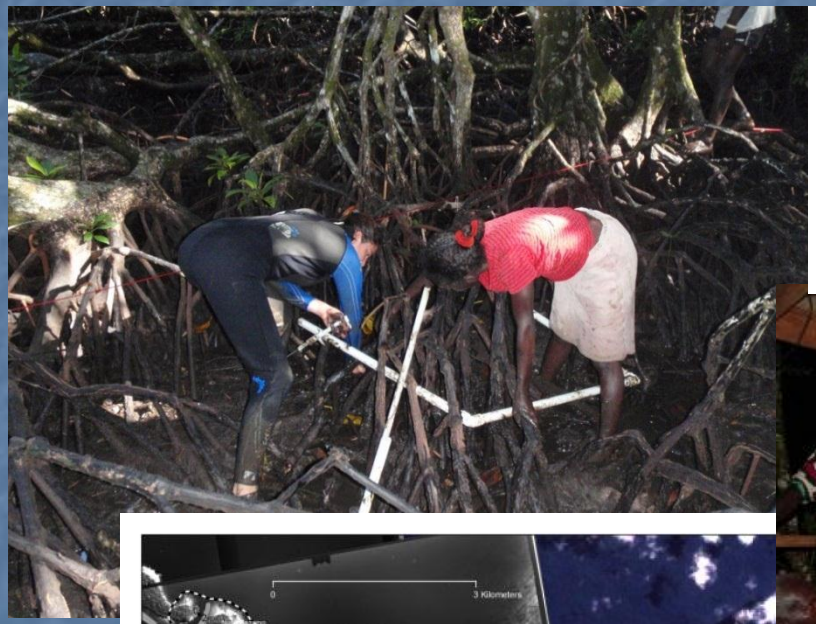
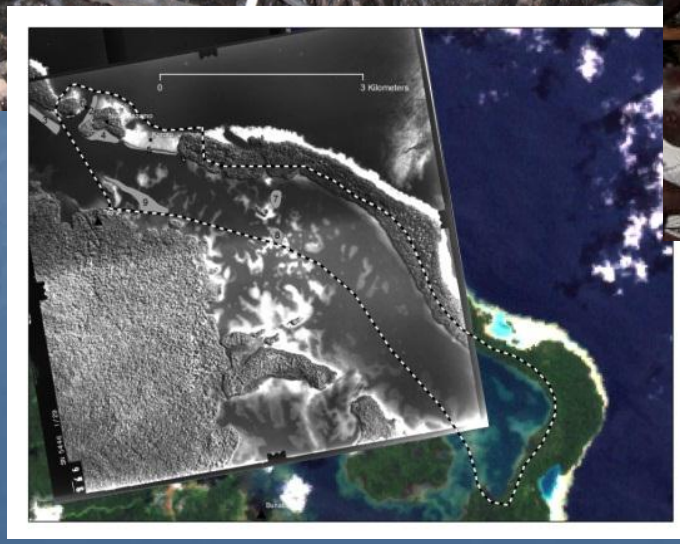
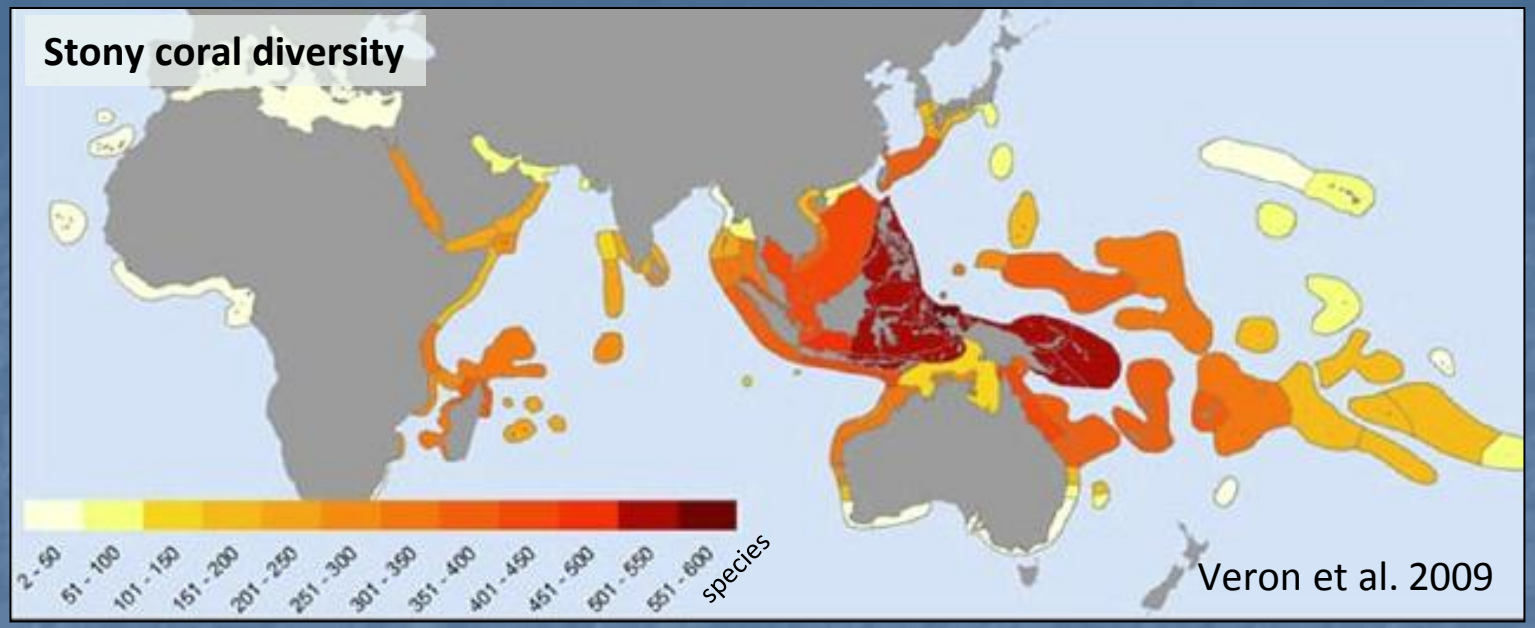
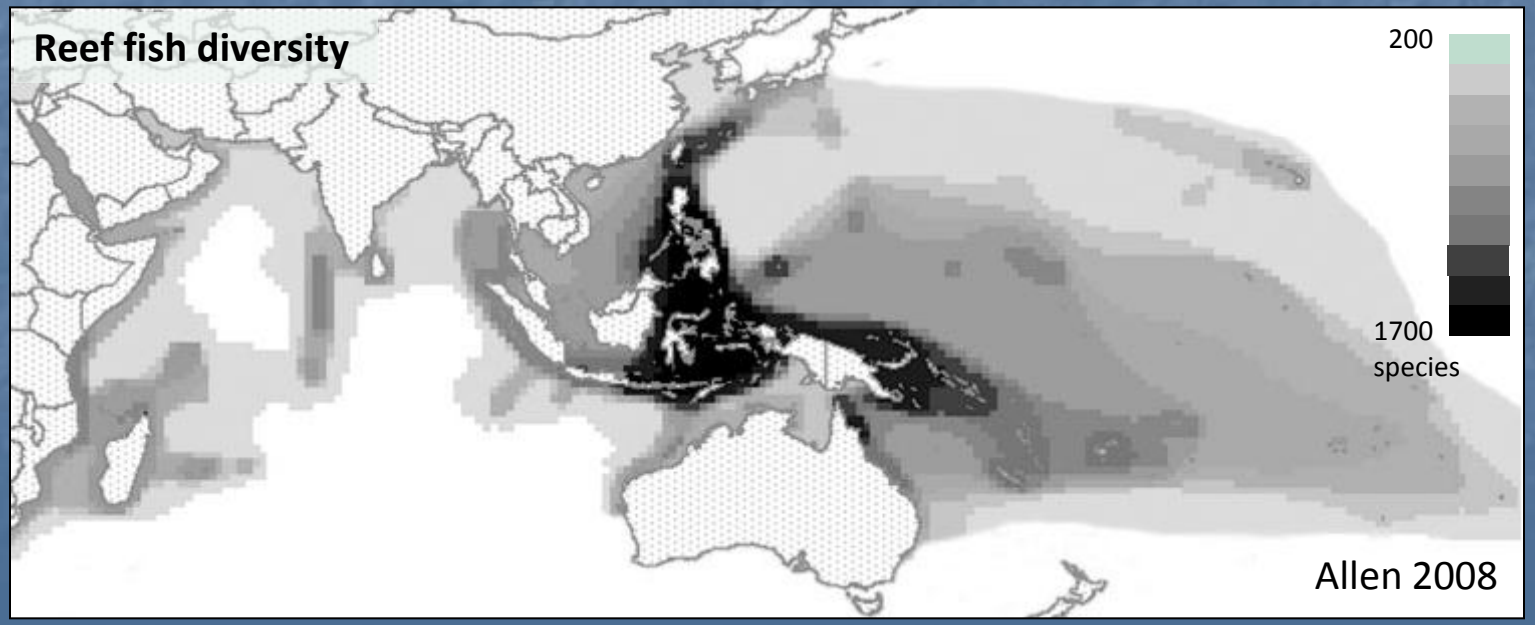
Shankar Aswani
Professor
Departments of Anthropology and
Ichthyology and Fisheries (DIFS)
Rhodes University
Grahamstown 6140
South Africa

