

パラオ国
サンゴ礁モニタリング能力向上プロジェクト
終了時評価調査報告書

平成24年3月
(2012年)

独立行政法人 国際協力機構
地球環境部

環境

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序 文

日本国政府はパラオ国政府の要請に基づき、海洋保護区のモニタリングに関して、パラオ国際サンゴ礁センターの技術的能力を強化し、ミクロネシアチャレンジ参加国・地域においてそれらが活用されることを目指して、2009年7月から3年間の計画で「サンゴ礁モニタリング能力向上プロジェクト」を実施しています。

国際協力機構は、このたび評価5項目における評価の実施と提言・教訓を導き出すための終了時評価調査団を2012年1月23日から2月2日の日程で派遣しました。調査団は、パラオ側メンバーと合同評価チームを構成して現地調査を行い、その結果を合同評価レポートとして取りまとめ、署名交換を行いました。

本報告書は、終了時評価調査時の調査および協議に基づく結果を取りまとめ、今後の協力への活用を通じ、更なる発展に繋がることを目的としております。

終わりに、これら一連の調査及び協議にご協力とご支援を頂いた関係者の皆様に対し、心より感謝申し上げます。

平成24年3月

独立行政法人国際協力機構

地球環境部長 江島 真也

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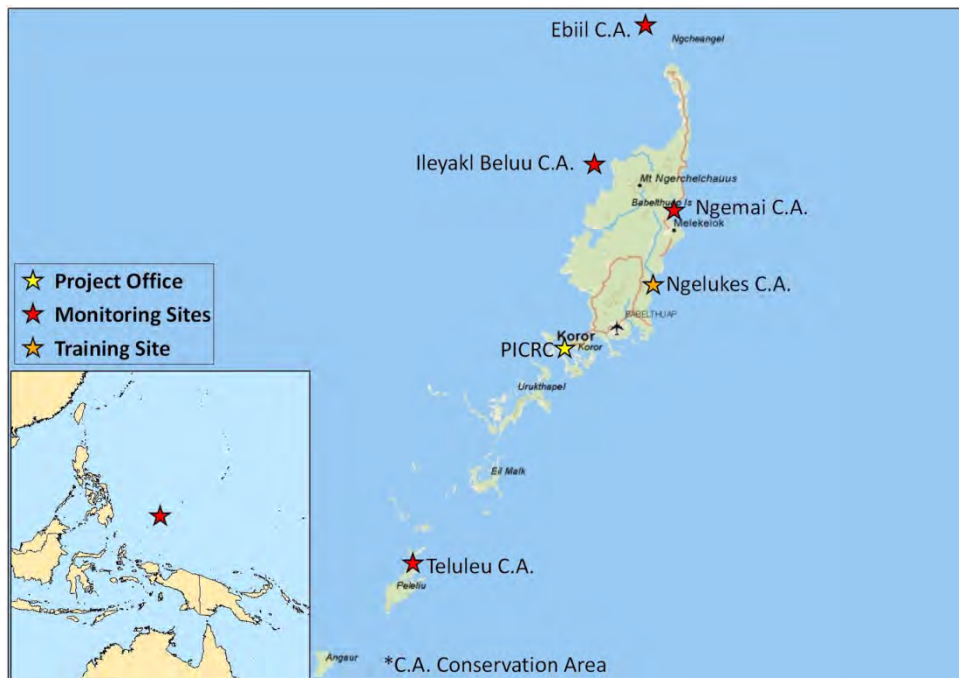
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地 図



(www.palau.or.jp/koror/index.html#02 より)

●パラオ国際サンゴ礁センター(PICRC) 位置図
※プロジェクト事務所はPICRC内に所在



●プロジェクトでモニタリングを実施した海洋保護区 (MPA)

写 真



パラオ国際サンゴ礁センター (PICRC) 全景



ヒアリング調査



合同評価書取りまとめの様子



ヒアリング調査



合同評価報告書署名



JCC ミニッツ署名

略 語 表

CEPCRM	Capacity Enhancement Project for Coral Reef Monitoring
CI	Conservation International
EQPB	Environmental Quality and Protection Board
FSM	Federated States of Micronesia
CEO	Chief Executive Officer
GF	Green Fee
GIS	Geographic Information System
ICRI	International Coral Reef Initiative
ICRS	International Coral Reef Symposium
IT	International Technology
JCC	Joint Coordination Committee
JET	Joint Evaluation Team
JICA	Japan International Cooperation Agency
JST	Japan Science and Technology Agency
LMMA	Locally Managed Marine Areas
MC	Micronesia Challenge
MCRO	Micronesia Challenge Regional Organization
MCTF(MCtf)	Micronesia Conservation Trust Fund
MICS	Marshall Islands Conservation Society
MNRET	Ministry of Natural Resource ,Environment and Tourism
MOU	Memorandum Of Understanding
MPA	Marine Protected Area
MRD	Marine Resource Division
NGO	Nongovernmental Organization
NOAA	National Oceanic and Atmospheric Administration
ODA	Official Development Assistance
OEK	Olbiil Era Kelulau
OEPPC	Office of Environmental Planning and Policy Coordination
OERC	Office of Environment Response and Coordination
OTV	Oceania Television Network
PALARIS	Palau Automated Land and Resource Information System
PAN/PANF	Protected Area Network / Protected Area Network Fund
PAN Act	Protected Area Network Act
PCC	Palau Conservation Consortium
PCC	Palau Community College
PCS	Palau Conservation Society
PO	Plan of Operation
PDM	Project Design Matrix
PICRC	Palau International Coral Reef Center
RMI	The Republic of the Marshall Islands
SPC	Secretariat of the Pacific Community
TNC	The Nature Conservancy

評価調査結果要約表

1. 案件の概要	
国名： パラオ共和国	案件名： サンゴ礁モニタリング能力向上プロジェクト
分野： 環境問題	援助形態： 技術協力プロジェクト
所轄部署： 地球環境部 森林・自然 環境保全第1課	協力金額（評価時点実施計画額）： 約 1.75 億円
R/D 署名： 2009 年 5 月 29 日	先方関係機関： パラオ国際サンゴ礁センター
協力期間： 2009 年 7 月 26 日～ 2012 年 7 月 25 日	日本側協力機関： 環境省
	他の関連協力： 青年海外協力隊
1-1 協力の背景と概要	
<p>パラオ国際サンゴ礁センター（PICRC）は、1994 年に日米コモン・アジェンダの新たな協力分野に「サンゴ礁」が追記されたことを背景に、サンゴ礁および関連する海洋生物の研究活動やその保全についての普及・啓発活動をおこなう拠点として、我が国の無償資金協力（1998 年～1999 年、8.3 億円）により施設整備が行われ、2001 年 1 月に開館した。国際協力機構（JICA）は、PICRC の研究機能、啓発・教育機能を図ることを目的として、2002 年から 2006 年までの 4 年間、技術協力プロジェクト「国際サンゴ礁センター強化プロジェクト」を実施し、機材の供与と職員を対象とした能力向上を中心におこなった。その終了時評価において、研究成果の政策への反映とサンゴ礁モニタリング能力を地域のハブ機能としてさらに向上させることが提言された。</p> <p>一方、パラオでは、これまで、州の条例などで規定されていた海洋保護区を含めた保護区管理において州と中央政府が協力するための枠組みとして保護区ネットワーク（PAN）法が制定されており、海洋保護区（以下、MPA）について、政府による保護区のネットワーク化を推進する姿勢を見せている。加えて、パラオを含むミクロネシアの 5 つの地域・国では 2006 年にミクロネシアチャレンジ¹（以下、MC）を宣言しており、沿岸域の 30%を保護区に設定するという数値目標を掲げている。一方で、各州が保護区管理を実施していく上で必要となるモニタリング手順書の整備といった、国内の基本的な体制については、未整備な部分があるのも現状である。</p> <p>かかる状況を踏まえ、2007 年にパラオ政府は MPA モニタリングに係る技術協力を我が国に要請し、2008 年 11～12 月の詳細計画策定調査を踏まえ、サンゴ礁モニタリング能力向上プロジェクト（以下、本プロジェクト）の実施に関する協議議事録が 2009 年 5 月に署名され、2009 年 7 月に開始された。</p> <p>本プロジェクトは 2012 年 7 月に終了予定であるため、今般終了時評価を行うこととなった。</p>	

