Climate Adaptation in the Pacific: Lessons Learned from Variability and Extreme Events

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Facilitating Adaptation to Climate Change in the South Pacific Region:

Bridging Research, Policy & Implementation

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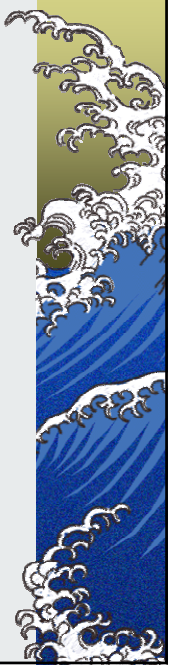
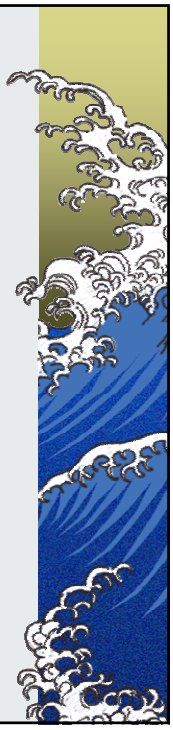
Some Definitions…

- ***Vulnerability*** – a combination of sensitivity, exposure and resilience (adaptive capacity); focus on
  - Reducing exposure and/or sensitivity or
  - **Enhancing resilience**
- ***Adaptation*** – those activities that people, individually or in groups such as households, villages, companies and various forms of government, carry out in order to accommodate, cope with or reduce the adverse effects of climate variability and change (SPREP, 2000); generally two types:
  - **Anticipatory (proactive)**
  - **Reactive**



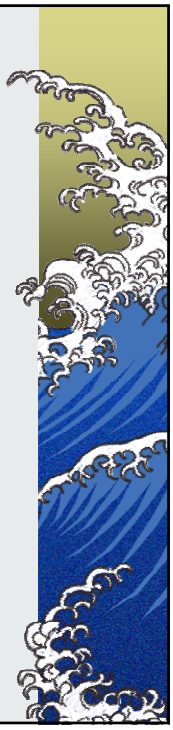
A General Approach to Adaptation Mainstreaming (New Orleans, 2003)

- Adaptation entails the **consideration of climatic variability and change in ongoing decision-making** processes, development plans, projects & initiatives
  - Improving society's ability to cope with changes in climate across timescales
  - Allows for adaptation to both natural and anthropogenic changes in climate
- **Adaptation requires being proactive regarding the full range of future stresses**
  - Recognize interconnections between socioeconomic, environmental and climatic stresses
  - *Comprehensive risk management* where climate is one factor in a multi-stress environment



Enhancing Resilience in the Pacific: Water Resources as Example

- Central importance of **water resources** to survival and development make this sector a natural target of opportunity
  - **"Water is Gold"** – cascading effects
- **Limited** (natural) **storage capacity**
- **Dependence on rainfall**; subject to seasonal and year-to-year variations
- **Increasing demand** – population growth and economic development
- **Infrastructure constraints**
- **Institutional challenges**



Providing Access to Fresh Water Enhancing Resilience

- Improve Infrastructure/Enhance Capacity
- Evaluate Existing Assets and Develop Unused/Alternative Sources
- Incentives for Water Conservation and Wastewater Recovery and Reuse

Providing Access to Fresh Water Enhancing Resilience

- Encourage Public-Private Partnerships Among Large-Scale Users (tourism, agriculture, military*)*
- Pursue Watershed Protection and Restoration
- Emphasize Integrated Water and Land Use Management; Explore Traditional Practices (e.g., Ahupua'a in Hawaii)

Providing Access to Fresh Water Enhancing Resilience

- Plan for Extremes (particularly droughts)
- Integrate Climate Forecasts into decision making
- Emphasize Self-Sufficiency in Long-Term Planning
- Promote Public Awareness, Education, Dialogue & Capacity-Building

Pacific ENSO Applications Center (PEAC)

PEAC Experience
Chronology of 1997-1998 Event

- Feb 97 — Some models suggest developing El Niño
- May 97 — PEAC issues scenario warning based on growing consensus
- June 97 — SST/SOI indicate strong event
- Aug 97 — PEAC alerts governments & develops rainfall forecasts
- Sept 97 — In-country briefings begin; quantitative forecasts in 3rd quarter newsletter and country task forces formed by governments

PEAC Experience
Chronology of 1997-1998 Event

- Oct 97 — Initial in-country briefings and dialogue continue
- Nov 97 — Follow-up briefings based on forecast updates & requests; Majuro/Marshall Islands briefings completed
- Dec 97 — 4th quarter newsletter updates quantitative forecast; typhoon Paka hits Marshall Islands & Guam; drought begins throughout region
- Jan 98 — Special issue of newsletter
- Feb 98 — 1st quarter newsletter with rainfall & tropical cyclone summaries
- Mar 98 — Special bulletin with initial event assessment

Lessons Learned from Variability

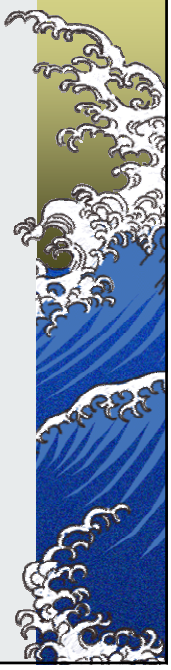
- **Evidence of enhanced resilience in some sectors**: water resource management, disaster management (incl. drought, flood & fire management as well as tropical cyclones), agriculture, health, fisheries, tourism
- **Significant improvements in forecasting capabilities but still limitations/constraints** on applications in specific places/sectors
- **Decision makers interested in continuum of information from extreme events:**
  - Addressing today's problems;
  - Planning for the future
- **Extreme events have been/can be a "galvanizing" focus**