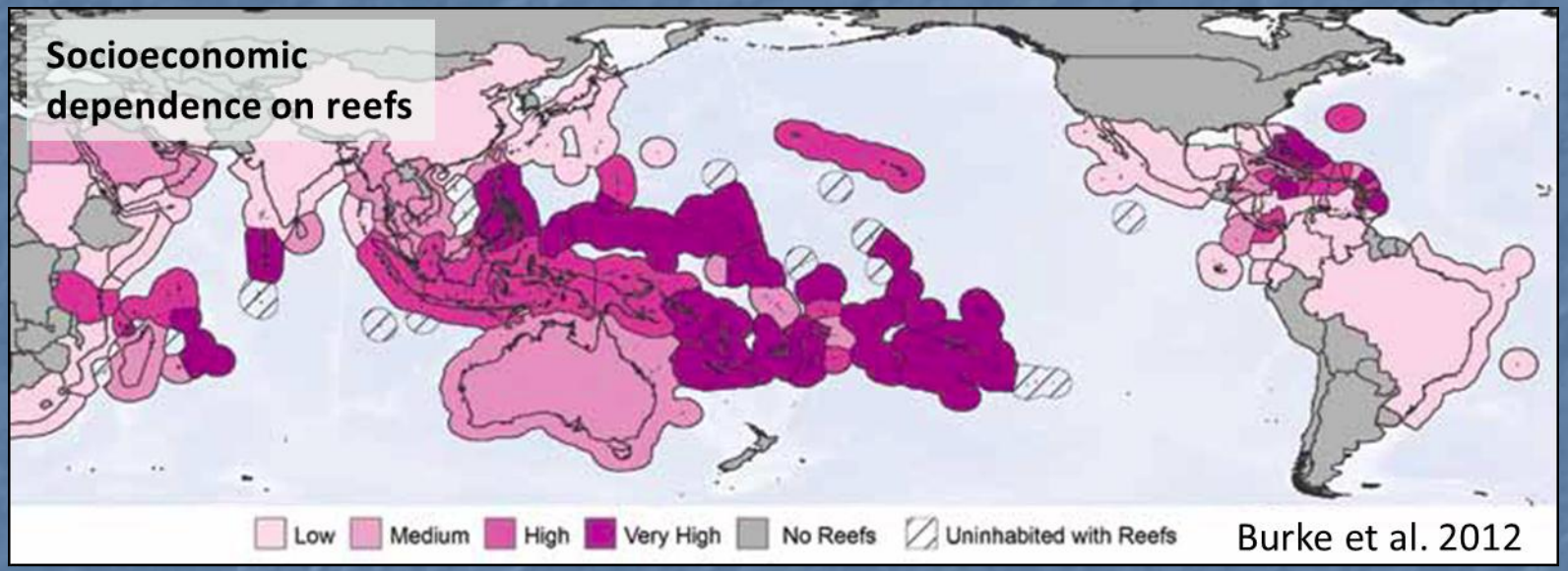
Adapting Customary Management/TURFs for Protecting Coastal Ecosystems and Livelihoods in Africa





