Biocultural approaches to developing indicators in Solomon Islands



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Ridge to reef management in Melanesia

- How do we build effective partnerships?
- How do we account for diversity of ecosystems, people, culture?

- How do we measure success?
 - Indicator development



Biocultural approaches to indicator development

- Monitoring and evaluation, via indicators, are important to the success of conservation programming
- Indicators can be biased:
 - Local misrepresentation (e.g., land use and conservation in Solomon Islands)
 - Changing the national debate (e.g., monetary economy vs. *kastom ekonomi* in Vanuatu)
- Room for improvement:
 - How do we ground indicators?
 - How do we capture linkages between land, sea, and people?

Biocultural approaches to indicator development in Solomon Islands



Top photo: P. Pikacha; center and bottom photos: S.D. Jupiter

Biocultural approaches to indicator development in Solomon Islands

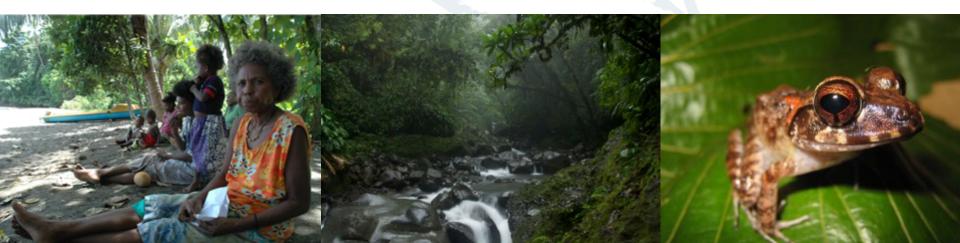
Aims:

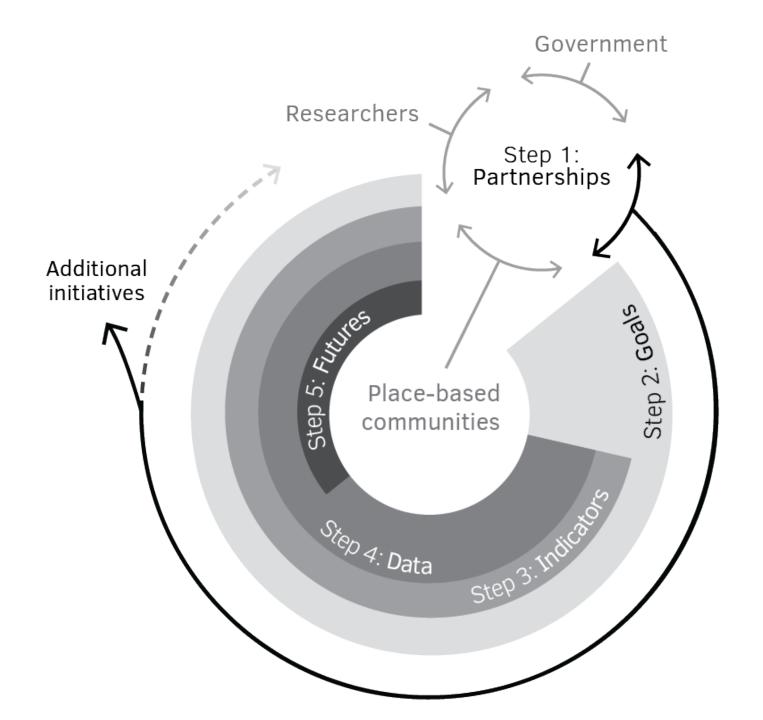
- 1. To work with communities to create biocultural indicators of resource management success
- 2. To use this discussion to support community resource management initiatives
- 3. To reflect on international metrics of success and see how the match with local versions.

The hypothesis is that through using a biocultural approach to describe a system you can support local conservation action and global conservation measurement

A biocultural approach to indicators

- Measures what is most important for community members
- Complements other types of indicator development
- The social process of working together to develop/choose an indicator locally is a key outcome; the products of biocultural approaches differ primarily in the process that produces them
- Key is how multiple forms of information are used in decisionmaking and in generating adaptive change.



