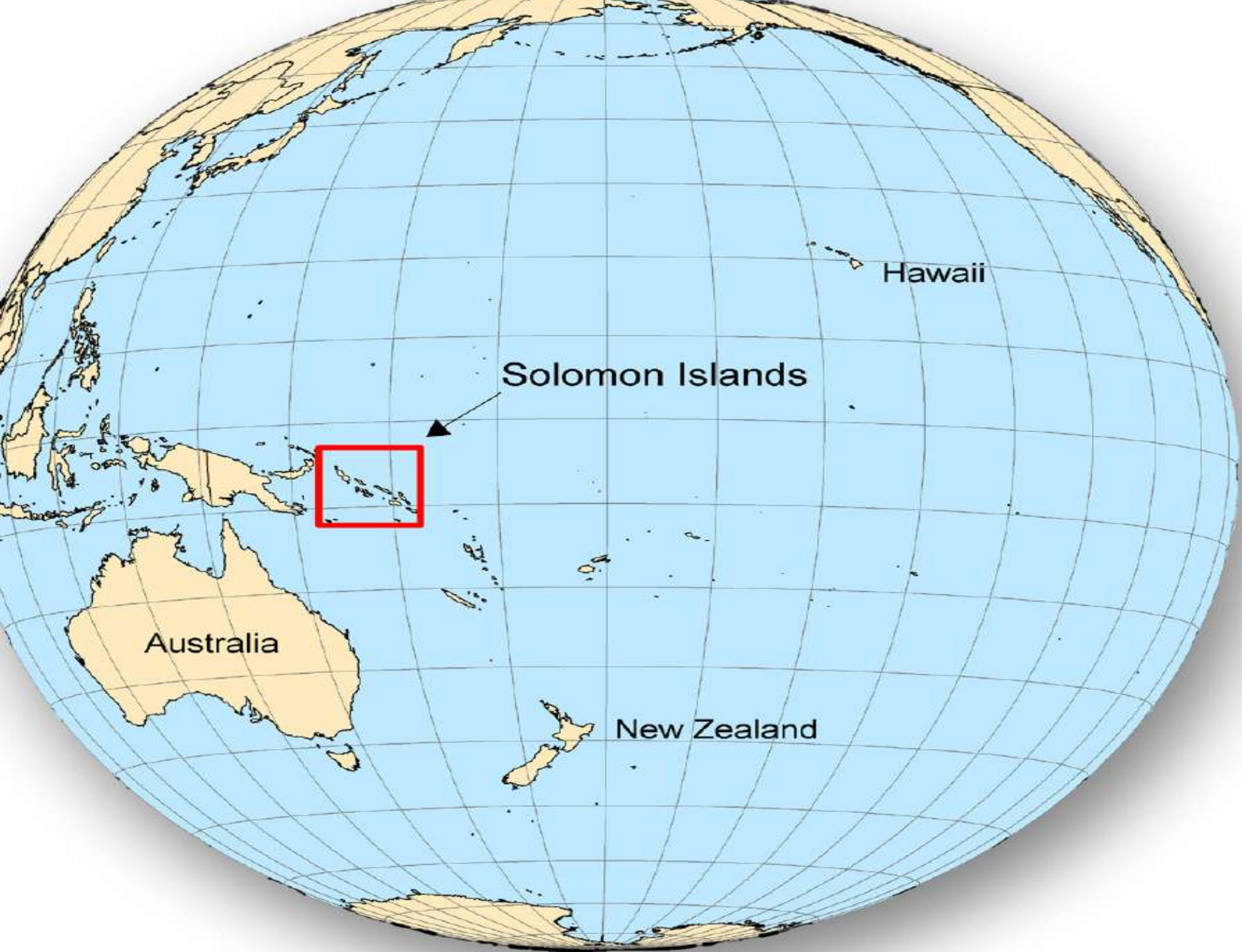




**Shankar Aswani**  
**Associate Professor**  
**University of California, Santa Barbara**  
**Department of Anthropology and**  
**Interdepartmental Graduate Program in Marine Science**