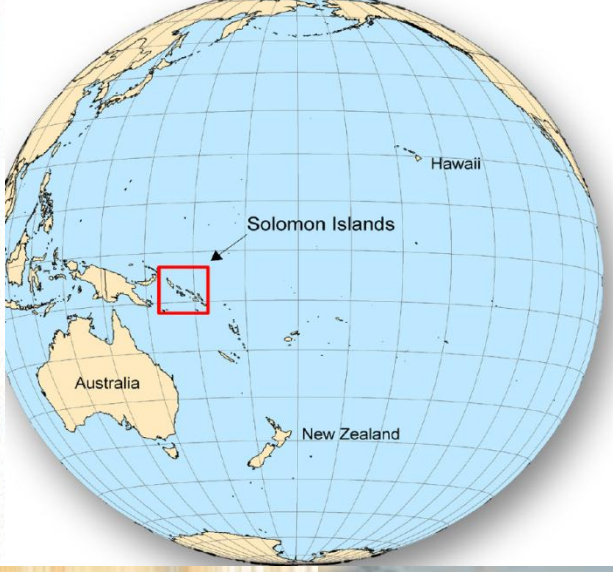

Stony coral diversity
2 - 50
51 - 100
101 - 150
151 - 200
201 - 250
251 - 300
301 - 350
351 - 400
401 - 450
451 - 500
501 - 550
551 - 600
species
Veron et al. 2009

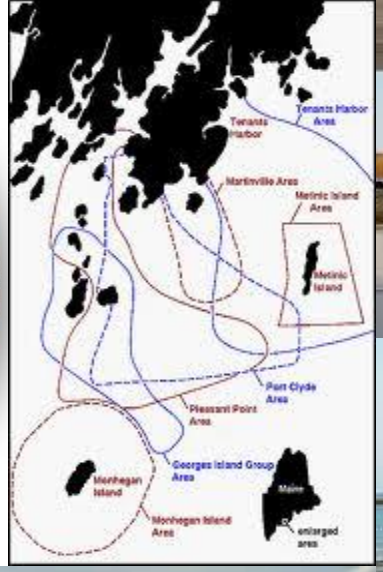

Reef fish diversity
200
1700
species
Allen 2008

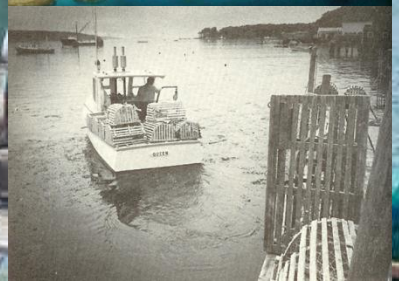


Burke et al. 2012


Koukourarata Mātaitai Reseve


Hawaii
Solomon Islands
Australia
New Zealand


Tenants Harbor
Tenants Harbor Area
Martinville Area
Metinic Island Area
Metinic Island
Port Clyde Area
Pleasant Point Area
Georges Island Group Area
Monhegan Island
Monhegan Island Area
Maine
enlarged area



WHAT IS *Customary Management*? (and other forms of informal TURFs-[territorial use rights fisheries])

- Customary management persists in many coastal communities of the Pacific, SE Asia, and Africa Regions despite colonization, sociocultural modernization, economic development, etc.

- 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 and Africa (e.g., Madagascar).* ***Note that they can be nascent too.***

- The cultural and institutional context of CM is a logical platform from which to build marine management, sustainable development, and conservation programs such as hybrid CM/EBM (or ICM-ICZM-EBM) systems in Oceania, SE Asia, and Africa…*because they are what is occurring* ***on the ground or invested by local managers for decades –and these are*** *often removed from the eyes of central governments and other global institutions*

- Advocating for CM is not based on some romantic notion about indigenous/local people and conservation and management of marine resources…but rather on pragmatism.

