

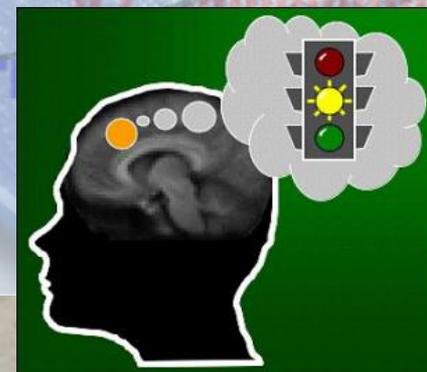
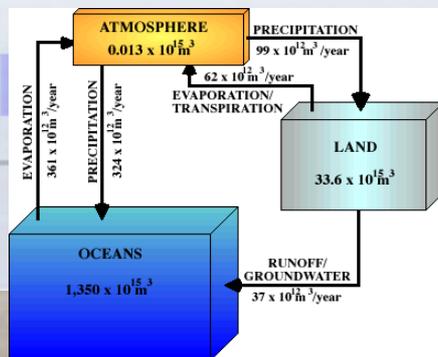


# Science, Policy and decisionmaking-

Roger Pulwarty

Adam Parris, Caitlin Simpson, Claudia Nierenberg

NOAA

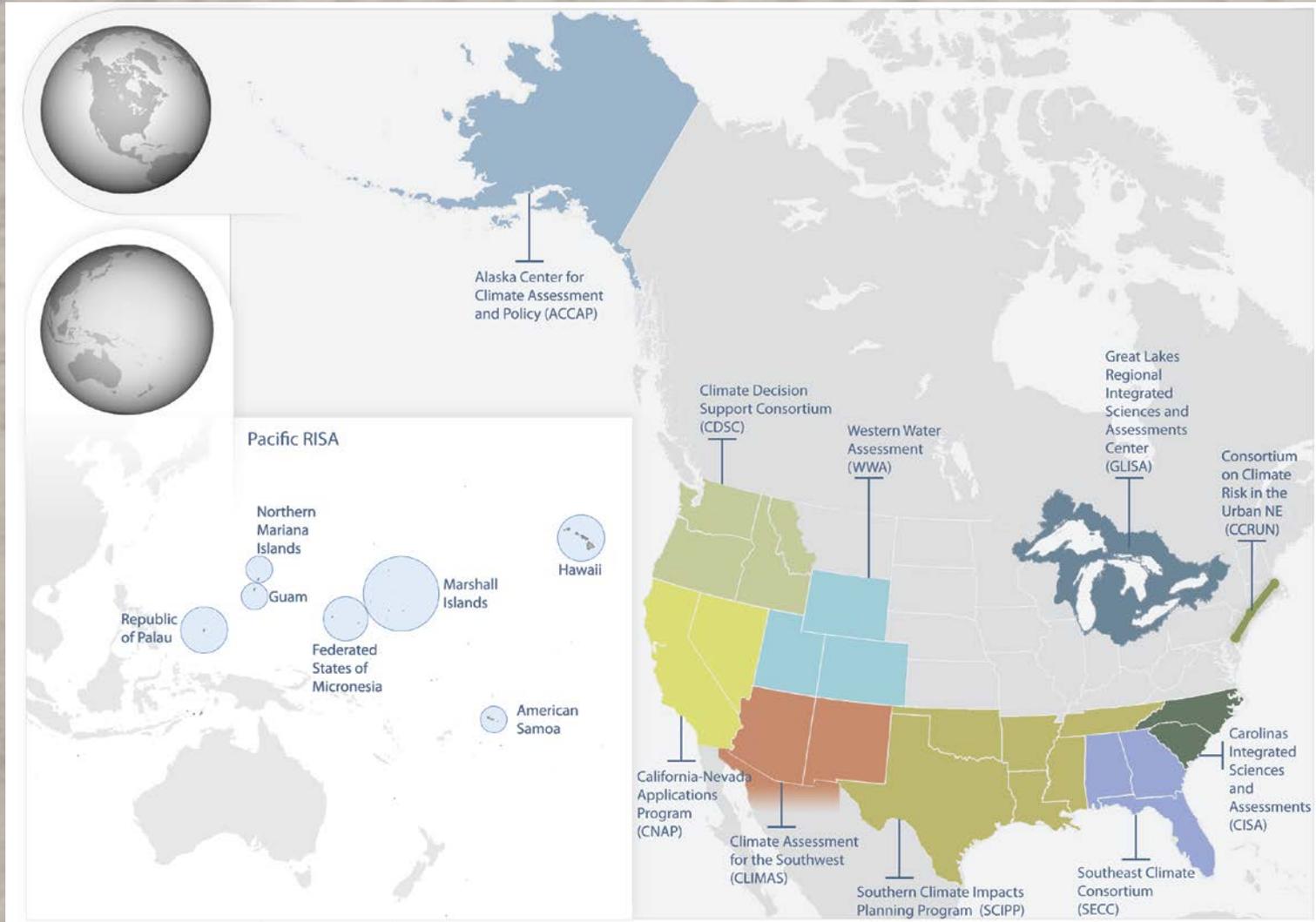


# How do we adapt?

- Infrastructure/assets
- Technological process optimization
- Institutional and behavioral change or reinforcement
- Crisis, learning and redesign



