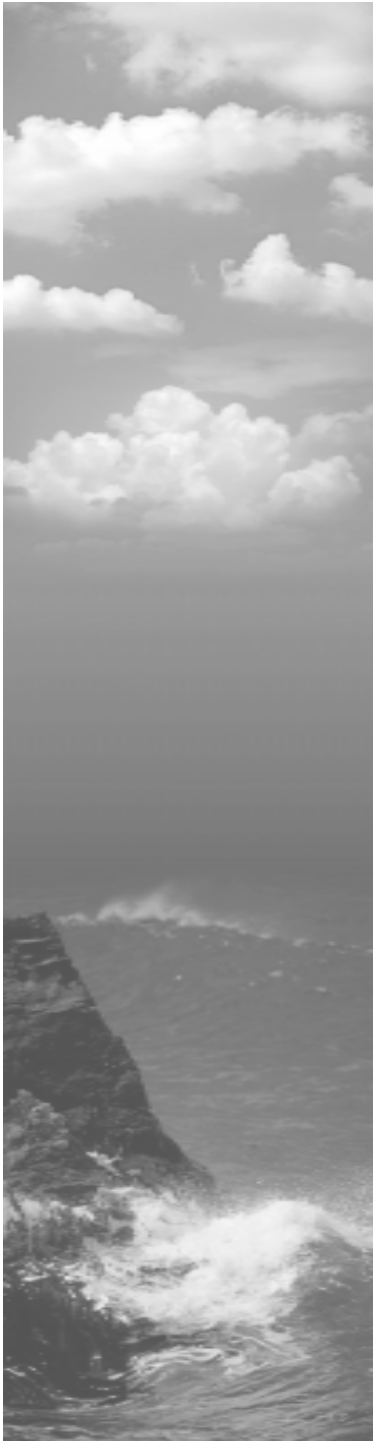




*The Risk Management Framework
and its Application to Climate Change*

by
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Global Change Strategies International

December 2001



RISKS and CHOICES

SO WHAT?

HOW SHOULD WE DEAL WITH THEM?



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- **What measures should be taken?**
- **How much time is available?**
- **What will it cost?**

HOW SHOULD WE DEAL WITH THEM?



RISKS and CHOICES

SO WHAT?

- What measures should be taken?
- How much time is available?
- What will it cost?

HOW SHOULD WE DEAL WITH THEM?

- Do nothing
- Share losses
- Modify or eliminate the threat
- Reduce or prevent effects
- Avoid the effects



THE DILEMMA

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Which can result in denial, delay or deferral of necessary action



A PROCESS THAT CAN HELP

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Scientists, engineers and economists have for some time routinely used a risk management framework to assist them in making optimal decisions where complicated risks are involved.

But, it was perceived to be too complex and difficult, suitable only for experts.



BUILDING A NATIONAL STANDARD

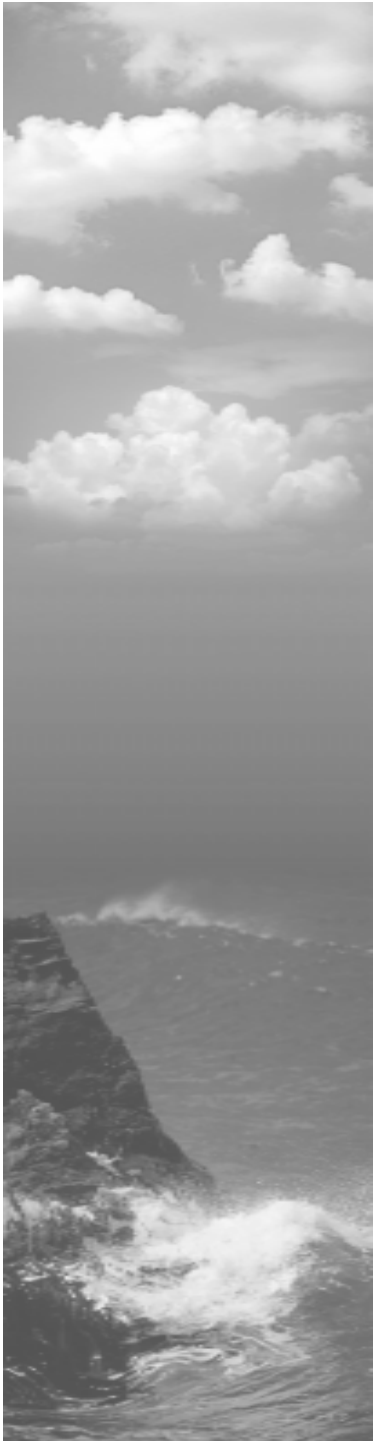
In Canada representatives of a number of organisations that regularly used risk management came together to write a simplified guide to the process to clearly show its benefits and facilitate its use.



