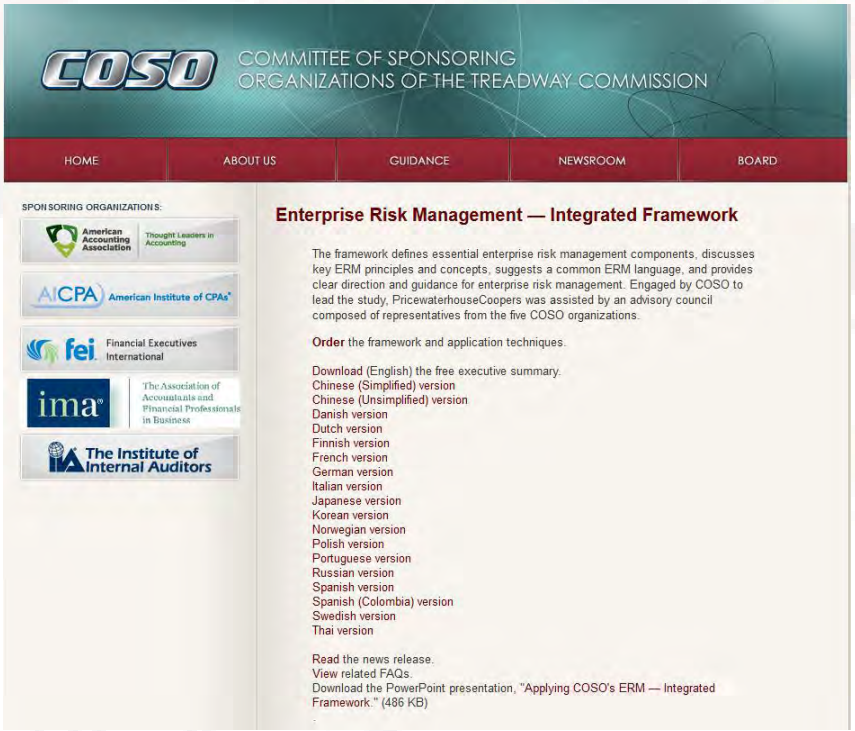
Risk Assessment
Inherent and Residual Risk – Establishing Likelihood and Impact – Data Sources – Assessment Techniques – Event Relationships

Risk Response
Evaluating Possible Responses – Selected Responses – Portfolio View

Control Activities
Integration with Risk Response – Types of Control Activities – Policies and Procedures – Controls over Information Systems – Entity Specific

Information and Communication
Information – Communication

Monitoring
Ongoing Monitoring Activities – Separate Evaluations – Reporting Deficiencies



ERM Institutional Risks

- Strategic
- Human health and safety
- Environmental
- Regulatory/Compliance
- Financial
- Operations
- Reputational

Do these things. It is much more than control.