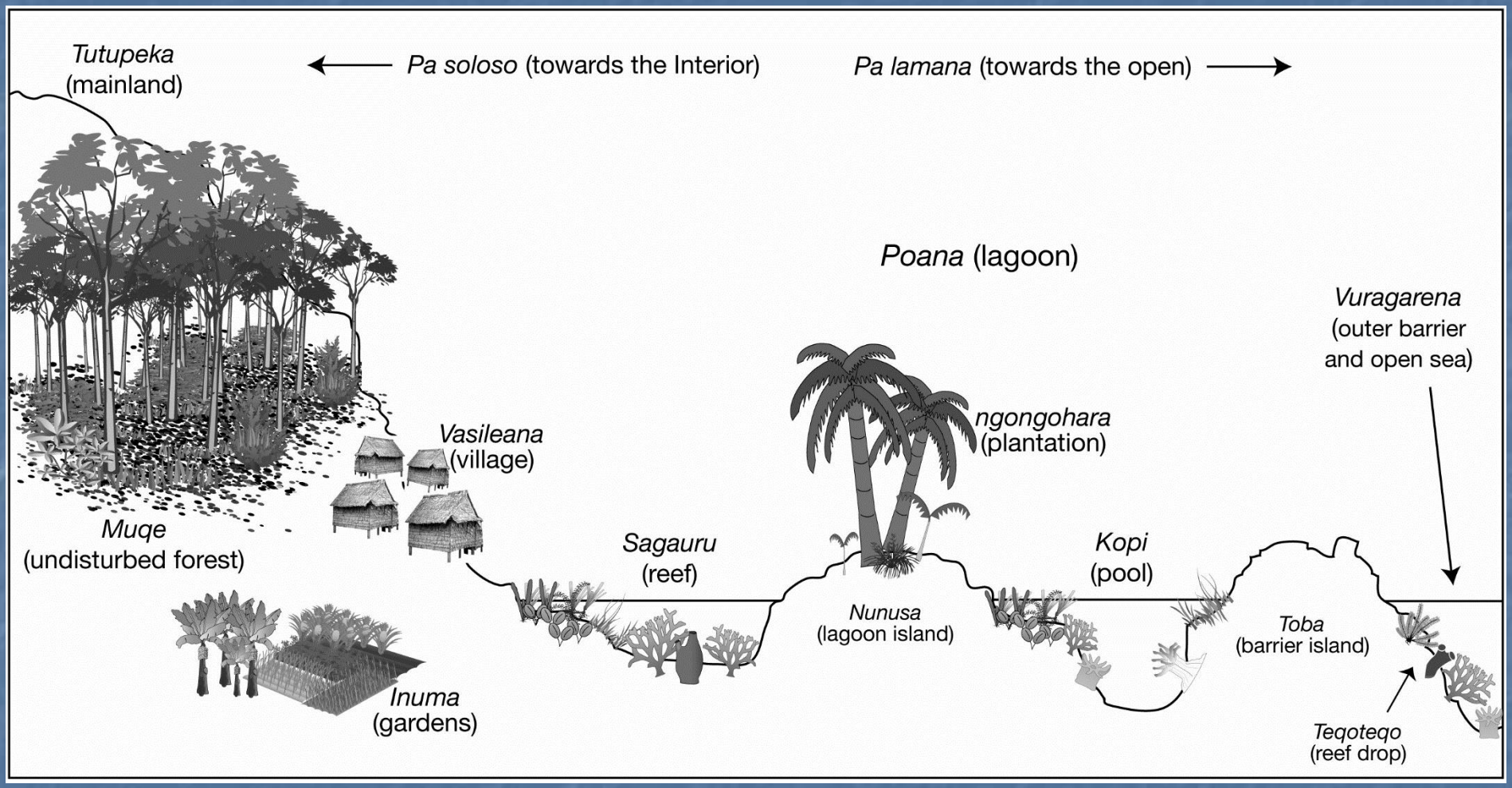
Hybridizing CM-TURFs with EBM and other forms of Western Management

- There are a number of conceptual and operational principles that make Western management (e.g., EBM) actually amenable to integration with CM:

- **1. Local people in various parts of the world, particularly 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 (*vanua*, *puava*, *ahupua'a a*, *coastal taboos in Madagascar* etc).


Tutupeka
(mainland)
Pa soloso (towards the Interior)
Pa lamana (towards the open)
Poana (lagoon)
Vuragarena
(outer barrier
and open sea)
Vasileana
(village)
ngongohara
(plantation)
Muqe
(undisturbed forest)
Sagauru
(reef)
Kopi
(pool)
Nunusa
(lagoon island)
Toba
(barrier island)
Inuma
(gardens)
Teqoteqo
(reef drop)