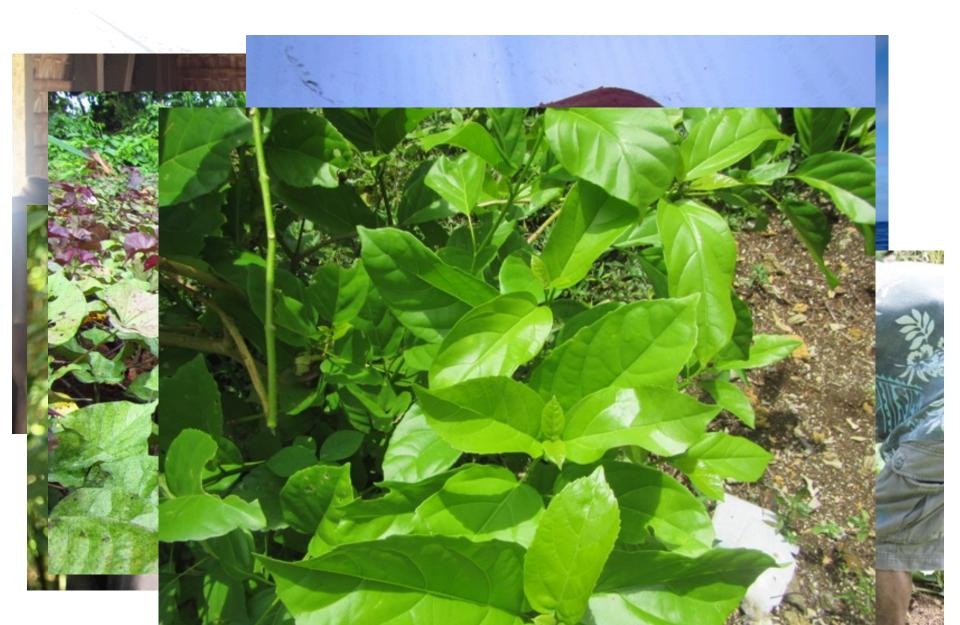


Community visioning exercises

- What is your dream future for this community?
- How is the community doing now?
- Definition of indicator categories, comparison with international examples



Current state data



Historical change



Art-based methods



Indicators

- 12-14 outcome groups community aspirations
 - 'Reef, mangroves and shellfish beds are healthy'
 - 'Appropriate garden practices are used and known'
- 60+ indicators
 - Global standardized indicators (dietary diversity)
 - Trend and perception based (subjective well-being, perceptions of governance)
 - Survey data (use of vernacular language to discuss the environment)
 - Evolving over time, subject to discussion
 - Linked together e.g., schooling and environment

Indicators

- Indicators of states & pressures place-based relevance
 - Maintaining 'qoana piru' in Zaira wild foods, medicines, and connection to landscape



Indicators

Feedbacks and pressures



Outputs

- Discussion around key issues at community level
 - Links to management planning
 - Strengths, weaknesses, and actions
- Data summaries
- Focused outputs ethnobotanies, women's food records

Outputs







Crinum asiaticus

Coastal vegetation, around villag-

Orinum Lily

COMMO

PLANT TY

Medicine, fishing

Rokoroko havoro: meka manavazana, meka piruna. Tona pa rarusu zera ipu piruna. Ululuna rokona meni buma tou ipu piruna. Ari havorona. Ipu manavazana ini ta seukulina pa kubere vanua. Hiva meava na rokona oro kalakea di solasoka buma heva. This is a flowering plant (giant lily), which has two types one that grows wild, and another that people grow for ornamental purposes and to harvest the flowers for decoration. The first one has big green leaves, and the second has smaller leaves that are more yellowish in colours.

KOLO<u>n</u>ohara Elelo lege Heni igana

GINANI
1 pokoho lege
1 gohara (lopu vala kolona)
1 igana hite motuna

- Kupi sari liho elelo leqe meke magu va hiteki.
- Repia sa nohara lopu vala kolo meke monoa sa nohara
- 3. Vizata vagia sa masana sa igana.
- Voi pa raro sari elelo lege meke heni v sa igana. Zoropo valasa kolonohara.
- Vahakea sa raro pa nika meke qaliria osolae mate sa leqe.