Problem Identification
- Recognize
- Accept
- Define

Risk Estimation
- Process
- RM Activities

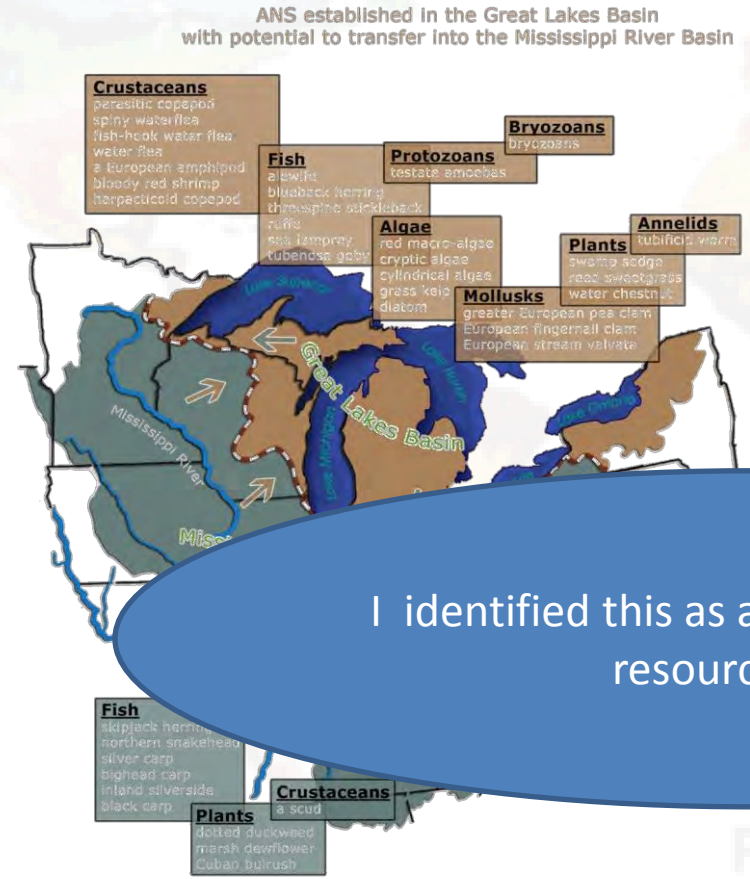
Risk Evaluation
- TLR
- RA Decision

Risk Control
- Formulate
- Screen
- Choose
- Implement

Risk Monitoring
- Monitor
- Evaluate
- Iterate


Consider an example from US Government

GLMRIS

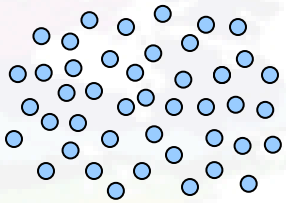


I identified this as a problem and gave resources to it

GLMRIS

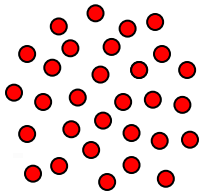
Planning Phase Interim Products

ANS Controls
April 2012

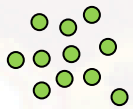


Screening Criteria

Eliminated Controls



Screened Controls



January 2013

Qualitative Risk Framework

5 Pathways in CAWS

Dispersal Mechanisms
Swim, Float, Hitchhike, Boats

39 ANS of Concern - CAWS

Time-Steps
Current, 10-yr, 25-yr, 50-yr

Effects
Environmental, Economic, Social/Political, Other

...sequence

November 2012

I okayed this process.

Hig... ANS

Medium-Risk ANS

Low-Risk ANS

Formulate Alternative Plans

GLMRIS Report

December 2013

Alternative 1
Alternative 2
...
Alternative N

I identified these as the ANS of concern from 294 ANS and after 35 individual ANS risk assessments.