2. PROPERTY RIGHTS (*Excludability* and *Extractability* controls)

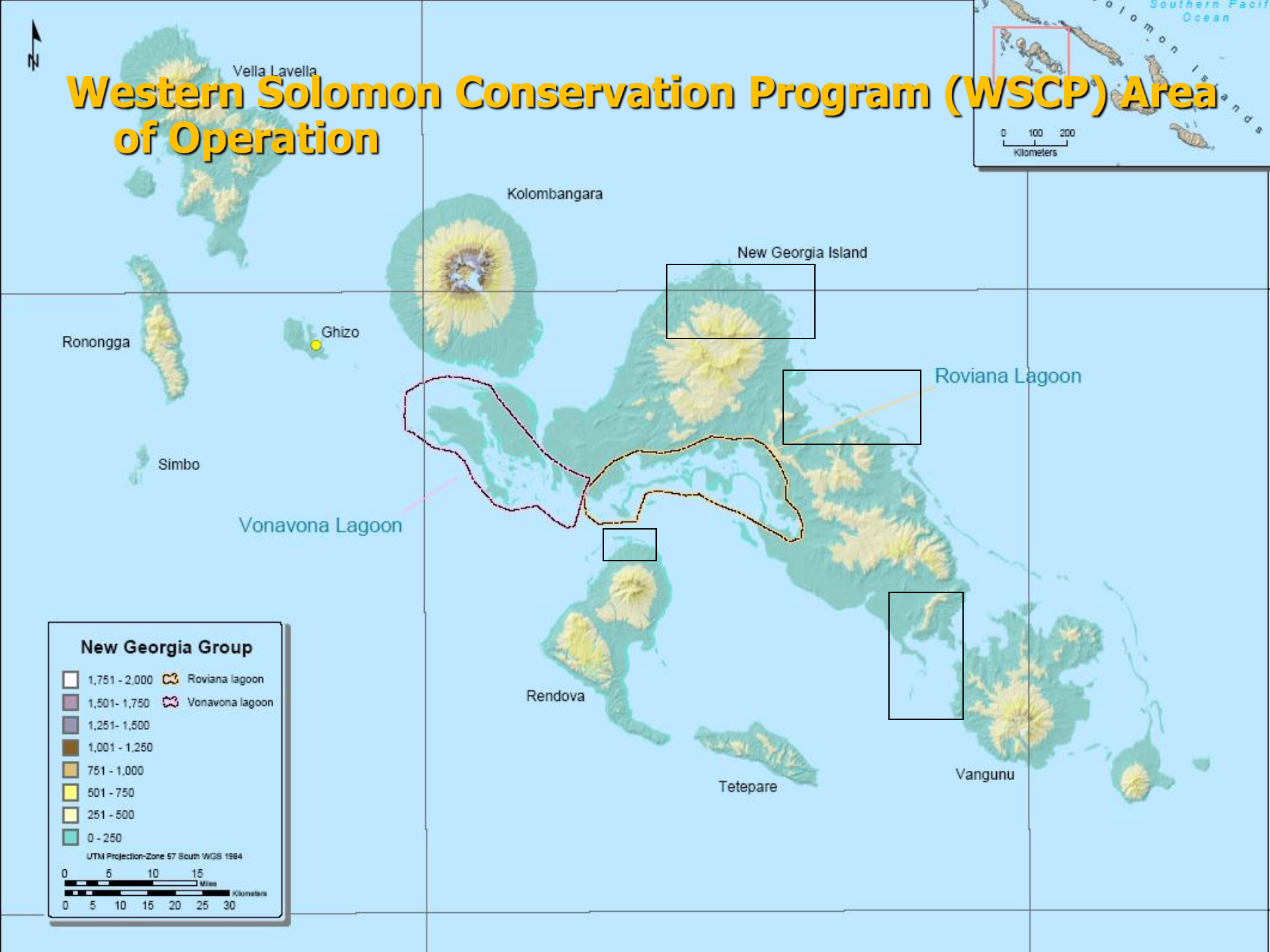
- In many Island and coastal nations, people have exclusivity/excludability/extractability rights over their territorial states (*This range from very weak informal TURFs to complete sea tenure systems*)
- Exclusive rights afford stakeholders, under the right circumstances the capacity to institute spatial, 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 (although this not always happen).

3. World View

- 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.

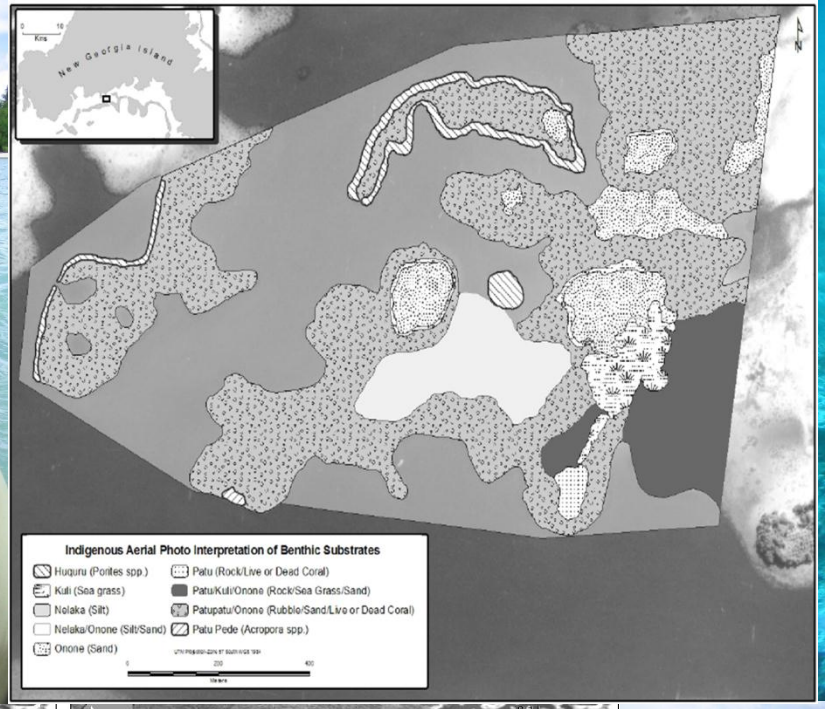
- Different historical (scientific managerialism vs. tradition) origins but have similar principles

