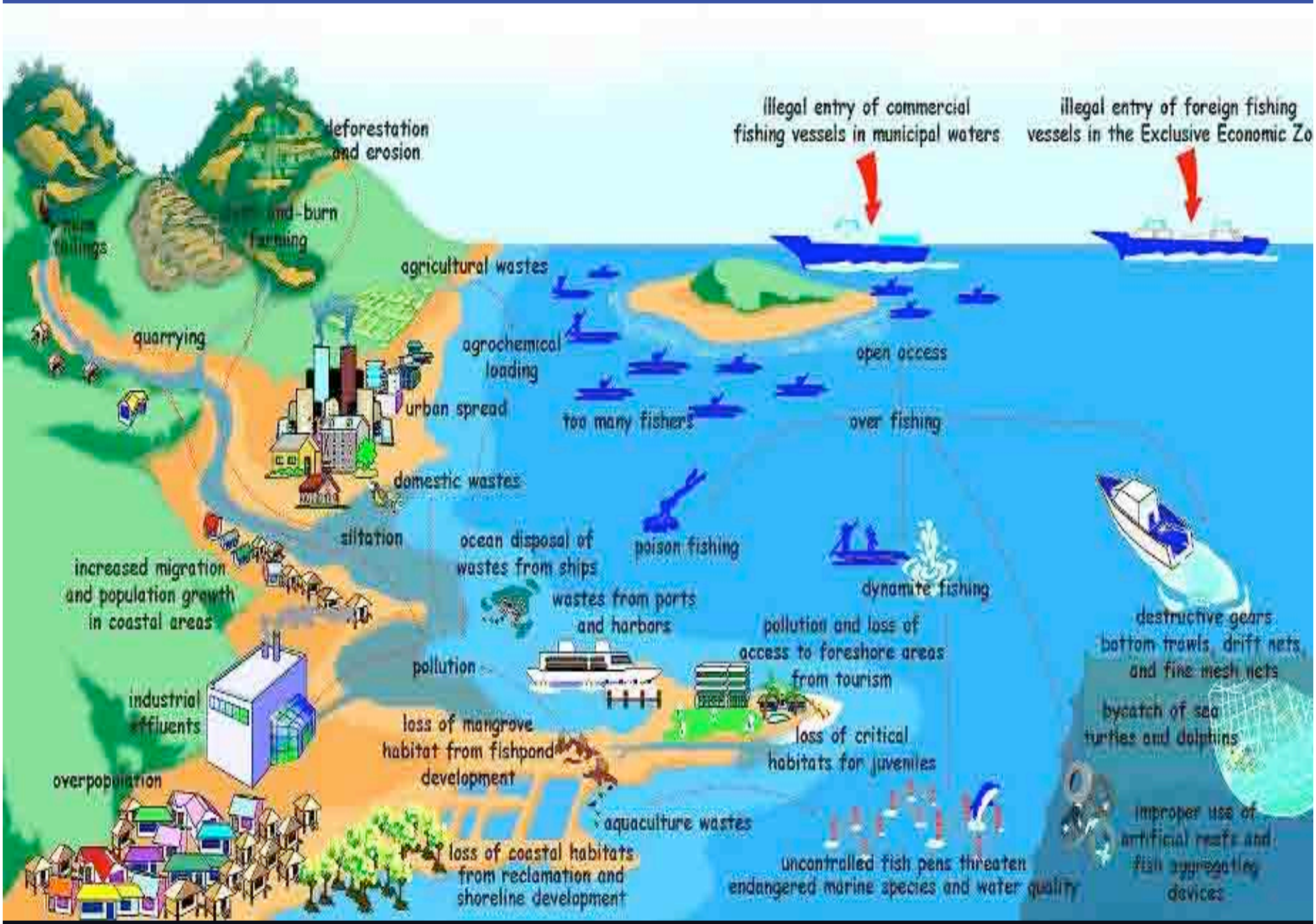
How Resilient is the Northeast to Natural Hazards?

