Gaps & Needs User Perspective Socioeconomic Information for Vulnerability and Adaptation Assessments

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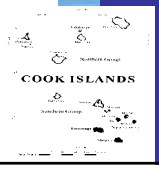
COOK ISLANDS

Overview

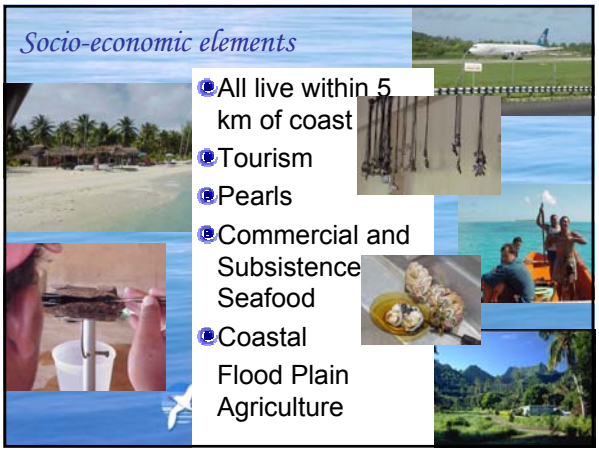
- **User objective – affects gaps & needs**
- **Learning by doing example, climate change and tourism assessment**
- **Gaps**
- **Needs**
- **Possible UNFCCC Roles**

Cook Islands

– Island micro-state
- Latitude 9-22°S
- Longitude 157-166°W
- limited land size (240 sq km)
- small population size (16,000)
- limited natural resources
- external economic and physical impacts important
- geographic diversity with both high and low islands



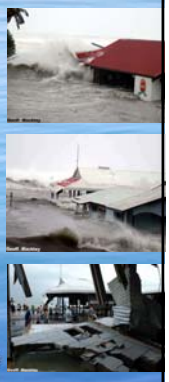
Socio-economic elements



- All live within 5 km of coast
- Tourism
- Pearls
- Commercial and Subsistence Seafood
- Coastal Flood Plain Agriculture

User Approach

- **User objective – application of socio economic information to better deal with impacts of climate change**
- **Additional to assessing impacts and vulnerability, need information for decision making on responses**
- **Small islands poorly researched, data gaps, may be limited options,**
- **decisions being taken in near term are not based on climate change because of limited understanding that different choices might be more or less adaptive, inertia, and scale of task**
- **Need to involve stakeholders to achieve adaptive behaviour changes**



V&A for Tourism & Climate Change in Takitumu district of Rarotonga

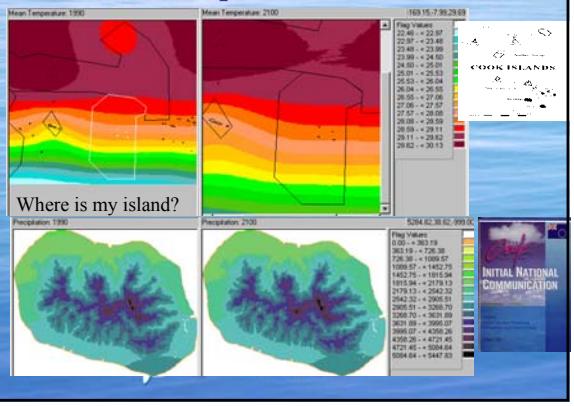


- **Methods aiming to get at adaptive capacity for climate change and responses to current climate variability**
- **Literature review, historical climate& livelihood data collation & analysis, analogues**
- **Global (4%) and National (10%) Trends in tourism as input to future scenarios**
- **Stakeholder consultations**
  - survey design, accommodators and resident community
  - targeted questions,
  - analysis



- **Field data collection for GIS hazard mapping, infrastructure locations and value (water, sanitation, energy, phone), lagoon sedimentation, agriculture and other land uses, health issues e.g. vectors, toxic syndrome**
- **Linkages to Insurance damage assessments, Disaster Management, Private Sector initiatives**