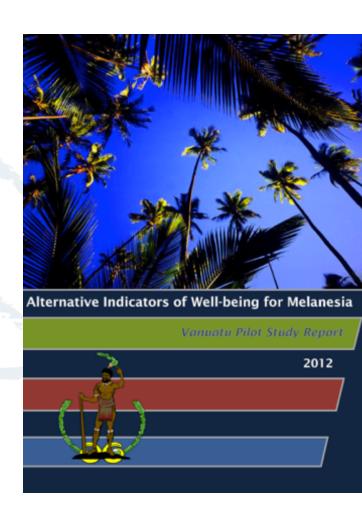


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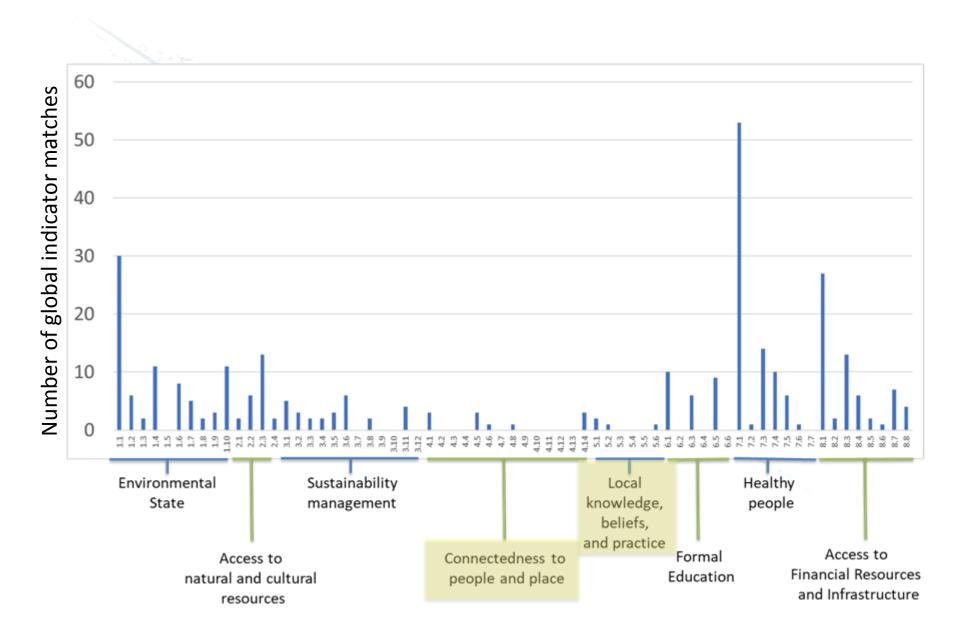
Outcomes

- Strengthened decision making
 process as key
- Building conservation capacity
- Foundation for further conservation work

 National – ability to shape conversations around development?



Outcomes – informing international metrics?

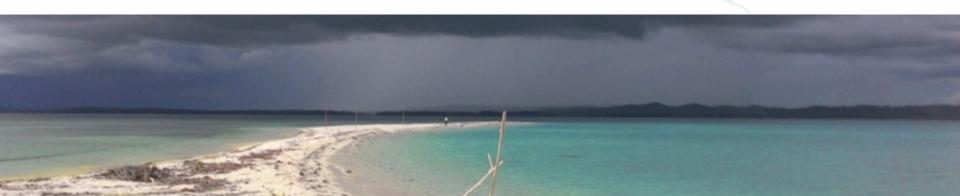


Opportunities

- Able to shape conservation programming at the local level?
- Potential to take account of feedbacks and cultural attachment to place
- Ability to localize conservation actions

Challenges

- Time and resource allocation
 - Building in appropriate timing to projects but balance key conservation needs?
- Linkages, feedbacks and cultural grounding
 - Grounding in existing projects, innovative methodologies
- Translation and information sharing
 - Power sharing, team diversity
- Scaling and scaffolding
 - Indicator categories with flexibility to use as needed
- Conservation vs. development



Lessons learning...

 Can these methods bridge the needs for partnership and diversity of the region?

Maybe

round, ideas, etc.