Pam Rubinoff

Rhode Island Sea Grant

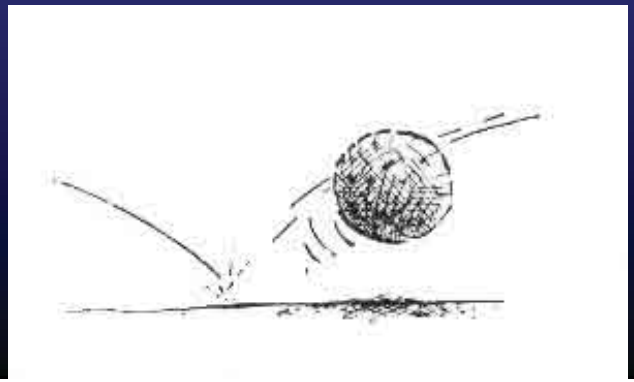
URI Coastal Resources Center


deforestation and erosion
mining tailings
slash-and-burn farming
agricultural wastes
quarrying
agrochemical loading
urban spread
domestic wastes
siltation
increased migration and population growth in coastal areas
ocean disposal of wastes from ships
wastes from ports and harbors
pollution
industrial effluents
overpopulation
loss of mangrove habitat from fishpond development
aquaculture wastes
loss of coastal habitats from reclamation and shoreline development
illegal entry of commercial fishing vessels in municipal waters
illegal entry of foreign fishing vessels in the Exclusive Economic Zo
open access
too many fishers
over fishing
poison fishing
dynamite fishing
pollution and loss of access to foreshore areas from tourism
loss of critical habitats for juveniles
uncontrolled fish pens threaten endangered marine species and water quality
destructive gears bottom trawls, drift nets and fine mesh nets
bycatch of sea turtles and dolphins
improper use of artificial reefs and fish aggregating devices