# Regional Integrated Sciences & Assessments



# Weather to Climate-A continuum.....

.....and a deficit

Heat Waves

Storm Track Variations

Madden-Julian Oscillation

El Niño-Southern Oscillation +

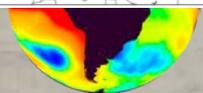
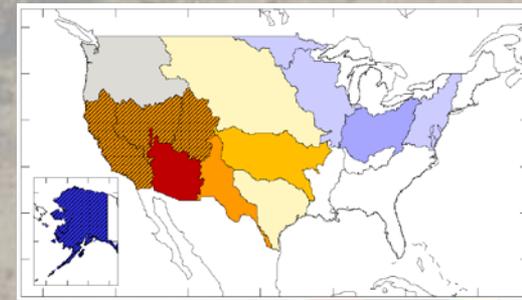
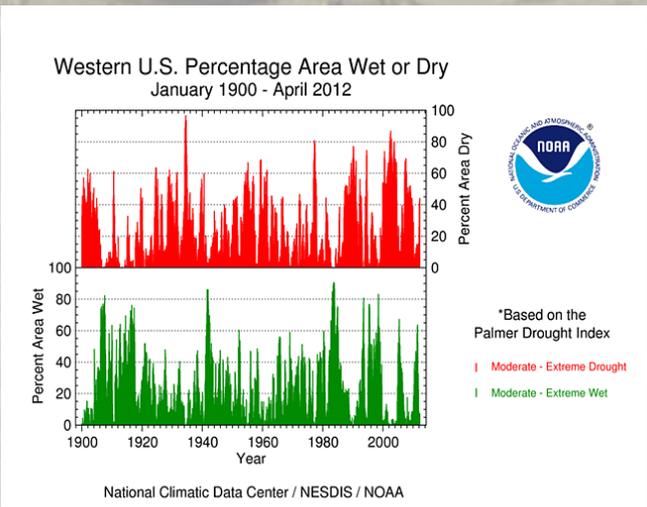
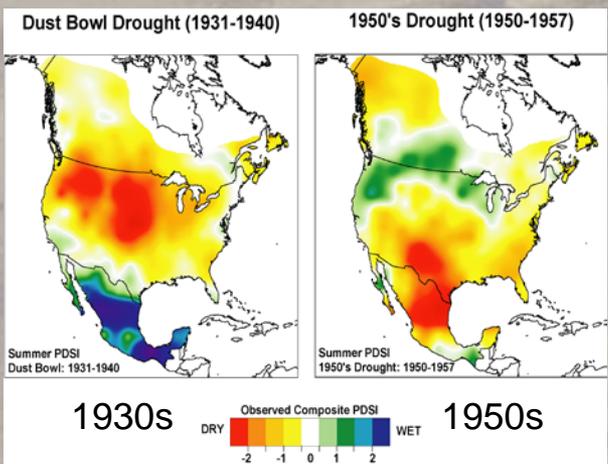
?????

*Decadal Variability*

*Solar Variability*

*Deep Ocean Circulation*

*Greenhouse Gases*



## **Key questions-improving the linkages between information and decision-making (ICSU others):**

- What is the quality of information available to decision-makers at all levels?
- What factors influence whether or not such information will be used?
- What factors influence whether risk communications are trusted?
- What governance structures may facilitate better decision-making practice?
- How can decision-making systems be adapted to the different levels of decision makers?

# If it is so easy, why is it so difficult?

The need to “change” in the light of new information is not widely acknowledged



# Stokes' s Model

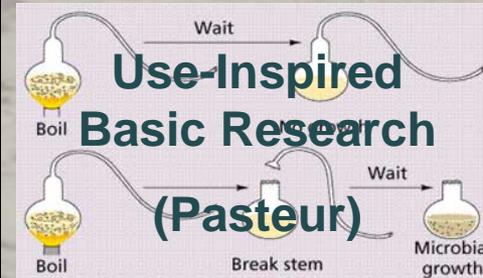
Research Inspired by  
Consideration of Use

No

Yes

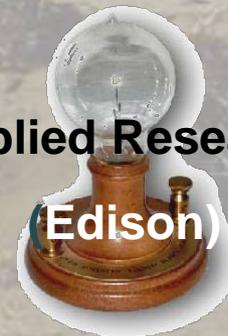
Research Inspired by  
Quest for Understanding

