

A Framework for Vulnerability Identification, Reduction and Cost

Goals: To be practical, useful,
transparent, easily modified,
amenable to stakeholder involvement, consensus building.

Process:

Identify potential flooded regions

For each region identify:

- structural and non-structural flood damage reduction measures.
- flood damage reduction (set of measures) scenarios
 - ★ For each reduction scenario,
 - Compute % reduction in flooded area for storms ranging from 1 to 1000 year return periods
 - Estimate cost of implementing the scenario.
 - Identify physical, economic, social, environmental and flood reduction scenario, vulnerabilities
 - ★ Create Overall Vulnerability-Cost tradeoff functions

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Identifying Physical, Economic, Social, Environmental Vulnerabilities

For all types of vulnerability, identify features that are vulnerable to flooding

For each region identify:

- flooded area associated with storms having 1-1000 return periods
- % or number of vulnerability-feature in flooded area for each storm intensity (return period).

★ For each flood reduction scenario, identify:

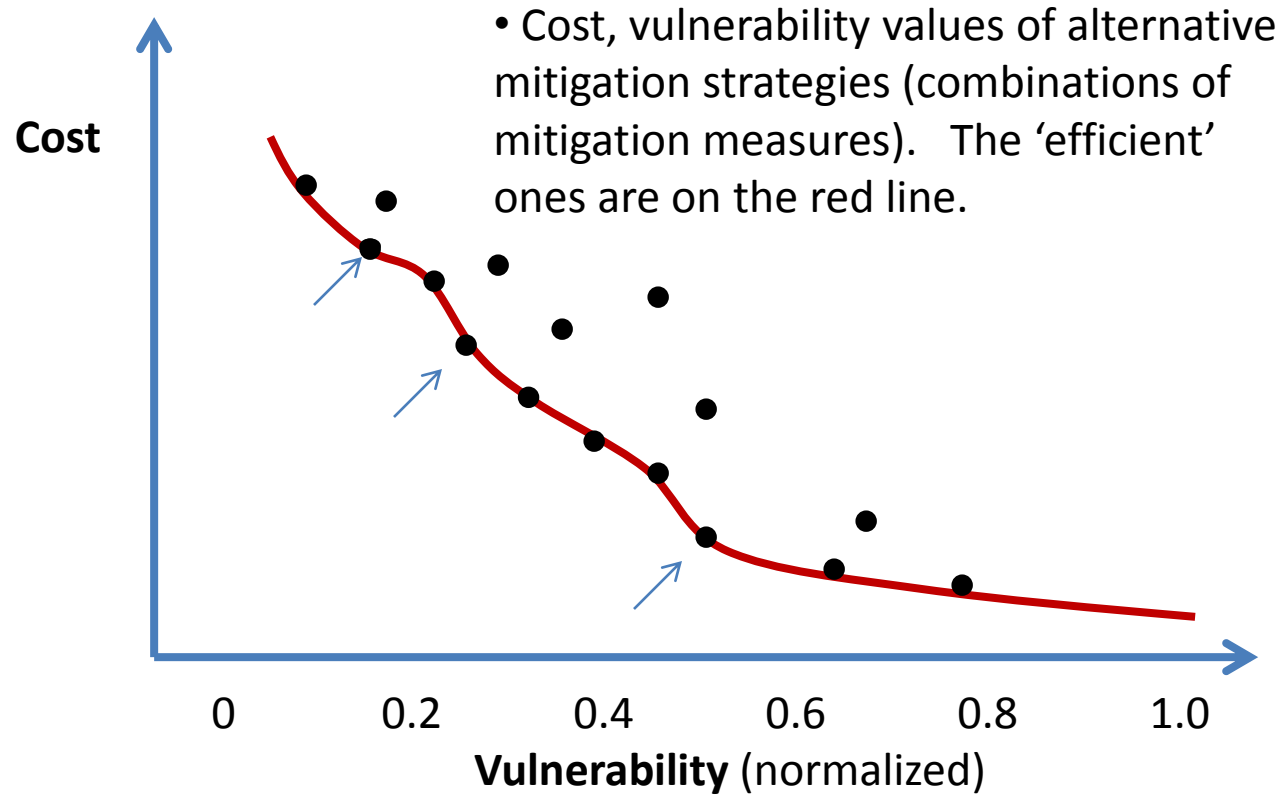
- Compute reduced vulnerabilities from flood damage reduction measures

= Reduced areas flooded times number or damage per unit area of vulnerability feature in region -

- Overall vulnerability index value for each scenario in region

★ Using all flood reduction scenarios and associated costs in region:

Plot vulnerability index value vs. cost to identify tradeoffs.



Cost – Vulnerability tradeoffs for a particular region