OtinTaai
Planning for Change in Oceania

We are like islands in the sea, separate on the surface but connected in the deep.

Liz Fischer
USDOT-FHWA-HI
Tumon, GU
2 June 2011
Moana

- 58M square miles
- 30,000 islands
- 37M people
  - 14M AU
  - 1.2M HI
Water was not a Barrier
Lapita Diaspora

Likely pattern of early human settlement in the Pacific

The Lapita dispersal from the Bismarck Archipelago to West Polynesia is quite closely dated to the period 3400 BP to 2900 BP. However, the chronology of Polynesian settlement remains uncertain and contentious.
“Ancient wisdom in Pacific cultures hold that all things are connected and related... the people of Oceania see the universe as living kin and patterned their cultures to fit that view.”

Papali’i Dr. Failautusi Avegalio

- “When the chickens come down from the trees to roost on the ground, we know that a big storm is coming.” Traditional disaster preparedness knowledge, Micronesia.

- “When the dogs are in the trees, we know there has been a tsunami.” Joke, Micronesia.
Connecting Past to Present

Albert Einstein reaffirmed the ancient wisdom of connections when he ushered in the era of particle quantum physics, which emphasized the innate connectedness of all things.
Vanua-Fonua-Enua-Aina
Natural Systems

- Marine & Terrestrial Protected Areas
- Soils & Geologic Base
- Water: Surface & Ground
- Estuaries & Wetlands
- Mangroves & Coastal Forests
- Coral Reefs, Sea Grass Beds, & Sandbars
Natural Systems Patterns

THE LA NINA AND EL NIÑO WEATHER PATTERNS...

IN THE PAST

TODAY
Water: Too Little
Water: Too Much

Fig. 7: Gauging erosion as losing land

Fig. 8: Sea water that floods the land that threatens food security pandanus trees.

Fig. 9: Giant taro in pits affected by sea water intrusion.
Land: Limited, Created, Lost
Land & Community
Transport - Land
Transport – Sea & Air
Community
Landless Nations?
Socio-Economic Considerations

Small island development states (SIDS)

- Small land masses amidst vast ocean
- Large populations for land area – high densities and growth rates
- Dependence on ocean
- Poor infrastructure
- Limited national & human resources

Adaptive capacity is low.
Wanga-Waka-Va’a: Journey & Navigation
THE CAIRO PRINCIPLES

Overarching Principle:

Reduce the vulnerability of coastal communities to natural hazards by establishing a regional early warning system and applying construction set-backs, green belts, and other no-build areas.

Developed in response to the 26 December 2005 Indian Ocean Tsunami.
Core to Implement

“4-Ps”:

• Political Will
• Public Participation
• Planning: environment, infrastructure, community, economic
• Public Awareness: best practices & education
“PEOPLES” Framework*

P - Population and Demographics
E - Environmental/Ecosystem
O - Organized Governmental Services
P - Physical Infrastructure
L - Lifestyle and Community Competence
E - Economic Development
S - Social-Cultural Capital

We Need to Start Here

* and Implementation; follow principles espoused by McHarg & Steinitz + Cairo
Hawai‘i

Hawaii Catastrophic All-Hazards CONPLA Plan
July 16, 2009
Version 2.0
FEMA

Hawaii Catastrophic Hurricane Operations Plan (OPLAN)
July 16, 2009
Version 2.0
FEMA

Hawaii Coastal Hazard Mitigation Guidebook
Volume 1: Hawaii Coastal Hazard Mitigation Guidebook
Volume 2: Coastal Construction Manual

University of Hawaii Sea Grant College Program

Homeowner’s Handbook to Prepare for Natural Hazards
Kiribati
GUIDELINES FOR LOW-IMPACT TOURISM
ALONG THE COAST OF QUINTANA ROO, MÉXICO

100. Characteristics of Quintana Roo’s Coastal Zone
110. Coral Reefs and Reef Lagoons
120. Beaches and Dunes
130. Wetlands and Coastal Lagoons
140. Sinkholes
150. Forests

200. The Coastal Processes of Quintana Roo
210. Sediment Transport
220. Natural Hazards
230. Groundwater

300. Siting Infrastructure Respective to Beaches and Dunes
310. Establish Construction Setbacks or Restricted Zones
320. Design Development to Complement Natural Conditions
330. Elevate Structures in Flood-prone Areas
340. Design Infrastructure to Withstand the Effects of Wind and Waves
350. Reduce the Impacts to Nesting Marine Turtles

400. Siting Infrastructure to Respect Wetlands
410. Design Development to Maintain the Function of Wetlands
420. Avoid Alterations that Reduce the Quality of Wetlands and Mangroves
430. Reduce Impacts from Land-based Runoffs
440. Reduce Discharge of Contaminants to Wetlands
450. Evaluate the Siting and Design of Piers
460. Use Integrated Methods to Develop Marinas

500. Vegetation Management and Landscape Design
510. Evaluating Existing Physical Characteristics
520. Utilize Native Vegetation in Landscape Design
530. Eliminate the Use of Exotic Species
540. Replant Areas that are Devegetated
550. Maintain Buffer Zones

600. Use and Management of Potable Water and Wastewater
610. Optimize Design and Siting of Wells
620. Optimize Water Use
630. Reduce Contaminant Discharge to Water Bodies
640. Site Septic Systems at Appropriate Locations
650. Utilize Alternative Septic Systems to Enhance Treatment

700. Managing Solid Waste
710. Reduce, Reuse, Recycle
720. Design Sanitary Landfills Appropriately
730. Identify Appropriate Locations for Landfills

800. Options for Alternative Energy
810. Options and Applications for Renewable Energy
820. Solar Power
830. Wind-generated Energy
840. Cost Comparisons
850. Implementing Renewable Energy Systems Without Environmental Impact

900. Applying Tourism Guidelines in Costa Maya
'it’s saving money if we do some of these works now, versus the long term costs…
In the case of our Shire, an additional $3 million is now budgeted each year for flood and erosion works, to prepare for the extreme weather events'

Mayor David Gibb, Mornington Peninsula Shire

Source: Climate Change Risks to Australia’s Coast 2009:146.
Menin Kairoir: The View Forward

• Strong ties between:
  ▪ climate adaptation planning,
  ▪ land use planning,
  ▪ infrastructure planning,
  ▪ disaster management planning,
  ▪ ecosystem restoration & mitigation, &
  ▪ population growth planning.

• Need best practices & practical lessons learned.

• Easily replicable to ensure implementation.

Caroline Islands Navigator’s Proverb
We know what to do with our water world...
...But are we prepared to adapt and modify our way of business and practice for a changing world?
Eti am kauti

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