A Sustainable Financing Model for a Marine Protected Area Network in Fiji

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Introduction

By 2060, global projections estimate more than one billion humans worldwide will live in coastal zones (Newman *et al.* 2015), those at greatest risk to coastal hazards (sea-level rise) and unsustainable use of marine environments include Small Island Developing States (SIDS).

A tool commonly used to mitigate against marine resource degradation is Marine Protected Areas (MPA) – 'explicit areas of ocean where human activities are regulated or prohibited' (Eastwood *et al.* 2016).

The Fiji government reaffirmed its commitment at the SIDS conference in 2014 to protect 30% of its seas by 2020 using MPAs (Yap *et al.* 2016).

Fiji has employed the Marine and Coastal Biodiversity Management in Pacific Island Countries (MACBIO) Project funded by the German Agency for International Cooperation (GIZ) and the International Union of Conservation and Nature (IUCN) as the main technical advisor to strengthen the sustainable management of marine and coastal biodiversity by assisting the government in meeting the 2020 goals.

A critical gap in the knowledge of the MACBIO project is identifying sustainable financing modalities to maintain an MPA network in which there is equitable allocation of costs and benefits to different stakeholder groups.

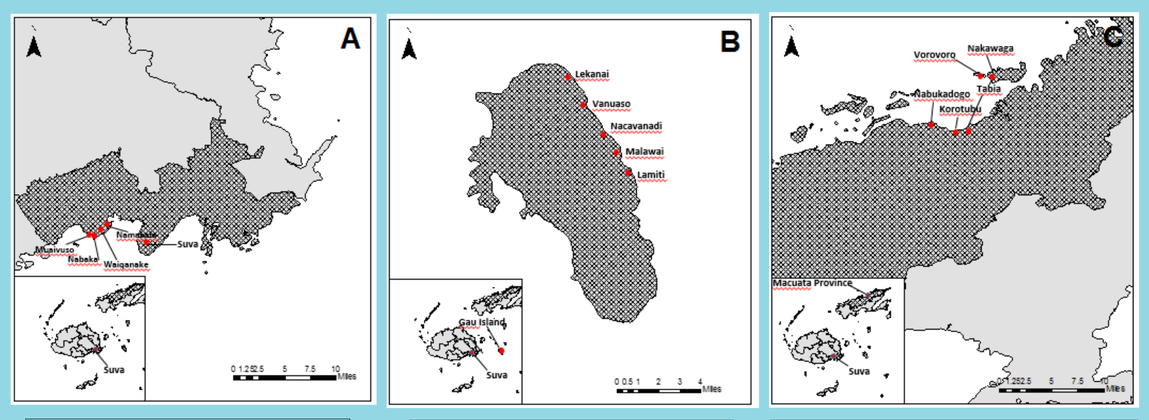
Aim

- Identifying sustainable financing mechanisms to maintain an MPA network in which there is equitable allocation of costs and benefits to different stakeholder groups.

Objective

- Attempt to identify possible financial mechanisms for inshore MPAs other than the usual direct government budget support using:
  - ➢ Willingness to Pay (WTP) (Fijian dollar/month) to manage the MPA
  - ➢ Willingness to Contribute Time (WtCT) (hours/week) to manage the MPA

Study Sites



Navakavu community | Gau Island | Macuata *Qoliqoli* Cokovata

Fig. A. Fiji Locally Managed Marine Area (FLMMA) network located on the Muaivuso peninsula, 13km west of Fiji's capital Suva
Fig B. A strong customary island living semi-subsistence livelihoods
Fig. C. A commercial fishing province strongly influenced by international support

- Proximity of sites to a local fishing market or lack thereof, their reliance on fish for livelihood and income and, current marine management in place (a *tabu)* distinguishes the different types of coastal localities in Fiji
- The variety of sites selected represent main differences between fishing communities which helps justify the wider assertions of the project in terms of financing mechanisms

Methods

- In the three communities, 5 stakeholder groups identified as benefiting from MPAs may be unwilling to pay to manage the MPA due a semi-subsistence livelihood or lack of money
- The approach by Tanya O'Garra (2009) was followed and argues that it is more suitable to assess non-use values by valuing the projected conservation benefits
- Thus, respondents were asking their WtCT (h/week) for future generations and marine resource benefits

Communities Willingness to Contribute Time to manage the MPA

- Table shows summary statistcs for all stakeholders WtCT
- The average WtCT is 4.6 hrs/week with 93.9% of respondents WtCT >0
- This is a key findings used to distinguish possible magnitudes of contribution to MPAs.
- Due to old age, health problems or occupations outside the community 6.1% of respondents were unwilling to contribute time or do not have the time to manage the MPA
- 100% of stakeholders considered MPAs to be very important and protecting it for future generations was worth their time

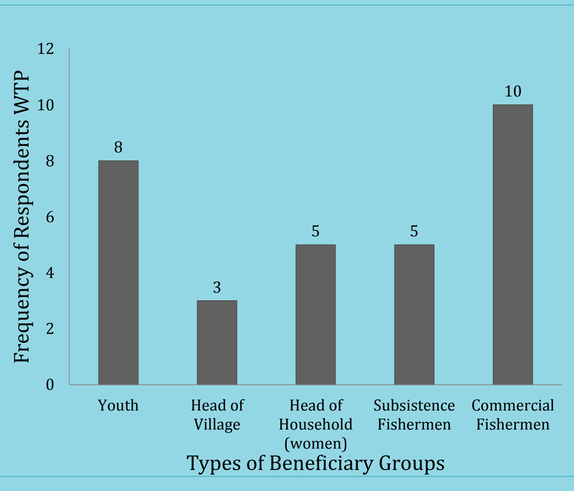
Summary Statistics	Responses (n=115)
WtCT>0 (%of sample)	93.6
WtCT= 0 (% of sample)	6.1
Mean WtCT (hrs/week) (s.d.)	4.6 (4.8)

Communities Willingness Pay to manage the MPA

- Table confirm that 82.6% of respondents were unwilling to pay for management of the MPA
- Respondents had little or no income, prefer labour over money or were unsure of how their money would be used
- 17.4% of respondents were WTP for management of the MPA

Summary statistics	Responses (n=115)
WTP>0 (% sample)	17.4
WTP=0 (% sample)	82.6
Mean WTP (FJ$ per month) (s.d)	9.5 (34.5)

- Most (82.6%) respondents are not WTP for management of the MPA which can be attributed to the objective



- Figure shows number of respondents versus stakeholder groups WTP
- When asked why they would be WTP, 10 commercial fishermen and eight youth were WTP because of occupations outside of the community and have stable incomes
- Heads of villages, heads of household (women) and subsistence fishermen were WTP because of old age or bad health

Provincial Trust Fund (PTF)

- Indirect budget suppport used to finance MPAs
- Ability to increase government expenditure through the national budget based on the proportion of funds (WtCT) each stakeholder is willing to contribute

- PTF can provide an additional sustainable source of revenue for the national budget of Fiji (Yang *et al.* 2015)

- A hybrid institution of customary management (WtCT) and national governance (PTF) moves away from the top-down centralized systems of MPAs with the aim to increase compliance and subsequent conservation efforts

Conclusions

- The PTF now need to be piloted and eventually scaled up across MPA networks which will require different levels of political commitment and institutional capacity
- The current gaps of knowledge in Fiji laws and policy were identified as an area that needs to be addressed in relation to developing inshore MPAs
- The national commitment signed at the SIDS conference in 2014 must consider the management and enforcement challenges of MPAs and securing effective interfaces between these support systems for a common goal of an effective MPA network

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