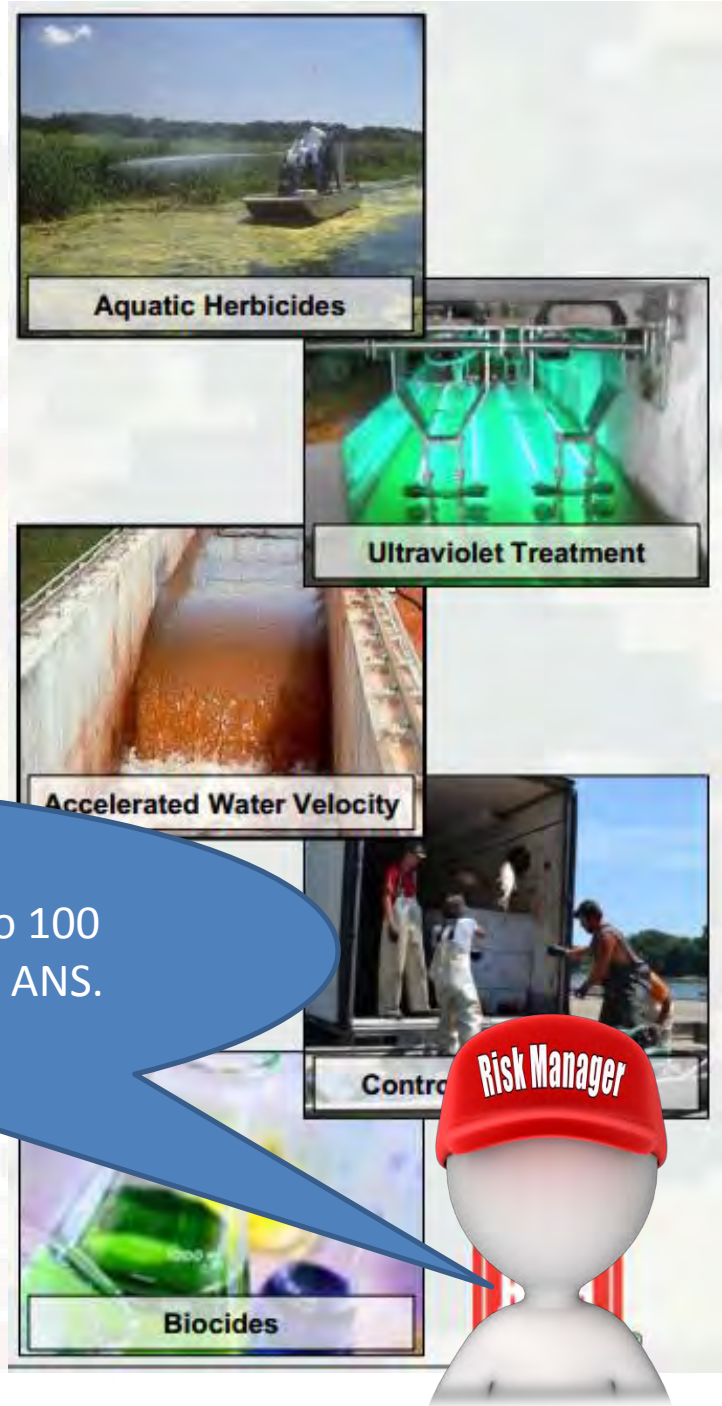
A P[illegible]est

	NUISANCE SPECIES		
	Asian Carp		Scud
	Silver Carp	Bighead Carp	*A. lacustre*
			
Mode of Transport	Eggs & Fry - Passive drift Juvenile & Adult - Active swimming	Eggs & Fry - Passive drift Juvenile & Adult - Active swimming	Passive drift Benthic Movement Hull Fouling Ballast Water
Current Location	Adult - Dresden Island Pool (2015) Juvenile - Peoria Pool (2015)	Adult - Dresden Island Pool (2015) Juvenile - Peoria Pool (2015)	Dresden Island Pool (2005)
Information	Extensive research regarding life history, potential for spread, and establishment in the Great Lakes	Extensive research regarding life history, potential for spread, and establishment in the Great Lakes	Little research regarding life history, ways to control, or prevent spread
Risk of Establishment - GLMRIS Report	T50: Prob(est) - M T50: Con(env, econ, & soc/pol) - H(M)	T50: Prob(est) - M T50: Con(env, econ, & soc/pol) - H(M)	T50: Prob(est) - H T50: Con(env) - M(H) T50: Con(econ & soc/pol) - N(L)