Resilience

Absorb shock

Bounce back



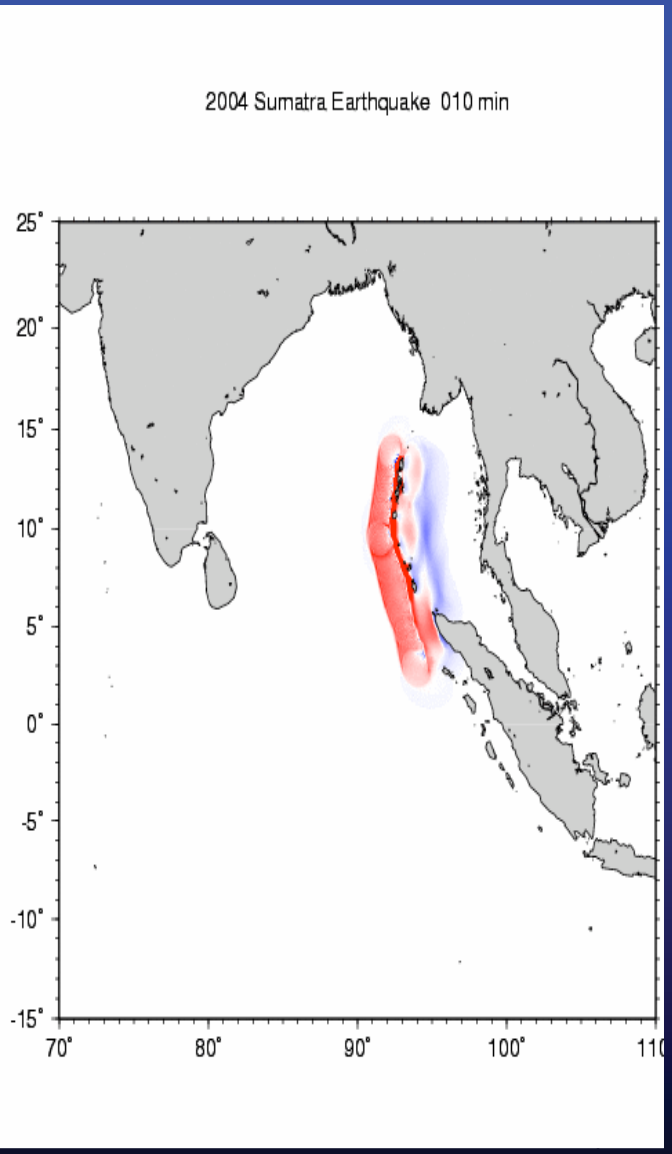
Learn & adapt

resilience

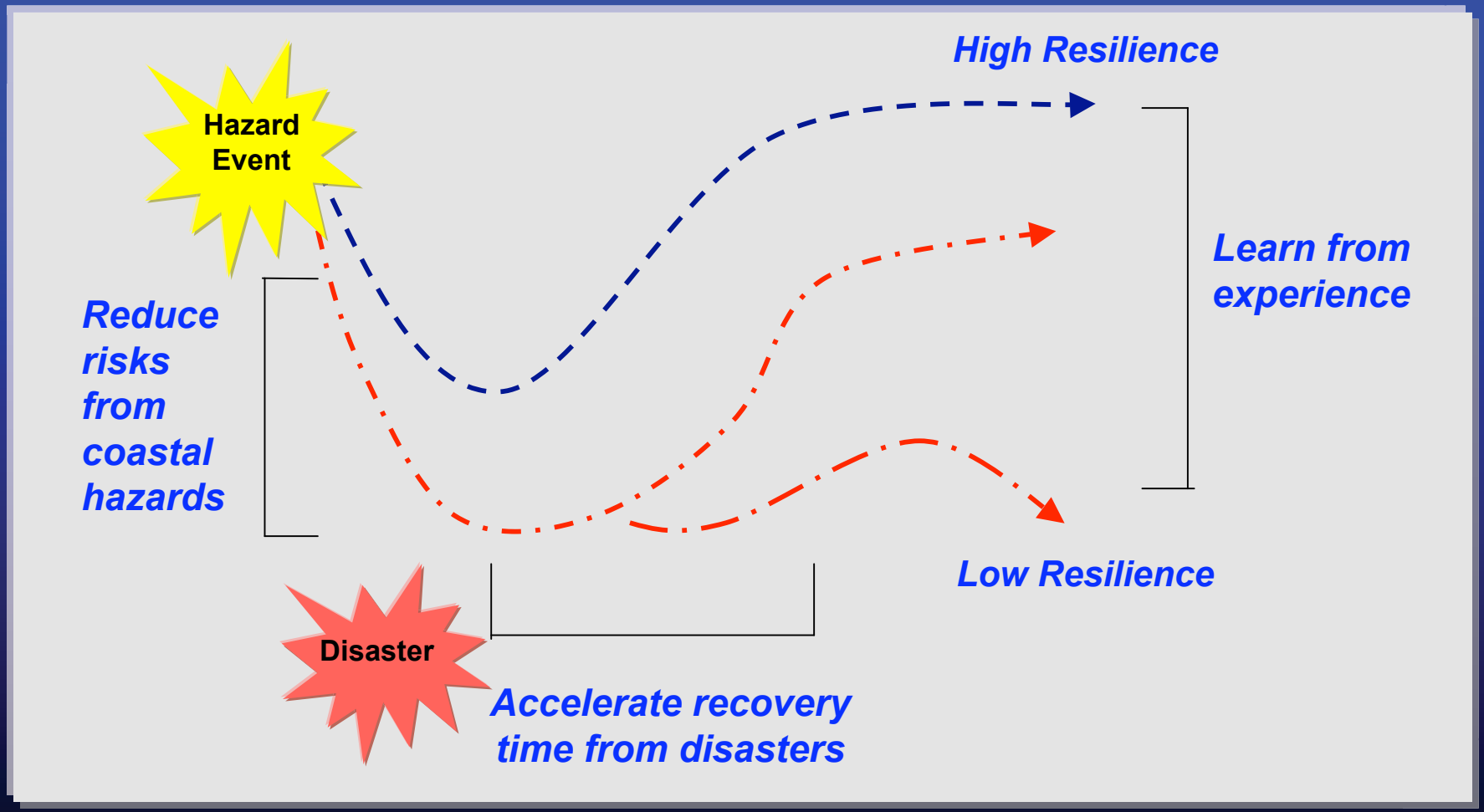
is the flip side of

vulnerability

December 26, 2004



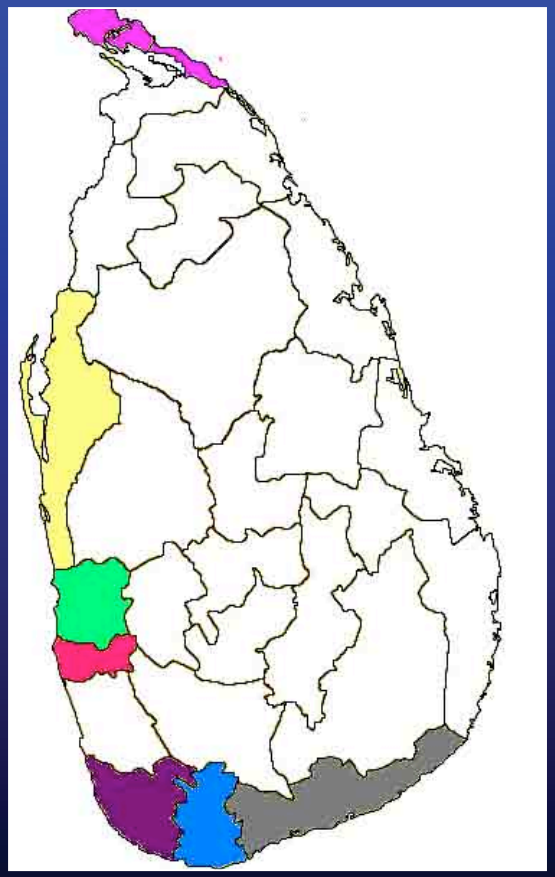
Goals of Coastal Community Resilience



A New Paradigm

Adaptive process for managing for resilience

Local Application



NE Assessment

Literature Review of the U.S. Northeast Coastal Community: Management of Coastal Ecosystems and Natural Hazards