**Western Solomon Conservation Program (WSCP)**  
**University of California SI Research Station**

**Adapting Customary Management for Protecting Coastal  
Ecosystems and Livelihoods**



Hawaii

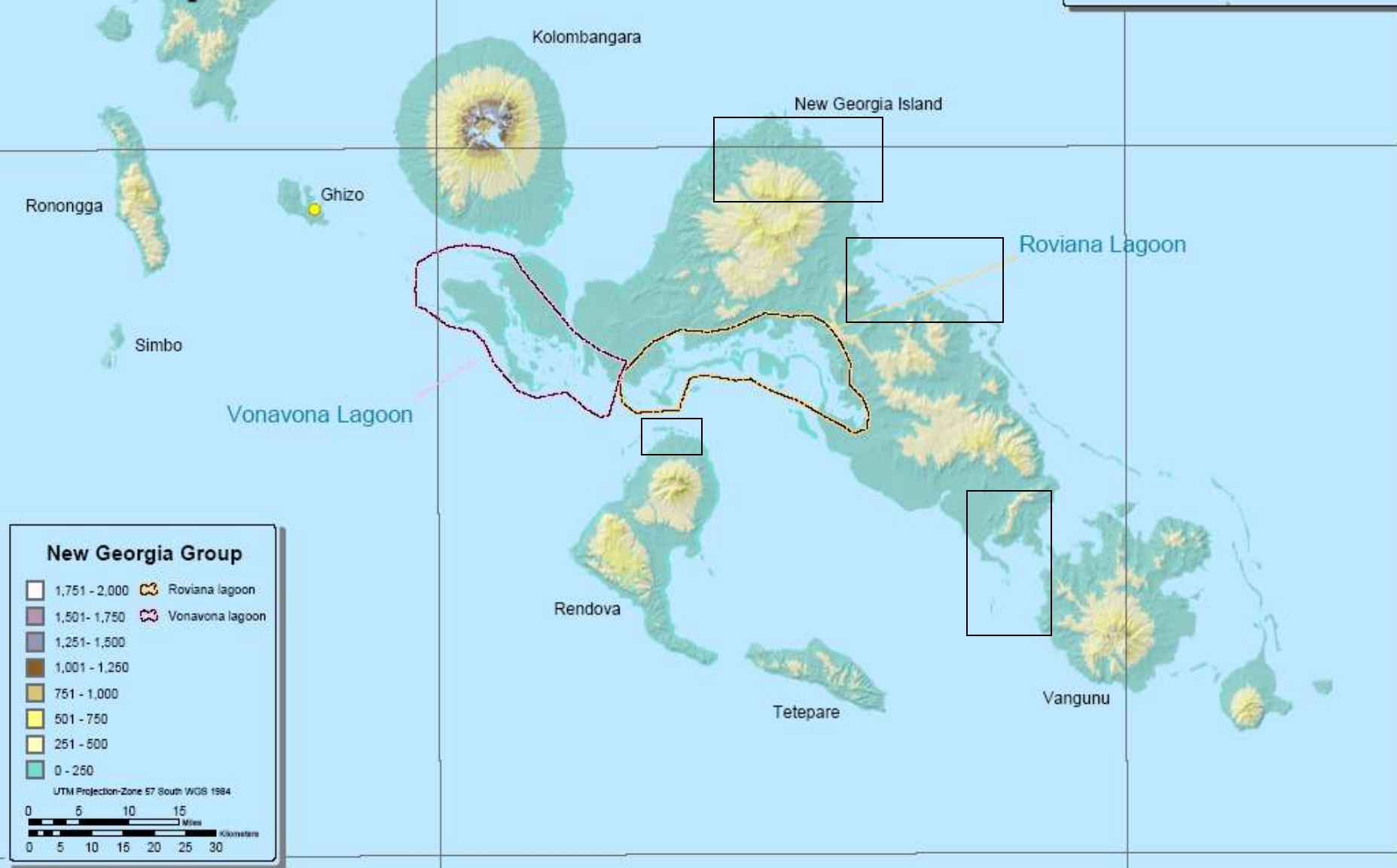
Solomon Islands

Australia

New Zealand



# Western Solomon Conservation Program (WSCP) Area of Operation



# Program Overarching Goal

To create a permanent system of MPAs across the Western Solomon Islands marine eco-region and to consolidate this network through a comprehensive socio-cultural, legal, and financial framework that emphasizes community- and church-based governance.