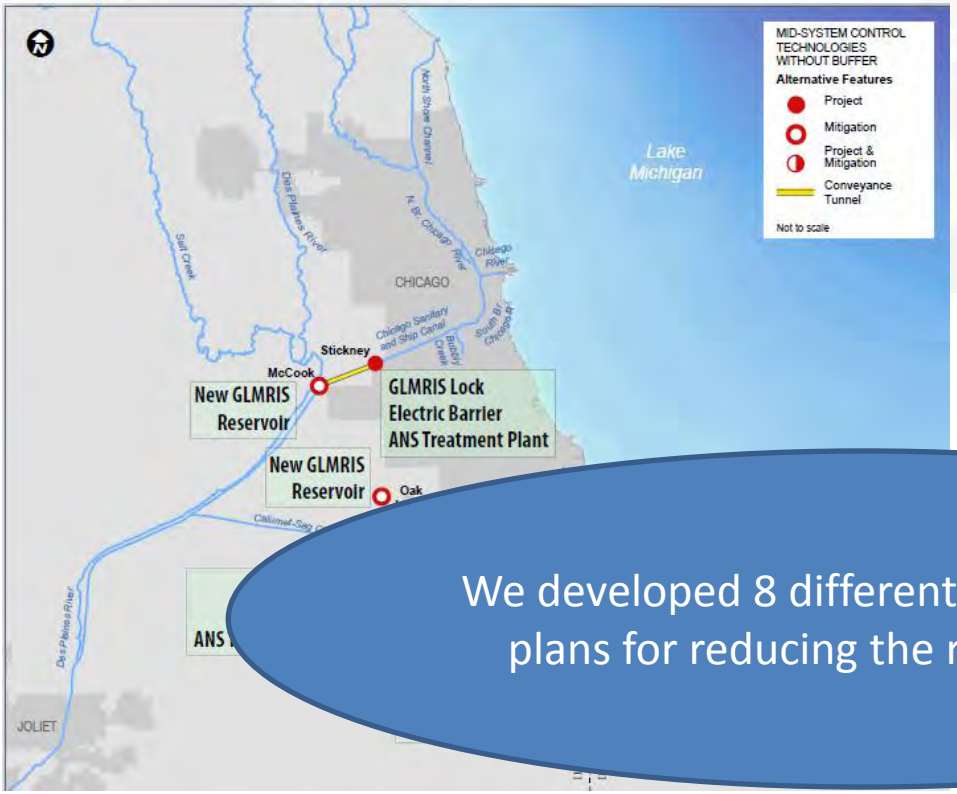
Risk Management

- Control Technologies
  - 27 available ANS control categories
    - > 90 individual measures
- Non-structural plan developed
  - E
- Stru

We identified and evaluated close to 100 ways to prevent the spread of these ANS.



Plan 3



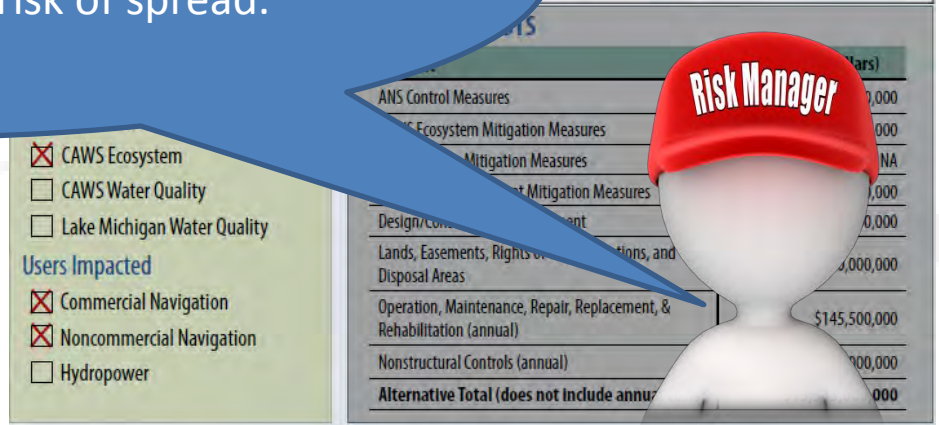
ANS RISK REDUCTION

Alternative Plan 3 is expected to reduce the risk of ANS establishment at the time steps shown below in green.

	Reduction in Risk at Year			
Species	**0**	**10**	**25**	**50**
Species Posing Risk to Great Lakes Basin				
Scud				
Bighead carp			X	X
Silver carp			X	X
Species Posing Risk to Mississippi River Basin				
Bloody red shrimp			X*	X*
a Diatom				
Fishhook waterflea				
Grass kelp		X	X	X
Red algae				
Reed sweetgrass				X
Ruffe				X
Threespine stickleback			X*	X*
[illegible]		X	X	X

earlier time steps. Risk of ANS establishment is
implementation.

We developed 8 different comprehensive plans for reducing the risk of spread.