¹北マリアナ諸島米国自治連邦区、ミクロネシア連邦(FSM)、マーシャル諸島共和国(RMI)、パラオ国、米国グアム準州が宣言した包括的な共通目標（「陸域の 20%、近海域の 30%を効果的に保全する」）

1-2 協力内容

本プロジェクトは、パラオにおける MPA の設置・管理が適切に行われる事を支援するために、PICRC における MPA のモニタリング能力の向上を図るとともに、MPA モニタリングに関して、周辺国・地域との連携を図るものである。

(1) 上位目標

PICRC の技術的能力が MC 参加国・地域において活用される。

(2) プロジェクト目標

海洋保護区管理に必要なモニタリングに関して、PICRC の技術的能力が強化される。

(3) 成果

- (i) 海洋保護区のモニタリングを支援する体制が整備される。
- (ii) 海洋保護区のモニタリングに関連する国際的イニシアティブや MC 参加国・地域、関連機関・研究機関等との連携が強化される。

(4) 投入 (2011 年 1 月現在)

日本側：総投入額 1.75 億円 (期間全体を通じた計画額)

長期専門家：3 名 機材供与：124,950.54USD (0.1 億円相当)
短期専門家：2 名 プロジェクト活動費：430,773.99USD (0.3 億円相当)
研修員受入：4 名

相手国側

カウンターパートの配置 延べ 25 名 (現在は 16 名)
土地・施設提供：プロジェクトの実施に必要な土地、建屋、設備、部屋
プロジェクト活動費：43,685 USD (給与、車両燃料費、消耗品費 (プロジェクト関連相当割合))

2. 評価調査団の概要

調査者	団長／総括	鈴木 和信	JICA 地球環境部 森林・自然環境保全第一課 企画役	
	サンゴ礁保全	木村 匡	JICA 地球環境部 課題別支援委員会海洋保護区分科会 委員 (財) 自然環境研究センター 上席研究員	
	自然保護政策	尼子 直輝	環境省 自然環境計画局自然環境計画課 サンゴ礁保全専門官	
	協力計画	宮崎 裕之	JICA 地球環境部 森林・自然環境保全第一課	
	評価分析	町田 賢一	株式会社かいほつマネジメント・コンサルティング	
調査期間	2012 年 1 月 23 日～2012 年 2 月 2 日		調査区分	終了時評価

3. 評価結果の概要

3-1 成果達成状況

3-1-1 プロジェクト目標：海洋保護区管理に必要なモニタリングに関して、PICRC の技術的能力が強化される。

指標：パラオ国内の海洋保護区 2 箇所で、PICRC の手順書に基づくモニタリングが実施される。

海洋保護区のモニタリングにおける制度的な役割がパラオ政府の公文書に明記される。

プロジェクト目標は達成される見込みである。

本プロジェクトによって選定された4カ所のMPAにおいて、PICRCが作成したモニタリング手順書案に基づきモニタリングが実施されている。また、モニタリングにおけるPICRCの役割は同手順書案に明確に示されており、現在協議中であるものの、手順書案が天然資源・環境及び観光省（以下「環境省」）に承認されることでPICRCの役割が公的に位置づけられる事となる。

3-1-2 成果1：海洋保護区のモニタリングを支援する体制が整備される。

指標：海洋保護区の管理・保全状況に関する情報が更新される。

モニタリング手順書がパラオ国天然資源・環境及び観光省の定めるモニタリングプロトコールとして認定される。

成果1は達成される見込みである。

本プロジェクトにより4カ所選定されたMPAとその比較対象地域におけるモニタリングデータはPICRCに蓄積されており、データベースとして逐次更新されている。また、モニタリング手順書案は既に作成され、正式な承認を得るため環境大臣に提出されることになっている。

3-1-3 成果2：海洋保護区のモニタリングに関連する国際的イニシアティブやMC参加国・地域、関連機関・研究機関等との連携が強化される。

指標：国際的枠組み及び関連機関・研究機関の会議・ワークショップ等で、PICRCが5件以上発表を行う。

海洋保護区に関する情報が広報媒体によって20回以上発信される。

海洋保護区に関するモニタリングに関するセミナー・ワークショップがPICRC主催で3回以上実施される。

成果2は達成された。

関係する10の国際会議・ワークショップにPICRCからの参加者が出席し、本プロジェクトに関する発表を行った。また、本プロジェクトに関する記事が、パラオで発行されている新聞に21回掲載されている。また、PICRC・JICA共催で2012年2月に、MPAモニタリングに焦点を当ててMCのワークショップを2010年2月に実施しており、本プロジェクトでは、ミクロネシア連邦（FSM）およびマーシャル諸島共和国（RMI）において、MPAモニタリングとデータベースに関するワークショップを計4回実施した。

加えて、PICRCと関係機関との協力の例として、南太平洋委員会（South Pacific Committee）によるPICRCのMPAデータベースの構築・改善の支援が挙げられる。両機関の協働は、本プロジェクトが参加者を派遣した「海洋管理区に関する太平洋地域会議（Pacific Regional Conference on Marine managed Area（2009年11月））」が契機となっている。

3-2 評価結果

3-2-1 妥当性

本プロジェクトの妥当性は極めて高い。

前述のパラオ政府のPAN法（RPPL6-39）、PICRC設置法（RPPL5-17）などで海洋環境の保全がパラオの国家的優先課題の一つであることが位置付けられているほか、第5回太平洋・島サミットの共同宣言

においても気候変動を含む環境問題に関する協力の必要性について日本を含む関係国首脳の間で共有されているなど、プロジェクト目標および上位目標は関連する日本およびパラオの政策、法律、計画に沿っている。また、MPA が各州政府の所管事項である中、各地の MPA 管理に共通して必要となる技術的事項に関し、準政府機関である PICRC において能力向上を図った事は適当であると考えられる。

モニタリングの対象地である 4 つの MPA は、保護区の特徴、州政府の能力など妥当な基準によって選定された。選定された MPA 周辺の住民の生計は、海洋資源と密接に関係しており、MPA 管理は海洋資源の持続的利用に資する事を勧案すると、彼らのニーズはプロジェクトと整合している。加えて、3-3-1(2)に記載のとおり、我が国の ODA における、自助努力支援、リーダーシップやオーナーシップの醸成といった特徴がプロジェクトにおいて有効であったことが示された。

3-2-2 有効性

本プロジェクトの有効性は高い。3-1-1 で述べたとおり、プロジェクト目標は達成される見込みであり、2 つの成果もその達成に貢献している。

成果 1 にむけた活動を通じて、パラオ側カウンターパートは 4 つの MPA でモニタリング活動の立ち上げと実施を行い、モニタリング手順書案を作成した。これらの活動により MPA モニタリングにかかる PICRC の技術的能力が向上した。

成果 2 に関する活動として、本プロジェクトでは、パラオ側カウンターパートによる国際会議やワークショップにおける本プロジェクトに関する発表の実施や、MPA モニタリングに関する他の参加者との協議を実施している。加えて、前述の成果 2 に関する指標は必ずしも達成状況の指標としては十分でない部分もあり、関係機関との連携の状況についても着目しているが、成果 2 に関する活動を通じて、複数の国において MPA モニタリングに関する知見の習得と、パラオ国内外の関係機関との関係の構築につながったことが確認できた。

しかし、開始時にカウンターパート機関内に空席のポストがあったこと、前研究部長がプロジェクト開始後 1 ヶ月で退職したこと、2 年間カウンターパートして経験を蓄積した研究員 2 名が退職したこと、後任の現部長が 7 ヶ月に渡る所長の空席期間にその業務を兼務したこと、はプロジェクト目標達成の遅延をもたらしている。このように、プロジェクト目標達成のための外部条件「モニタリングを担当する PICRC の職員が大きく減らない」が満たされなかった点で有効性を減じた。