***Program Objectives:***

# **1. Strengthening Governance Institutions of the Western Solomons MPA Network**





## **2. Creating a Community and Church-based Management Structure**

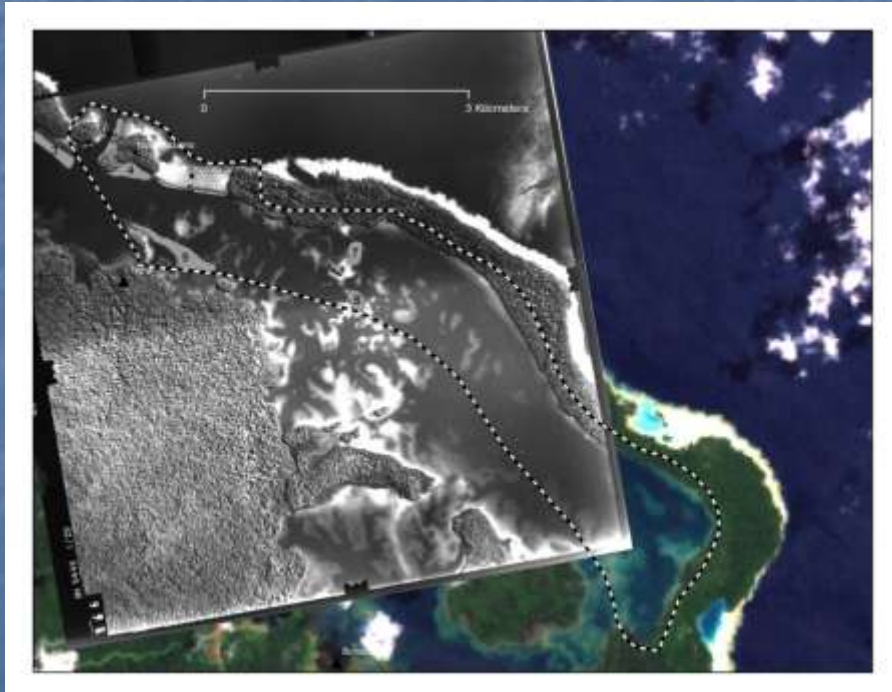


# 3. Rural Development





# **4. Strengthening the Legal Effort and Achieving Financial Sustainability**





# **5. Integrated Biological & Social Monitoring/Research**



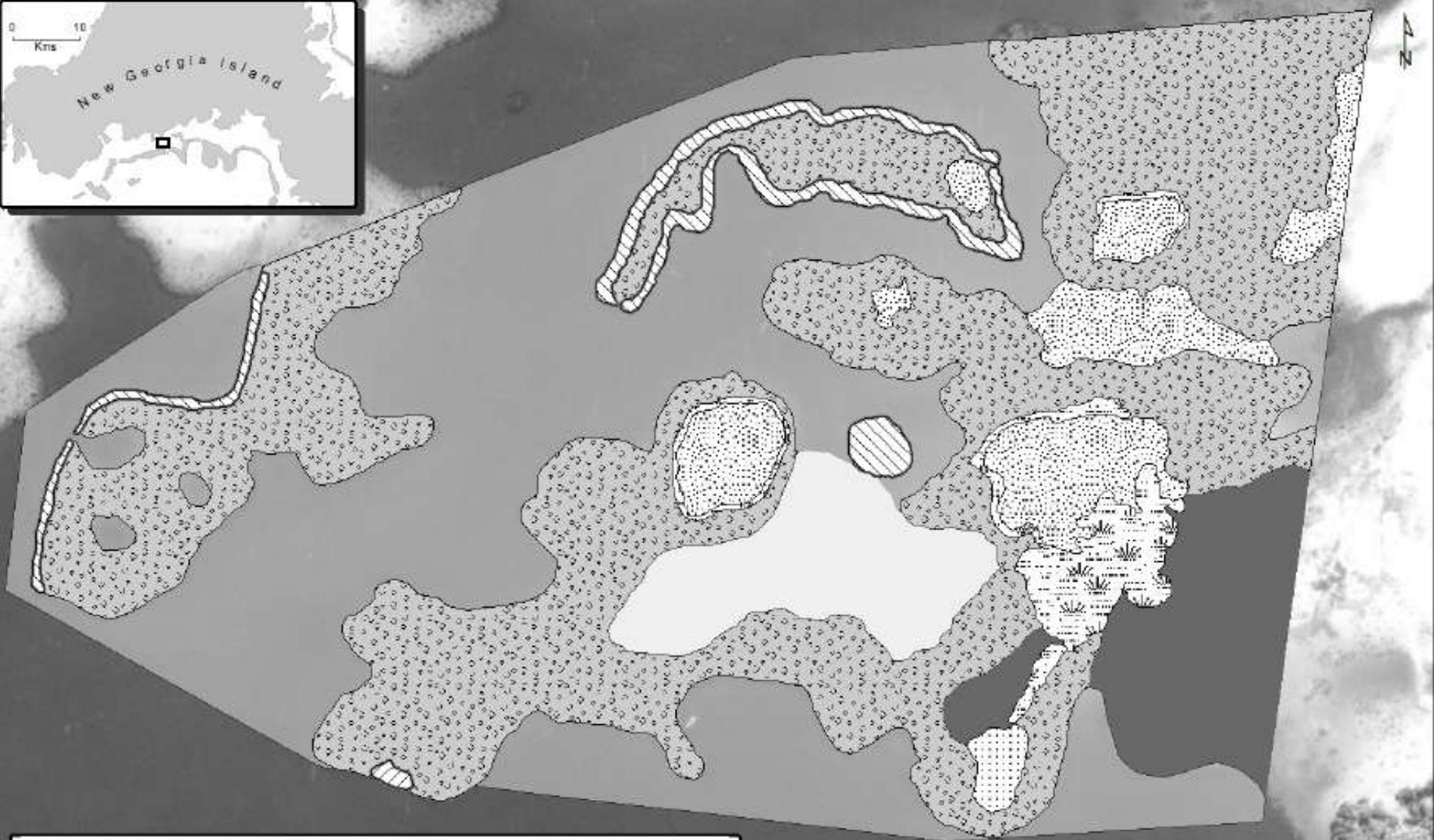
# Research Objectives

- **Identifying marine biological diversity and possible environmental changes caused by human and natural events**
- **Assess the biological and social impacts of the MPAs**
- **A longitudinal analysis of marine harvesting patterns in the region**
- **Documentation and integration of specialized indigenous ecological knowledge with Western science**
- **Understanding how socio economic and ecological changes affect customary systems of sea tenure and resource management**









