

TERMS OF REFERENCE

INTERDISCIPLINARY STUDY OF MARKET FORCES AND FISHERY MANAGEMENT IN MICRONESIA

Consultant Team¹:

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Statement of Purpose:

To undertake an interdisciplinary assessment and analysis of the market forces, both internal and external, that are driving the increasing demand for coastal fish resources within Micronesia; and to investigate the potential opportunities to reinforce community and traditional rights-based coastal fisheries management with contemporary rights-based and market-based fisheries management approaches that are increasingly being applied internationally to manage fisheries.

At a time when Micronesia's coastal fisheries are recognized by its leaders as being increasingly overharvested, there is also a weakening of traditional rights-based coastal fisheries management. This is occurring at a time when internationally there is mounting recognition of the potential of rights-based and market-based fisheries management approaches.

The study will:

- Identify, review and analyze the internal and external market forces and their impacts on coastal fisheries sustainability in Micronesia;
- Review the range of existing community and traditional rights-based marine resource management practices in Micronesia and assess them in terms of modern rights-based fisheries management approaches and the Ecosystem Approach to Fisheries management;
- Evaluate and propose possible approaches to incorporate modern rights-based fisheries management with community and traditional Micronesian fisheries management systems to reinforce local management of coastal fisheries, preferably within an ecosystem approach context;
- Identify appropriate and innovative sustainable financing options for coastal fisheries management within Micronesia, including market-based approaches and alternative livelihood options.

The study will contribute to the discussions around a shift in Micronesia's coastal fisheries policies to support and reinforce community and traditional rights-based fisheries management systems and the adoption of an ecosystem approach to fisheries management. The protection of vital coastal fisheries for communities and the development of innovative approaches to coastal fisheries management and financial sustainability are being undertaken within the context of the Micronesia Challenge. While the initial focus is on applying these approaches within Micronesia, they will also be more broadly relevant within the Pacific, including Hawaii.

¹ See Attachment 1 for brief resumes

Context:

Micronesia's diverse natural resources are the natural capital for local people. Recognizing the growing local and global threats to their natural resources and the Micronesian way of life, the leaders took action by launching the Micronesia Challenge², an unprecedented commitment to protect the habitats and resources that sustain their people. The Micronesia Challenge jurisdictions are facing significant threats to the management of their coastal fisheries due, in part, to internal and external market forces placing increasing demands on the coastal fisheries resources at a time of weakening traditional resource management systems. All five jurisdictions have identified the overharvesting of reef fisheries as a priority threat that needs prompt attention, but in a manner appropriate to the existing governance systems, both traditional and legislative.

Micronesia offers a wide spectrum of fisheries governance, from strong traditional management practices that reinforce tenure and access rights, such as those in Yap State (FSM), to government-managed, open access fisheries like Guam that are driven primarily by market forces. As a result, the region provides the scope for innovative coastal fisheries management approaches—developing culturally appropriate fisheries management systems that build on the region's long traditions of sustainability while at the same time incorporating modern market-based responses.

The importance of coastal fisheries to the economies of Micronesia is reflected in the increasing attention they are receiving: from the value of fisheries to the national economies (see Gillett 2009), to the significance of local markets (see Rhodes *et al.* 2008; Houk 2010). Internationally there has been a shift to market-based and rights-based approaches to fisheries management to increase the ecological and economic performance of fisheries, while improving the sustainability of coastal communities (see Costello, *et al.* 2008; Essington 2010; Jacquet, *et al.* 2009). Similarly there has been recognition within the Pacific region, including Micronesia, of the need to adopt and implement an Ecosystem Approach to Fisheries (EAF) management (see Preston 2008 and 2009).

The purpose of this study is to undertake an interdisciplinary—fisheries, economics and social science—assessment and analysis of the internal and external market forces that are driving the increasing demand for coastal fish resources within Micronesia; and to investigate the potential opportunities to reinforce community and traditional rights-based coastal fisheries management with contemporary rights-based and market-based fisheries management approaches that are increasingly being applied internationally to more effectively manage fisheries. The long-term goal is to ensure sustainable coastal fisheries management practices that address the three contemporary challenges of overharvesting, escalating market forces, and a continuing shift away from the traditional management of fishing.