3-2-3 効率性

本プロジェクトの効率性は中程度である。

ほとんどの投入は活動実施のために計画通り実施され、活動は概ねスケジュールどおり実施され、3-1-2 および 3-1-3 で述べたとおり 2 つの成果は予定どおり産出されつつある。主な成果の一つであるモニタリング手順書は、パラオ、FSM、RMI において試行され、5 つの MC 参加国・地域において実施・適用可能な内容となっている。費用対効果を高めた点として、日本人短期専門家派遣および本邦研修を、現地および第三国の専門家の投入によって置き換えたこと、また、例えばモニタリング実施時などに、ネイチャーコンサーバンシー (TNC) やパラオ保全協会 (PCS) といった外部機関の物的・人的なリソースを効率的に活用できたことが挙げられる。

しかし、カウンターパートの研究員が総じて多忙であり、本プロジェクトに十分な時間を割くことができない部分があったこと、プロジェクト前提条件「PICRC の管理体制が安定的に維持される」と

プロジェクト目標達成のための外部条件（3-2-2 に記載）が満たされなかった点は、プロジェクトの円滑な実施を阻害し、効率性を減じた。特に前提条件に関連して、パラオ政府から PICRC に対する補助金が減額されており、全職員の給与が 2011 年の 7 ヶ月間 15%削減された。これが職員のモチベーションと生産性の低下につながったことは否定できない。パラオ側の中核カウンターパートの退職や、その後の速やかな後任の採用がなされなかった点、本邦研修において本邦側の受入準備が滞った点などもプロジェクトの進捗に影響を与えた。

3-2-4 インパクト

本プロジェクトのインパクトは高い。

(1) 上位目標の達成見込み

上位目標は、FSM と RMI を主たる対象として将来的に達成される見込みがある。指標にある手順書の活用であるが、プロジェクトによって開発されたモニタリング手順書案は、MC のワークショップを通じて共有されており、特に MC 参加国・地域における独立国である FSM と RMI で活用されていくことが期待される。また本プロジェクトの活動を通じて MPA モニタリングデータベースが既に PICRC に構築されており、今後、MC における連携が深まっていく中で、MC 参加国・地域のデータ蓄積へと拡充されていくことも十分考えられ、PICRC による MC 参加国・地域に対する技術的な支援の提供につながる事が考えられる。

MC を対象とするこれらの活動の財源としてはミクロネシア保全信託基金（MCTF）が想定されるが、同基金は各参加国・地域が所定の拠出金を提供することによってそれぞれ活用可能となる。基金の造成は始まっており、近い将来基金の活用が開始されることが見込まれる。

(2) 他のインパクト

負のインパクトは確認されず、以下の正のインパクトが確認・予見された。第 1 に本プロジェクトのニューズレターが、PICRC のニューズレターへ発展したこと、第 2 に本プロジェクトで開発したモニタリング手順書案の環境省承認後には、PAN 技術委員会（保護区管理計画の技術的なレビューを実施する組織）のガイドライン（今後、作成予定）へ手順書の内容が PICRC の役割の明示も含めて反映される可能性があること、第 3 に本プロジェクトで実施したモニタリングの非対象州でも、PICRC の実施している MPA モニタリングに対する関心が高まっており、照会や協調の動きがみられはじめていくこと、第 4 に本プロジェクトはパラオのコンサベーションコンソーシアム²に対しモニタリング手順書案を含む様々な議題を提示することで同コンソーシアムを強化し、参加者同士の関係構築を促進したこと、第 5 に本プロジェクトによって開催された MC ワークショップは MC の進捗を促進し、MC における MPA モニタリングに対する意識を高めたことが、確認・予見された。

3-2-5 持続性

本プロジェクトの自立発展性は中程度である。

(1) 政策、制度、法的側面

3-2-1 に記載のとおり、海洋資源の保全が今後ともパラオの優先政策であり続けることは確実である。また、モニタリング手順書が環境省に承認されれば、PICRC が MPA モニタリングを継続して支援

²非公式な会合でありながら、パラオで唯一環境保全に関する機関が一堂に会する場でもある。

するための制度的な根拠も確保される。今後は、その周知や普及などが一つの課題と考えられる。なお、PICRC 設置法において PICRC の自立が明記されている事は、財政上の持続性からみると法的な懸念材料の一つである。

(2) 組織的側面

本プロジェクトの実施により、職員相互の情報共有といった基礎的なスキルが高まり PICRC の組織強化につながったといえる。しかし、職員の退職と適当な後任職員の採用サイクルに滞りがみられる点は、PICRC の自立発展性における構造的な課題である。

加えて、現行の PICRC5 年戦略には、サンゴ礁モニタリングや MPA モニタリングが明確に示されていない。これは、各州の実施する MPA モニタリングに対して、PICRC が支援を引き続き実施する上での懸念といえる。

(3) 財務的側面

現在、PICRC の収入は政府の補助金、研究プロジェクトへの助成金、寄付、水族館および売店からの収入から成り、総額は概ね安定している。ただし、今後、想定される MPA モニタリング支援にかかる費用は、国内であれば PAN 基金、MC 参加国・地域であれば MCTF からの調達が必要と考えられる。手順書の承認プロセスまだが終了していない事や MCTF が造成途上であることから今後の見通しについて判断する事は難しいが、引き続き、パラオ政府や MCTF などとの調整していくことが重要である。また、水族館や売店運営についても収入増に向けた改善が図られることが望まれる。

(4) 技術的側面

PICRC のカウンターパートは、本プロジェクト活動を継続するために十分な知識と技術を身につけている。しかし退職率が高い点は、技術や知見が組織に蓄積されるような体制・制度が十分構築されていない現状では、自立発展性を阻害するリスクといえる。なお、モニタリング手順書案は、3-2-3 効率性で述べたとおり、サイトでの試行を通じて作成されたもので技術的に見て極めて適切に作成されている。一方、プロジェクトでモニタリングを実施した 4 カ所の MPA が位置する州政府および FSM と RMI における州政府の多くは、基本的に MPA モニタリングを行う上で支援が必要であったことから PICRC の技術支援の需要は高い。なお、国内の陸域の保護区についても並行して制度整備が進められており将来的にはそれらとの連携・統合も期待できる。

3-3 効果発現に貢献した要因

3-3-1 計画内容に関すること

特になし。

3-3-2 実施プロセスに関すること

(1) コミュニケーション

本プロジェクトは、プロジェクトを円滑に実施するため、日・パラオ双方のプロジェクト関係者および PICRC の職員間のコミュニケーションを向上させている。具体的には、プロジェクトの進捗管理、情報共有、課題の協議、合意の形成を目的として隔週のプロジェクト会議、毎週の部長会議、毎月全職員会議を導入した。パラオ側カウンターパートの 1 人は、本邦研修におけるマネジメントとコミ

コミュニケーションに関する研修内容に刺激を受け、帰国後すぐに所属する研究部内でのミーティングを開始するなど、自立発展性などに寄与している。

(2) オーナーシップ

パラオ人カウンターパートのオーナーシップを醸成し自立発展性を高めるため、日本人専門家は、パラオ人カウンターパートによる自発的なプロジェクトの実施を促進することに特に留意した。例えば、ワークショップや会議において、日本人専門家はしばしば裏方に徹し、パラオ側カウンターパートに発表させるようにした。こうした働きかけによりパラオ側カウンターパートのオーナーシップは高められ、プロジェクトの有効性や自立発展性を高めることにつながったが、同時にプロジェクトにおける日本側の貢献が見えづらくなる側面があったことも否定できない。

(3) 他機関との協力

本プロジェクトは多くの関係機関と積極的に協働した。環境省のキャパシティは限られており、TNC や PCS などの関係 NGO は、パラオや MC 参加国・地域の海洋環境保全において不可欠の役割を果たしている。こうした機関との協働は、本プロジェクトの実施において必要かつ極めて重要であった。協働はプロジェクトの活動を充実させ、効率性を高めており、加えて自立発展性の向上にも貢献すると思われる。