**Indigenous Aerial Photo Interpretation of Benthic Substrates**

- |                          |   |
|--------------------------|---|
| Huquru (Portes spp.)     | Patu (Rock/Live or Dead Coral)                  |
| Kuli (Sea grass)         | Patu/Kuli/Onone (Rock/Sea Grass/Sand)           |
| Nelaka (Silt)            | Patupatu/Onone (Rubble/Sand/Live or Dead Coral) |
| Nelaka/Onone (Silt/Sand) | Patu Pede (Acropora spp.)                       |
| Onone (Sand)             |   |

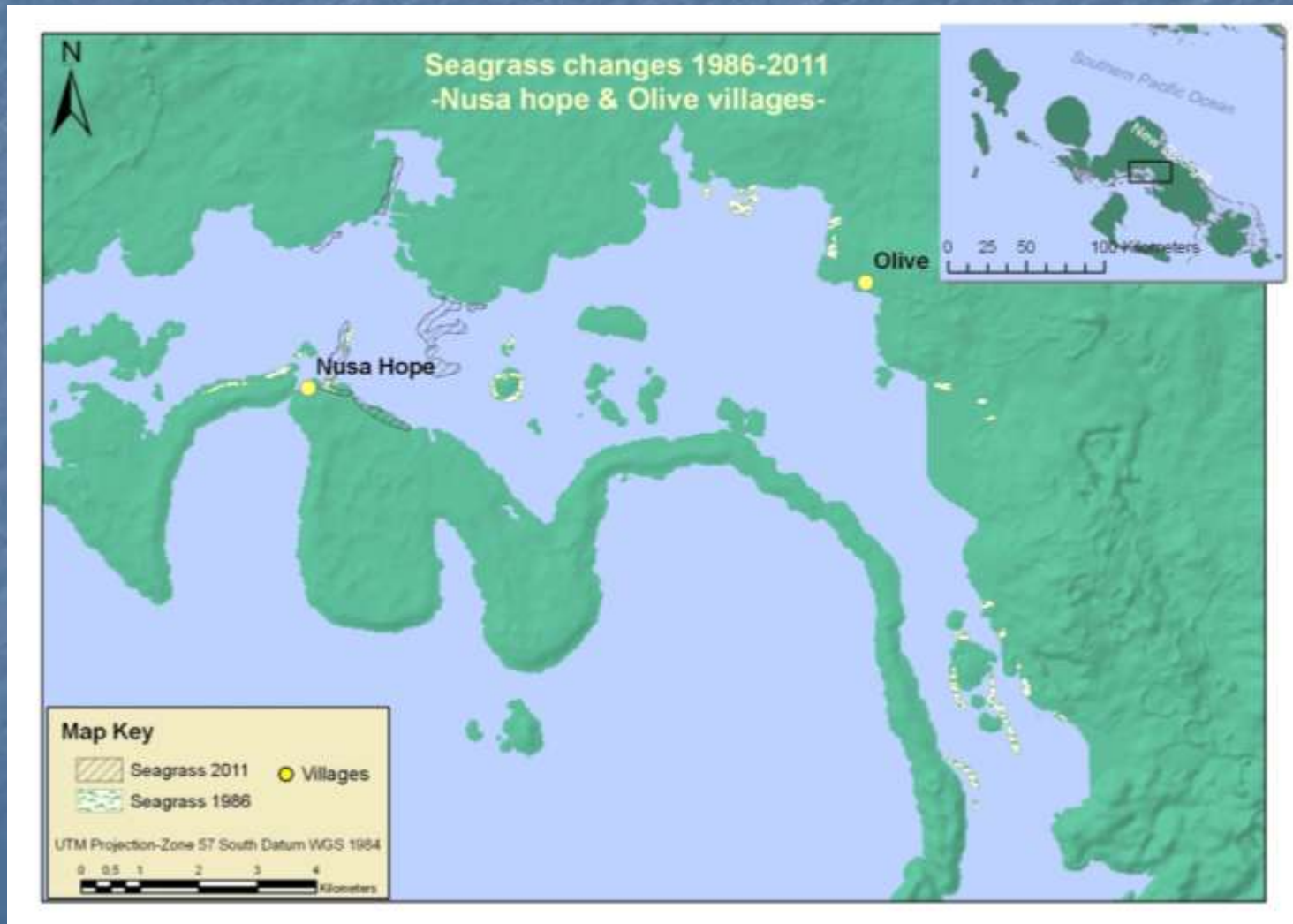
UTM PROJECTION, 5° SOUTH WGS 1984



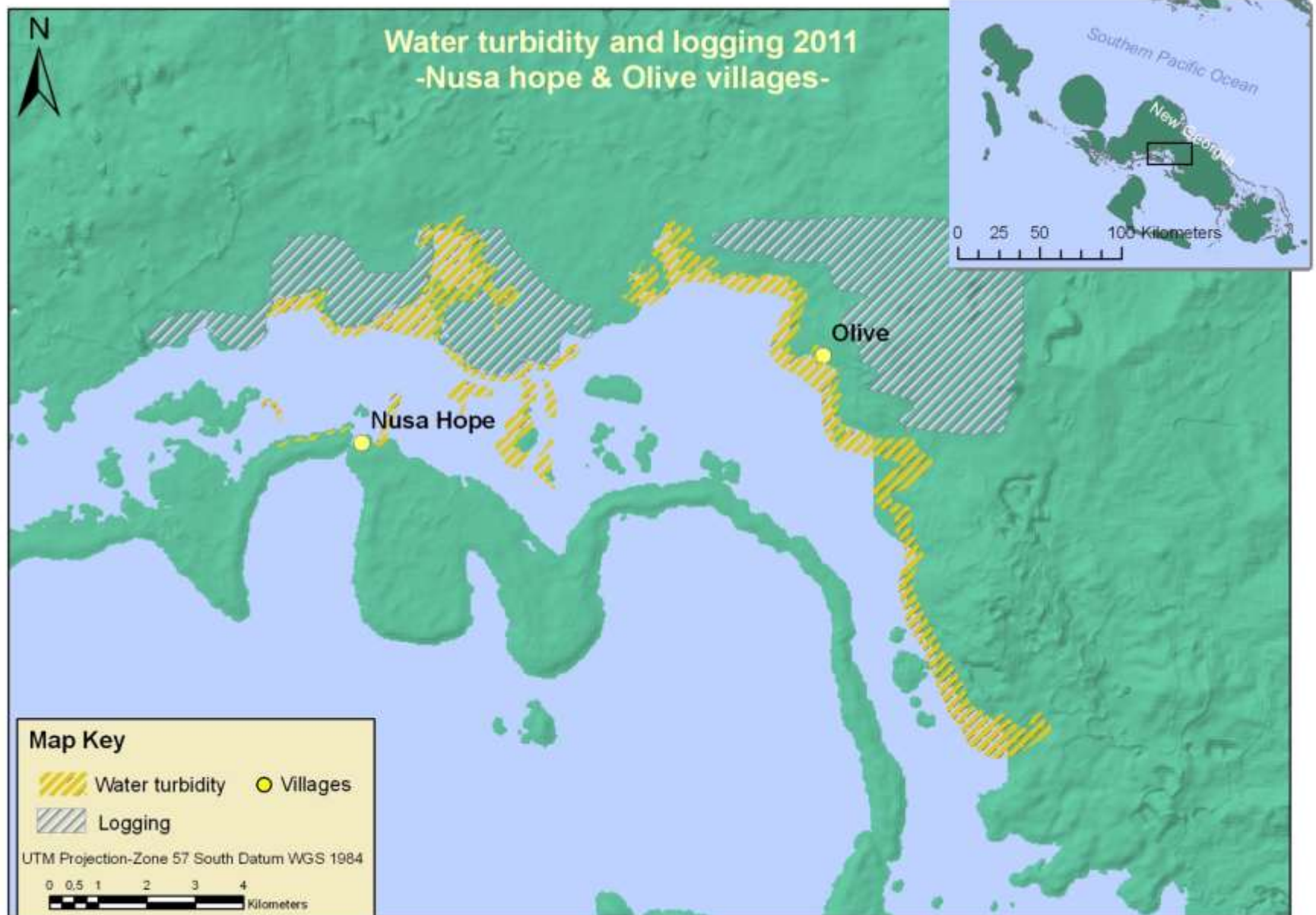




# Environmental Change and IEK











# Outer reef coral disease 1986-2011 -Nusa hope & Olive villages-


Nusa Hope



## Map Key

-  Villages
-  coral disease, 1986
-  coral disease, 2011
-  coral dead, 2011