Yes



No

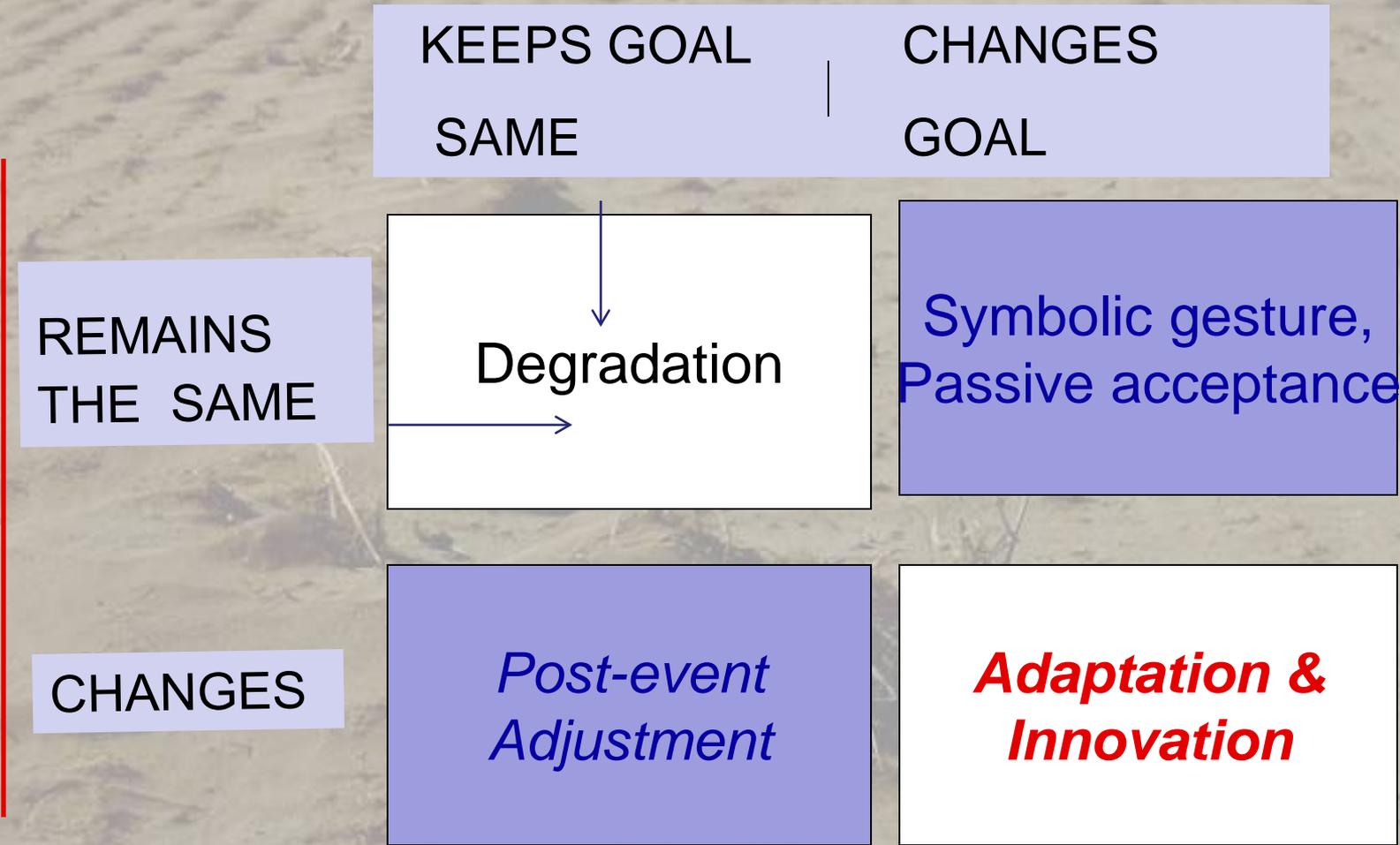
Applied Research

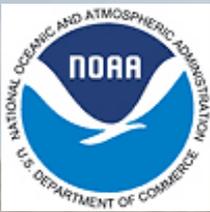