3-4 問題点および問題を惹起した要因

3-4-1 計画内容に関すること

特になし。

3-4-2 実施プロセスに関すること

3-2-3 効率性で述べたとおり、核となるカウンターパートの退職、PICRC 職員の給与削減が本プロジェクトの実施に影響を与え、特に効率性が阻害される要因となった。これらは、前提条件とプロジェクト目標を達成するための外部条件が満たされなかったことを意味している。

3-5 結論

本プロジェクトは、政策、ニーズ、課題に対する解決手段としての面から適切であり、妥当性は極めて高い。プロジェクト目標は2つの成果の産出をとおして達成の見込みであるため、有効性は高い。投入は概ね妥当であり、活動についてはコミュニケーション促進、オーナーシップの醸成、他機関との協働に注視して進めており所期の成果が産出されつつあるが、前提条件とプロジェクト目標達成のための外部条件が満たされなかった点は、プロジェクトの実施に影響を与えており、効率性は中程度と判断される。上位目標を含め、多様な正のインパクトが確認・予見されているためインパクトも高い。PAN 基金および MCTF の活用見込みに基づき、上位目標の達成と自立発展性の財務的側面は確保されていると判断されるが、PICRC 職員の高退職率は、技術的側面における懸念である。従って、自立発展性は中程度と判断される。

これらから、プロジェクト実施期間については計画通りとすることが妥当である。

3-6 提言

3-6-1 プロジェクト終了までの提言（主としてプロジェクトまたは PICRC に対する提言）

- (1)本プロジェクトの成果・結果ならびに保護区ネットワークの枠組みによる MPA 管理の方向性を国民に対して広く知らしめ、もって環境省などの政府機関が PAN の枠組みにおける PICRC の役割を認識・承認することを促進する。
- (2)本プロジェクトにおける非対象州の住民および州政府が、モニタリング手順書についての理解を深めるため、全国または地方におけるワークショップを開催し、もって手順書の将来的な活用を促進する。
- (3)プロジェクトまたは PICRC は、MC に対し、PICRC による FSM や RMI に対するモニタリング実施支援の適切な仕組みの検討を提案する。
- (4)プロジェクト成果品の概要を英語で取りまとめ、広報のみならず海外の科学者と実務者にとっての事例研究として積極的に活用されるようにする。
- (5)上位目標達成に向けた協働計画を、政府機関、ドナー機関、NGOs などの関係機関と共に作成する。

3-6-2 プロジェクト終了後における提言（主として PICRC に対する提言）

- (1)PAN 法の枠組みに沿った政府の施策のもと、手順書に沿ったモニタリングを継続するために、PICRC は MPA モニタリングを次期 5 カ年戦略における正式な活動の一つとして位置づける。
- (2)PICRC は科学的助言が実施可能な組織として、MPA 管理能力の向上のためにコンサベーションコンソーシアムにおいて主導的立場を担い、今後、コンソーシアムにおいて国全体の環境保護施策が提言されていくこと。
- (3)PICRC は本プロジェクトで対象外となった州および MC 参加国・地域におけるモニタリング手順書の適用・運用方法に関し、検討を更に進める。
- (4)PICRC は上位目標の達成に向けて、中央政府、州政府、および TNC や PCS などの NGOs との関係を維持・強化する。
- (5) PICRC は本プロジェクトの成果・結果を PAN 基金を含む政府ならびに準政府機関と共有し、長期的には、陸域や社会経済など他のデータと組み合わせた統合的な自然環境モニタリングに活用できるようにする。
- (6)PICRC はプロジェクトが支援したニューズレター、リーフレット、出版物の作成やマスメディア、セミナーを通じた積極的な広報活動を継続する。
- (7)PICRC は明確なマネジメント戦略を作成し、財務面、制度面、人的資源面、特に財務的自立性の確保を目的とした水族館の運営について検討するとともに、議会に対し PICRC 設置法 (RPPL 5-17) の改正を提案する。
- (8)PICRC は PAN 基金、議会、環境省および州政府が PICRC の機能と役割を認識し、活動を支援するように働きかける。
- (9)PICRC は、本プロジェクトの成果・結果を効果的に活用し、また関係機関との関係を維持するため、政府、州政府、JICA パラオ事務所、ドナー機関や NGOs などと定期的に会合を持つ。加えて、MC に貢献するために、MC 参加国・地域とのパートナーシップが強化できるような場や機会の設定をおこなう。

3-7 教訓

- (1)PICRC 本体の運営は本プロジェクトには含まれていないものの、プロジェクトの技術的な成果は、健全な組織運営に大きく影響される。財務面と組織面における長期な制度面からの自立発展性の観点からは、特に財務戦略と会計担当職員の状況について、プロジェクトの計画段階において関与の可否も含めた検討が必要であった。

(2) 上位目標の達成と自立発展性においては、多くの予測不可能かつ制御できない要因がある。例えば、MCTF は PICRC が MC 参加国・地域に対して技術的支援を提供するために必要な制度であるが、MC 参加国・地域の個々の財務能力の制約により基金造成は完了しておらず、未だ活用に至っていない。本プロジェクトでは中間レビューを実施していないが、適切な上位目標の設定や各種指標・活動の見直しの機会を設けるために、協力期間中にプロジェクト計画を協議、改訂する場が必要であった。

3-8 フォローアップ状況

パラオ国全体の MPA モニタリングの体制を効率的に確立させるために、本プロジェクトにより高められた PICRC の技術的能力を活用し、本プロジェクトの対象州以外の州政府担当官等を対象にしたワークショップの開催を J I C A のフォローアップ協力として検討している。

Summary of Evaluation Study

1. Outline of the Project	
Name of Country: Republic of Palau	
Name of Project: Capacity Enhancement Project for Coral Reef Monitoring	
Sector: Environment	Scheme: Technical Cooperation
Department in Charge at JICA: Forestry and Nature Conservation Division 1, Global Environment Department	
Duration of Project: From July 2009 to July 2012	
Implementing Organization: Palau International Coral Reef Center	
Other Related Cooperation Activities: Grant Aid Project, Technical Cooperation Project (Palau International Coral Reef Center Strengthening Project: 2002-2006), Japan Overseas Cooperation Volunteers	
<p>1-1 Background</p> <p>The Palau International Coral Reef Center (PICRC) was constructed by grant-aid from the Government of Japan in the context that a new cooperation field (coral reefs) was added to the Common Agenda at a US-Japan vice-ministerial meeting, and it began its activities in January 2001 to provide a forum for coral reef research and education. The Japan International Cooperation Agency (JICA) implemented a 4-year Technical Cooperation Project between 2002 and 2006 to strengthen the main functions of PICRC. At the completion of the project, the evaluation team recommended, among others, that: (1) PICRC should utilize their research results to strengthen the Palau Government’s policy for the establishment and evaluation of Marine Protected Areas (MPAs), and (2) PICRC should improve its institutional capacity as a hub in the Micronesia region for the monitoring of coral reefs.</p> <p>The Palau government enacted the Protected Areas Network Act (RPPL 6-39) to provide a framework for collaboration between the national and the state governments for protecting the nation’s biodiversity by managing MPAs. Moreover, five Micronesian jurisdictions, including Palau, launched the Micronesia Challenge (MC)¹ in 2006. There was a necessity to develop basic systems for monitoring, including a monitoring protocol. Based on this background, there have been increasing expectations that PICRC’s technical support for monitoring will play an important role for measuring the effectiveness of the management of MPAs. In view of this situation, JICA, in collaboration with PICRC, commenced the 3-year “Capacity Enhancement Project for Coral Reef Monitoring Project” (CEPCRM) in July 2009.</p>	

¹ It is a commitment to effectively conserve 30 percent of near-shore marine resources and 20 percent of terrestrial resources across Micronesia by 2020 by the Federated States of Micronesia, the Republic of Palau, the Republic of the Marshall Islands, the United States Territory of Guam and the Commonwealth of the Northern Mariana Islands.

