Climate Change Impacts, Vulnerability and Adaptation Research

Priorities Emerging from START Research Networks

Goals of START research on impacts, vulnerability and adaptation

1. Generate, evaluate and share scientific knowledge to enable decision-making that reduces vulnerability to climate change and climate hazards.
2. Build and sustain capacity in developing countries for generating, evaluating, sharing and applying knowledge for adaptation.
    - Capacity building is integral to all research activities

Priorities for Research

- Target decision-making
- Engage stakeholders
- Focus on vulnerability
- Address multiple temporal scales
- Emphasize place-based research
- Provide access to and develop capacity to use climate information

Target decision-making

- Target research to well defined decision-making contexts
- Adaptation decisions need information that is temporally, spatially and sector specific
  - Identify the relevant temporal and spatial scales and types of information needed by stakeholders & decision-makers
  - Design research to address their information needs

Priority decision contexts

- Decision contexts that are strongly influenced by climate and climate change include:
  - Development & poverty reduction
  - Food security and hunger
  - Sustainable management of land, water, biodiversity and other natural resources
  - Natural hazards prevention
  - Public health

Engage stakeholders

- Research that gets used
  - Involves stakeholders in setting research objectives and project design
  - Draws upon stakeholders' knowledge
  - Involves stakeholders' in the research, particularly the assessment of response options
  - Involves stakeholders appropriate to the decision context
    - Local, national, international groups
    - development agencies, finance ministries, community organizations, private sector associations etc.

Address multiple temporal scales

- People face climate risks now, not just in distant future
  - Climate change often perceived as threat that is distant in time; research has focused mostly on time horizons 50 years and more in future
  - But climate hazards pose threats now that are poorly managed
  - Changing climate is changing the hazards in near term
  - Near term hazards and adaptation strategies under-researched
- Research needed on impacts, vulnerability and adaptation at multiple temporal scales:
  - Climate variability, extremes and trends of recent past
  - Current climate variability, extremes and trends
  - Climate changes over 10-20 year horizon
  - Climate changes over longer time horizons

Focus on vulnerability

- Understanding vulnerability is critical to devising effective responses to reduce vulnerability
  - Who is vulnerable to climate risks?
  - What factors, including non-climate ones, determine their vulnerability?
  - Is vulnerability changing in degree or character?
  - Why is vulnerability changing?
  - What can be done to reduce vulnerability?

Emphasize place-based research

- Global change in local places
  - impacts and adaptation options strongly influenced by conditions & processes at sub-global to local scales
- Development and adaptation projects are implemented at national to local scales
- Research agenda:
  - Place-based research is critical
  - Downscaling issues: for climate, but also for other drivers

Provide access to and develop capacity to use climate information

- IPCC task group on climate data has highlighted needs of developing countries for
  - Climate data products for their region
  - Access to data and data products
  - Capacity to access and use data
- Critical obstacles to understanding climate change risks and planning adaptation responses
- Institutional framework needed to enhance expertise in developing country research centers, link them to research centers in North, and link them to user organizations within their regions (see IPCC TGICA proposal)