

## **RETI Course Module**

### ***Coastal communities and climate change – Developing participatory scenarios***

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#### **Learning Objectives**

- To understand foundational concepts, multiple determinants and practical approaches for understanding risks, impacts, vulnerabilities, adaptations and possibilities for climate-resilience experienced by coastal systems and communities under climate change.
- To learn how to model baseline climate and socioeconomic scenarios from current data and assumptions about future trends in changing climatic, environmental and socioeconomic conditions.
- To explore community-focused vulnerability and adaptation assessment approaches that engage participants in envisioning and developing plausible scenarios of adaptation, and building more sustainable and resilient communities and livelihoods.
- To explore goals, uncertainties, capacities, challenges, opportunities and tools at the level of communities and local institutions that can enhance or constrain successful planning and implementation of adaptations.
- To learn about a case study of climate change implications for coastal and Mi'kmaq communities and livelihoods on Prince Edward Island through the lens of a community-focused adaptation assessment approach.

#### **Community-focused approaches to assessing vulnerability and adaptation planning**

While adaptation research and policy are conducted mostly by larger-scale institutions, the act and process of adaptation are a “localized phenomenon” (Brooks and Adger 2004). Hence, place-based and community-focused studies are very important for grounding assessment and adaptation approaches and for providing contextual insights on local conditions and relationships that enhance or constrain adaptive capacity. To ensure effective adaptation planning and action, the UNFCCC Cancun Agreements (2011) also recognize the importance of engaging local stakeholders, local governance structures and socially vulnerable populations in genuine participatory processes.

Community-focused adaptation (CFA) describes locally driven capacity-strengthening, planning and action approaches that respond to climate change impacts and socioeconomic and environmental challenges. These approaches are developed and operationalized through active participatory process with local stakeholders, bottom-up social learning and empowerment models, and place-based research, decision-making and implementation mechanisms. A rapidly expanding approach to research, policy and practice that holds much potential for addressing both climate and social vulnerability within locally grounded and informed processes, CFA is gaining considerable support and momentum amongst climate change and development research and practitioners. CFA approaches attempt to bridge considerable gaps in adaptation research and policy: i) adaptation priorities and knowledge requirements of local stakeholders versus scientists and policy-makers; ii) consideration of multiple climatic and non-climatic determinants and vulnerabilities; and iii) place-based processes for engaging and empowering local knowledge, values and decision-making in adaptation planning and implementation.

Although associated mostly with low and middle-income countries, and within the larger framework of community-based development or resource management discourses and programs, CFA approaches to research, planning and action processes have gained importance and are growing within higher income countries as well. Hence, the approach is becoming increasingly global in its reach and relevance and is worthy of analyzing from within the discourses on multidimensional and transformational adaptation perspectives.

### ***Community-Based Vulnerability Assessments (CBVA)***

CBVA provide conceptual and methodological frameworks for actively engaging community and institutional stakeholders in participatory vulnerability and adaptation-oriented assessment approaches at the local level. The key objective of this tool is to determine current and anticipated vulnerability and adaptive capacity for local stakeholders by: i) identifying socioeconomic and biophysical determinants of climate risk and exposure sensitivity and how they affect communities, and ii) assessing how these determinants and interactions constrain or enhance choices and capacities for adaptation interaction. The situated experiences and specialized knowledge that local communities and stakeholders have is particularly valuable to assessing nuanced and context-specific interrelationships and processes. Assessments and adaptation strategies must be informed and sustained by local social and cultural values and priorities if they are to be effective, equitable and legitimate. The tool's uniqueness is that it provides a vehicle for local stakeholders to understand the nature of their susceptibility to climate risk and non-climatic stresses, and to adequately respond to anticipated risks and impacts through adaptation action.