ces Center at the University of Rhode Island
for the
nic and Atmospheric Administration (NOAA)
Coastal Services Center

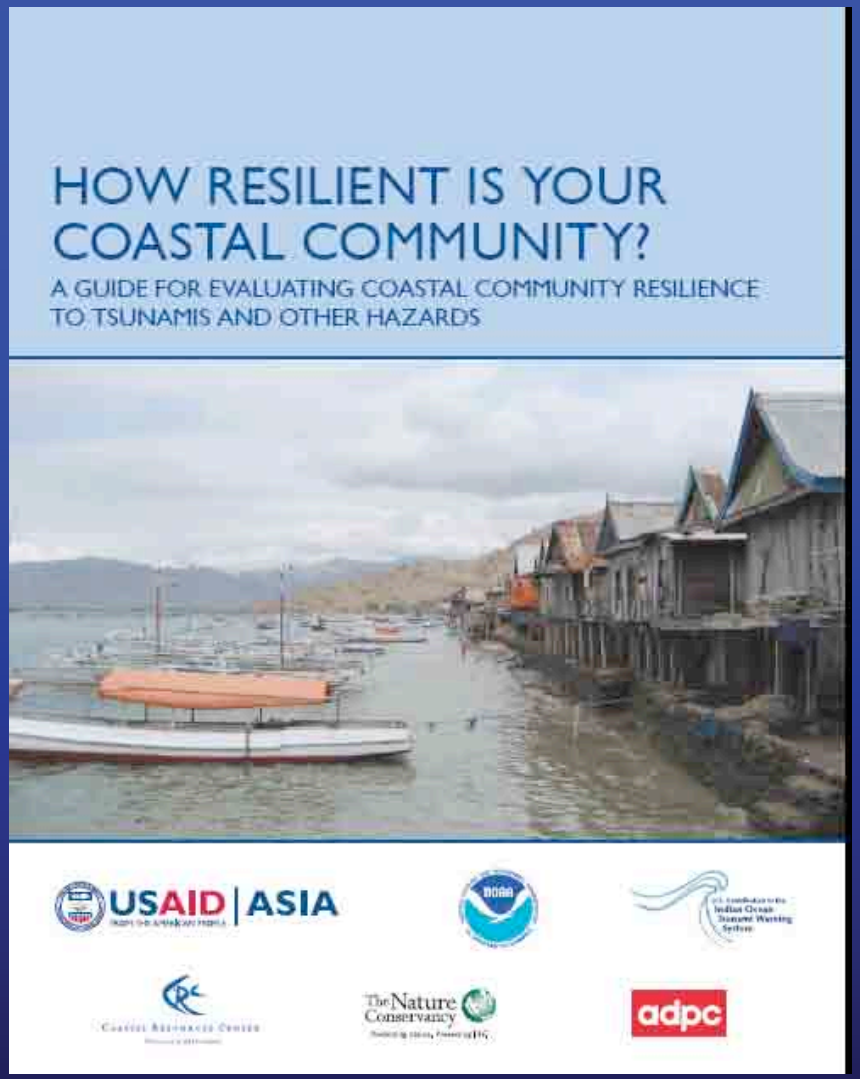
NOAA Coastal Services Center
Linking People, Information, and Technology

Priority Issues for the
Northeast State Coastal Programs

Highest priorities are on the left side and descend to the lowest on the right.
Priorities are based on the current NOAA 309 Assessment Reports.