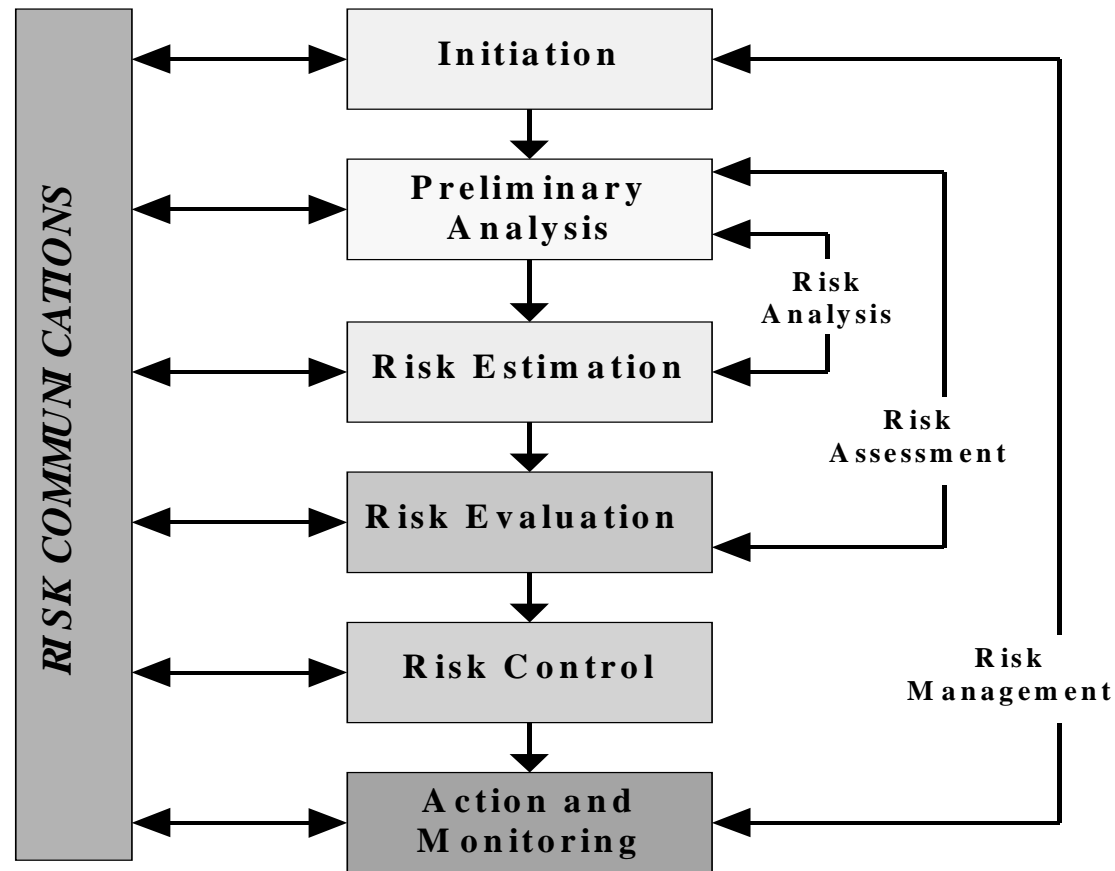
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The result: A National Standard of Canada, *Risk Management: Guideline for Decision-Makers* (CAN/CSA-Q850-97).



