



AFC Theme 2
Risk Informed Decision Making

Risk Terminology and Communicating Flood Risk

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Risk is not new to Corps

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RISK-BASED ANALYSIS FOR EVALUATION OF HYDROLOGY/ HYDRAULICS AND ECONOMICS IN FLOOD DAMAGE REDUCTION STUDIES

- 1. Purpose.** This circular provides guidance on the evaluation framework to be used in Corps of Engineers flood control and flood damage reduction studies. It is jointly promulgated by Planning and Engineering and applies to Hydrology/Hydraulics and Economic evaluations.
- 2. Applicability.** This circular is applicable to all HQUSACE/OCE elements, major subordinate commands, districts, laboratories and all field operating agencies (FOA) having Civil Works responsibilities. It applies to all implementation studies for flood control and flood damage reduction projects.

What is New?

- Risk analysis as comprehensive approach
- Risk management is not just projects
- Risk is more than economics and expected values
- Uncertainty explicitly recognized in analysis and decisions
- Collaborative risk management may mean the Corps is not in charge

Risk Language

- Risk terms tend to be redefined by each discipline to meet their narrow usage
- If we are to communicate risk to stakeholders and the public we need to be able to communicate among ourselves
- The Corps needs to standardize its risk terminology

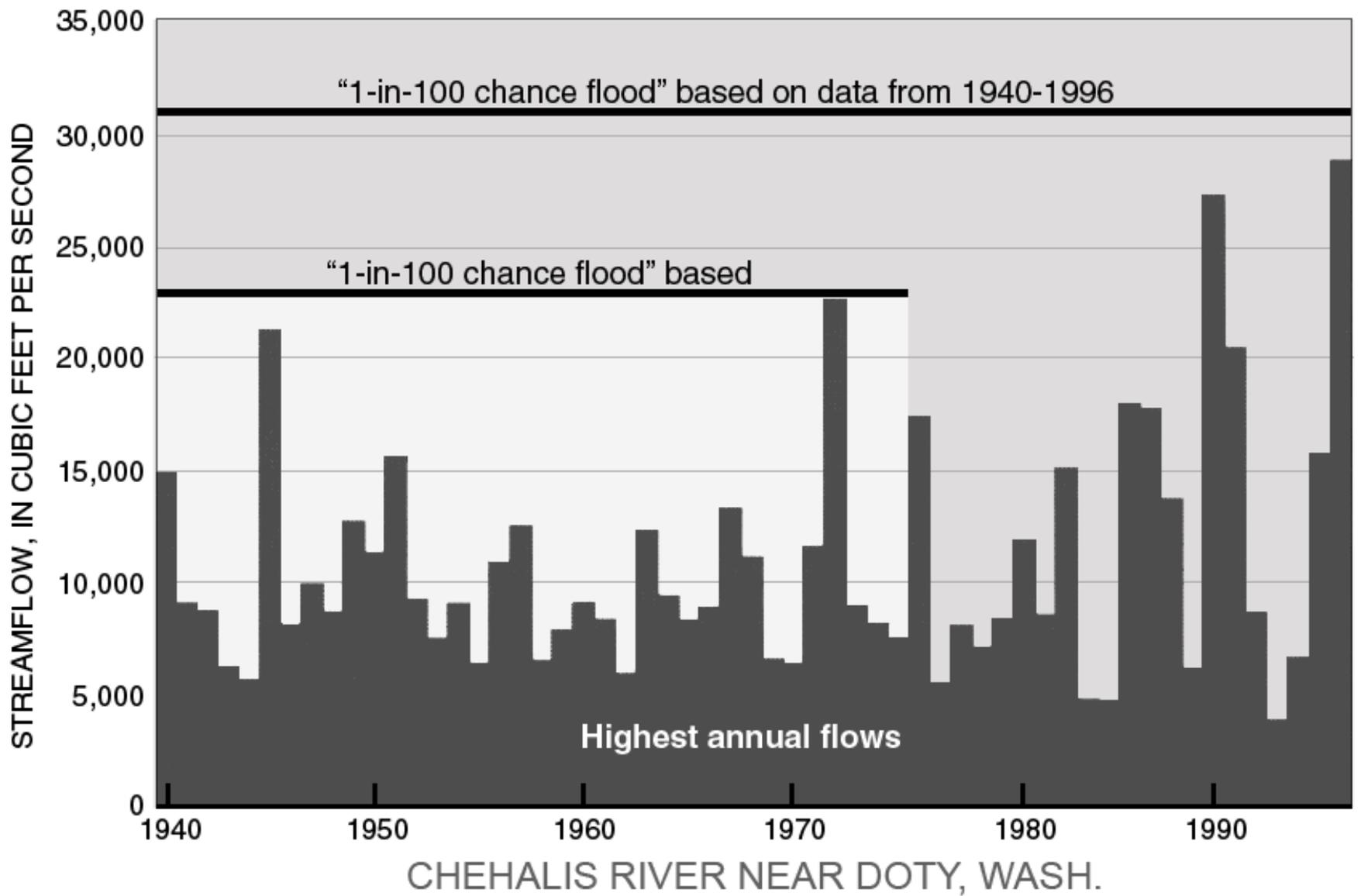
Risk

- The likelihood and severity of adverse outcomes



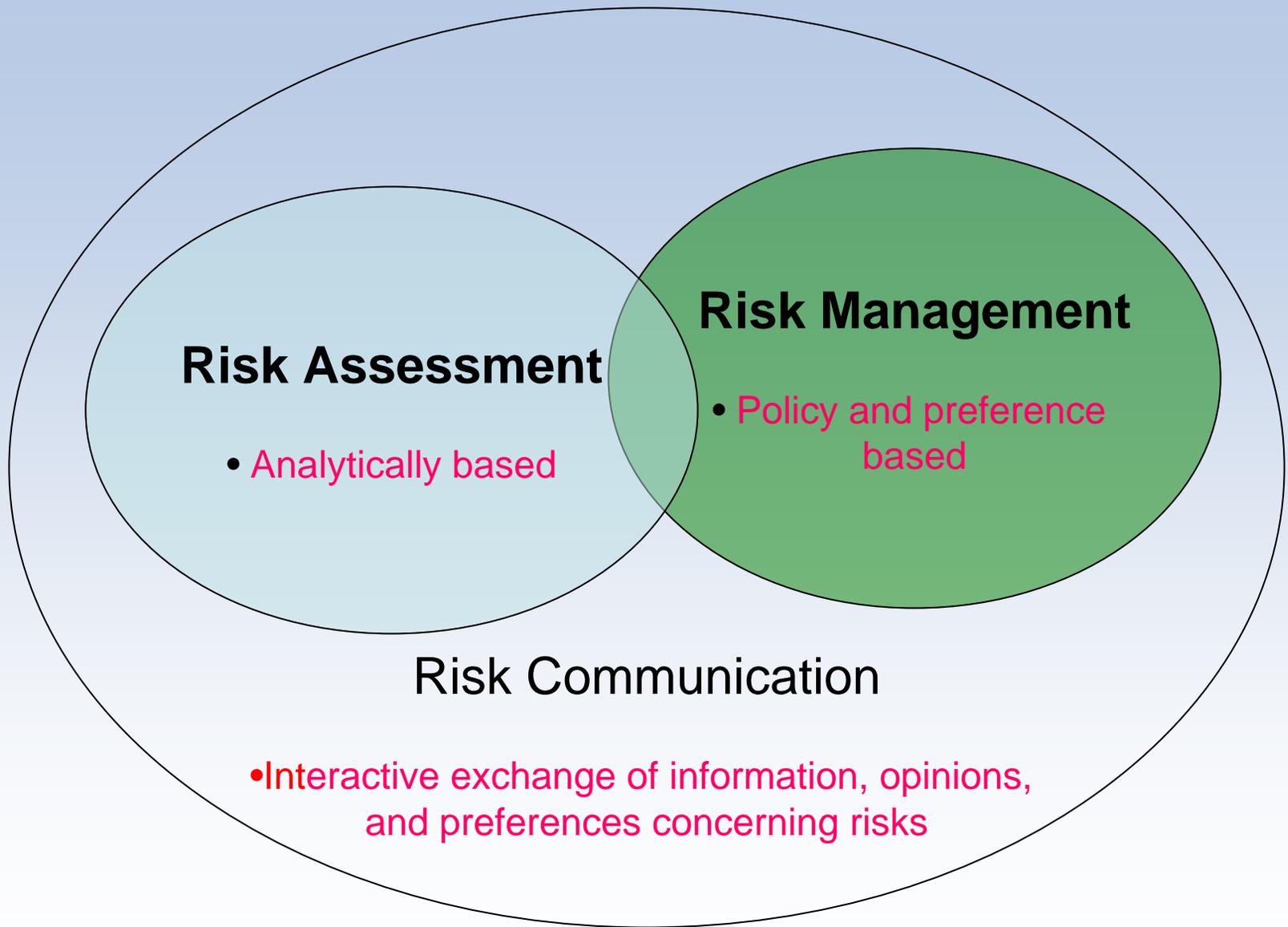
Speculative Risk

- A category of risk that, when undertaken, results in an uncertain degree of gain or loss



Risk Analysis

- Risk analysis is a **decision-making framework** that comprises three tasks: risk assessment, risk management, and risk communication.



