

From Climate Data to Climate Intelligence: Building Resilience

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With support from:



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Outline

- Defining Climate Information (vs Climate Data)
- Communicating Climate Information Effectively – Principles
- Translating Climate Data to Support Adaptation
 - Concepts
 - Frameworks



What is Climate Information?

- Climate Information is the interpretation of observed and modeled data
- Information is processed and comes in a meaningful form – generates knowledge
- Confidence limits, variability, etc.

Adapted from: UNEP (2009) Climate information and capacity needs for Ecosystem Management under a Changing Climate.

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Why do we need Climate Information?



To understand the exposure to hazards to humans, infrastructure, and other systems.



Communicating Climate Information Effectively

The Problem

The Response

Confusion with climate data slows adaptation

Data on climate change can get "lost in translation"

- Environmental Commissioner of Ontario, 2015



Climate information must be communicated and transferred efficiently depending on the user 's needs to convey the optimal meaning – OURANOS (2014)





Peel Climate Trends Report, 2016

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For Example... Make Climate Data Relatable





Principles... Don't Forget the Data's Uncertainty

Climate models more effective at means and large-scale weather systems / storms Difficult to resolve convective storms in climate models / historical analysis



It is important to understand the limitations of climate information used – OURANOS (2014)



Remember...

- Climate Data is available, and is becoming more accessible & understandable.
- Climate Data cannot be used in isolation, and a "single best scenario" does not exist (instead, think: Range of futures to stress test).
- But climate data needs to be used to inform action on climate change

YorkU's LAMPS Climate Projections Portal http://occp.lamps.yorku.ca/



Ontario Climate Change Data Portal

www.ontarioccdp.ca

Translating Climate Data to Support Adaptation

"It is estimated that one US dollar invested in anticipatory measures can save up to 7 US dollars in future relief costs"

- UNFCC



A Few Concepts...



Climate information (Scenarios, Drivers, Thresholds) is used with system details to estimate vulnerability

The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of elements including sensitivity and lack of capacity to adapt.

Resilience

The capacity of a system to cope with a climate impact or disturbance, responding or reorganizing in ways that maintain the system's essential function, identity and structure, while also maintaining the capacity for adaptation, learning and transformation.

(IPCC, 2014)



So What Does this Look Like?





Using Climate Information in Adaptation Planning





Vulnerability and Risk Assessments How Vulnerable Am I?





Fundamentals in Assessments





Vulnerability & Risk Assessment Frameworks to Address Climate Change

Step 1: Set Context and Build Team	 Define the study area and identify environmental themes (ie., ecological, social, and economic) indicators Build the team and engage experts, stakeholders, and partners 	Ecosyste Adapta	em tion
Step 2: Assess Current Vulnerability	 Describe the system's current sensitivity and exposure to climate and non-climatic stresses Describe the degree of adaptive capacity of the system 	Guideli	nes
Step 3: Develop and Apply Future Scenarios	 Develop and apply future climate scenarios Consider anticipated non-climatic stresses (e.g., human population growth, land use) 	ESS	
Step 4: Estimate Future Vulnerability and Risks	 Identify and describe future impacts Determine future vulnerability and categorize uncertainty Describe the likelihood and consequences of vulnerabilities through socio-economic, political, a environmental evaluations Determine areas at highest risk Communicate initial findings to key organizations 	ITERATIVE PROC	
Step 5: Develop Adaptation Options	 Based on the risk analysis, determine potential adaptation options Prioritize adaptation options considering economic feasibility, social acceptability, ecolog suitability, and technical and institutional feasibility (e.g., barriers and opportunities) 	țical	,
Step 6: Implement and Mainstream Adaptation	 Determine highest priority adaptation actions for implementation Communicate accomplishments Monitor adaptation actions and vulnerabilities over time Acquire new knowledge, learning, and insights, and modify adaptation actions as required 		ns.c

P-CRAFT: Systematic Literature Review Tool



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Case Studies Today will showcase these Concepts in Practice

- Adaptation Planning
- Vulnerability and Risk Assessments
 - Community
 - Corporate
 - Asset Specific
- Environmental Assessments
- Actions to Reduce Vulnerability
- Capacity Building



Thank you!

For more information, please visit: <u>http://climateconnections.org</u>

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