UTM Projection-Zone 57 South Datum WGS 1984

0 0.3 0.6 1.2 1.8 2.4  
 Kilometers

Open sea

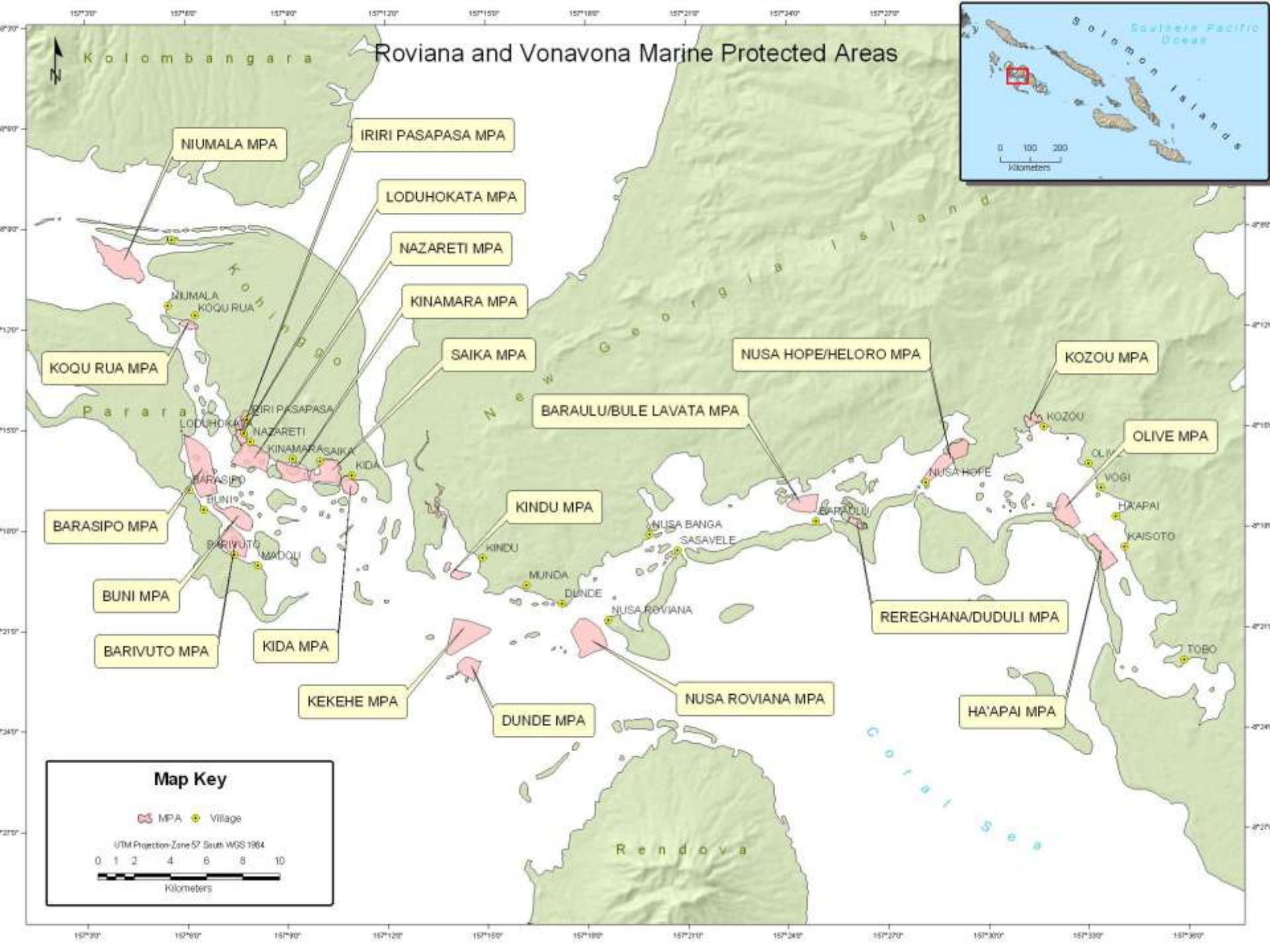
New Georgia

0 4 8 16 Kilometers

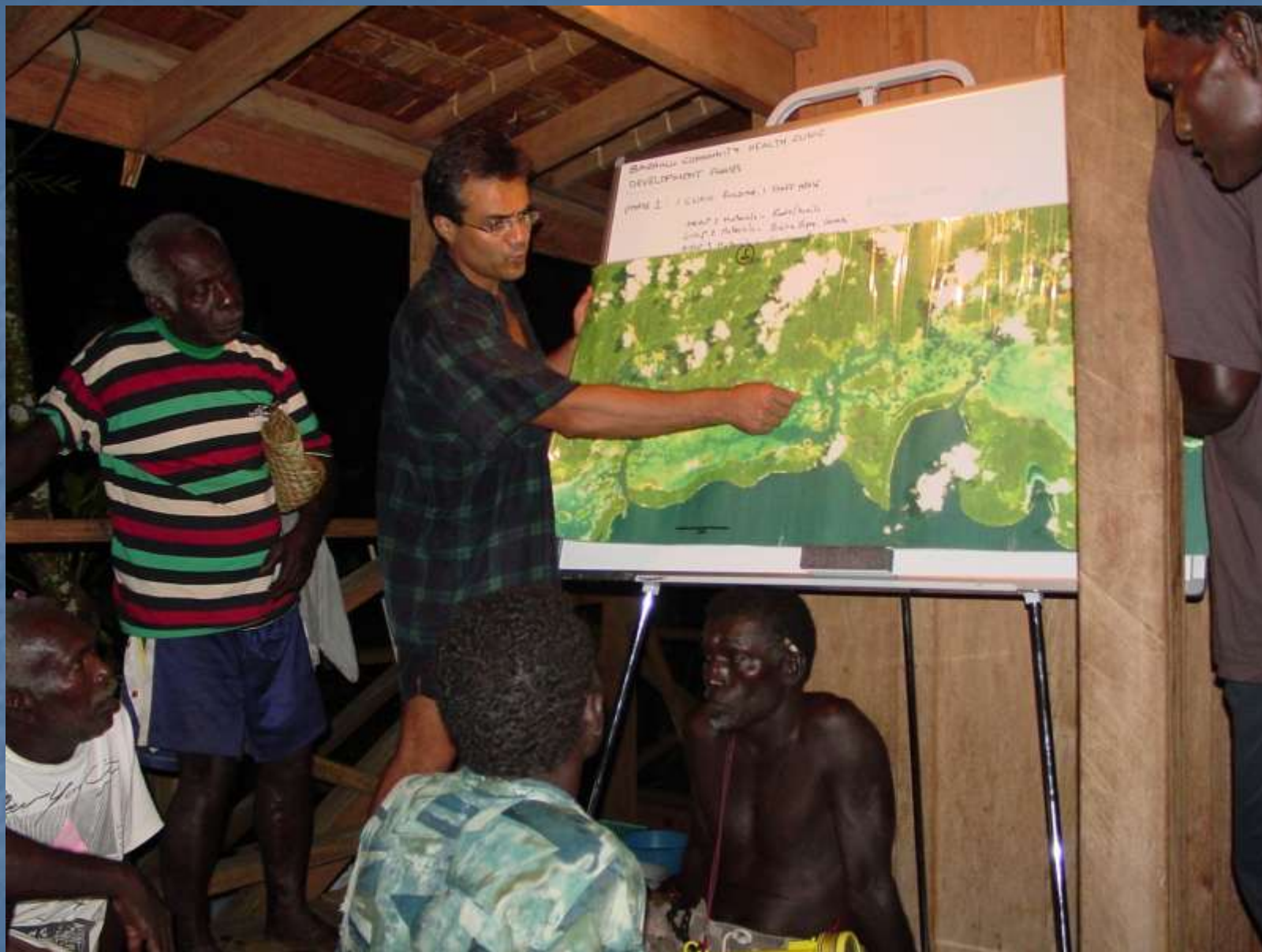


# Management Goals

- Create a network of Marine Protected Areas (MPAs) in southwestern New Georgia and across the Western Solomons (32 as of 2011).
- Conduct participatory workshops to assist local communities in monitoring and sustaining the MPAs
- Establish local infrastructural development incentives
- Assist local communities in enforcement and to legally codify their management initiatives.
- Integrate all management initiatives with the regional government's coastal management plans.
- Integrate all conservation initiatives with the MECM
- Collate an environmental dictionary and other educational materials