Risk Assessment

- Analytically based

Risk Management

- Policy and preference based

Risk Communication

- Interactive exchange of information, opinions, and preferences concerning risks

Residual Risk

- Risk remaining after a risk management measure has been implemented.

We do not do a good job of communicating residual risk.

The screenshot shows the USA TODAY website interface. At the top, there is a search bar and navigation links for Home, News, Travel, Money, Sports, and Weather. The main content area features a large 'OPINION' header and a cartoon illustration. Below this, there is a bar chart titled 'Damages in billions' showing data for various years: 1910s (\$30.8), 1950s (\$44.8), 1960s (\$28.3), 1970s (\$63.5), 1980s (\$49.1), 1990s (\$72.1), and 2000-07 (\$82.4). To the right of the chart is a photo of a flooded house with the headline 'Latest Midwest floods expose lessons unlearned'. Below the photo, there is a text block starting with 'The floods that swallowed towns and farms, claimed at least 24 lives, drove 38,000 people from their homes and left billions of dollars in damage across the Midwest cannot be written off solely as an act of nature. The four weeks of major flooding that began in June are just as much a man-made disaster, one in the making for decades.' At the bottom of the page, there is a 'Today's topics' section with a list of items including 'Latest Midwest floods expose lessons unlearned', 'A flimsy vow on the budget', 'Math meltdown', 'Helms subtly carried torch of obituary supremacy', 'Obama's super-patient status questionable', and 'Reevaluation of dollar infersness oil'. The footer contains the text 'Posted at 12:22 AM ET, July 06, 2008 in Environment - Editorial, USA TODAY editorial | Permalink | Comments 3' and the logo for 'NS for CHANGE'.

Year	Damages in billions
1910s	\$30.8
1950s	\$44.8
1960s	\$28.3
1970s	\$63.5
1980s	\$49.1
1990s	\$72.1
2000-07	\$82.4

Latest Midwest floods expose lessons unlearned

The floods that swallowed towns and farms, claimed at least 24 lives, drove 38,000 people from their homes and left billions of dollars in damage across the Midwest cannot be written off solely as an act of nature. The four weeks of major flooding that began in June are just as much a man-made disaster, one in the making for decades.

(Photo - In Clarksville, Mo., Dustin Wright sits in front of his home last month / Win McNamee, Getty Images)

Continue reading.

Posted at 12:22 AM ET, July 06, 2008 in Environment - Editorial, USA TODAY editorial | Permalink | Comments 3



“Texas Chicken”

What Risk Communication is

- Considers human perceptions of risk
- Multi-directional communication among communicators, publics and stakeholders
- Activities before, during and after an event
- An integral part of an emergency response plan
- Empowers people to make their own informed decisions

Language of Communication is Important

- *When federal officials repeatedly refer to "100 year" floods and levees designed to protect against them, **they mislead people into thinking that such storms are once-in-a-lifetime events.** Whatever statistical validity these terms ever had, **they no longer serve the public,** and the government would do better to drop them.*

USA Today, 8 July

**"PERSONS NOT HEEDING
EVACUATION ORDERS IN
SINGLE FAMILY, ONE OR TWO
STORY HOMES WILL FACE
CERTAIN DEATH. ."**

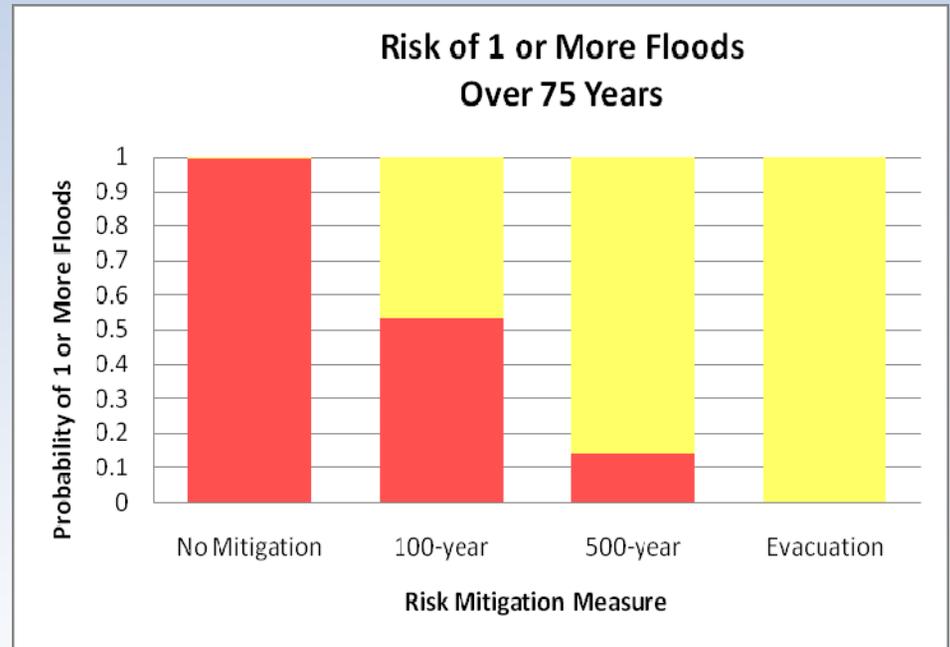
*National Weather Service
Hurricane Ike Warning for
Galveston
September, 2008*