Western Solomon Conservation Program (WSCP) Area of Operation

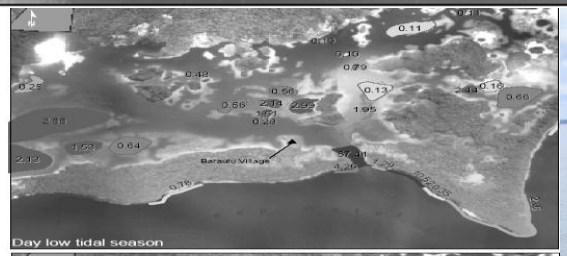


To begin hybridizing these systems we have done the following as part of a "TDA" for designing and implementing a SAP (1992-2014):

- **Studying TURFs/Customary Sea Tenure (Local 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 Strategies)**
- *Human Behavioral Ecology and Fishing*
- *Geographical Information Systems (GIS) and Human Foraging*
- *Human foraging and health and nutrition*
- **Indigenous Ecological Knowledge (Human Perceptions)**
- *GIS and Indigenous Ecological Knowledge*
- *Indigenous Ecological Knowledge and Marine Science*
- **Large Scale Environmental Disruption and Socio-ecological Research**
- **Climate Change and Socio-ecological Research**
- **Spatial and Ethnographic Study of Eco-tourism Development**


New Georgia Island
Indigenous Aerial Photo Interpretation of Benthic Substrates
Huguru (Porites spp.)
Kuli (Sea grass)
Nelaka (Silt)
Nelaka/Onone (Silt/Sand)
Onone (Sand)
Patu (Rock/Live or Dead Coral)
Patu/Kuli/Onone (Rock/Sea Grass/Sand)
Patupatu/Onone (Rubble/Sand/Live or Dead Coral)
Patu Pede (Acropora spp.)