This project contributes to the ongoing work to implement EAF in support of the Micronesia Challenge goals. To ensure that improved fishing practices are sustainable in the long term, any changes in fisheries management must be implemented within existing government and traditional mechanisms. What is learnt in Micronesia can inform coastal fisheries work in other parts of the Pacific, including Hawaii.

Scope of Work:

Scope: The geographic scope of the study is the Micronesia Challenge jurisdictions: the Federated States of Micronesia, the Republic of the Marshall Islands, the Republic of Palau, the U.S. Territory of Guam and the U.S. Commonwealth of the Northern Mariana Islands. It is recognized that some jurisdictions will, by necessity, be considered in greater detail than others, based on availability of information and data.

² The Micronesia Challenge is a commitment by the Chief Executives of the Federated States of Micronesia (FSM), the Republic of the Marshall Islands (RMI), the Republic of Palau, the U.S. Territory of Guam and the U.S. Commonwealth of the Northern Mariana Islands (CNMI) to *effectively conserve at least 30% of the near-shore marine resources and 20% of the terrestrial resources across Micronesia by 2020.*
<http://micronesiachallenge.org>

The study will focus on coastal and nearshore fisheries (including catches of reef-associated nearshore pelagic fish by coastal fisheries).

Objectives & Tasks: To undertake an interdisciplinary assessment and analysis of the internal and external market forces that are driving the increasing demand for coastal fish resources within Micronesia; and to investigate the potential opportunities to reinforce community and traditional rights-based coastal fisheries management with contemporary rights-based and market-based fisheries management approaches that are increasingly being applied internationally to manage fisheries.

The study will:

- Identify, review and analyze the internal and external market forces and their impacts on coastal fisheries sustainability in Micronesia;
- Review the range of existing community and traditional rights-based marine resource management practices in Micronesia and assess them in terms of modern rights-based fisheries management approaches and the Ecosystem Approach to Fisheries management;
- Evaluate and propose possible approaches, including innovative options, to incorporate modern rights-based fisheries management with community and traditional Micronesian fisheries management systems to reinforce local management of coastal fisheries, preferably within an ecosystem approach context;
- Identify appropriate and innovative sustainable financing options for coastal fisheries management within Micronesia, including market-based approaches and alternative livelihood options.

Deliverables:

1. Progress Report 1:
 - a. Summary of progress (500 words; suitable for transmission to donor)
 - b. Overview of activities undertaken
 - c. Highlights
 - d. Issues
 - e. Planned activities
2. Progress Report 2:
 - a. Summary of progress (500 words; suitable for transmission to donor)
 - b. Overview of activities undertaken
 - c. Highlights
 - d. Issues
 - e. Planned activities
3. Draft Final Report
4. Final Report

The Final Report should include, *inter alia*:

- A non-technical Executive Summary.
- An introduction to the study including background, a literature review (including ‘grey literature’) and other pertinent information.
- Separate sections for each of the four bulleted tasks above, detailing the methods, results, discussion and recommendations. Where appropriate case studies and examples should be provided.
- Discussion and conclusions.
- Recommendations with explanations and justifications for:
 - Any suggested changes to coastal fisheries policies, legislative frameworks and management approaches across and within the five jurisdictions;
 - Implementing the study’s recommendations.
- Attachments:
 - People, agencies, organizations and groups consulted.

- Implementation plan for the recommendations with milestones, success indicators, conceptual model and results chains (http://fosonline.org/Site_Page.cfm?PageID=168) indentifying specific and appropriate economic, ecological, governance and social/cultural indicators and measures. The study should suggest appropriate measures and indicators that can be incorporated into the Micronesia Challenge-wide measures program.
- A two-page study overview brochure with the recommendations in a form that can be shared directly with communities.