THE RISK MANAGEMENT PROCESS



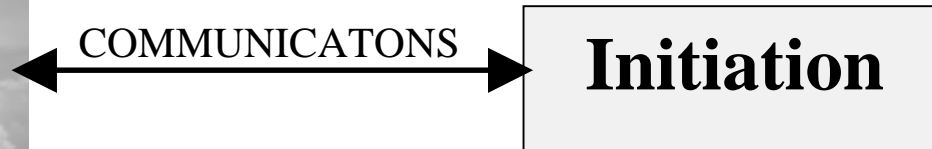


RISK

Risk is made up of three components:

- **Frequency of the loss**
- **Consequences of the loss**
- **Perceptions of the stakeholders and acceptability of the risk**

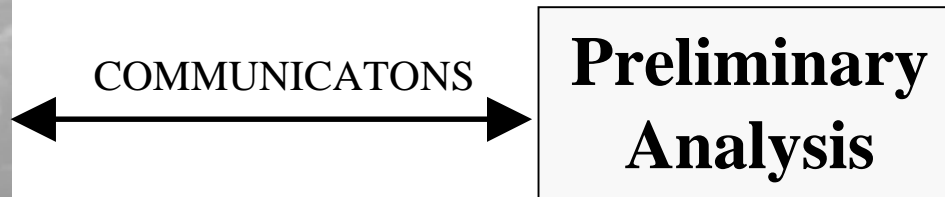
1. BEGINNING THE PROCESS



Set up and start the process:

- **Define the problem**
- **Identify the management team**
- **Assign responsibility and resources**
- **Identify potential stakeholders and begin to develop consultation process**

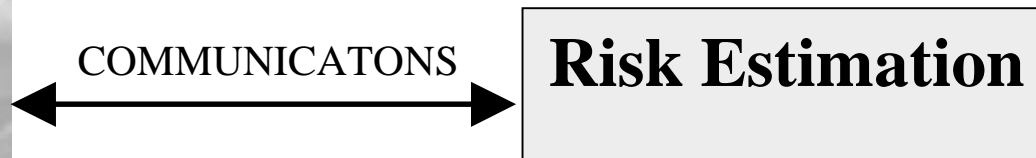
2. THE PRELIMINARY ANALYSIS



Define the risk problem and undertake analysis and evaluation:

- **Define scope of decisions**
- **Identify hazards**
- **Begin stakeholder analysis**
- **Start collecting information**