1-2 Outline of the Project

CEPCRM is the project for enhancement of PICRC's monitoring capacity, so that MPA is set and managed adequately in Palau and collaboration with surrounding nations and regions is strengthened

(1) Overall Goal

- The technical capacity of Palau International Coral Reef Center (PICRC) is utilized in five Micronesia Challenge (MC) Jurisdictions.

(2) Project Purpose

- The technical capacity of PICRC is enhanced in monitoring required for management of Marine Protected Area (MPA).

(3) Outputs

1. The system to support the monitoring on MPA is developed.
2. The partnership is enhanced between PICRC and international initiatives, five MC Jurisdictions, related organizations and research institutions.

(4) Inputs(as of Dec.2011)

(Japanese side)

- long-term experts:3
- short-term experts:2
- training in Japan;4 trainees (training in Japan)
- Equipment: 124,950.54 US dollars (USD) for Vehicle, Monitoring equipment, Aquarium spare parts, GIS and database system devices, etc.
- Operational Costs: 430,773.99 US dollars (USD) (in July 2009-December 2011)
- participation to conferences/workshops

(Palauan side)

- Counterparts: Total number of assigned counterparts is 25(current counterparts : 16)
- Facilities and Equipment: Land, buildings, facilities, and room space necessary for the Project
- Administration and operational costs for the Project: 43,685 USD. The following portions are the costs for utilities, fuel (vehicles), and supplies for project implementation
 - 30% of the costs used by research and education departments
 - 10% of the costs used by administration, engineering, and aquarium departments

2. Members of Evaluation Study Team

Members	Leader:	Kazunobu SUZUKI (Mr.) Advisor, Forestry and Nature Conservation Division 1, Global Environment Department, JICA
	Coral Reef Conservation:	Tadashi KIMURA (Mr.) Technical Advisory Committee, Global Environment Department, JICA
	Nature Conservation Policy:	Naoki AMAKO (Mr.) Assistant Director, Biodiversity Policy Division, Nature Conservation Bureau, Ministry of the Environment

	Cooperation Planning:	Hiroyuki MIYAZAKI (Mr.) Forestry and Nature Conservation Division 1, Global Environment Department, JICA	
	Evaluation Analysis:	Kenichi MACHIDA (Mr.) Consultant, Kaihatsu Management Consulting, Inc.	
Duration	From 23 January to 2 February 2012	Type	Terminal evaluation
3. Outline of Results of Evaluation Study			
3-1 Achievements of Outputs			
3-1-1 Project Purpose: The technical capacity of PICRC is enhanced in monitoring required for management of Marine Protected Area (MPA).			
Objective Verifiable Indicators: The monitoring is implemented based on protocols developed by PICRC at 2 MPAs of Palau. The institutional role of the PICRC in MPA monitoring is clarified			
Project Purpose will be accomplished. The MPA monitoring has been implemented at the four selected sites in line with the draft monitoring protocol. As the institutional role of PICRC in MPA monitoring is clearly stated in the draft monitoring protocol, the role is to be officially confirmed upon the approval by the Minister of Natural Resources, Environment & Tourism (NRET) in the near future.			
3-1-2 Output 1: The system to support the monitoring on MPA is developed.			
Objective Verifiable Indicators: Information related to management and conservation of MPA is updated. The monitoring protocols are approved as official monitoring protocols by the Ministry of Natural Resources, Environment and Tourism. Output 1 will be accomplished.The monitoring data of the selected four MPAs and their control sites have been collected in PICRC, and the database has been updated. Moreover, the monitoring protocols have been drafted and are to be submitted to the Minister of NRET for official approval.			
3-1-3 Output 2: The partnership is enhanced between PICRC and international initiatives, five MC Jurisdictions, related organizations and research institutions.			
Objective Verifiable Indicators: PICRC makes 5 presentations at the conferences and workshops of relevant international frameworks and related organization or research institutions by the end of the Project. PICRC produces 20 different publications or announcements through media by the end of the Project. The seminars and/or workshops on MPA monitoring for five MC Jurisdictions are conducted by PICRC 3 times by the end of the Project.			
Output 2 is accomplished. The project has sent participants to ten relevant international conferences			

or workshops, where they have given a presentation at each occasion. Newspapers published in Palau have reported on the project 21 times. The project has conducted a workshop on MPA monitoring and database building in FSM and RMI a total of four times, and a workshop for MC focusing on MPA monitoring in February 2010. As an example of a partnership between PICRC and other organizations, PICRC has been working with the South Pacific Committee (SPC) to modify and improve the MPA database. The relationship between the two organizations was initiated at one of the conferences participated in, the Pacific Regional Conference on Marine Managed Areas (November 2009).

3-2 Evaluation by Five Criteria

3-2-1 Relevance

Relevance of the project is regarded as very high. The project purpose and overall goal are aligned with relevant policies, laws, and plans in Japan and Palau. The four target MPAs were appropriately selected based on several criteria such as the characteristics of MPAs, capacity of state governments, etc. The livelihood of communities near the MPAs is closely related to marine resources, so their needs are consistent with the project. Moreover, the uniqueness of Japan's ODA was effective for emphasizing self-reliant effort, leadership and ownership by recipients, as called for by Japan's ODA, in this project.

3-2-2 Effectiveness

Effectiveness of the project is judged as high. The project purpose is likely to be attained as described in 3-1-1 Project Purpose. The two outputs have contributed to the achievement of the project purpose. Through the achievement of output 1, Palauan counterparts have monitored the four MPAs and drafted the monitoring protocol. These directly enhanced PICRC's technical capacity for MPA monitoring. As a result of output 2, Palauan counterparts have participated in international conferences and workshops to present the project and discuss the MPA monitoring. These experiences have facilitated PICRC's efforts to enrich the knowledge of MPA monitoring in various countries and network with related organizations domestically and internationally (Evaluation team think there are shortcoming in these indicators, so collaboration with relevant bodies is used as supplemental indicator).

However, the important assumption for the project purpose that "PICRC personnel assigned for monitoring is not decreased drastically" was not fulfilled throughout the project period. At the beginning of the Project, There is a vacant post on the Palauan side. Several key Palauan counterparts, including the head of the research department, CEO, and two researchers, left PICRC and replacements were often not found promptly, impeding the progress of the project.

3-2-3 Efficiency

Efficiency of the project is estimated as moderately successful. Almost all inputs were appropriately provided for conducting the activities. The activities have been implemented nearly on schedule, and two outputs have been achieved in line with the plan, as described in 3-1-2 and 3-1-3. The monitoring

protocol, one of the major outputs, has been drafted reflecting the results of practices in the field in Palau, FSM, and RMI, so that the protocol is feasible and applicable to the MC jurisdictions. The cost-effectiveness of the project was enhanced by replacing Japanese short-term experts and training in Japan with local and third-party experts, and by utilizing human and physical resources in external organizations such as TNC and PCS.

However, the pre-condition that “The governing structure of PICRC is stably maintained” and as mentioned in 3-2-2 an important assumption for the project purpose were not met, and this affected the smooth project implementation, resulting in a lowering of the efficiency. The salary of all PICRC staff was decreased by 15% for about seven months in 2011 due to a reduction² of government funding to PICRC. This measure affected the motivation and lowered the productivity of the staff during the period. In addition, delays in the arrangements for training in Japan also lowered the project efficiency because it was quite useful training that could have made the project more efficient earlier.

3-2-4 Impact

Impacts from the project are regarded as high based on the following evaluations.

(1) Overall Goal

The overall goal is likely to be achieved in the future, centering on FSM and RMI. Relating to Objective Verification Indicators, Monitoring protocols developed by the project are expected to be utilized for the management of MPAs in FSM and RMI, which are independent countries in the MC jurisdictions. A database on MPA monitoring has been established in PICRC, and MPA monitoring data from the MC jurisdictions will likely be collected in the database. During the course of these processes, PICRC will be requested to provide technical assistance to the MC jurisdictions. All of these expected activities for the MC jurisdictions are to be implemented by the Micronesian Conservation Trust Fund (MCTF), and the fund will become available once each MC jurisdiction provides the designated amount of contribution to the MCTF. The contributions have started to come in and are expected to be completed soon.

