

Foundational Concepts
and
Overview of Key Steps

Components of Vulnerability

- Sensitivity
- Exposure
- Adaptive Capacity

1 CLARIFY VULNERABILITY FRAMEWORK

To what: Vulnerable to what (climate hazards)

Of what: Who/what is vulnerable (social group, neighborhood, sector)

Dimensions of vulnerability: Physical (including exposure), environmental, social (including governance), economic, human

2 ASSESS CURRENT VULNERABILITY

Current risk and event history, and response to existing climate hazards

Current dimensions of vulnerability (physical, environmental, social, economic, human)

3 IDENTIFY FUTURE STRESSORS

Direct and Indirect impacts of: climate changes, development trends, and growth scenarios

4 ASSESS FUTURE VULNERABILITY

Identify most vulnerable groups and areas, and vulnerability of sectors and inter-linkages between them

Review governance and institutional mechanisms associated with vulnerability and building resilience

(Dependent on 2 and 3)

Sensitivity

Would the target be affected by change?



- Sunburn example:

- Key factor: amount of melanin
- Melanin absorbs UV rays, which cause sunburn
- Lower melanin → more likely to burn

Exposure

How much change will the target experience?

- **Sunburn example:**
 - Strength of UV determines exposure
 - Affected by latitude, season & weather
 - With enough exposure, most anybody can burn



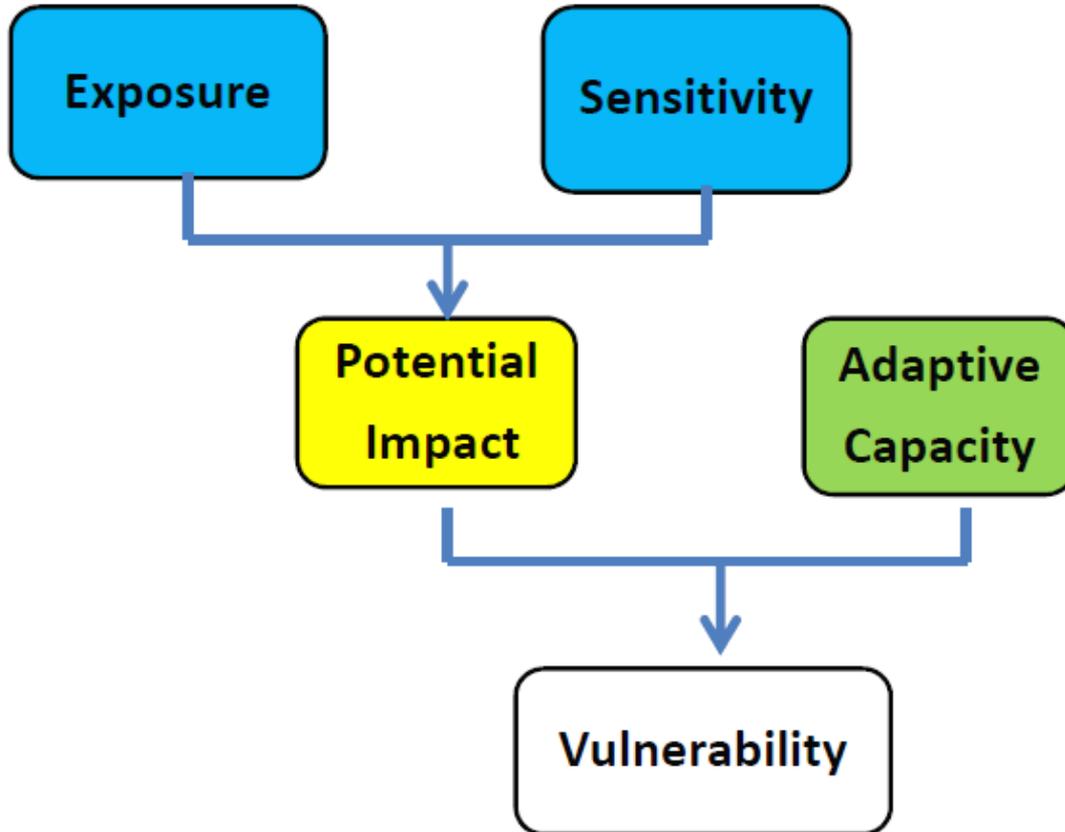
Adaptive Capacity

Can the target adjust to changes?