# If environment is changing:

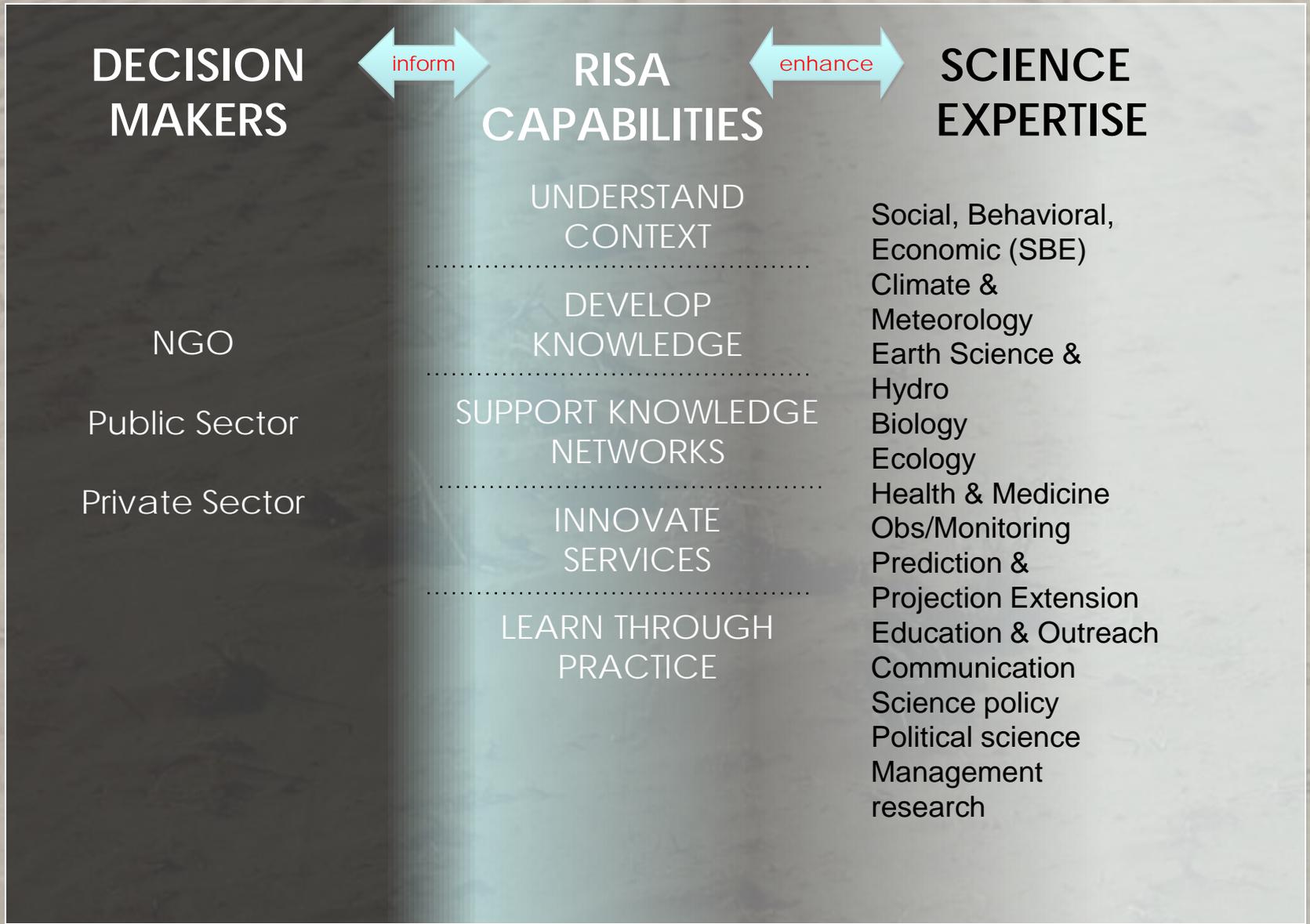
## Government/community:

Research Program





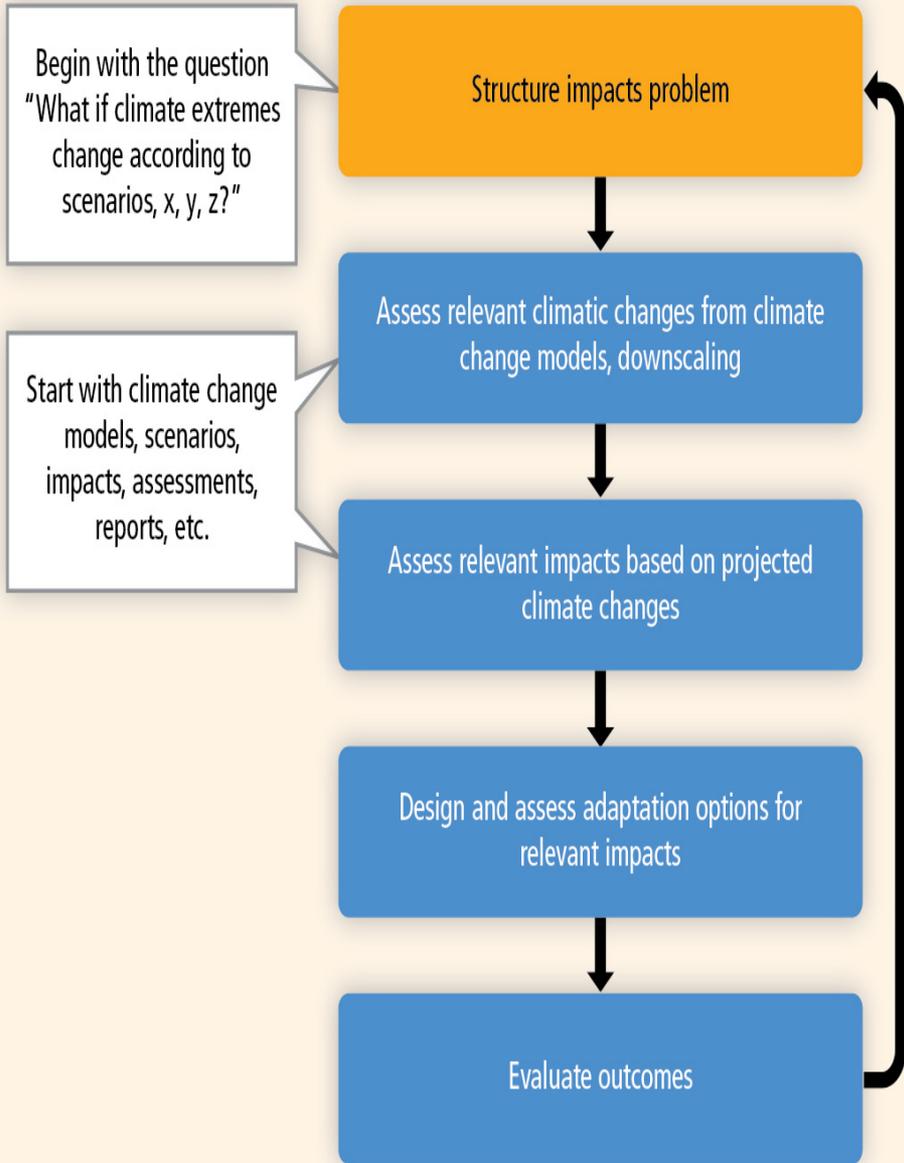
# RISA Capabilities



# Climate Models

## First

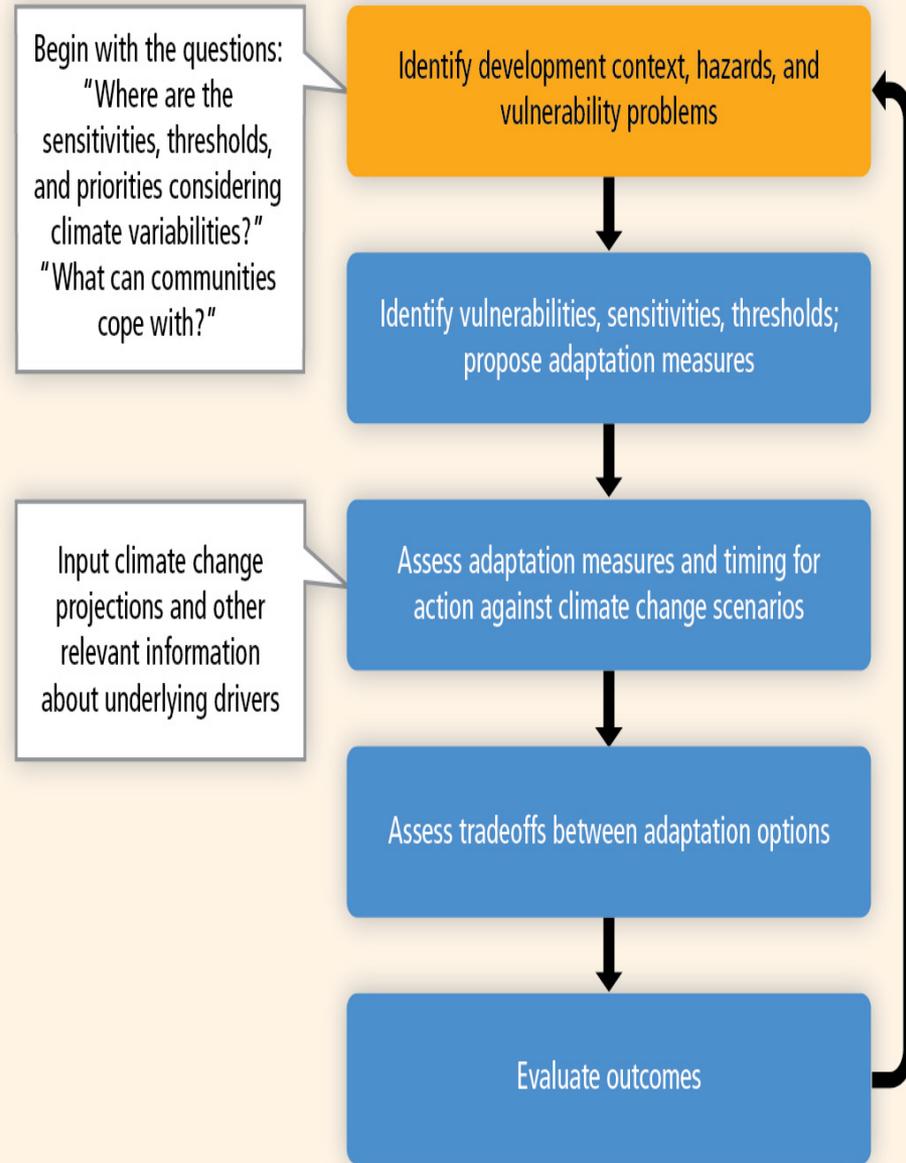
### "Climate Models, Scenarios, Impacts-First"



# Vulnerability and Capacity

## -First

### "Vulnerability, Thresholds-First"



# If it's so easy...why is it so difficult?

## The cumulative nature of hazards, extremes and disasters

- Informing warning and response: What do we expect when engaging in interdisciplinary collaborations?

## Difficulties of proactive decision-making: Learning and policy windows

- Learning, non-learning and response: Limits of a communications framing
- What characteristics lead to successful responses?

## Information services to support adaptation in changing environments

- Where do science and policy talk to each other and what do they say?

# Where do science and policy speak to each other?

- **Workshops and meetings (shared scenario construction; shared model building?)**
- **Presentations and briefings (include locally organized events, e.g. hearings)**
- **One-on-one technical assistance**
- **Coordination with other ongoing projects**
- **Work with the local media**
- **Web site development and maintenance**
- **Graduate-level courses on climate impacts & adaptation**