SMART GLMRIS

Table ES.1 GLMRIS Evaluation Criteria Summary

		GLMRIS Alternatives Evaluation Criteria†												
				Effects of GLMRIS Alternatives										
		Effectiveness at Preventing Interbasin Transfer (at time of implementation)	Implementation (years)	Negative CAWS Environmental Impacts	Negative Water Quality Impacts (CAWS)	Negative Water Quality Impacts (Lake Michigan)	Water Quality Mitigation Measures Cost[4]	FRM (net change in EEAD – an annual impact)	FRM Mitigation Measures Cost[4]	Commercial Cargo Cost Impacts (annual cost)	Non-Cargo Navigation Impacts	Complexity of Regulatory Compliance	Cost of the ANS Control and Mitigation Measures[4]	Nonstructural & OMRR&R Costs (annual)[4]
GLMRIS Alternatives	No New Federal Action – Sustained Activities	★	The No New Federal Action – Sustained Activities Alternative assumes that any currently funded ANS prevention actions are maintained to include the operation of the existing electric barrier in Romeoville, IL. All alternatives below are actions in addition to the No New Federal Action – Sustained Activities Alternative. For complete details on this alternative, please review Section 3.8.											
	Nonstructural Control Technologies	★★	0	L	L	L	N/A	$0	N/A	Likely minimal[3]	L	L	$–[5]	$68 M
	Mid-System Control Technologies without a Buffer Zone – Flow Bypass[2]	★★★	25	M	L	L	N/A	$1.1 M	$9,100 M	$0.75 M	L	M	$15,500 M	$210 M
	Technology Alternative with a Buffer Zone[2]	★★★	10	H	L	L	$1,600 M	$0.6 M	$2,000 M	$0.50 M	M	M	$7,800 M	$220 M
	Lakefront Hydrologic Separation[2]	★★★★	25							$210 M	H	H	$18,300 M	$160 M
	Mid-System Hydrologic Separation[2]	★										H	$15,500 M	$140 M
	Hybrid – Mid-System Separation Cal-Sag Open[2]											H	$15,100 M	$180 M
	Hybrid – Mid-System Separation CSSC Open[2]	★★★	25							.80 M	M	H		

I will chose the best plan based on these criteria, which risk assessors estimated to provide me with the information I needed.

† Evaluation Criteria Descriptions are located on the reverse side of this table.

1 Under the Lakefront Hydrologic Separation Alternative, stormwater and CSOs would no longer be able to backflow to Lake Michigan, likely reducing beach closures and contamina

2 This alternative includes the nonstructural measures identified in the Nonstructural Alternative.

3 A quantified evaluation of the impacts of the Nonstructural Alternative was unable to be completed. Based on professional judgment, the impacts are believed to be likely minimal.

4 The costs presented in the GLMRIS Report are commensurate with the five percent level of detail in design for each alternative. The cost and schedule estimates are appropriately used in this report as a means to compare the tives p ing stream for an alternative is assumed to be sufficient to support annual progress to meet corresponding implementation timelines. These cost and schedule estimates are not intended to support authorizing language, and will change w ore gns of an alternative.

5 Estimated initial costs for the Nonstructural Alternative are assumed negligible and sufficiently captured by the estimate for the annual OMRR&R Costs.

Congress (Risk Managers) Said

- Prevent the upstream transfer of ANS from the MR Basin to the GL Basin through the CAWS in the vicinity of the Brandon Road Lock and Dam in advance of a bidirectional solution.

Peer Review Report of the Procedures and Standards that Govern the Consideration of Import and Export Requests Under the Plant Protection Act

A Report Presented by the National Plant Board to the Secretary of Agriculture and the US Congress

July 2006

NPB national plant board

Recommendation: Development and publication of a strategic risk management framework for PPQ that will function, more or less, as a flexible standard operating procedure for the agency. This should include:

- **A risk management process that identifies the outcomes expected from measures analyzed, and,**
- **a process to monitor and evaluate the efficacy of risk mitigation measures chosen then a means to modify these as necessary.**

We've been waiting for PPO community of practice to up its risk management game since this report in 2006.

Peer Review Report of the Procedures and Standards that Govern the Consideration of Import and Export Requests Under the Plant Protection Act

A Report Presented by the National Plant Board to the Secretary of Agriculture and the US Congress