- **Sunburn example:**
 - Extrinsic: sunblock, protective clothes, shelter
 - Intrinsic: ability to increase melanin production



Putting it Together



Key Steps for Vulnerability Assessment

1. Determine objectives and scope
2. Gather relevant data and expertise
3. Assess the components of vulnerability
4. Apply assessment results



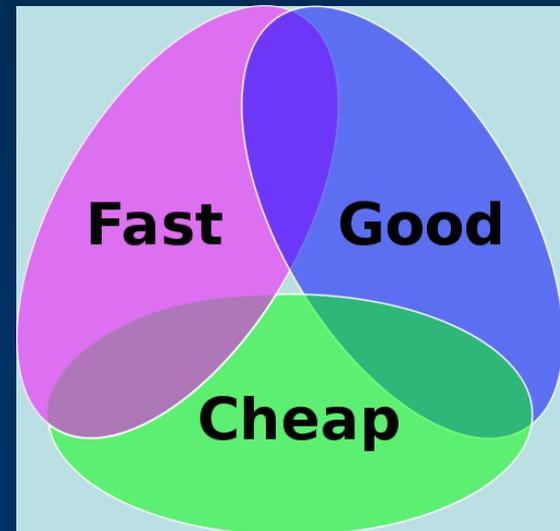
Step 1

1. Determine objectives and scope

- Why?
- Targets?
- Scale?
- Approach?

Complexity and Specificity

- **Level of specificity and complexity**
 - Most complex not always “best”
 - Should be appropriate to type of decision or user needs
 - Potential for “false accuracy”
- **Remember project triangle: Can only maximize two**
 - Time
 - Cost
 - Quality



Approach: Quantitative vs. Qualitative

- Quantitative
 - Generally rely on computer-based models
 - Often resource intensive (data, expertise, time)
- Qualitative
 - Can rely on conceptual ecological models
 - Can make use of generalized climate scenarios
 - Often rely on expert opinion

Step 2

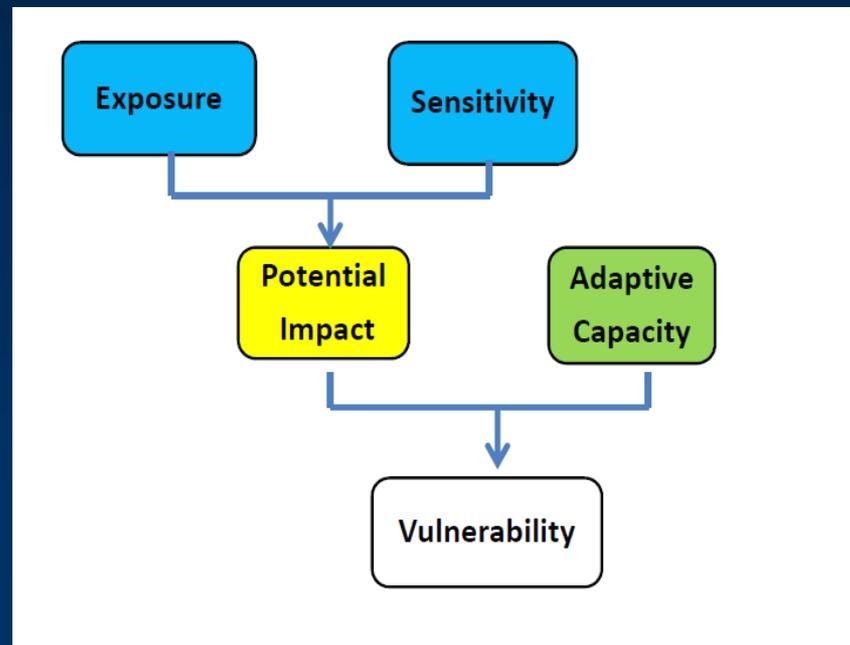
2. Gather relevant data and expertise

- Review existing literature
- Reach out to experts
- Obtain/develop climate and ecological response projections

Step 3

3. Assess components of vulnerability

- Assess sensitivity, exposure, adaptive capacity
- Estimate overall vulnerability
- Document confidence levels/uncertainties



Step 4

4. Apply assessment results

- *Reduce sensitivity*
- *Reduce exposure*
- *Enhance adaptive capacity*

- *Support continued learning and action*