- Indicators of 'success' are variable
- Some match with 'conservation' goals, but within social contexts
- Solid foundation for building conservation programming
- However require a wide range of skills and long commitment

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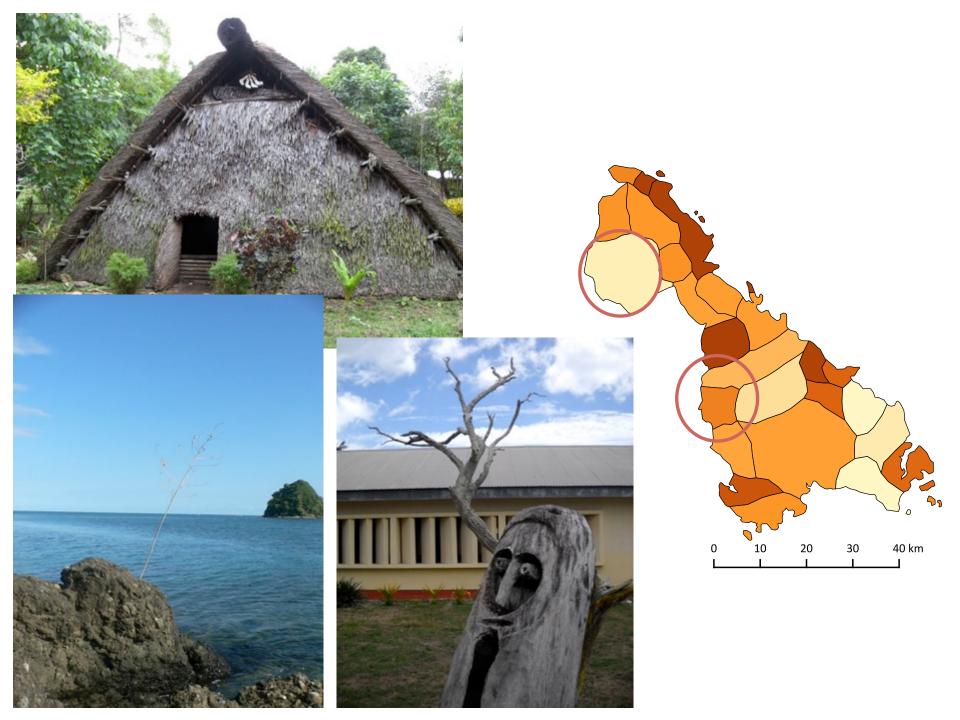
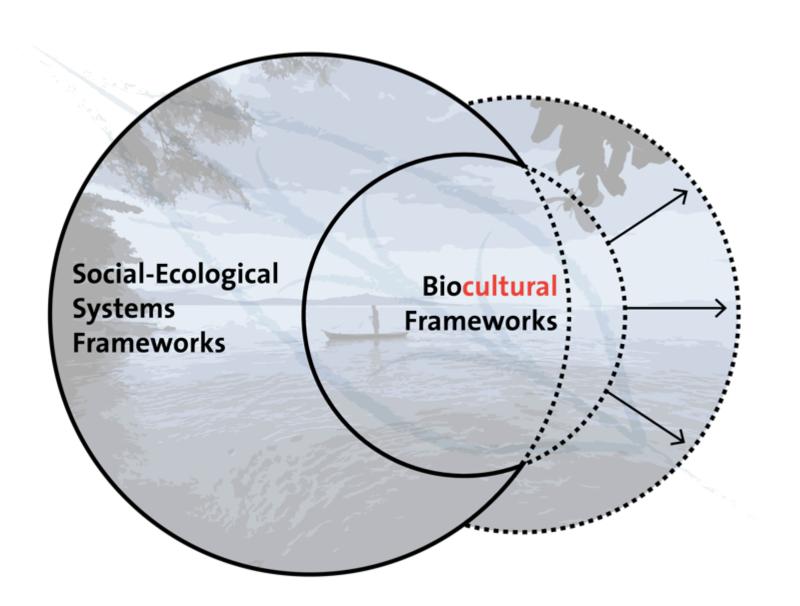


Figure 3. Roviana and Vonavona Marine Protected Area (MPA) Network Roviana and Vonavona Marine Protected Areas Southern Pacific IRIRI PASAPASA MPA NIUMALA MPA LODUHOKATA MPA NAZARETI MPA KINAMARA MPA KOQU RUA NUSA HOPE/HELORO MPA SAIKA MPA KOZOU MPA KOQU RUA MPA BARAULU/BULE LAVATA MPA OLIVE MPA CONSERVATION IS OU KINDU MPA BARASIPO MPA The Politic BUNI MPA REREGHANA/DUDULI MPA KIDA MPA VARIBUTO MPA KEKEHE MPA NUSA ROVIANA MPA HA'APAI MPA DUNDE MPA Map Key

Designed by Matthew Lauer, University of California, Santa Barbara.