ACTIONS
for **CHANGE**

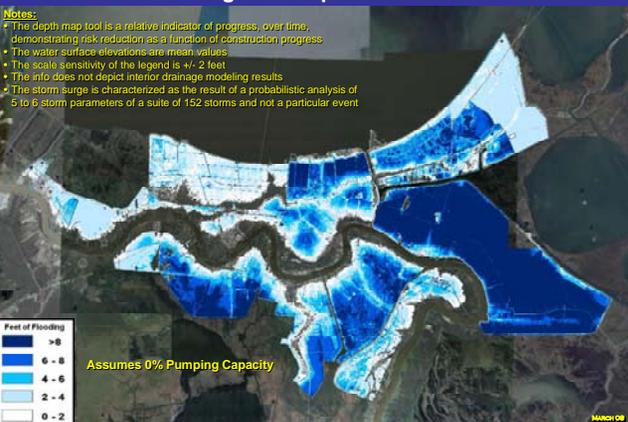
Communicating with Data

10-yr Floodplain Occupant

Time in floodplain	Probability of 1 or more floods
10 years	65.132%
25 years	92.821%
30 years	95.761%
75 years	99.963%
100 years	99.997%



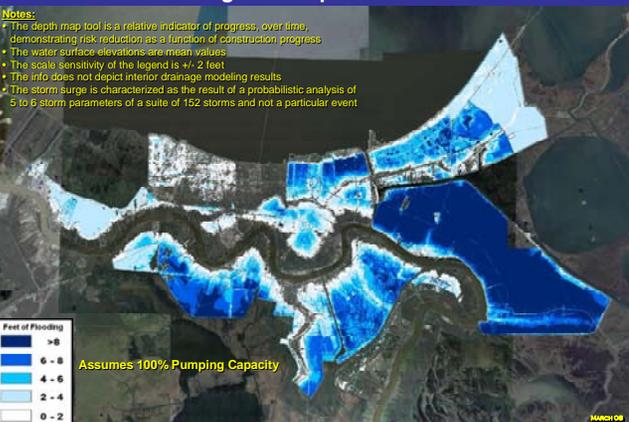
Before Katrina, you had a 1% chance every year of flooding this deep from Hurricanes



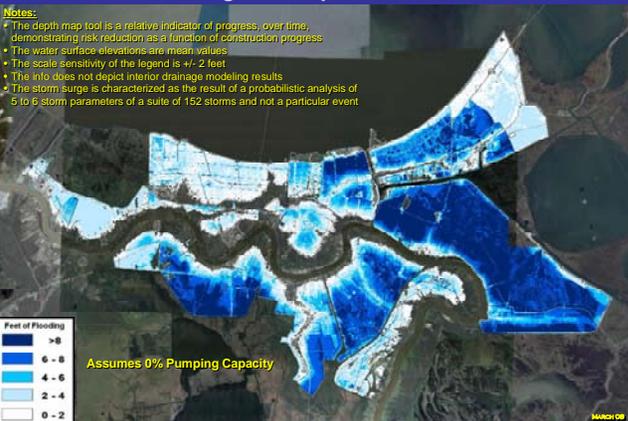
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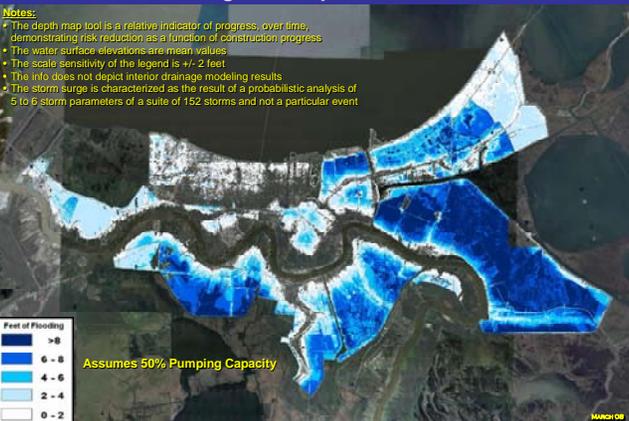
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On June 1, 2007, you had a 1% chance every year of flooding this deep from Hurricanes



