WORKSHOP OBJECTIVES

- DEVELOP A MORE COMPLETE UNDERSTANDING OF REGIONAL VULNERABILITY AND

- STRENGTHEN AND ENHANCE A CONTINUING, INTERACTIVE DIALOGUE TO SUPPORT DECISION MAKING
Pacific Islands Climate Assessment

- Pacific regional contribution to the first U.S. National Assessment of the Consequences of Climate Variability and Change
- Steering Committee for overall guidance
- Focus on U.S.-affiliated Pacific jurisdictions within regional context—with links to related climate programs and activities in the region
Pacific Islands Regional Assessment

Overarching Goal

NUTURE THE **CRITICAL PARTNERSHIPS NECESSARY** TO DEVELOP AND USE **CLIMATE INFORMATION** TO ENHANCE THE ABILITY OF SCIENTISTS AND DECISION MAKERS THROUGHOUT THE PACIFIC **TO UNDERSTAND AND RESPOND TO THE CHALLENGES AND OPPORTUNITIES PRESENTED BY CLIMATE VARIABILITY AND CHANGE**
Pacific Islands Climate Assessment

- Combine research/analysis with dialogue and education
- Extensive involvement of stakeholders and scientists throughout the region:

  Assessment as process of shared learning and joint problem-solving
Pacific Islands Climate Assessment

- Highest priority on water resources, public health and safety (extreme events) and challenges for coastal communities and ecosystems

- Address today’s problems today (natural variability) and plan for the future (climate change)

- Start with historical analysis of climate patterns, impacts and responses (already underway)
Workshop on Climate and Island Coastal Communities

Workshop Organization

- **Opening Plenary** – Providing a cultural and scientific context for deliberations

- **Small-Group Discussions** of Key Issues – Impacts and Responses

- **Plenary Discussion** of Key Findings, Recommendations and Next Steps
Workshop Reference Materials

- **Background Paper**  – A work-in-progress
- **Key chapters from the U.S. National Assessment**  – Islands, Coastal, Native Peoples
- **Report of 1998 regional workshop**
- **Regional summary of model-based scenarios**
- **Plenary presentations & statements**
- **Selected background readings/references**
Workshop on Climate and Island Coastal Communities

Exploring “vulnerability” involves issues of:

- EXPOSURE
- SENSITIVITY
- ADAPTIVE CAPACITY/RESILIENCE

WITH A FOCUS ON

- CULTURAL CONTEXTS AND
- PROMOTING APPROPRIATE ACTION
Workshop Goal

TO BRING EXPERTS FROM DIVERSE BACKGROUNDS TOGETHER TO SHARE KNOWLEDGE AND PURSUE INNOVATIVE PARTNERSHIPS TO ENHANCE THE ABILITY OF ISLAND COMMUNITIES TO RESPOND TO CLIMATE-RELATED CHALLENGES AND OPPORTUNITIES...

CREATING AN AHA COUNCIL FOR CLIMATE
Pacific Islands Regional Assessment

Underlying Assumptions

- Understand & address climate in context of other economic, social & environmental stresses
- Understand current patterns of natural variability and how they might change
- Address today’s problems today while planning for the future
Pacific Islands Regional Assessment

Underlying Assumptions

- Appreciate special circumstances of island communities (size, isolation, resource limitations)
- Required data sets often missing or inaccessible; limited research/information on regional consequences
- Infrastructure and community services already stressed
Pacific Islands Regional Assessment
Underlying Assumptions

- Critical need to reduce the “information gap” between scientists and decision makers

Address scientific, institutional and communication barriers/opportunities
Pacific Islands Regional Assessment
Information Needs

- Regional climate information (temperature, rainfall, trade winds, tropical storms, etc.)
- Patterns of resource use, ecosystem change and species diversity (local, island, regional)
- Changing environmental, demographic and economic patterns and trends
- Value of climate information for decision making
- Nature and consequences of response options—adaptation as well as mitigation
Workshop on Climate and Island Coastal Communities

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Workshop on Climate and Island Coastal Communities

KEY QUESTIONS

- WHAT SYSTEMS, COMMUNITIES, ACTIVITIES ARE PARTICULARLY SENSITIVE TO CLIMATE AND WHY?