### ***Adaptation Assessment Approaches***

Building on risk assessment and community-based vulnerability assessment models, this study uses an adaptation assessment approach for the conceptual and methodological framework. Vulnerability and adaptation assessments identify, spatialize

and evaluate characteristics of exposure sensitivity, vulnerability, adaptive capacity and responses within specific populations. The goal of this framework is to incorporate locally situated experiences of vulnerability — in synergy with formal climate scenarios, and socioeconomic and biophysical data — to identify effective long-term adaptation options at the community level. The framework aims to develop plausible scenarios and visioning strategies that are locally grounded and holistic. It assesses them according to how coastal systems and livelihoods are impacted, and how they will respond to potential adaptation options relative to the adaptive capacity and priorities of local stakeholders. The approach is bottom-up and is designed to engage the perspectives and experiences of local stakeholders and decision-makers associated with fisheries/aquaculture and tourism operations.

### ***Participant development of local scenarios and storylines***

Scenarios are plausible descriptions of pathways to possible futures of: i) adapting to climate, environmental, social and economic changes and ii) building more sustainable and resilient communities and livelihoods. Conventional climate and socioeconomic scenario data can be static, simplistic and impersonal. Holistic scenarios and qualitative storylines elaborated by participants can enrich and situate analyses of local vulnerability and adaptation within their particular contexts and realities. Participant storylines are shared by both climate-sensitive communities and institutional stakeholders and are an important type of heuristic for participatory scenario elaboration and development. They are also foundational to generating discussion on key issues, and stakeholder priorities and concerns that can inform broader, and more nuanced aspects of the study. Participant development of scenarios and storylines follow three stages:

- Stage 1**      Facilitator presentation of: i) future coastal hazards and risks, and biophysical and socioeconomic vulnerabilities and impacts (general, fisheries, tourism); and ii) potential adaptive capacities and responses to hazards.
  
- Stage 2**      *Build holistic scenarios and storylines - identify and elaborate on scenarios of coastal vulnerability and adaptation.*
  - a. Observed coastal risks (e.g. warming temperatures, sea level rise, coastal erosion, flooding) and impacts (e.g. fisheries, tourism, built and coastal infrastructure, health, ecological) — and how those may change over time.
  - b. Observed social, economic and institutional stresses and how those may change over time.
  - c. Consequences for livelihoods, social well-being, values, and relationships to the coastal environment.

- d. *Potential* adaptive responses to identified risks (e.g. shoreline stabilization, structural elevation, education and awareness, emergency and risk management plans, wetland restoration).
- e. Key goals and capacities (e.g. knowledge, decision-making, resources, tools) identified by local communities and institutions to help them adjust, minimize vulnerability, plan adaptation and build long-term resilience.
- f. Existing or potential uncertainties, barriers and opportunities (physical, technological, economic, institutional, legal, cultural, or environmental) that participants perceive to either facilitate or constrain their ability to understand, plan and implement adaptive responses.
- g. Related concerns and/or priorities (e.g. conservation, livelihood/job development, community development, water quality, food security, health and developing properties and infrastructure) that participants deem equally or more important than adaptation to climate change.

### *Stage 3      Evaluation, visioning and strategy building*

Reflecting on the holistic scenarios and storylines from Stage 2, identified adaptation options will be evaluated for their suitability based a combination of information from i) participant reflections of lessons learned from past adaptation responses, ii) generic criteria for appraising desirability and relevance, and iii) against maladaptive criteria. These appraisals are instrumental to assessing adaptation options, and guiding decision-making with local stakeholders on selection and strategy building for appropriate options. The visioning component will focus on assessing the potential for adaptation within community and livelihood goals, especially related to fisheries and tourism. Stakeholders will conceptualize short- and long-term strategies for enhancing adaptive capacity, and targeting institutional resources (educational, capacity-building, administrative, financial) and governance frameworks (regulatory, policy) to support plausible adaptation strategies. Stakeholders will be asked to identify and discuss key goals, tools and mechanisms to facilitate adaptation preparedness, planning, implementation and management processes at community and sectoral levels.