3. RISK ESTIMATION

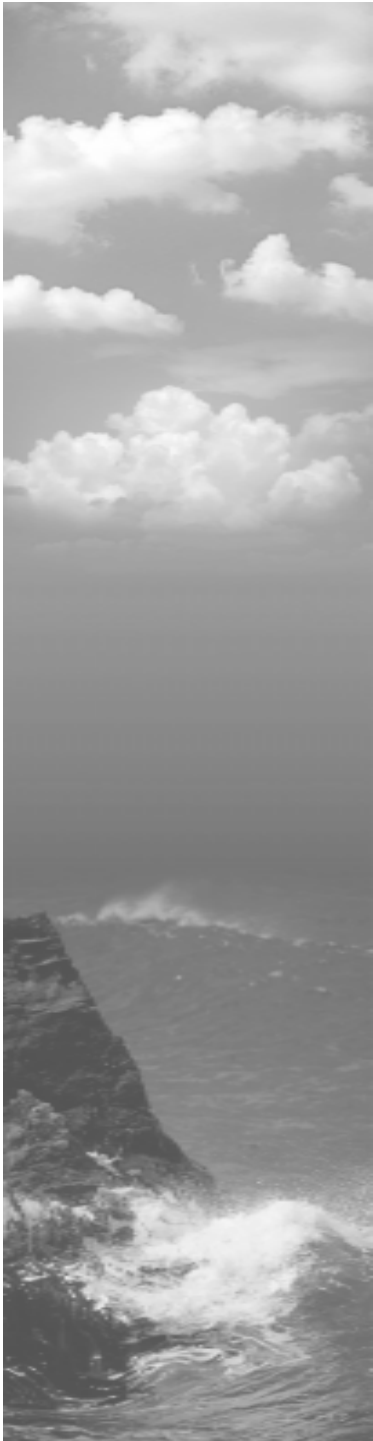


The frequency and consequences of loss associated with each risk scenario are estimated

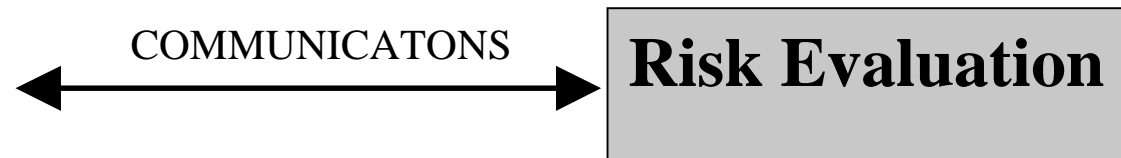
- **Decide methodology for estimating frequency and consequences**
- **Estimate frequency of risk scenarios**
- **Estimate consequences of risk scenarios**
- **Refine stakeholder analysis through dialogue**

RISK ANALYSIS

Step 2 plus Step 3 are often called “risk analysis”

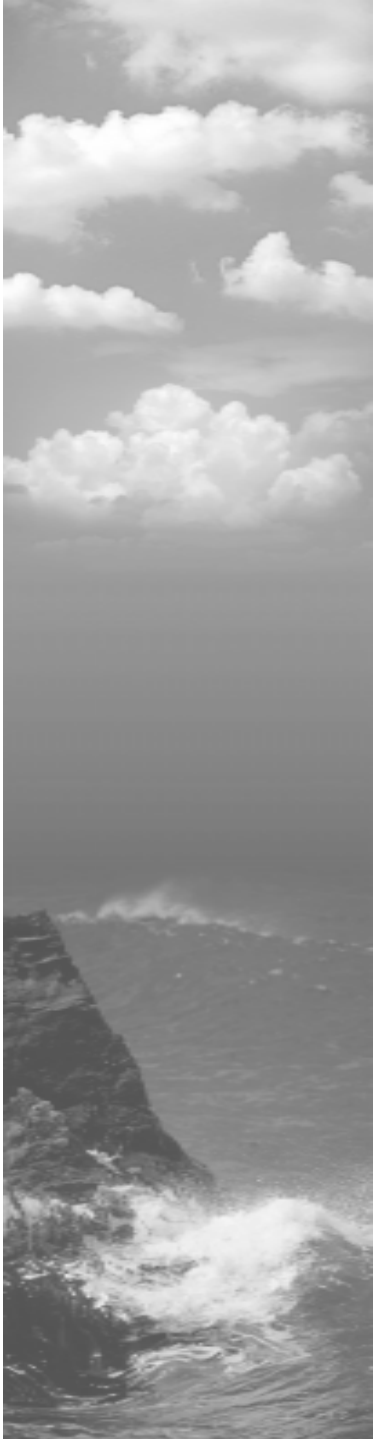


4. RISK EVALUATION



Estimated risks are evaluated in terms of issues, stakeholder needs and concerns, benefits and costs.