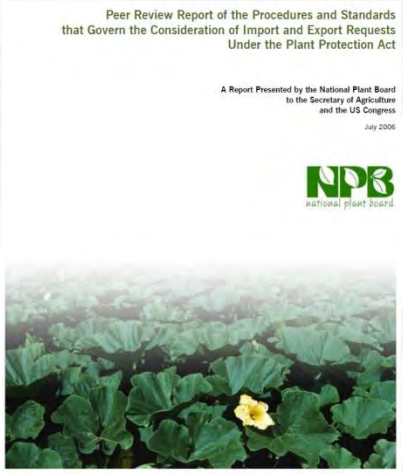
July 2006

NPB national plant board

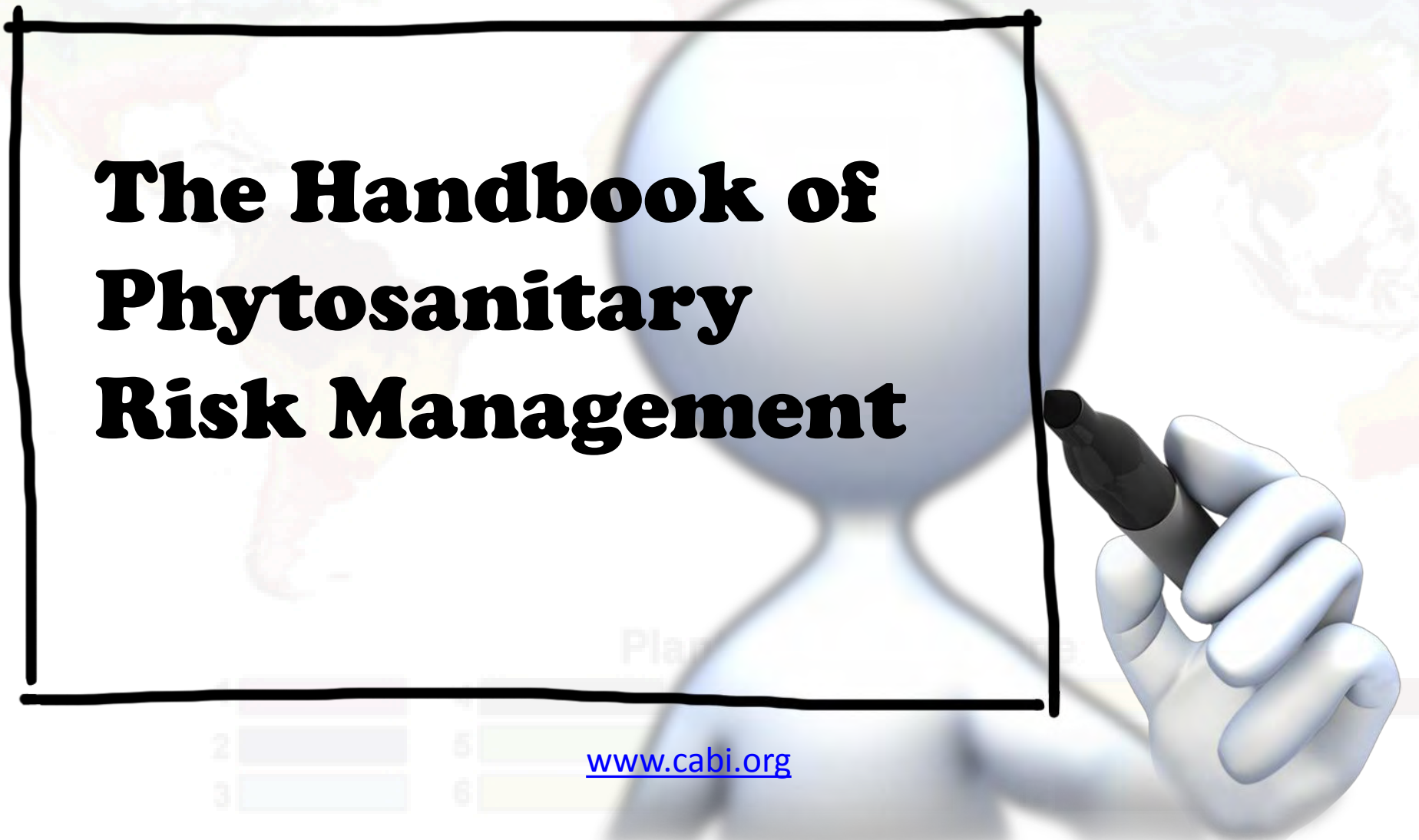
Recommendation

Risk Management Ought to Include…

- Identifying problems
- Setting priorities
- Allocating resources to these priorities
- Commissioning risk assessments
- Evaluating the risk
- Identifying and evaluating measures to reduce risks
- Overseeing the risk communication process
- Negotiating and making decisions
- Identifying outcomes to monitor
- Monitor and evaluate the outcomes of the risk management measure
- Modify the measures as needed
- Directing and managing the entire process