(2) Other Impacts

Apart from the overall goal, several other positive impacts are seen, and no negative impacts are projected. First, “Reef Talk,” a project newsletter, has been up-scaled to become the newsletter for PICRC. Second, a guideline for the PAN technical committee will be prepared referring to the monitoring protocol, including the role of PICRC, once it is officially approved by MNRET. Third, an interest of non-targeted state governments in the projects MPA monitoring has been enhanced. Fourth, the project strengthened the conservation consortium (CO)³ and the network among the members by providing CO with issues for discussion, including the draft monitoring protocol. Fifth, an MC Workshop organized by the project has provided impetus to the MC and brought MC’s attention to monitoring.

² From \$450,000 (Oct.2009-Nov.2010) to \$372,000 (Oct.2010-Nov.2011)

³ The consortium is an informal but exclusive platform in which all parties concerned with environment issues in Palau meet and discuss the issues.

3-2-5 Sustainability

Sustainability of the project is regarded as moderate based on the following evaluations

(1) Political, Institutional and Legal Aspects

As mentioned earlier in 3-2-1, it is certain that the conservation of marine resources and environment will remain as a prioritized national agenda in Palau. The institutional groundwork for PICRC to continue to support MPA monitoring will be confirmed once the monitoring protocol is officially approved. However, one concern in the PICRC Act is that it states that PICRC should be self-sufficient, even though it is not feasible in reality.

(2) Organizational Aspects

PICRC has been organizationally strengthened through the implementation of the project. However, frequent turnover of the staff and difficulty in recruiting qualified replacements are structural risk factors for PICRC that could hamper its sustainability. Moreover, coral reef monitoring and MPA monitoring are not specifically described in PICRC's current 5-year strategic plan. This will not help facilitating PICRC's paying attention to continuous support to MPA monitoring.

(3) Financial Aspects

The sources of PICRC's funding consist of government budget, grants for research projects, donations, and income from the aquarium and shop. The total amount of the funding is generally stable. Financial resources allowing PICRC to assist MPA management and monitoring are the PAN fund (PANF) and the MCTF fund for domestic and international activities respectively. Both funds will be available for government organizations in Palau and the MC jurisdictions responsible for their MPAs, as well as related parties such as PICRC. But process of the protocol's approval and fund development are not ended, so the availability lacks detail or specifics yet. It is important for PICRC to continue discussion with relative organizations.

(4) Technical aspects

Palauan counterparts in PICRC now have enough skills and knowledge to continue the project activities. Moreover, as described in 3-2-3 Efficiency, the monitoring protocol has been drafted quite appropriately from a technical standpoint. However, high-turnover seems to be a risk of sustainability, as the organizational capacity and institutions of PICRC have not sufficiently developed in order to accumulate expertise and knowledge. The state governments that have jurisdiction over the four MPAs, as well as many states of FSM and RMI, need PICRC's technical support to conduct MPA monitoring and analyze the data.

3-3 Promoting Factors

3-3-1 Factors concerning to Planning

Nothing special

3-3-2 Factors concerning to Implementation

(1) Communication

The project has improved the communication among project members from both the Japanese and the Palauan sides as well as the staff of PICRC. Specifically, the project introduced biweekly project meetings, weekly directors' meetings and PICRC-wide staff meetings that aim at monitoring the progress of the project, sharing information, discussing issues, and building consensus. One of the Palauan counterparts initiated internal meetings in his department after being stimulated by what he had learned on management and communication during the training in Japan.

(2) Ownership

In order to nurture the Palauan ownership and strengthen the sustainability of the project, the Japanese experts have paid careful attention to motivating and facilitating the Palauan counterparts to implement the project proactively. For example, often acting in a supporting role, the Japanese experts have requested the Palauan counterparts to give presentations at conferences or workshops. This has enhanced, as expected, Palauan counterparts' ownership of the project, although it has entailed the risk of creating an impression that the contribution of the Japanese side is less visible.

(3) Collaboration with Organizations concerned

The project has actively worked with many related organizations in various ways. As MNRET has limited capacity, related organizations such as TNC, PCS, etc. fulfill an indispensable function in marine environmental conservation in Palau and the MC jurisdictions. Collaboration with those organizations is necessary and important for the project. The collaboration has enriched the project activities, improved efficiency, and will contribute to sustainability.

3-4 Impeding Factors

3-4-1 Factors concerning to Planning

Nothing special

3-4-2 Factors concerning to Implementation

As described in 3-2-3 Efficiency, the turnover of key counterparts and the financial crisis in PICRC have affected the project implementation. These problems have meant that the pre-condition and important assumption for the project purpose were not fulfilled.

3-5 Conclusion

The project will continue to be appropriate from the viewpoints of priority, needs and means for addressing the issue, so relevance is regarded as very high. The project purpose is likely to be achieved through creating the two outputs, so effectiveness is judged as high. While efficiency is moderate because the project has been creating quality outputs by appropriate inputs and remarkable efforts for activities focusing on such aspects as facilitating communication, nurturing a sense of ownership, and collaborating with other organizations in project implementation, yet the project was affected by the unfulfilled precondition and important assumption for the project purpose. Impact appears to be high, as several kinds of impacts are expected to be seen including the achievement of the overall goal. Based on good prospects for accessibility to the PANF and the MCTF, achievement

of the overall goal and financial sustainability of the project activities seem to be feasible, although the high turnover of PICRC staff is a concern for technical sustainability. As a result, sustainability is estimated as moderate.

3-6 Recommendations

3-6-1 Recommendations for the remaining period of the Project (mainly for the project or PICRC)

- (1) It is strongly recommended that the Project publicize its outputs/results and future direction of the MPA management by the PAN mechanism to the public to encourage government bodies such as MNRET to facilitate the process of authorization and recognize the responsibilities of PICRC for implementing the PAN mechanism.
- (2) It is recommended that the Project organize national/local workshops to promote a better understanding of the protocol by the local communities and state governments in non-targeted states, so that the utilization of the protocol will be facilitated.
- (3) It is recommended that the Project/PICRC request the MC to find appropriate mechanisms for supporting FSM and RMI in conducting national monitoring with the assistance of PICRC.
- (4) It is recommended that the Project prepare the summary of the Project products in English to be proactively used not only for public relations purposes but also as a case study for international communities of scientists and practitioners.
- (5) It is recommended that the project make a collaboration plan toward achievement of the overall goal in close consultation and cooperation with its partners (governments, foreign aid agencies and NGOs).

3-6-2 Recommendations for the post-project period (mainly for PICRC)

- (1) It is recommended that PICRC regard MPA monitoring as an official activity in its next 5-year strategy plan in order to implement the activity based on the monitoring protocol under the official/governmental program supporting PAN mechanisms continuously.
- (2) It is recommended that PICRC lead the Conservation Consortium so that PICRC can improve its capacity for MPA management as a scientific advisory institution for the government. It is also recommended that the consortium consider a national policy on environmental conservation with PICRC playing a key role in the consortium.
- (3) It is recommended that PICRC further explore possible applications of the protocol for regular MPA monitoring in states outside the scope of the Project and the MC jurisdictions.
- (4) It is recommended that PICRC continue to maintain and strengthen its network with central and state government agencies and NGOs such as TNC and PCS toward the achievement of the overall goal.
- (5) From a long-term point of view, the Project outputs/results should be verified and applied for future integrated environmental monitoring in combination with other data sources (e.g., terrestrial and socioeconomic data). Therefore, it is recommended that the Project outputs/results be shared with the government and semi-government organizations concerned, including the board of the PANF,
- (6) The Project has developed publicity materials such as a newsletter, leaflets, and publications, and intensively implemented public relations activities through the mass media and seminars. This contributes to improving the visibility of PICRC both in Palau and international arenas. Thus, it is

recommended that PICRC continue these public relations activities even after the termination of the Project.