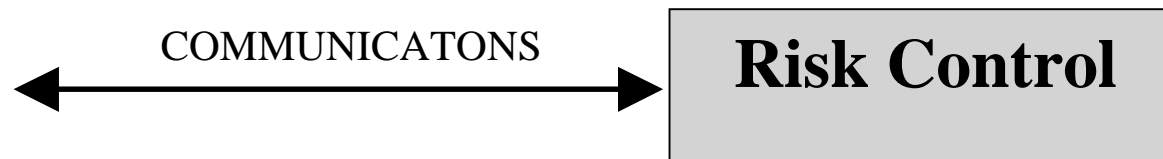
- **Estimate and integrate benefits and costs**
- **Assess stakeholder acceptance of risk**



RISK ASSESSMENT

The process in Steps 2, 3 and 4 is often referred to as “risk assessment”

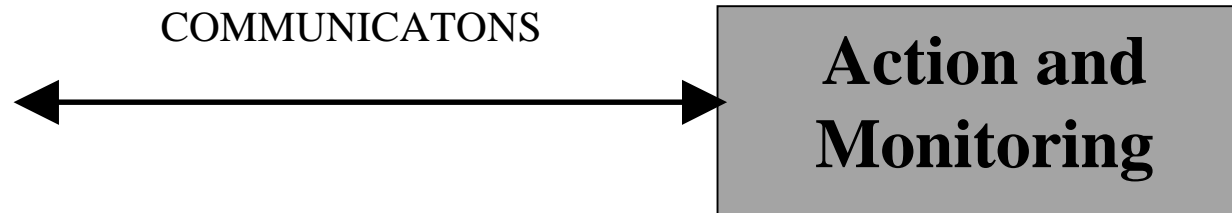
5. RISK CONTROL



Risk control options to reduce, control, respond to or avoid the risk including mitigation of the effects.

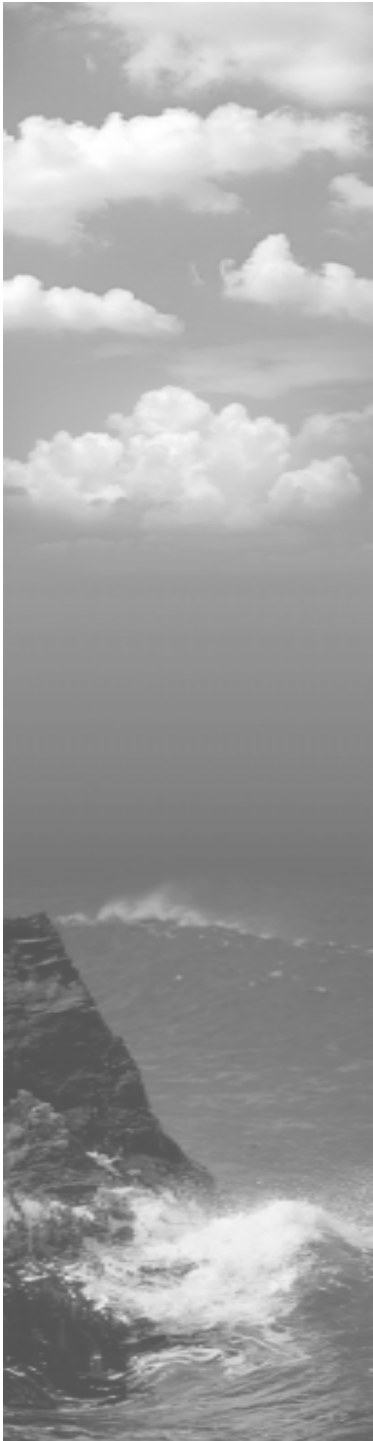
- **Identify feasible risk control options**
- **Evaluate risk controls**
- **Evaluate “residual” risk**
- **Assess stakeholder acceptance**