- HOW MIGHT WE ACT TO ENHANCE THE ADAPTIVE CAPACITY/RESILIENCE OF THESE SYSTEMS, COMMUNITIES AND ACTIVITIES?
Workshop on Climate and Island Coastal Communities

WHAT INFORMATION IS NEEDED TO REDUCE SENSITIVITY OR BUILD RESILIENCE? AND

HOW CAN SUCH INFORMATION BE USED TO SUPPORT PLANNING, POLICY FORMULATION AND DECISION MAKING?
Pursuing Partnerships to:

- Fill information gaps through research, monitoring, modeling and assessment
- Improve access to useful and usable information
- Develop effective response strategies (adaptation and mitigation)
- Promote education and dialogue—shared learning & joint problem solving
Workshop on Climate and Island Coastal Communities

KEY ISSUES/TOPICAL AREAS

- Providing Access to **Fresh Water**
- Protecting **Public Health**
- Ensuring **Public Safety & Protecting Community Infrastructure**
- Sustaining **Tourism**
- Sustaining **Agriculture**
- Promoting Wise Use of **Coastal & Marine Resources**
Providing Access to Fresh Water
Some Initial Thoughts

- 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
Protecting Public Health
Some Initial Thoughts

- Direct effects via changes in temperature, water & extreme events
- Indirect effects on disease vectors & pathogens
- Links between drought and nutrition
- Cultural considerations
- Public health infrastructure already stressed
Public Safety & Community Infrastructure – Some Initial Thoughts

- Extreme events – today’s problems and tomorrow’s challenges (storms, droughts, floods)
- Changes in current patterns of exposure
- Sea level rise as an exacerbating factor
- Infrastructure in low-lying areas
- Threats to “lifeline facilities” – communication, transportation, waste management, etc.
Sustaining Tourism
Some Initial Thoughts

- Current challenges and future planning
- Reliance on sensitive natural resources (e.g., coral, forests, fisheries)
- Consequences for facilities, critical infrastructure and support services
- Access to water
- Changes in tropical storm patterns
- Health-related impacts
Sustaining Agriculture
Some Initial Thoughts

- Subsistence, food supply and commercial implications
- Cultural considerations
- Current challenges and future planning
- Extreme events – droughts, tropical storms and storm surge
- Implications of sea level rise – saltwater intrusion, inundation of coastal areas, exposure to storms/storm surge
**Marine and Coastal Resources**

**Some Initial Thoughts**

- Direct impacts on critical coastal resources and habitats (e.g., coral reefs, mangroves, beaches)
- Consequences for economically-significant fisheries (e.g., tuna) and/or key sectors (e.g., tourism)
- Multiple stresses (rainfall, temperature, sea level and human activities)
- Long-term trends and extreme events
CLIMATE CHANGE IMPACTS ON THE U.S.—ISLANDS

MODELS SUGGEST CHANGES IN:

- NATURAL VARIABILITY (e.g., EL NIÑO)
- TROPICAL CYCLONES
- INCREASED OCEAN TEMPERATURES
- CHANGES IN OCEAN CIRCULATION
- CHANGES IN SEA LEVEL (PERIODIC CHANGES AND SUSTAINED RISE)
EXPLORING VULNERABILITY

- EXPOSURE
- SENSITIVITY
- ADAPTIVE CAPACITY (RESILIENCE)
CLIMATE & ISLANDS WORKSHOP: SOME KEY FINDINGS

- Continue dialogue among experts from all knowledge groups – AHA COUNCIL for climate

- Achieve balance between “intellect” and “intuition”

- Commit to a meaningful integration of traditional knowledge – the past as key to the future; role of traditional leaders
CLIMATE & ISLANDS WORKSHOP: SOME KEY FINDINGS

- Enhance Interpretation and Communication
  - Produce useful and usable products
  - Utilize “information brokers” and cultural translators – building trust essential
  - Explore new technologies to develop and convey information
CLIMATE & ISLANDS WORKSHOP: SOME KEY FINDINGS

- Pursue pro-active (vs. reactive) policy
- Sustained commitment to adaptation – actions and dialogue

- Integrate planning/decisions/policies across levels of government and with donor agencies

- Address today’s problems (e.g., El Niño) while planning for future – learn by doing
CLIMATE & ISLANDS WORKSHOP:
SOME KEY FINDINGS

- Recognize special characteristics of island communities
  - “One Size Does Not Fit All”
  - Unique natural and cultural resources/assets
  - Geographic size, isolation and limited resources constrain some response options
  - Traditional adaptation practices & new options
  - Partnerships among island groups valuable
CLIMATE & ISLANDS WORKSHOP: SOME KEY FINDINGS