Aswani and Lauer 2006



USDA Guide to Measuring Household Food Security

In the past 12 months . . .

Were you ever hungry but didn't eat because there wasn't enough food?

Did you ever reduce the size of a child's meal because there wasn't enough food?

Children skipped meals because there was not enough food?



Solution: Frame with a Resilience Perspective

What are the ways that you ensure that no one in your community goes hungry?

How do you ensure that you can access food after a tropical cyclone? What are the knowledge sources for emergency food sources (upland gardens, etc.)? Who holds that knowledge and how is it passed on?

How many days after a major disruption in your food system can you survive on existing or emergency food sources?



Different types of indicators

Example biological indicator: size structure of

trochus populations (to assess compliance with minimum size limit)

Example standard social indicator: % of codified local resource management rules of which communities are aware



Example of biocultural resilience indicator that integrate the feedbacks between people and ecosystems in this space:
% of trochus fishers who say they only catch trochus above minimum size

Examples of global-local disconnect

- Focus on endpoints for instance catch per unit effort or \$\$ brought in
 - Fish Aggregation Devices
 - Solomon Islands
 - Men spend more time fishing
 - Higher CPUE, more money
 - Broken reciprocity between men and women for work in the garden or with childcare
 - J. Albert 2014

Implementing a biocultural approach

Stages:

- Identify aspirations: Community visioning exercises, visual approaches
- Define success, identify indicators
- Monitor and measure
- Plan and support action
- Indicator sets 60 to 65 indicators, which are variable and under development
 - Terrestrial health e.g., abundance of useful plants
 - Marine health e.g., ability of community to restrict access to outsiders
 - Community health e.g., prevalence of voluntary work for others
 - Feedbacks and linkages e.g., vibrancy of vernacular language around the environment, ability to enforce management decisions based on local ecological knowledge

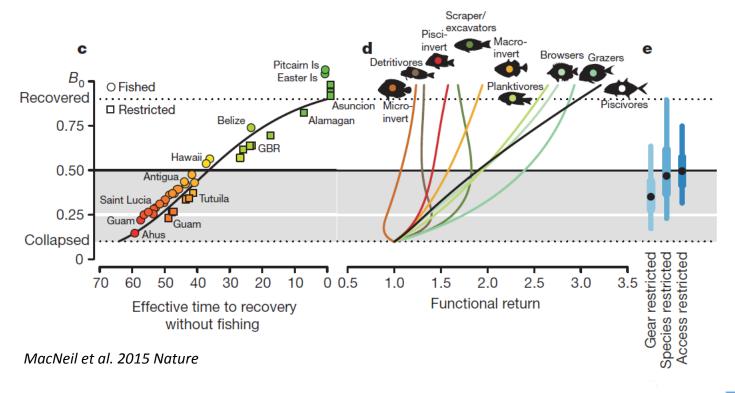


Locally-designed indicators

- Measure relevant system components
- Include a range of aspects beyond those strictly associated with fisheries management
- •Can focus on outcome statements (e.g., 'resource base is adequate for community needs')
- •Each outcome statement addressed by one or more indicators, including perceptions-based measures (e.g., perceptions of locally-important species abundance)
- •Biophsyical measures are linked with wider concerns of communities on resource use and governance (e.g., local language vitality, perceived strength and legitimacy of governance)

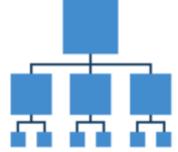
Globally designed, standardized indicators

Value in comparisons against known tipping points backed by robust scientific evidence



 $\rm B_0$ ~ 1000 kg/ha total coral reef fish biomass – near pristine system 900 kg/ha – recovered system <300 kg/ha – begin to lose critical herbivory functions

100 kg/ha – ecosystem collapse



Next steps

- Data analysis
- Mental modeling and future scenarios
- Production of community outputs
 - Community resources
 - Mapping products
 - In-depth documentation: valued plants, traditional recipes
- Links with ongoing management planning
 - WCS