PACCLIM Outputs



Example of Cook Clim Inundation Simulation

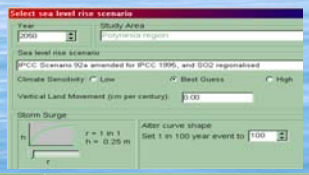
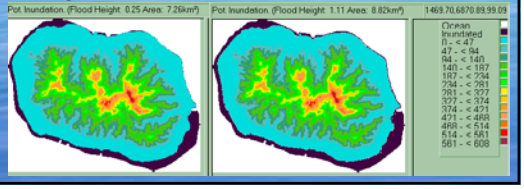
Concerns:

Only for one island

Not visually significant for decision makers

Population & Socio-economic info missing

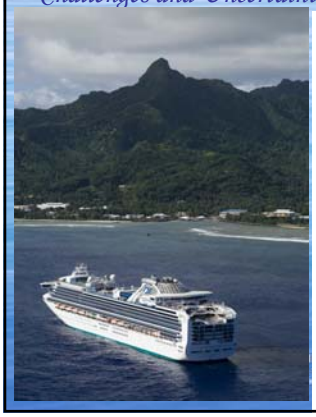
Time Consuming

Brainstorming/Expert Judgement Method
Main Types Of Tourism Sector Impacts

CLIMATE IMPACT	HOW AFFECTED
Temperature	Coral bleaching - snorkelling Heat Stress
Precipitation	Drinking water contamination Dengue fever outbreaks Runoff pollutes lagoon Activities Limited
Sea Level Rise & Inundation	Reefs able to cope? Beach loss, infrastructure damage. Local produce growth affected by salt water intrusion
Tropical Cyclones & Storm Surges	Infrastructure Damage Loss of life
ENSO Events	La Nina Heavy rain – poor experiences El Nino Cyclones, Dengue – cancelled trips/flights

Challenges and Uncertainties



- **Time horizons – Tourism Masterplan 2015, National Sustainable Development Plan 2025, available scenarios 2050-2100**
- **Events and Trends, e.g. 5 cyclones in one month in 2005, tornado, importing labour, international economic down turns, lifestyle and market shifts i.e. cruise ships**
- **Behaviour change – affect of carbon miles on 'ecotourism' destination**
- **Self insurance & other coping strategies**
- **Assumption tends to be business & growth as usual**

Gaps

- Georeferenced data, analysis, and user friendly visual representation (especially relative to similar information for mitigation)
- Costs of different response options,
- Expected lifespan (sustainability)
- Ecosystem services valuation
- Alternative Scenarios and Contingencies both social & economic
  - E.g. if migration, if tourism slows, if buffer zones are established vs. sea walls

Needs

- **Translation of Data into usable format that assists with adaptation decision making**
- **Scenarios that consider the unique circumstances of small islands e.g. harbour protection, impacts, contingencies if still wiped out by extreme event**
- **More integrated and analysed data, including use of GIS layers**
- **Cost benefits of different options in a small island context**
- **Where country capacity is limited, preparation of packages of information (e.g. model run results) that present a range of possibilities and include uncertainties**
- **Stakeholder considerations, who will be using & applying data e.g. AIACC experience, also SIDS issues coral reefs etc**

Possible Roles of UNFCCC

- **Financially support and facilitate collaboration between countries and research institutions for preparation of information in usable format**
- **Work with IPCC and others to develop new guidelines that focus on adaptation analysis including use of socio-economic information**
- **Pilot & increase documentation and dissemination of socio-economic costs and benefits of Type III adaptation experiences**
- **Recognising there is expertise and a range of global databases in this area, ensure the most vulnerable especially small islands that are experiencing impacts have access to analysed socio-economic information that will improve decision making**
- **Consider expanding the role of LEG/EGTT/CGE or an adaptation expert group to provide targeted input and advice in response to gaps in this area.**
- **Address issue of no impacts, adaptation, and vulnerability community/organisation within the IPCC scenario development process**
- **Promote community based approaches, including facilitator training and partnerships with organisations that have local representation**