- **Special information needs**, include:
  - Extreme events
  - Natural variability as well as long-term trends
  - "Baseline" information for monitoring
  - Historical data sets – observations/insights from scientific and traditional sources
  - Local- (site-specific) and regional-scale information on climate processes and consequences
CLIMATE & ISLANDS WORKSHOP: SOME KEY FINDINGS

Build & Sustain Critical Partnerships

- Scientific community, government (all levels), businesses, community leaders, NGO’s
- Network of institutions (e.g., national weather services, universities and research institutions, regional organizations, industry and professional associations, donor agencies, etc.)
- Multi-disciplinary science teams
- Scientists AND other experts
CLIMATE & ISLANDS WORKSHOP: SOME KEY FINDINGS

- Focus on **Vulnerability** in order to:
  - Understand **impacts** (exposure & sensitivity)
  - Address **resilience/adaptive capacity**
  - Develop **appropriate response options**
  - Engage all experts in **shared learning and joint problem-solving**
CLIMATE & ISLANDS WORKSHOP
COASTAL & MARINE RESOURCES

- Human and biological communities
- Extreme events & range of variability vs. “means”
- Pro-active planning and actions to adapt & mitigate
- Integration of traditional knowledge & practices in analysis and action
- Actions appropriate to island settings – carrying capacity matters
Actions appropriate to community values and goals

Participatory process – full engagement of all experts and stakeholders

Targeted education and capacity-building (e.g. planning boards)

Effective interface between science and decision makers—information clearinghouse
Tourism extremely climate-sensitive—leadership opportunity

Extreme events as a galvanizing focus

Address the “keys” to tourism – safety, health and infrastructure

Opportunity to look at alternative infrastructure options & changes in governance systems

Address consequences for natural systems
CLIMATE & ISLANDS WORKSHOP TOURISM

- Partnership among government, industry and the public essential—numerous stakeholders
- Opportunities for community dialogue and partnerships
- Develop baseline of today’s impacts
- Establish effective weather/climate information system(s)—two-way dialogue
- Education a key
Climate impacts on water affect nearly all human and natural systems and activities.

Recognize differences in island typologies (natural and human).

Response options might involve economic instruments and legislation as well as education, training and information exchange.
CLIMATE & ISLANDS WORKSHOP
WATER RESOURCES

- Pursue watershed management, protection & restoration—traditional and modern approaches
- Develop multi-disciplinary/multi-cultural “watershed councils” (ahupua`a systems)
- Conduct integrated climate assessments for each island
- Integrate climate information in planning
- Building TRUST among partners essential
Issues include drought, saltwater contamination, tropical cyclones—extremes
Pursue pro-active, pre-disaster planning and preparedness
Reduce vulnerability to today’s climate events (e.g. extremes related to El Niño)
Incorporate traditional knowledge & adaptations
Closer link between science and agricultural community/sector
CLIMATE & ISLANDS WORKSHOP

AGRICULTURE

- Enhance adaptive capacity through:
  - Diversification (vs. mono-crop agriculture)
  - Drought and/or salt-resistant varieties
  - Integration of climate information in drought mitigation plans
  - Protection against invasive & alien species
  - Comprehensive land use policies/practices
  - Education and public awareness
CLIMATE & ISLANDS WORKSHOP
PUBLIC HEALTH

- Address vulnerable populations & communities – older, younger, lower-income, immune status, water quality/sanitation conditions
- Many climate-sensitive diseases/vectors
- Consider synergistic relationships e.g.,:
  - Drought/agriculture/nutrition
  - Drought/floods & diarrheal diseases
  - Global travel—spread of infectious diseases
CLIMATE & ISLANDS WORKSHOP
PUBLIC HEALTH

- Address key systems: infrastructure, sanitation, health care & emergency services, disaster planning/preparedness/relief, agriculture
- Understand and integrate local health knowledge
- Closer link between science, health sector and community leaders
- Education, communication, partnerships
Numerous climate-related risks -- tropical cyclones, winds, storm surge, drought, rains/flooding, sea level rise – and nearly all elements of infrastructure affected.

Water availability and quality particularly important/crucial.

Improve adaptive capacity for extreme events – addresses today’s problems and reduces future vulnerability.
CLIMATE & ISLANDS WORKSHOP
PUBLIC SAFETY & INFRASTRUCTURE

- Pro-active preparedness vs. reactive disaster relief – integrate climate in planning
- Local government and community engagement a key and
- Local research & information needed
- Public education & awareness essential
- Science-Community-Government Dialogue