Baraulu Village
Day low tidal season


Baraulu Village
Day low tidal season

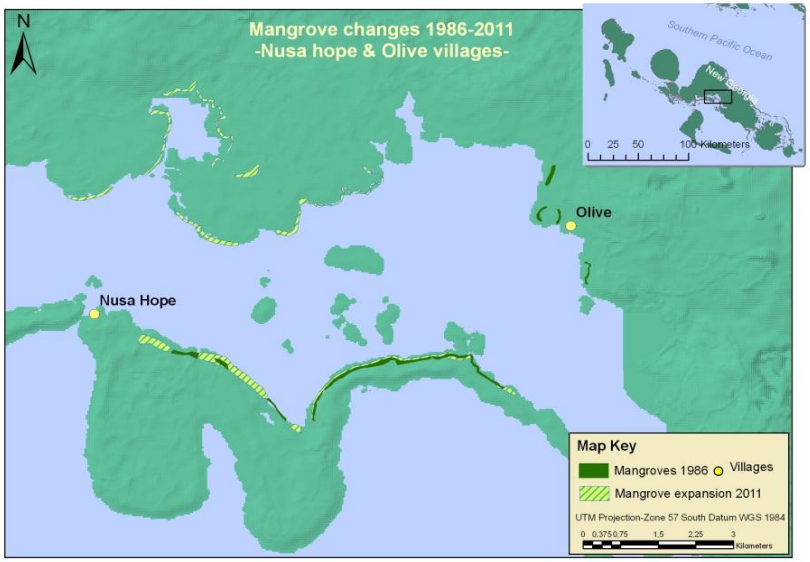

Baraulu Village
Day high tidal season

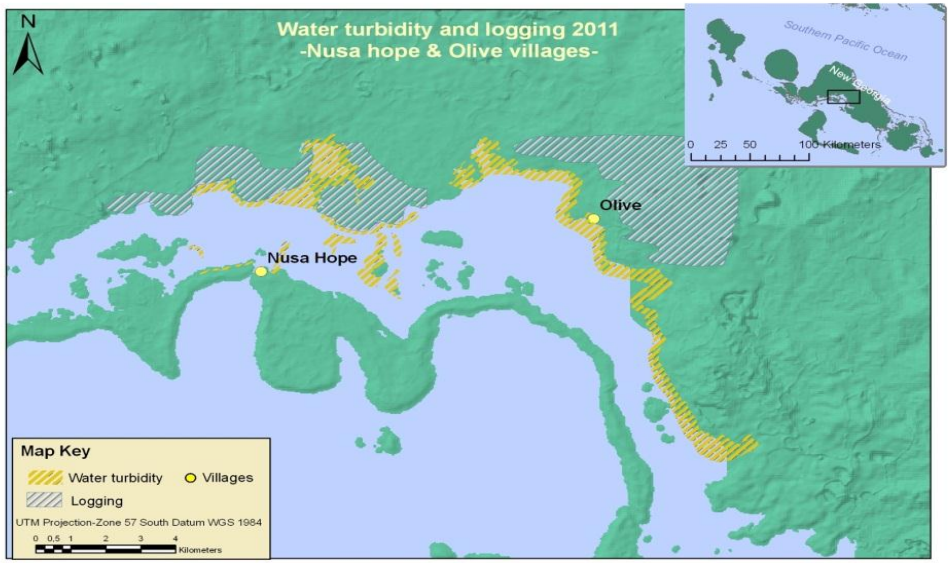

Baraulu Village
Day high tidal season

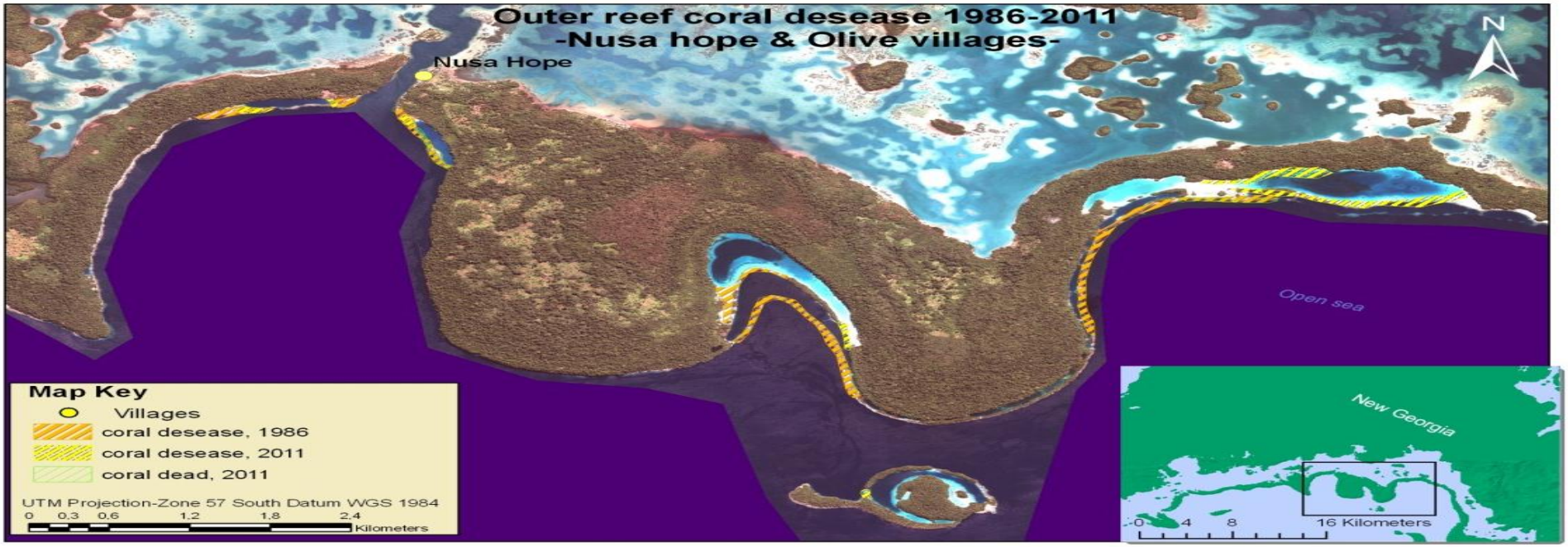

Baraulu Village
Intermediate tidal season


Baraulu Village
Intermediate tidal season

Recent climate and environmental change work (IEK complemented with marine scientific research):







Water Quality

Water Quality
Very Good
Average
Poor
N
Based on an index of normalised values for turbidity, dissolved oxygen and chlorophyll collected across 110 sites in July 2010
0 10 20 Kilometers

Coral Bleaching

Legend
Bleaching Prevalence (%)
No Bleaching
0.1
0.25
0.5
0.75
1
1.5
2
Km
0 3 6
N

Mangroves

Legend
Cutting or Damage
No Mangrove
Low Mangrove Biomass
High Mangrove Biomass
N
0 2 4 8 Km