Coming in 2017



www.cabi.org

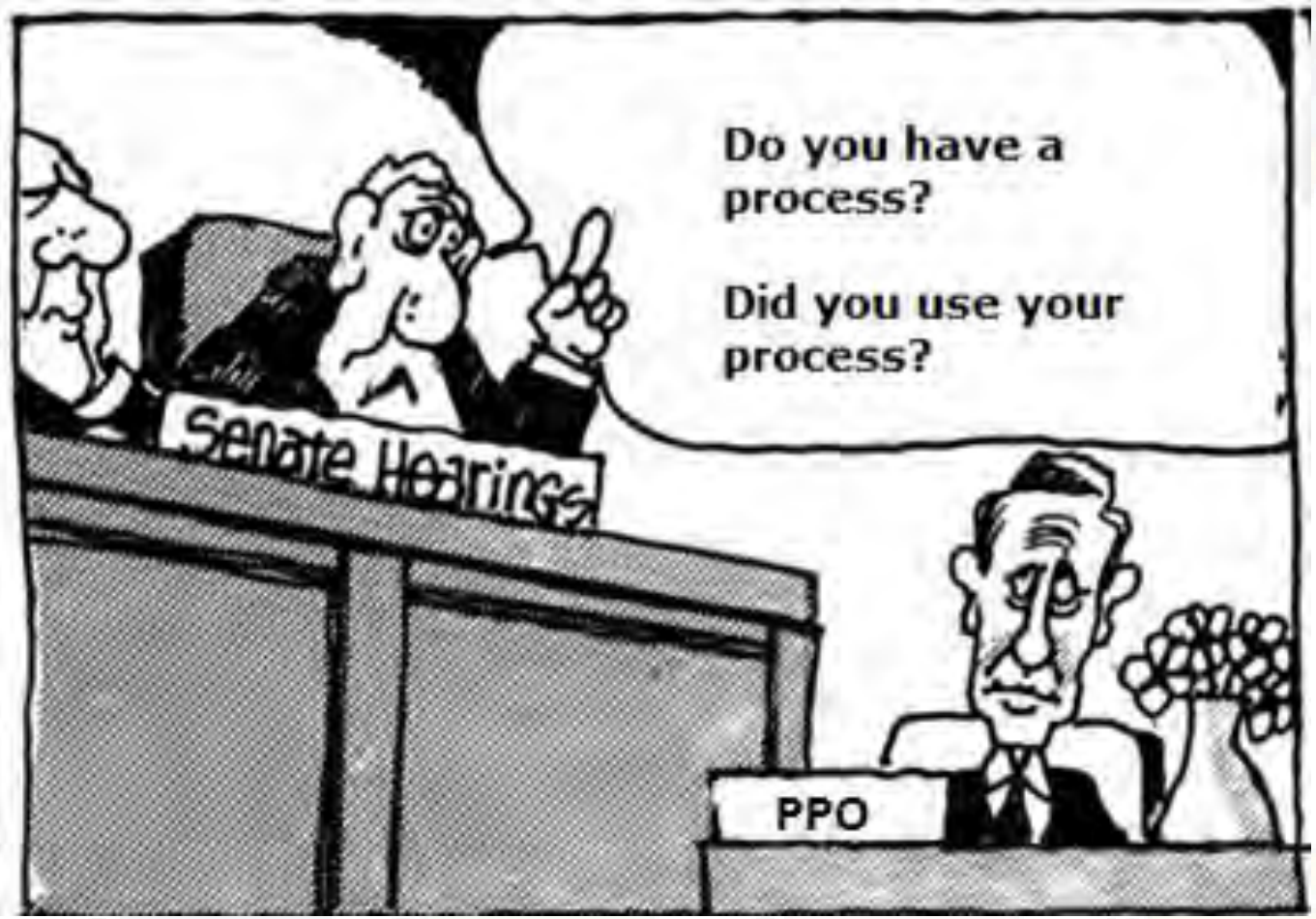
Risk Assessment

We encourage PPO's to grow from risk assessment focus to a risk analysis focus.

THE FUTURE OF RISK MANAGEMENT


We would like to change that.
Risk Manager
Risk Assessme
cience Ba
Risk Management
“Policy Based”
Risk Communication
Interactive exchange of information
and opinions concerning risks

Take Away


Do you have a process?
Did you use your process?
Senate Hearings
PPO