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With the 100-year level of protection, you have a 1% chance every year of flooding this deep from Hurricanes



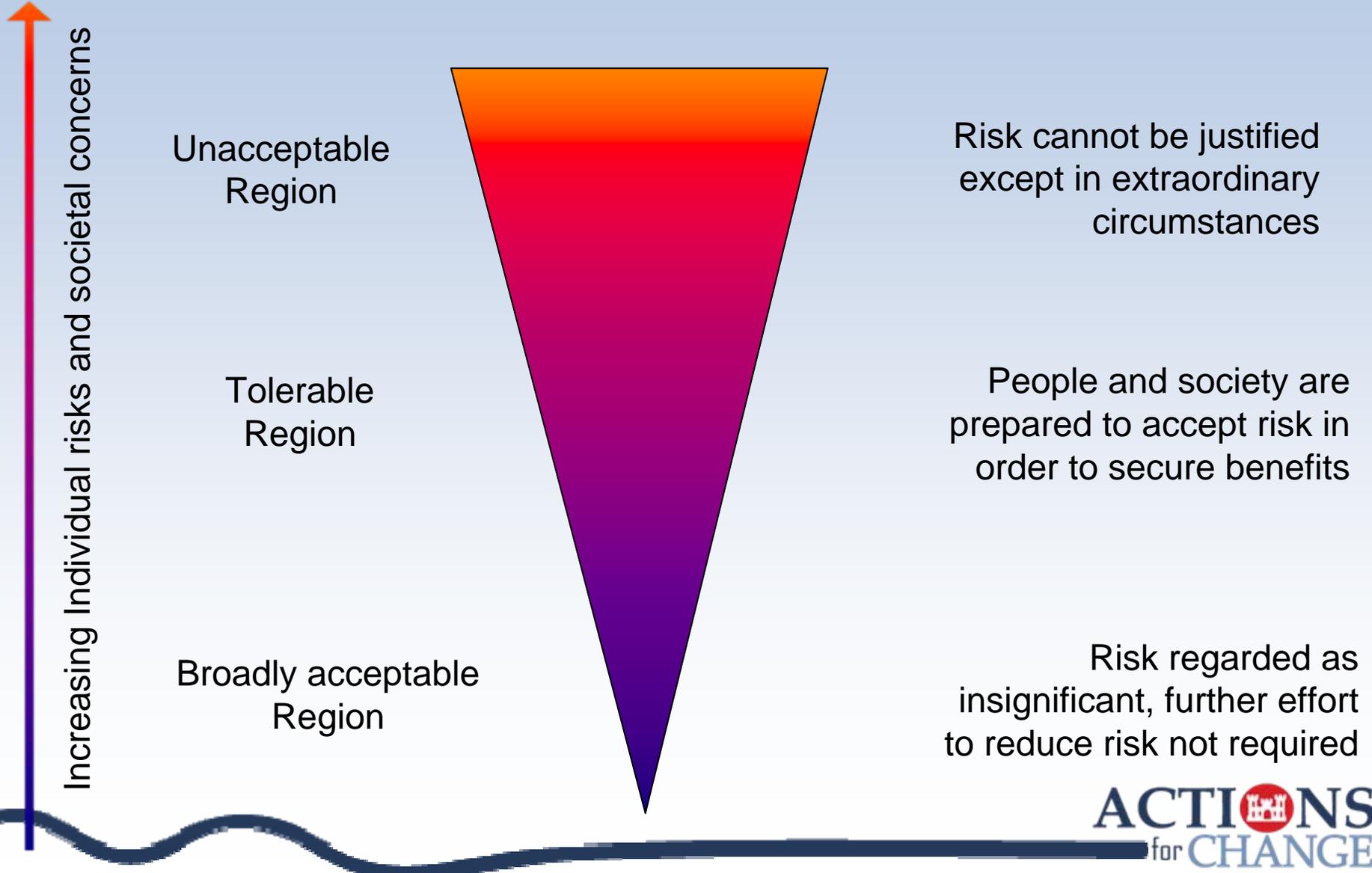
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Risk Management & Tolerable Risk



Questions?