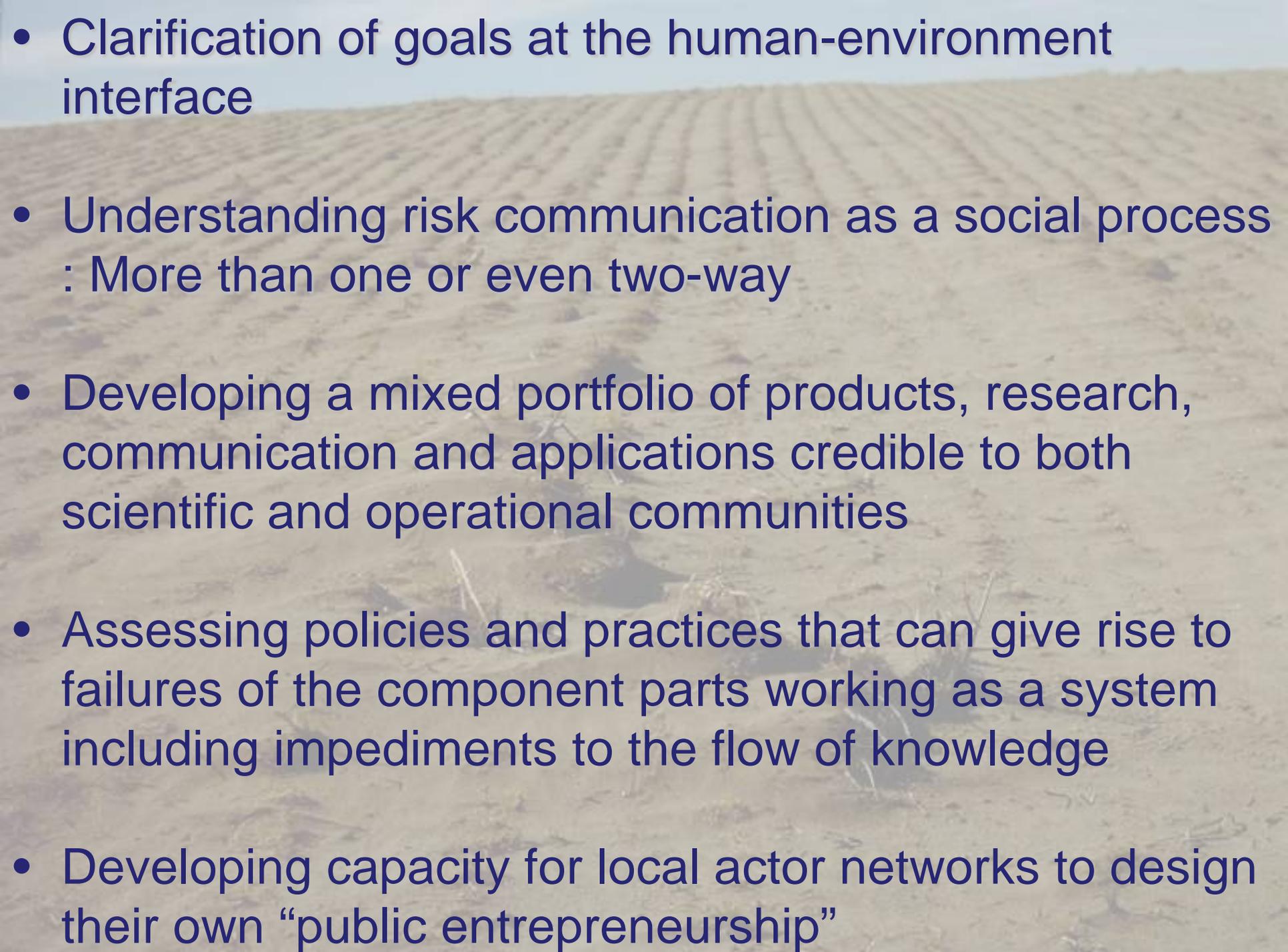
**What else is needed? A collaborative framework between research and management in which the public and leadership are engaged**

# Climate risk management-governance



**Accountability**- CRM needs to be located with planning oversight and some fiscal responsibility-provide political authority and policy coherence across sectors. **Emergency management organizations can rarely play that role**

**Efficiency**- only occurs when CRM is carried out in partnership with at-risk sectors and communities and organizations that represent them. Benefits are cost-effectiveness, sustainability, citizenship and social cohesion.

- 
- Clarification of goals at the human-environment interface
  - Understanding risk communication as a social process : More than one or even two-way
  - Developing a mixed portfolio of products, research, communication and applications credible to both scientific and operational communities
  - Assessing policies and practices that can give rise to failures of the component parts working as a system including impediments to the flow of knowledge
  - Developing capacity for local actor networks to design their own “public entrepreneurship”