	Cumulative and Secondary Impacts	Ocean Resources	Wetlands	Hazards	Energy Siting	Public Access	Special Area Management Plans	Aquaculture	Debris
Maine	High	High	Medium	High	Medium	High	High	Medium	Low
New Hampshire	High	High	High	Medium	Medium	Medium	Low	Medium	Low
Massachusetts	High	High	High	High	Medium	High	Medium	Low	Low
Rhode Island	High	Medium	High	Medium	High	Medium	High	Low	Low
Connecticut	High	High	Medium	Medium	High	Medium	Low	Medium	Medium

Table 2. Priority Issues for the Northeast State Coastal Programs



Resilience Benchmarks	
A. Governance	
☑ Plans and policies ☑ Basic services ☑ Collaboration mechanisms ☑ Leadership, financial and technical resources	**A1** Community development plans and policies incorporate short-term and long-term goals and actions for achieving coastal community resilience.
	A2 Basic services are accessible to society provided by capable and transparent institutions as an enabling condition for building coastal community resilience.
	A3 Multisectoral collaboration mechanisms are functional and effectively used to manage for resilience.
	A4 Financial, technical and human resources provide regular support to achieve community resilience.
B. Socio-economy and Livelihoods	
LIVELIHOODS ☑ Sustainable and diverse livelihoods ☑ Technical and financial resources ☑ Social and cultural networks	**B1** Economic development plans and programs promote sustainable and diverse livelihoods based on knowledge of risks from coastal hazards.
	B2 Technical and financial resources are available to promote economic diversification, to reduce vulnerability to coastal hazards, and promote post-disaster recovery.
	B3 Social and cultural networks established and support efforts to build coastal community resilience.
C. Coastal Resource Management	
☑ Plans, institutions, and systems ☑ Ecosystems protected and maintained. ☑ Restoration policies	**C1** Plans, institutions, and systems established and effectively managing coastal and other natural resources for food security, sustainable development, conservation, natural resource/habitat restoration, and public safety.
	C2 Sensitive coastal habitats, ecosystems and natural features are protected and maintained to reduce risk from coastal hazards.
	C3 Restoration policies and systems guide post-disaster management of natural resources and minimize risks from coastal and natural hazards.
D. Land Use Management and Structural Design	
☑ Land use decisions ☑ Siting, design, and construction considers risks ☑ Monitoring and enforcement ☑ Redevelopment policies and systems	**D1** Land use plans are developed and reviewed based on an assessment of risks from coastal hazards and the need to protect sensitive coastal habitats.
	D2 Siting, design and construction of public and private structures considers risks from coastal hazards and protects sensitive coastal habitats.
	D3 Effective monitoring and enforcement of land use policies and building standards and codes
	D4 Redevelopment policies and systems guide post-disaster reconstruction away from sensitive and vulnerable areas

www.crc.uri.edu/download/CCRGuide_lowres.pdf

www.iotws.org

Governance

Leadership, systems, & institutions provide enabling conditions for coastal community resilience

- ✓ Strong legal framework with decentralized management; home rule
- ✓ Implementation and coordination gaps
- ✓ Regional agreements beginning to occur for coordination and advisory
- ✓ Federal agencies have regional offices for permitting, TA, oversight

Fair

Livelihoods & Socio-economy

Prosperous, sustainable, diverse economies and livelihoods and healthy, peaceful socio-cultural conditions allow communities to maintain quality of life before, during, and after disasters

- ✓ Citizen-government involvement
- ✓ Diversified economies in region
- ✓ Small businesses provides diversity but also vulnerability
- ✓ Region is under-insured

Good

Coastal Resource Management

Active management of coastal area resources reduces vulnerability to coastal hazards and sustains environmental services and livelihoods

- ✓ Strong state programs - detailed policies/permitting
- ✓ Varied local level implementation responsibilities
- ✓ Ecosystem-based plans in select locations
- ✓ CRM plans with linkages to land use and hazards
- ✓ Restoration programs in place
- ✓ Regional linkages, both formal and informal