- (7) It is recommended that PICRC develop a clear management strategy and request National Congress to amend the current PICRC Act (RPPL 5-17), taking financial, institutional and human resource aspects into consideration, particularly the operation of the Aquarium to ensure financial sustainability.
- (8) It is recommended that PICRC encourage the PANF, National Congress, MNRET and state governments to fully recognize PICRC's function and role and to take necessary measures to support its activities.
- (9) It is recommended that PICRC organize regular meetings with the participation of various stakeholders such as the central government, state governments, JICA Palau, relevant partners, including foreign aid agencies and NGOs, in order to utilize the Project outputs/results effectively as well as to maintain the partnership with them. At the same time, future possible occasions to enhance partnerships with the MC jurisdictions to contribute to the MC should be promoted.

3-7 Lessons Learned

(1) Although the institutional management of PICRC is not a part of the Project, technical achievement of the project is dependent on the sound institutional management. For long-term institutional sustainability, financial and administrative aspects, *inter alia* financial strategy planning and accounting staff allocation, should have been taken into consideration from the planning stage of the project.

(2) There are many unforeseeable and uncontrollable conditions for achievement of the overall goal and sustainability. For example, MCTF is a necessary scheme for PICRC to provide technical assistance to the MC jurisdictions, yet the fund has not been disbursed, mainly due to financial constraints on the MC jurisdictions. The Project design should be discussed and modified at appropriate times during the course of the Project to set a feasible and appropriate overall goal.

3-8 Follow-up situation

Nothing.

Holding workshops targeting the States officer is be discussing to utilize PICRC's the enhanced capacity for non-targeted states.

第1章 終了時評価調査の概要

1-1 評価団派遣の経緯と目的

本調査では、協力期間終了を2012年7月に控えた本プロジェクトについて、これまで実施してきた協力活動全般（プロジェクトの実績、実施プロセス、運営管理状況等）について、計画に照らし、その達成状況を整理・把握する。その結果に基づき、JICA 事業評価ガイドラインに則り、評価5項目（妥当性、有効性、効率性、インパクト、自立発展性）の観点からプロジェクトの評価を行う。評価結果を踏まえ、協力期間終了までに必要な活動方針等を検討するとともに、将来の類似プロジェクトの形成・実施に参考となる教訓・提言を得る。

1-2 調査団の構成と調査期間

(1) 調査団の構成

氏名	担当	所属
鈴木和信	総括/団長	JICA 地球環境部森林・自然環境グループ森林・自然環境保全第一課企画役
木村匡	サンゴ礁保全	JICA 地球環境部課題別支援委員会海洋保護区分科会委員 (財) 自然環境研究センター上席研究員
尼子直輝	自然保護政策	環境省自然環境計画局自然環境計画課サンゴ礁保全専門官
宮崎裕之	協力計画	JICA 地球環境部森林・自然環境グループ森林・自然環境保全第一課
町田賢一	評価分析	株式会社かいはつマネジメント・コンサルティング

(2) 調査期間

2012年1月23日から2月2日まで

1-3 対象プロジェクトの概要

1-3-1 協力の背景

大洋州では伝統的に国民生活と経済活動が自然環境に密着しており、環境保全と開発との調和が重要である。パラオ国では、サンゴ礁などの自然環境を利用した観光開発を経済的発展の主軸としている。しかし、近年サンゴ礁生態系は、天然林の農地への転換、破壊的な漁法や乱獲、急激な開発、気候変動等により、危機に晒されている。

我が国政府はパラオ国に日米コモン・アジェンダに基づき「パラオ国際サンゴ礁センター(PICRC)」をアジア・大洋州のサンゴ礁研究の拠点として無償資金協力(1998年～1999年、8.3億円)により建設した(2000年8月竣工、2001年1月開館)。PICRCの設立後、JICAは「国際サンゴ礁センター強化プロジェクト」(2002年～2008年)を実施し、PICRCの研究、啓蒙、教育機能を強化してきた。その終了時評価の際には、プロジェクトの終了後に実施すべき事項として、研究成果の政策(保護区設定・評価等)への反映と、PICRCのサンゴ礁モニタリング能力を地域のハブ機能としてさらに向上することが提言された。

一方で、ミクロネシア地域では、包括的な自然環境保全政策を目指した取り組みがおこなわれており、2006年には、5つの地域・国によりミクロネシアチャレンジ（MC）が宣言されている。また、パラオ国政府では国内各州が所掌している保護区の効果的な運用と申請、指定に係るシステムの構築を目的とした「パラオ保護区ネットワーク法（以下、PAN法）」を施行している。サンゴ礁に保全に結びつく海洋保護区(MPA)の重要性は、サンゴ礁保全の国際的枠組み（ICRI（International Coral Reef Initiative））や生物多様性条約等においても広く認識をされている。しかしながら、パラオ国における保護区ネットワークの効果的な推進に必要なモニタリング手順といったモニタリング体制等については未整備であり、PICRCがその役割を担うことが期待されたことから、パラオ国政府は2007年にMPAのモニタリングに係る技術協力を我が国に要請し、2008年11月から12月にかけて「パラオ国際サンゴ礁センター強化プロジェクトフェーズ2詳細計画策定調査」が実施された。これを踏まえて、JICA及びパラオ国政府は2009年5月26日にR/Dの署名をおこなった。

1-3-2 協力内容

(1) 案件名

サンゴ礁モニタリング能力向上プロジェクト

(Capacity Enhancement Project for Coral Reef Monitoring)

(2) 相手国実施機関

パラオ国際サンゴ礁センター（Palau International Coral Reef Center）

(3) 協力期間

2009年7月26日から2012年7月25日まで（3年間）

(4) 対象グループ

直接：パラオ国際サンゴ礁センター

間接：天然資源・環境・観光省、州政府、地域住民

(5) 上位目標

- ・ PICRCの技術的能力がMC参加国・地域において活用される。

(6) プロジェクト目標

- ・ 海洋保護区管理に必要なモニタリングに関して、PICRCの技術的能力が強化される。

(7) 成果(アウトプット)

(i) 海洋保護区のモニタリングを支援する体制が整備される。

(ii) 海洋保護区のモニタリングに関連する国際的イニシアティブやMC参加国・地域、関連機関・研究機関等との連携が強化される。

第2章 評価の方法

2-1 評価調査の手法

当評価調査は、以下の手法を用いて実施された。

- 既存報告書類のレビュー
- インタビュー調査
 - パラオ国際サンゴ礁センターのカウンターパート（理事長、所長、研究部長、教育部長）
 - 日本人専門家（チーフアドバイザー、業務調整）
 - Ngardmau 州の政府職員、環境保全委員会、住民
 - 国務省
 - 環境省保護区ネットワーク部
 - 保護区ネットワーク基金
 - パラオ保全協会
 - ネイチャーコンサーバンシー（米国 NGO）
 - ミクロネシアチャレンジ事務局

2-2 主な調査項目と情報・データ収集方法

プロジェクトの実績および実施プロセスについては、添付の合同評価報告書の Annex3 に記載の「成果達成状況調査表(Evaluation Grid 1: Project Performance Record)」に沿って情報・データを収集した。5項目評価については、同じく同報告書の Annex 3 に記載の「評価グリッド(Evaluation Grid 2: 5 evaluation criteria)」に沿って情報・データを収集した。

第3章 プロジェクトの実績

3-1 投入の実績

3-1-1 日本側

日本側の投入にかかる計画と実績を下表のとおり取りまとめた。詳細は添付の合同評価報告書の Annex 4 を参照。

(1) 専門家派遣、本邦研修

これまでの期間、長期専門家は予定どおり派遣されている。チーフアドバイザーに交代はなかったが、業務調整は3年間において2度交代（2010年10月、2012年3月（予定））することとなる。

短期専門家と本邦研修の一部は、現地の人的資源等の状況を考慮して現地および第三国専門家の投入によって置き換えられた。具体的には、IT/データベース短期専門家派遣とGIS/IT本邦研修を実施する代わりに、パラオ人の専門家を現地業務費によって投入した。