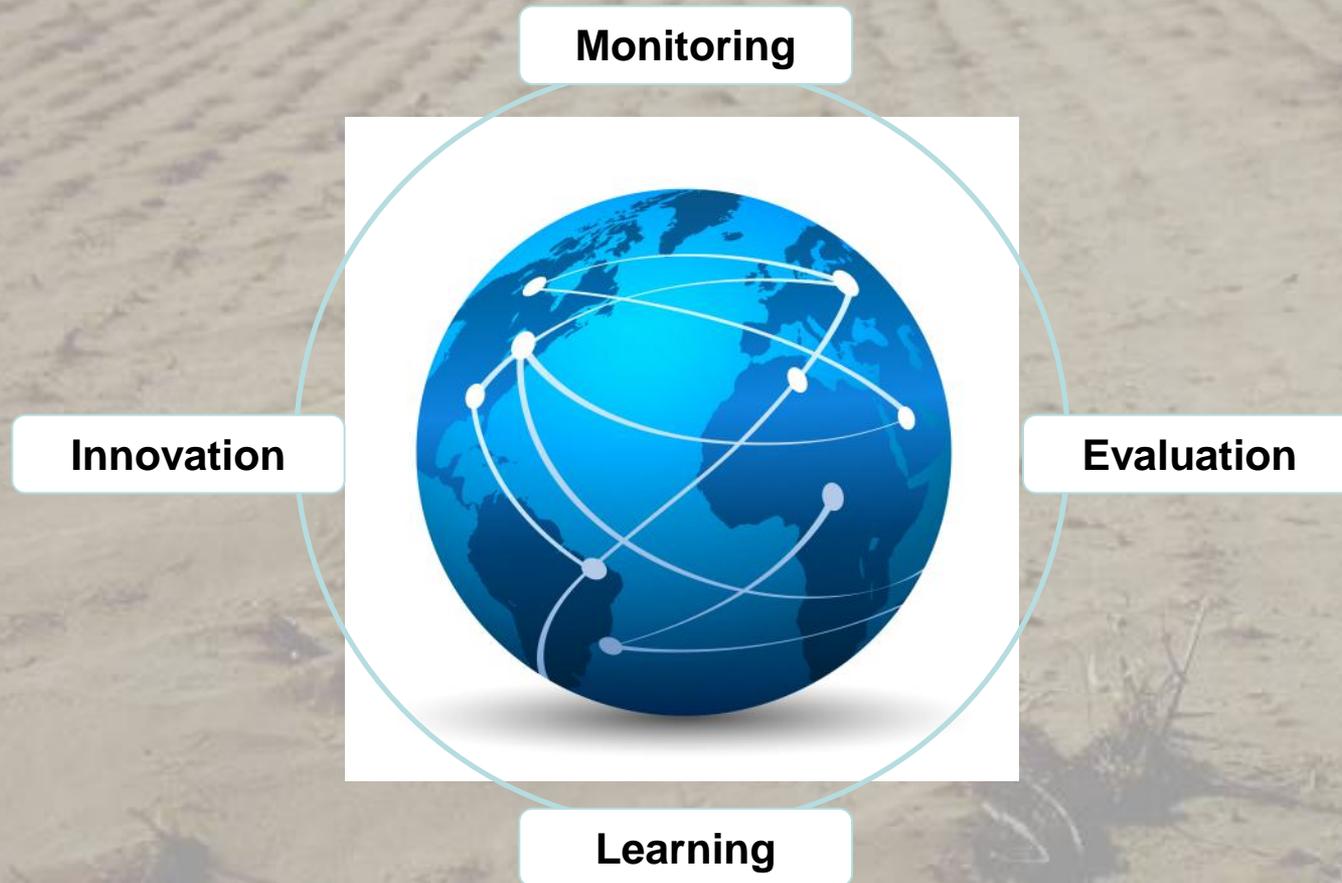
# The Romans Ignored The AD 350 IPCC Report!



Source: InfoRoma, 2004. [www.inforoma.it](http://www.inforoma.it)

**DEFERRED MAINTENANCE?**

# Where do science and policy speak to each other? and how does learning take place?



**Lesson identified vs lessons learned**  
**Learning and NOT doing**  
**Doing and NOT learning?**

# Understand the rules of the game?

## RULES

1. YOU CAN....
2. YOU CAN'T...
3. YOU CAN....
4. YOU CAN'T

Rules for gathering, storing communicating, using and evaluating information are essential elements of operating procedures

## Conspicuous over-consumption of information

- Surveillance vs decision modes
- Scanning for surprises vs clarifying uncertainties
- Incentives for “ratcheting” over adaptation as baselines change
- “Information use” as symbolic commitment to rational choice

# RISAs-Five Over-arching Strategies

1. **MANAGEMENT** - Develop a management and governance plan to reduce partner fatigue and better integrate RISA with NOAA and fed partners
2. **COORDINATION** - Perform and implement annual project analysis to understand and map research among the RISA researchers
3. **COLLABORATION** – Initiate a interagency, capacity building competition to encourage transfer of RISA knowledge and capabilities
4. **EVALUATION** – Develop new evaluation schemes to achieve greater recognition and to help adapt external institutions
5. **COMMUNICATION** - Advance communication of accomplishments and success

# *Translation?.....Transfer?..... Transformation?*



Transitions from applications

Private vs public

Applied

Benefits and limits of

“co-production”



Social-ecological

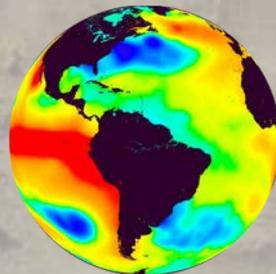
Path dependence

*Or Tinkering?*

Adaptive

Across organizational boundaries

Joint monitoring and joint fact-finding



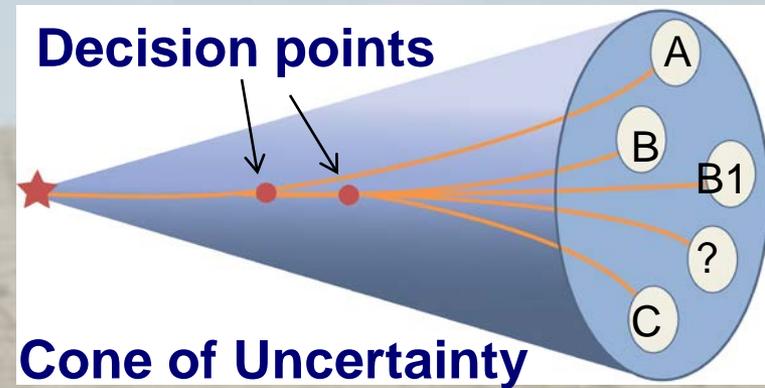
# Let's Not Wait Too Long! Thanks



*photo courtesy K. Dixon, NOAA GFDL*

# These result in different policy trajectories-

- operational-incremental-advocacy development
- constitutive-norms/values-learning



“They will never agree” said the nineteenth-century wit Reverend Sidney Smith when he saw two people shouting at each other from houses on opposite sides of an Edinburgh street-

They are arguing from different premises”

# Adaptation experiences: analytic and deliberative

- (1) Clarification of goals at the human-environment interface
- (2) Distillation of lessons from comparative appraisals of current and past practices
- (3) Construction and support of a cooperative foundation for research and management
- (4) Social processes of risk communication: More than just two-way
- (5) Public-private partnerships: Not one or the other but what combinations are needed and at what scales?