Good

Land Use & Structural Design

Effective land use and structural design reduce risks from coastal hazards

- ✓ Significant amount of pre-existing structures in high hazard areas
- ✓ States use International Building Code
- ✓ Local level implementation with varied capacities
- ✓ Flood maps used for design/planning, are outdated
- ✓ Structural mitigation projects are site-by-site, per hazard mitigation plans and state/fed priorities

Fair

Risk Knowledge

Understanding of coastal hazards and appropriate measures to minimize risk reduces community exposure

- ✓ Unaware of risks or aware and complacent?
- ✓ Lack of awareness on flood plains and insurance
- ✓ Technology and expertise exists, but maps and information is limited for decisions
- ✓ Models and application for risk analysis varies in technique and in scale

Fair

Warning & Evacuation

Community is capable of receiving notifications and alerts of coastal hazards, able to warn at risk populations, and act on warning information

- ✓ Good local & in-state warning/evacuation system
- ✓ Regional evacuation planning activities uncertain
- ✓ Uncertain how effective programs are in vulnerable & non-english speaking communities
- ✓ Communication of interstate riverine flood warnings for businesses is improving

Good

Emergency Response

Emergency response institutions and systems are established and maintained to respond quickly to coastal disasters and address community emergency needs

- ✓ Local level response is supported by states
- ✓ Coordination between emergency managers and coastal managers inconsistent.
- ✓ Inter-state agreements not widely used to coordinate responses (i.e. port closures for energy)

Fair

Disaster Recovery

Plans, systems, and institutions minimize negative environmental, social, and economic impacts from disaster recovery

- ✓ Tendency to get back to normal
- ✓ Short term recovery not linked to long term community visions
- ✓ Long term recovery plans are limited
- ✓ Opportunity for looking at regional assets and long term development planning

Poor

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Multi layer information collection