6. ACTION AND MONITORING

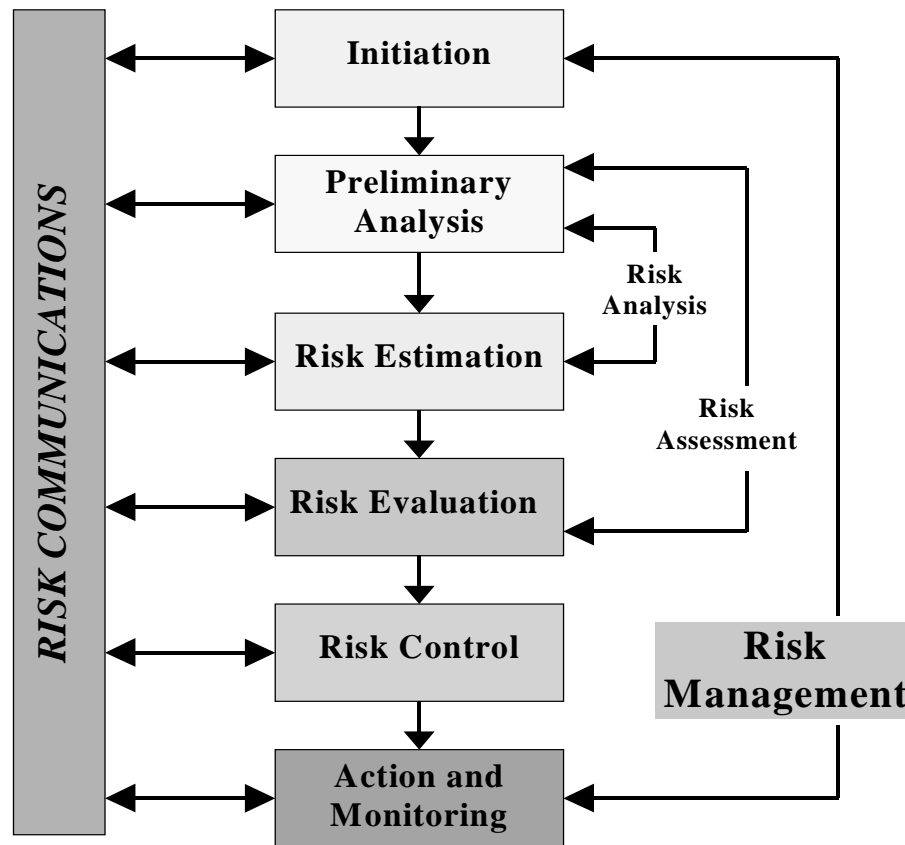


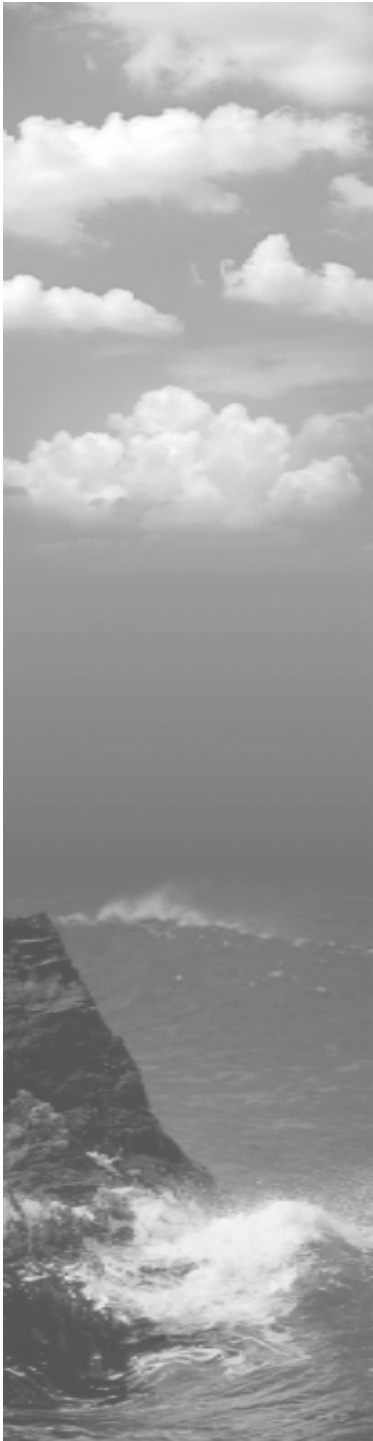
The chosen risk control actions, financing and communications strategies are implemented, the effectiveness is evaluated and monitoring is set up:

- **Develop and implement plan**
- **Evaluate effectiveness and input into next cycle**
- **Establish monitoring process**



THE RISK MANAGEMENT PROCESS





SOME ADDITIONAL THOUGHTS

- **This process is very flexible, science-based.**
- **Provides documentation of decisions and a “risk library”.**
- **Emphasizes communications with all stakeholders**
- **Applies to a wide variety of situations (adaptation to CC, extreme events etc.).**

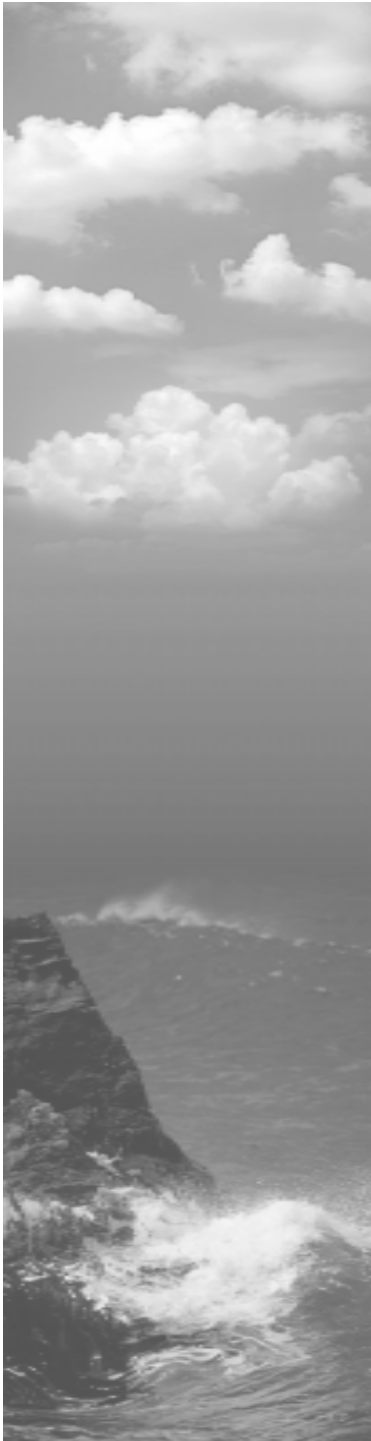


SOME MORE ADDITIONAL THOUGHTS

- Many governments use the “Emergency Management System”, the “Incident Command System” or a more general prevention, preparedness, response and recovery paradigm.
- These fit comfortably within a risk management decision framework.
- The broader risk management framework is more comprehensive, provides more rigour in the risk assessment and analysis steps and requires much more consultation with and involvement of key stakeholders and others who consider that they have an interest in the process