# What we say to dogs

Okay, Ginger! I've had it!  
You stay out of the garbage!  
Understand, Ginger? Stay out  
of the garbage, or else!



# What they hear

blah blah GINGER blah  
blah blah blah blah  
blah blah GINGER blah  
blah blah blah blah...

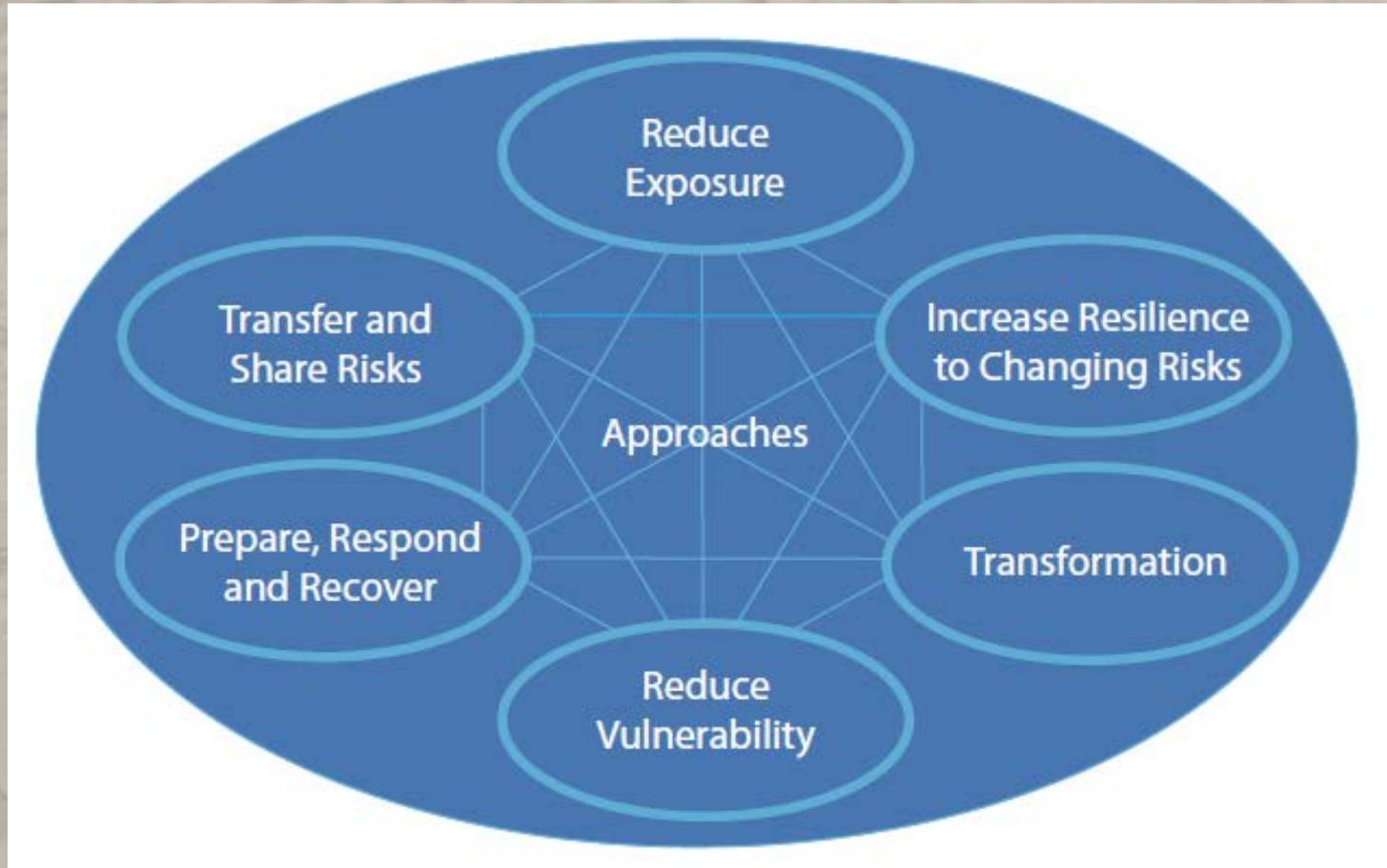


Utilities  
Tribes  
Feds  
Energy

RISAs  
CSCs  
Consultancies

Interior  
NOAA  
USACE etc.

# The solution space



# RISA- collaborative framework between research and management

- Knowledge development and management
- Product and delivery systems
- Capacity and coordination
  - Ensure network development and maintenance
  - Identify local entrepreneurs/leadership
  - Make risks and benefits transparent
  - Conduct post-audits