- Train Solomon Islands MECM personnel with hands-on field training









# Research Stations





# Boats



# Equipment





## **So, WHAT IS Customary Management?**

- **Customary management persists in many coastal communities of the Coral Triangle despite economic and sociocultural modernization.**
- **Customary management systems are historically rooted practices that regulate the use of, access to, and transfer of resources locally, and which are generally informed by indigenous ecological knowledge and embedded in customary land and sea-tenure institutions (Cinner & Aswani 2007)—and they occur throughout the world including the Mediterranean Region.**
- **The cultural and institutional context of CM is a logical platform from which to build marine management and conservation programs such as EBM in Oceania**

# Combining Ecosystem-based Management and CM

- **There are a number of conceptual and operational principles that make Western EBM actually amenable to integration with CM:**



- **1. Local people in the Pacific Islands conceptualize their territorial estates holistically (e.g. core principle of EBM and other coastal management schemes—for watershed protection).**
- **Locals understand to some degree the interconnectivity between and within terrestrial and marine ecosystems, which is essential in EBM.**
- **A holistic view of the environment**

*Tutupeka*  
(mainland)

← *Pa soloso* (towards the Interior)

*Pa lamana* (towards the open) →

*Poana* (lagoon)

*Vuragarena*  
(outer barrier  
and open sea)

*Vasileana*  
(village)

*ngongohara*  
(plantation)

*Muge*  
(undisturbed forest)

*Sagauru*  
(reef)

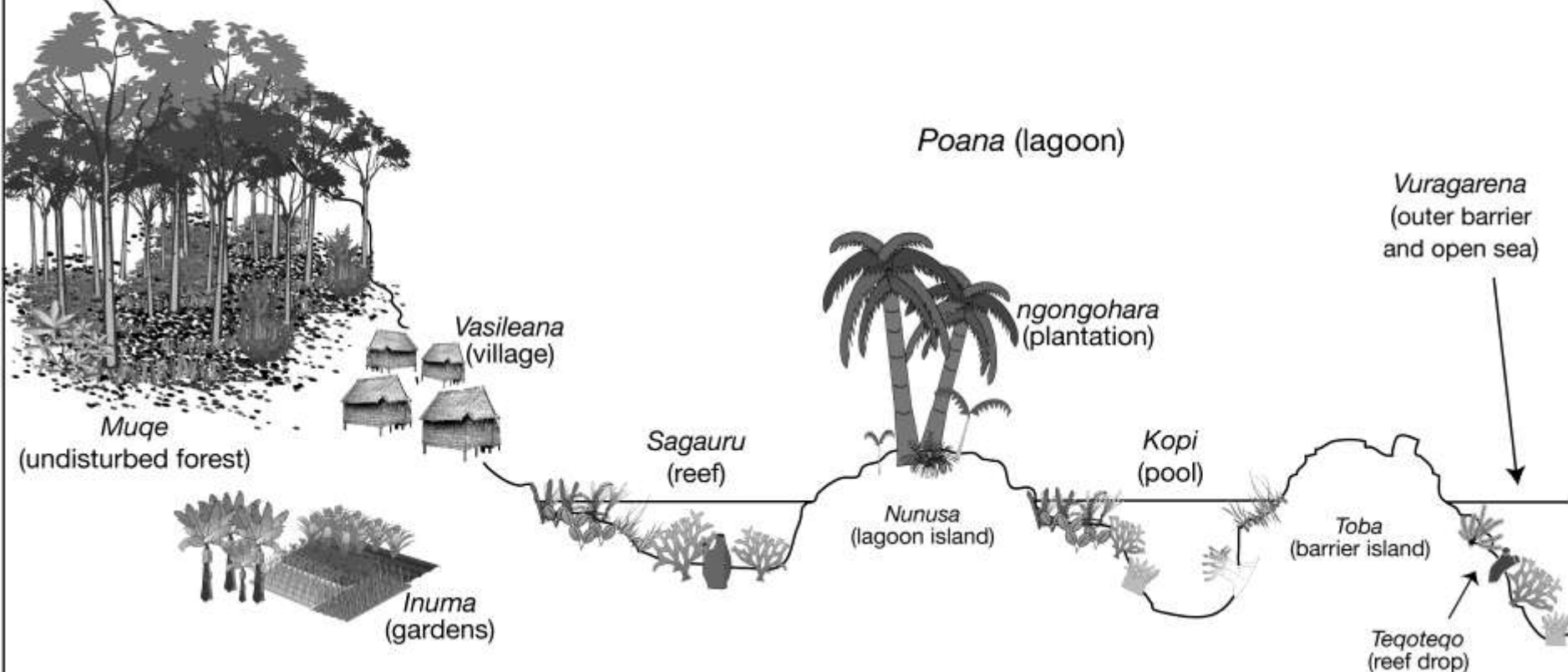
*Kopi*  
(pool)