Lessons Learned from Variability

- **Building trust and credibility essential** – sustained "eyeball-to-eyeball" contact:
  - Role of trusted information brokers
  - Build on existing institutions; role of NMHSs
- **Shared learning & joint problem-solving**:
  - Among partners in climate information system
  - Across local, national, regional and international
  - Between/among providers and users
  - Among user communities
  - Dynamic nature of climate and policy
    - Continuous evaluation and revision
- **Consistent, understandable messages critical**

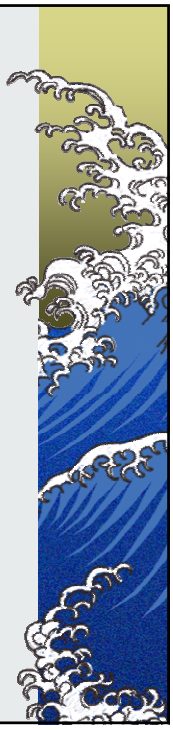
Some Guiding Principles

- Focus on **integrated climate-society system**
- **Collaborative, participatory process** with stakeholders:
  - Science-applications partnerships
  - Continuous, interactive dialogue
  - Co-production of knowledge
  - Public education campaign essential
  - Document and share experiences
- **Problem-focused approach**:
  - Understand place, context, history and decision making processes;
  - Responsive to user needs



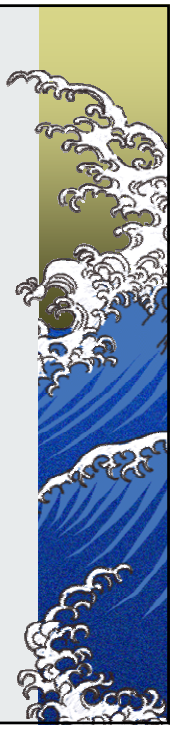
Some Guiding Principles

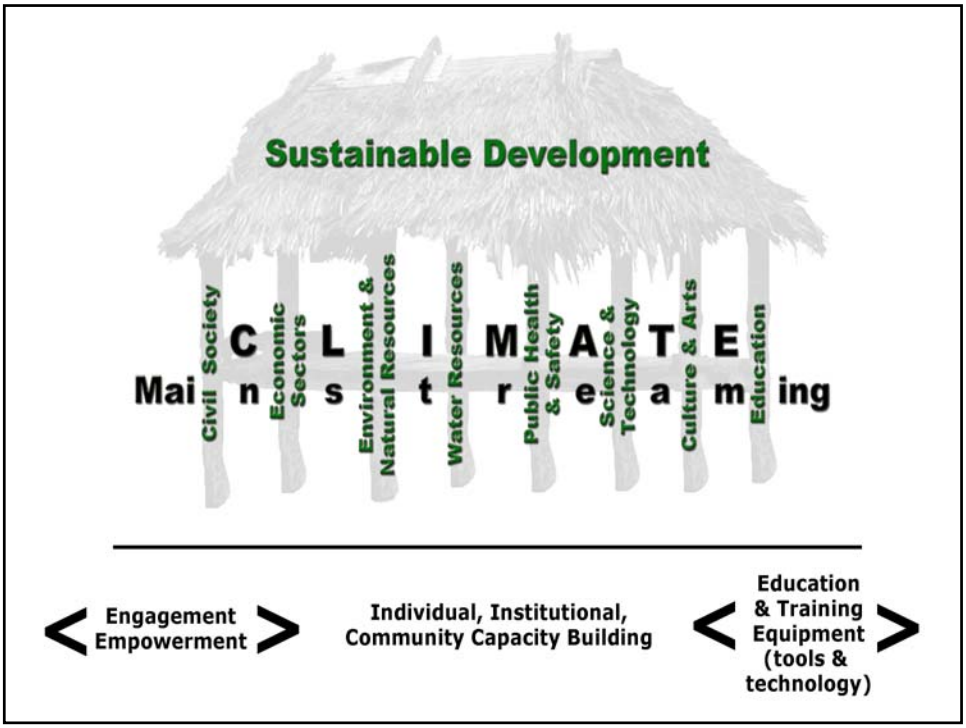
- **Useful and usable information**
  - Appropriate scale, timing, format, language
  - Near-term decisions and long-term planning
- **Appropriate tools, technologies**
  - Communication, product development, analysis, "discussion" and "decision" support tools
- **Address both process *and* products**
- Importance of **integrated program** of observations, monitoring, forecasting, assessment, education and applications – ***with continuous evaluation and adjustment***



Some Guiding Principles

- **Build on existing systems, institutions, programs, relationships & networks**
- Facilitate ***proactive decision making and adaptive approaches***
- **Climate risk management in a sustainable development context**:
  - Responding to today's variability
  - Adaptation to long-term change
  - Economic planning & community development
  - Mainstreaming climate information & adaptation




Sustainable Development
Civil Society
Economic Sectors
Environment & Natural Resources
Water Resources
Public Health & Safety
Science & Technology
Culture & Arts
Education
Mainstreaming CLIMATE
Engagement Empowerment
Individual, Institutional, Community Capacity Building
Education & Training Equipment (tools & technology)