Proposed Timeline:

Task	Initiation	Completion
Literature review	1 December 2010	28 February 2011
Interviews	1 January 2011	30 April 2011
Surveys-fisher perception	1 January 2011	28 February 2011
Surveys-Finance options	28 February 2011	31 March 2011
Site visits (as needed)	1 April 2011	30 April 2011
Analysis and reporting	1 May 2011	20 May 2011
Final reporting	3 June 2011	24 June 2011

Reporting	
Progress Report 1 due	28 January 2011
Progress Report 2 due	31 March 2011
Draft Final Report due	10 June 2011
Final Report due	24 June 2011

References:

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TNC Project Manager/Contact:

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 (Email: andrew_smith@tnc.org)

Attachment 1:

Kevin L. Rhodes, Ph.D.

Past experiences: I have 14 years of experience working in Coral Triangle, Pacific Island (Micronesia and Melanesia) and Caribbean communities on fisheries, socio-economic and conservation projects. I have collaborated on or lead numerous conservation-focused scientific research projects that have improved understanding of basic life history and behavioral traits of tropical marine fishes. Most recently, my research focus has been in identifying area needs for tropical marine fishes for marine protected area design and improvement and conducting socio-economic studies on fisheries and fishing communities to identify ways to improve management and stakeholder needs.

Peter C. Houk, Ph.D.

Past experiences: I am the Executive Director of the Pacific Marine Research Institute (PACMARES), with an interest in quantitative ecology as a means of improving our understanding of influential processes that predict the dynamics of nearshore marine ecosystems at multiple spatial scales. I have regional experience in science and community-based management in American Samoa, the Commonwealth of the Northern Mariana Islands (CNMI), Marshall Islands and the Federated States of Micronesia. Through PACMARES, I have established long-term datasets that are currently being used to quantify the relative influences of land-based pollution and herbivore abundance upon resiliency following disturbance cycles. Over the past 8 years I have been conducting research with numerous partners and funding agencies throughout the Pacific that has led to the generation of a wealth of standardized coral-reef ecosystem data. These data encompass over 50,000 coral colony measurements and hundreds of benthic and macroinvertebrate transects that span 25 islands and atolls across Micronesia. Over the past decade I have fostered relationships with jurisdictional government agencies and non-governmental organizations throughout the Pacific to bridge the gap between science and management. One example includes a recent grant that was awarded to produce quarterly fisheries journals for distribution throughout Micronesia where select topics are discussed (www.micronesianfishing.com).

Jennifer McIlwain, Ph.D.

Past experiences: In my capacity as both a research scientist and academic I have, for the past 10 years, worked on many issues related to tropical artisanal fisheries in the Middle East (Oman) and more recently Micronesia. These include (but not limited to) large-scale research projects focused on population dynamics of reef fish particularly that of demography, stock assessment and population connectivity. Many of the projects I have led produced tangible recommendations that have been implemented by local fisheries agencies. I am currently working with two NGOs in Micronesia to identify ways of improving their coral reef fish monitoring program (Pohnpei) and marine protected area design (Yap).

Quentin S.W. Fong, Ph.D.

Past Experiences: Quentin Fong has a dual appointment as the Seafood Market Specialist for the Alaska Sea Grant Marine Advisory Program and the Fishery Industrial Technology Center in Kodiak. Born and raised in Hong Kong, he has 12 years of commercial diving and fishing experience and 10 years of seafood trading experience. As an educator at the University of Alaska Fairbanks, Quentin conducts marketing workshops, one-on-one consultations with stakeholders on strategic marketing and business management strategies and conducts applied market research and economic feasibility studies. Some of his past projects include developing marketing strategies and conducting economic feasibility for pearl and oyster farms in Marshall Islands and Alaska, conducting market research and business training to women's oyster growing and small-scale women jewelry making co-operatives in Bahia Santa Maria, Mexico and Fumba, Tanzania, and developed a bioeconomic model linking Hong Kong shark fin markets to shark populations, with application to right-based management.