Compiling information for Assessment

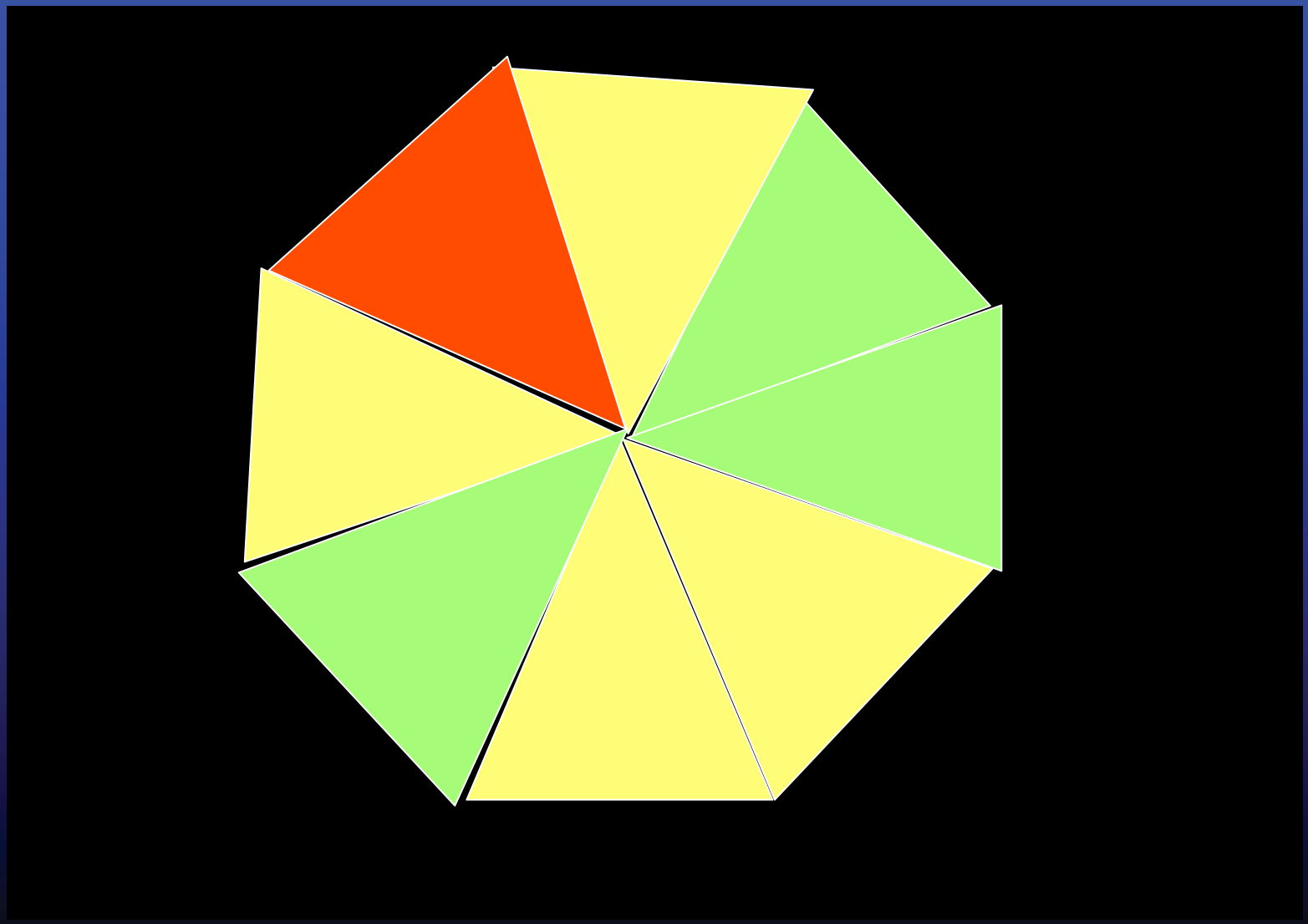
Focal groups

Institutional visits & resource interviews

Benchmarks by elements

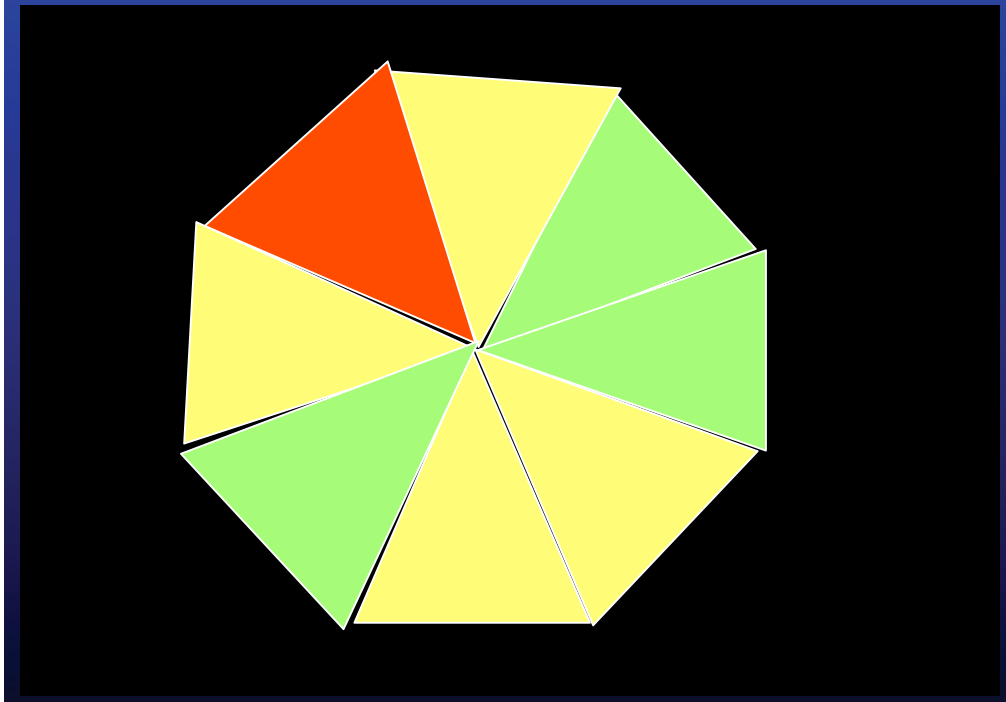
Secondary reviews

CURSORY view of NE



A reality check is needed!

Engage stakeholders to truly examine the strengths and weaknesses of local communities



Pam Rubinoff, rubi@crc.uri.edu

http://seagrant.gso.uri.edu/ccd/haz.html

www.coastalcommunityresilience.org