*Nunusa*  
(lagoon island)

*Toba*  
(barrier island)

*Inuma*  
(gardens)

*Teqoteqo*  
(reef drop)





- In many Pacific Island nations, islanders have exclusivity/excludability rights over their territorial states
- Exclusive rights afford stakeholders, under the right circumstances the capacity to institute spatial, temporal, gear, effort, species, and catch restrictions.
- This can result in the protection of ecosystem structure and function, and they are place-based, thus allowing stakeholders to restrict human activities that are detrimental to a local ecosystem.
- Stakeholders have the capacity for joint and collective action to safeguard their resources.

- **Customary management does not only entail ownership and use control of resources but a set of practices and perceptions that are embedded in the whole indigenous socio-cultural, economic, and political systems—something that, for instance, EBM strives for.**



To begin hybridizing these systems we have established a network of 32 MPAs as a basis for an EBM plan. To do this we have studied the following areas:

- **Studying Customary Sea Tenure (Governance)**
- *Sea Tenure: Ethno–history, Genealogical Demography, and Settlement Patterns*
- *Sea Tenure: Socioeconomic Transformations and Coping Strategies*
- *Sea Tenure: Institutional Cognition and Governance*
- *Sea Tenure and Ecological Assessments*
- **Human Foraging Strategies (Resource Exploitation)**
- *Human Behavioral Ecology and Fishing*
- *Geographical Information Systems (GIS) and Human Foraging*
- **Indigenous Ecological Knowledge (Human Perceptions)**
- *GIS and Indigenous Ecological Knowledge*
- *Indigenous Ecological Knowledge and Marine Science*
- **Large Scale Environmental Disruption and Socioecological Research**
- **Climate Change and Socioecological Research**

# Road to Adaptive Co-Management in a hybridized CM-EBM System

- Even though CM and EBM (and ICZM) have different origins the potential for cross-fertilization between traditional and modern coastal-management systems seems significant.
- This hybridization process should begin soon because of the rapid degradation of our ocean ecosystems and because there are really no other viable alternatives for holistic and potentially successful management of watershed and marine ecosystems



# SESAME (Aswani et al 2011)

- First, any management system (EBM or hybrid) will need to be ***Simple*** and readily understood by policy makers and resource users.
- Second, managers need an ***Experimental*** approach—that is, understanding local histories, customs, social-ecological interactions, and management options is key to effective management and able to synthesize new knowledge into the system.
- Third, successful management programs need to be ***Strategic*** and evolve from early successes in response to local challenges, or the ability to listen, synthesize, and create strategic partnerships to solve complex problems.

- Fourth, a standardized approach to EBM (or any management system) will fail unless made context *Appropriate* (so, not one fit all)
- Fifth, an EBM approach needs to be interdisciplinary and *Multi-disciplinary*
- Finally, *Evaluation* programs are necessary to gain knowledge of experiences to feed back into future management changes



# Conclusions

- EBM needs to resonate with local cognitive frames of reference (e.g., governance, socioeconomic, and cultural idioms) for its acceptance and successful integration with local systems of management, whether traditional or otherwise
- Establishing an improved institutional framework does not necessarily require transferring full ownership of coastal resources to local communities, but could involve co-management by governments and local communities (and others)
- Hybridized programs may not be the panacea for all marine ecosystem-management problems globally.
- Important not to lose sight of “lessons learned”
- Existing management practices, including local traditional/hybrid systems and ICM practices in developing nations, should be seen as a subset of EBM rather than needing a reinvention of the wheel