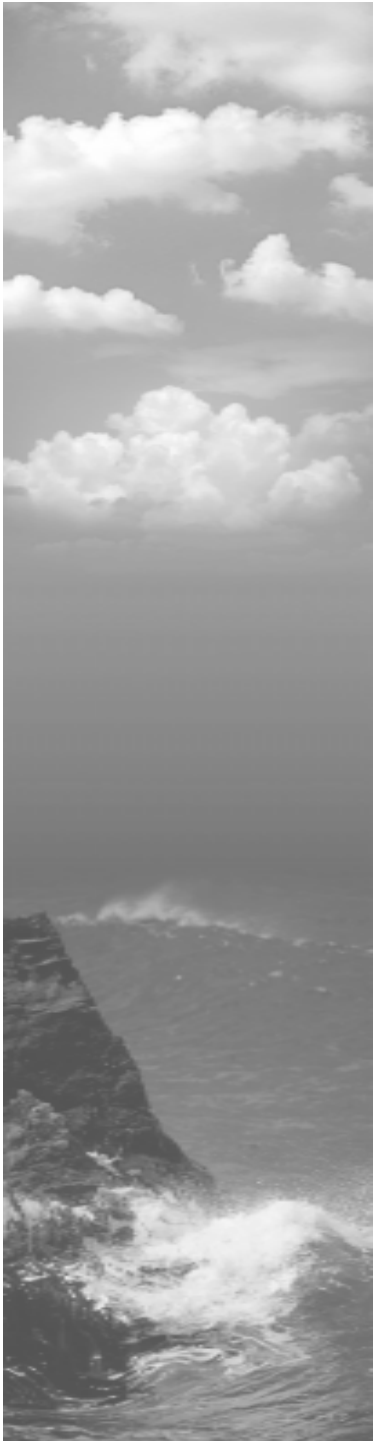
SUMMARY

- **Looked at the risks and choices issue related to climate change.**
- **Considered the dilemma of uncertainty, complexity and the impact upon making choices.**
- **Examined the risk management process as an aid to decision-making.**
- **Looked briefly at the components of the process.**
- **Considered some of the advantages offered.**



TERMS - HAZARD

A source of potential harm, or a situation with a potential for causing harm, in terms of human injury, damage to health, property, the environment, and other things of value, or some combination of these.





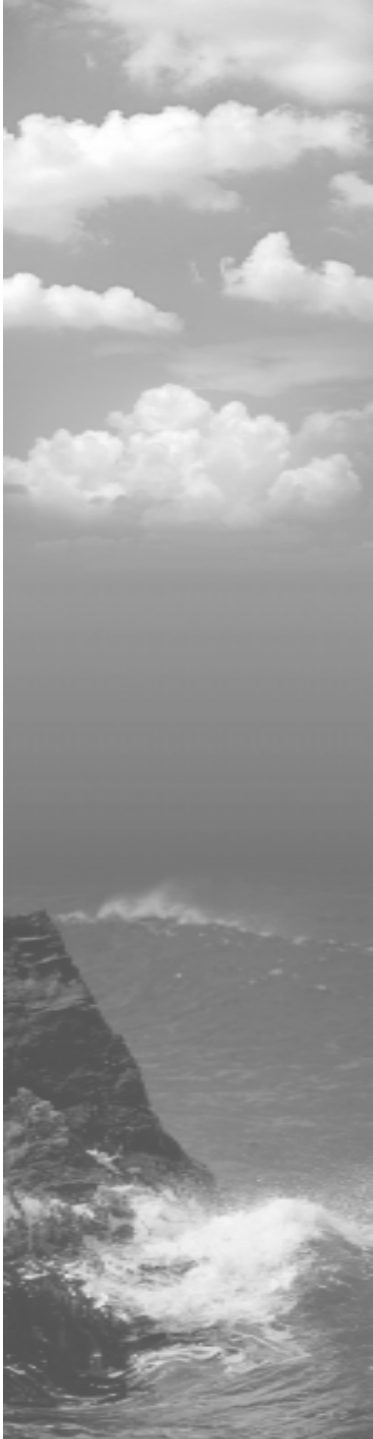
TERMS - MITIGATION (1)

In the climate change lexicon, a mechanism, means or process for reducing the net emission of greenhouse gases or increasing the capacity or number of carbon “sinks” or depositories.



TERMS - MITIGATION (2)

In the language of risk management and emergency preparedness, mitigation means to cause to become less harsh, hostile; severe or painful; to moderate or secondarily, to carry out sustained action to reduce the risk to life, property and the environment from disasters of all types



TERMS - PREVENTION

An emergency preparedness term meaning an action or actions to keep from happening or forestalling an emergency, disaster, spill or release.



TERMS - RISK

The chance of an injury or loss as defined as a measure of the probability and severity of an adverse effect to health, property, the environment, or other things of value. Risk is a product of the probability of the hazard and the consequences of or vulnerability to that hazard and the perception of the stakeholder.

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