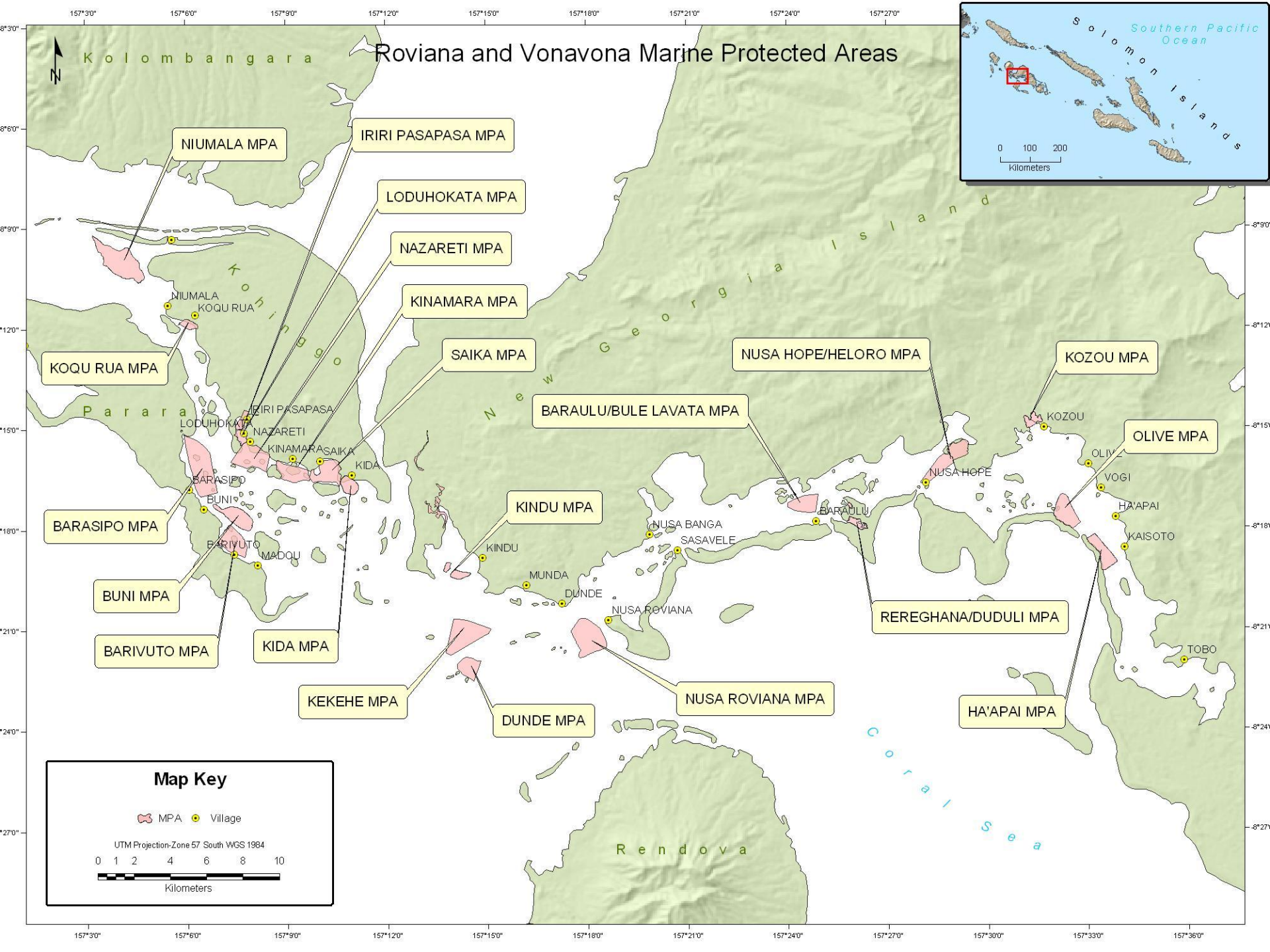
Coral Disease

Legend
Total Disease %
No disease
0.1
0.25
0.5
0.75
1
1.5
2
2.5
Km
0 3 6
N

The Local SAP (Science to Governance)

- Created a network of Marine Protected Areas (MPAs) in southwestern New Georgia and across the Western Solomons (32 as of 2014)
- Conducted participatory workshops to assist local communities in monitoring and sustaining the MPAs as well as for education
- Established local infrastructural development incentives
- Assisted local communities in enforcement and to legally codify their management initiatives

- Integrated all management initiatives with the regional government's coastal management plans
- Drafted a climate change adaptation plan and protocol
- Trained Solomon Islands MECM personnel/students/locals with hands-on field training
- Produced educational materials (videos, t-shits, music CD)


Roviana and Vonavona Marine Protected Areas
Kolombangara
New Georgia Island
Rendova
Coral Sea
Solomon Islands
Southern Pacific Ocean
0 100 200
Kilometers
NIUMALA MPA
IRIRI PASAPASA MPA
LODUHOKATA MPA
NAZARETI MPA
KINAMARA MPA
SAIKA MPA
NUSA HOPE/HELORO MPA
KOZOU MPA
OLIVE MPA
KOQU RUA MPA
BARAULU/BULE LAVATA MPA
BARASIPO MPA
KINDU MPA
BUNI MPA
BARIVUTO MPA
KIDA MPA
REREGHANA/DUDULI MPA
KEKEHE MPA
DUNDE MPA
NUSA ROVIANA MPA
HA'APAI MPA
NIUMALA
KOQU RUA
Kohingo
Parara
IRIRI PASAPASA
LODUHOKATA
NAZARETI
KINAMARA
SAIKA
KIDA
BARASIPO
BUNI
BARIVUTO
MADOU
KINDU
MUNDA
DUNDE
NUSA ROVIANA
NUSA BANGA
SASAVELE
BARAULU
NUSA HOPE
KOZOU
OLIVE
VOGI
HA'APAI
KAISOTO
TOBO
Map Key
MPA
Village
UTM Projection-Zone 57 South WGS 1984
0 1 2 4 6 8 10
Kilometers

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

Researchers, policy makers and conservation practitioners should remember that:

- **(1)** customary management strategies are heterogeneous and context dependent, thus specific integrative interventions are more appropriate under certain social, economic, political, and cultural conditions than others;
- **(2)** hybrid CM-EBM institutions will have to match the varying spatial scales at which resources are owned, used, and governed under CM systems with the scale of ecologically relevant processes;
- **(3)** hybrid CM-EBM should understand and harness both scientific and local knowledge systems and mechanisms for detecting and reacting to changes in social and ecological systems;
- **(4)** the adaptive nature of hybrid management systems requires a legal capacity to enact and enforce decentralized management at the local level and joint management arrangements as CM and EBM are integrated at varying institutional scales (e.g., provincial and national governments);
- **(5)** hybrid management strategies should embrace the utilitarian nature and goals of CM institutions, and
- **(6)** there are limits to what hybrid management can achieve, so it may not be appropriate everywhere, and thus it will be limited in the scope and scale of threats it can address and its ability to withstand some social, economic and political processes.

Source: Cinner and Aswani 2007

SESAME

- 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 (*NOT reinvent the wheel*) in response to local challenges, or the ability to listen, synthesize, and create strategic partnerships to solve complex problems.

Source: (Aswani, Christie *et al* 2012)

- Fourth, a standardized approach to EBM (or any management system) will fail unless made context ***Appropriate*** (so, not one fit all)

- Fifth, an hybrid 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 (to learn from mistakes and not to reinvent the wheel)

Conclusions

- Hybrid systems (e.g., CM/EBM, ICM-ICZM/EBM) need to resonate with local cognitive frames of reference (e.g., governance, socioeconomic, and cultural idioms) for their 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


Thank you