Climate Change Vulnerability Assessment Training Course

Unit 1: Presentation 1 Overview of Vulnerability Assessment
The Future is Now
Adaptation Defined

Initiatives and measures designed to *reduce the vulnerability* of natural and human systems against actual or expected climate changes.
Adaptation ≠ Adaptive Management
Climate-Smart Conservation Cycle

1. Define planning purpose and objectives
2. Assess climate impacts and vulnerabilities
3. Review/revise conservation goals and objectives
4. Identify possible adaptation options
5. Evaluate and select adaptation actions
6. Implement priority adaptation actions
7. Track action effectiveness and ecological response

Revisit planning as needed
Adjust actions as needed
Re-assess vulnerability as needed
Defining Vulnerability

The extent to which something is susceptible to harm from climate change impacts

- **What** things are most or least vulnerable
- **Why** they are vulnerable
“Are VAs for the built environment only?”
Why Assess Vulnerability?

Vulnerability assessments can help:

• Develop strategies to address climate change
• Inform decisions or plans
• Build staff capacity for climate smart thinking

What vulnerability assessments don’t do:

• Make a conservation decision for you
Key Course Objectives

• Understand VA in context of adaptation planning
• Evaluate factors influencing vulnerability and how they affect an assessment
• Understand strengths and limitations of approaches
• Ability to design a VA applicable to your needs
• Ability to interpret and disseminate results
Unit 1: Presentation 2

Foundational Concepts

Overview of Key Steps
Components of Vulnerability

- Sensitivity
- Exposure
- Adaptive Capacity
Sensitivity

Would the target be be affected by change?

- **Sunburn example:**
  - Amount of melanin in skin is key physiological factor
  - Melanin absorbs UV rays, which cause sunburn
  - Skin with lower melanin levels is more sensitive to sunburn
Exposure

How much change will the target experience?

- **Sunburn example:**
  - The amount of UV rays determines exposure
  - Strength of rays depends on latitude, season & weather
  - With enough exposure, most anybody can burn
Adaptive Capacity

Can the target adjust to changes?

- **Sunburn example:**
  - Can be intrinsic (reduce sensitivity) or extrinsic (reduce exposure)
  - For sunburn, extrinsic adaptations includes sunblock, protective clothes, shelter
  - Intrinsic adaptations include UV-induced increase in melanin production (i.e., tanning)
Putting it Together

Exposure

Potential Impact

Vulnerability

Sensitivity

Adaptive Capacity
Key Steps

1. Determine objectives and scope
2. Gather relevant data and expertise
3. Assess the components of vulnerability
4. Apply assessment results
1. Determine objectives and scope
   - Why?
   - Targets?
   - Scale?
   - Approach?
“How detailed should assessments be?”

“How to properly conduct a CCVA?”

“I want to know the ultimate GOAL of doing a VA, and how it will be applied.”

“I question if the assessments will be site specific enough to be helpful”
All VAs involve answering a set of questions about the target

Vary in terms of:

– Focus?
– Which components of vulnerability?
– Information sources?
– Output?
Step 2

2. Gather relevant data and expertise
   – Review existing literature
   – Reach out to experts
   – Obtain/develop climate and ecological response projections
3. Assess components of vulnerability

- Assess sensitivity, exposure, adaptive capacity
- Estimate overall vulnerability
- Document confidence levels/uncertainties
4. Apply assessment results

– *Reduce sensitivity*
– *Reduce exposure*
– *Enhance adaptive capacity*

– *Support continued learning and action*
The importance of process

**Share of performance explained by given element**
(based on multivariate regression analysis), %

- **Quantity and detail of analysis performed** — eg, detailed financial modeling, sensitivity analysis, analysis of financial reaction of markets
- **Quality of process to exploit analysis and reach decision** — eg, explicit exploration of major uncertainties, inclusion of perspectives that contradict senior leader’s point of view, allowing participation in discussion by skill and experience rather than by rank

**Industry/company variables** — eg, number of investment opportunities, capital availability, predictability of consumer tastes, availability of resources to implement decision

- 39%
- 8%
- 53%