また当初計画に含まれていなかった追加の投入として、社会経済モニタリングの第三国専門家（ハワイ大所属（派遣当時））とワークショップファシリテーションの本邦短期専門家が派遣され、また水族館維持管理にかかる本邦研修¹が実施された。

(2) 機材供与

下表のとおり機材供与は予定どおり実施され、これまでのところ総額は124,950.54米ドルとなっている。

(3) プロジェクト活動費

パラオ国内外における海洋保護区（以下、MPA）モニタリングの実施、水族館の補修、国際会議・ワークショップへの参加、MCを始めとしたワークショップの開催、現地専門家の雇用などを目的として、これまで総額430,773.99米ドルが支出されている。

表-1:日本側による投入

項目	計画	実績
専門家派遣	1. 長期専門家: 1.1 チーフアドバイザー 1.2 業務調整 2. 短期専門家: 2.1 モニタリング計画 2.2 海洋保護区管理	1. 長期専門家: 1.1 チーフアドバイザー 1.2 業務調整 2. 短期専門家: 2.1 海洋保護区管理/モニタリング 2.2 ワorkshopファシリテーション

¹研修員の航空運賃はプロジェクトが負担（プロジェクト活動費）し、他の費用は福島水族館が負担した。

	2.3 IT/データベース	3. 現地/第三国専門家 3.1 社会経済モニタリング 3.2 データベース構築
機材供与	1. 車両 2. モニタリング機材 3. 水族館に関する資機材 4. GIS とデータベース構築に関する資機材 5. その他プロジェクトに必要な機材類	計画のとおり \$ 124,950.54
本邦研修	1. サンゴ礁保全 2. 海洋保護区管理 3. サンゴ礁モニタリング 4. GIS/IT	1. 海洋保護区管理のためのサンゴ礁および周辺の生態系モニタリング (2名) 2. 水族館維持管理 3. サンゴ礁保全
プロジェクト活動費	—	\$ 430,773.99

3-1-2 相手国側

パラオ側の投入にかかる予定と実績を下表のとおり取りまとめた。詳細は添付の合同評価報告書の Annex 5 を参照。

(1) カウンターパート配置

下図および下表のとおり、現在 16 名延べ 25 名のパラオ側カウンターパートが配置されているが、開始当初に空席となっていたポストがあったこと、核となるカウンターパートがしばしば退職し、後任職員が速やかに配置されないこともあった。特に、研究部および所属する職員は本プロジェクトの核となるが、プロジェクト開始後 1 ヶ月目に研究部長が退職した。後任となる現部長は、プロジェクトマネージャーである所長が約 7 ヶ月にわたり空席であったため、やむなくその期間兼務した。また、2 年以上にわたりプロジェクト活動の中核を担った 2 名の研究員が退職し、その内 1 名の後任職員はまだ採用されていない。

(2) 施設設備

下表のとおり当初計画どおりの施設設備が提供されている。

(3) プロジェクト運営・管理費

下表のとおり PICRC の支出の内、43,685 米ドルの運営・管理費が本プロジェクトの実施分として計上された。

List of Counterpart Personnel

2012/1/26

No	Name	Title in PICRC	Assigned Period	2009	2010	2011	2012	Remarks
				7 8 9 ***	1 2 3 4 5 6 7 8 9 ***	1 2 3 4 5 6 7 8 9 ***	1 2 3 4 5 6 7	
1	Dr. Patrick U. Tellei	Board of Directors, PICRC	7/2009-to date	██████████	██████████	██████████		Project Director
2	Fabian B. Iyar	Chief Executive Officer	7/2009-4/2011	██████████	██████████			Project Manager
3	Sandra S. Pierantozzi	Chief Executive Officer	10/2011-to date			██████████		Project Manager
4	Laurinda Mariur	Head, Administration Department	7/2009-12/2009	██████████				
5	Mary Yangilmau	Head, Administration Department	11/2009-to date		██████████	██████████		
6	Steven Victor	Researcher / Head, Research Department	7/2009-7/2009	██████████				
7	Yimnang Golbuu	Chief Researcher / Head, Research Department	7/2009-to date	██████████	██████████	██████████		Project Manager Apr.-Sep 2011
8	Noelle Wenty Oldiais	Researcher, Research Department	7/2009-9/2011	██████████	██████████			
9	Lukes Isechal	Researcher, Research Department	7/2009-to date	██████████	██████████	██████████		
10	Jacques Idechong	Researcher, Research Department	12/2009-12/2011		██████████	██████████		
11	Shirley Dirreblekuu Koshiba	Researcher, Research Department	12/2011-to date				██████████	
12	Geory Mereb	Research Assistant, Research Department	7/2009-to date	██████████	██████████	██████████		
13	Arius Merep	Research Assistant, Research Department	7/2009-to date	██████████	██████████	██████████		
14	Jay Andrew	Research Assistant, Research Department	7/2009-to date	██████████	██████████	██████████		
15	Dawnette Oisudong	Research Assistant, Research Department	7/2009-to date	██████████	██████████	██████████		
16	John Wong	Head, Engineering Department	7/2009-to date	██████████	██████████	██████████		
17	Antonio Raquino	Technical Assistant, Engineering Department	7/2009-to date	██████████	██████████	██████████		
18	Jeff Michaels	Landscaper, Engineering Department	7/2009-3/2011	██████████	██████████			
19	Masao Udui	Boat Safety Officer, Engineering Department	7/2009-8/2011	██████████	██████████			
20	Kambes Kesolei	Head, Aquarium Department	7/2009-8/2011	██████████	██████████			
21	Jay Oruetamor	Aquarist, Aquarium Department	7/2009-to date	██████████	██████████	██████████		
22	Singeo Franz	Aquarist, Aquarium Department	7/2009-9/2009	██████████				
23	Shane Moy Shmull	Aquarist, Aquarium Department	10/2009-to date		██████████	██████████		
24	Carol Emaurois	Head, Education and Public Relations Department	7/2009-to date	██████████	██████████	██████████		
25	Ines Kintoki	Assistant Education Officer, Education and Public Relations Department	7/2009-to date	██████████	██████████	██████████		

Note

* Total accumulation number of counterpart personnel

25

* Number of currently working counterpart personnel

16

図－１：パラオ側カウンターパート配置

表－２：パラオ側による投入

項目	計画	実績
カウンターパート配置	1. 所長 2. 管理部職員 3. 研究員 4. 技師 5. 水族館管理者 6. 教育部職員	1. 所長 2. 管理部長（1名） 3. 研究員（3名） 4. 技師（2名） 5. 水族館管理者（3名） 6. 教育部職員（2名） 7. 管理部職員 カウンターパート配置： ➤ 延べ25名 ➤ 現在16名

施設と機材	<ol style="list-style-type: none"> 1. プロジェクトに必要な土地、建物、設備 2. 資機材の導入と保守に必要なインフラ設備・部屋 3. JICA 専門家の執務室・設備 4. その他必要性が合意された設備 	計画のとおり
プロジェクト活動費・事務費	プロジェクト活動費・事務費	計画のとおり \$43,685 プロジェクト実施に必要なカウンターパート給与、車両の燃料費、消耗品費における下記の割合 ▶ 費用の 30% : 研究部、教育部 ▶ 費用の 10% : 管理部、機械部、水族館

3-2 活動の実施状況

計画されていた活動は概ね予定どおり実施されている。しかし、添付の合同評価報告書の Annex 11 のとおり、下表に示す 4 つの活動については進捗が遅延しているか、現時点においては一部の内容しか実施されていない。

表-3 : 遅延している活動

関連する成果	遅延している活動	遅延の理由	完了予定
成果 1	1.6 これらの活動に基づきモニタリングの手順書を作成する	3-1-2(1)のとおりカウンターパートの退職と後任職員の配置の遅れ、または他の業務により十分な時間を確保できなかった。	2012年2月
成果 2	f. 1)モニタリング結果に基づく MPA の現状、2)PICRC のモニタリング能力、3)モニタリング手順書にかかるパンフレットを関係機関に提供する	同上	2012年3月
	g.FSM と RMI におけるモニタリングとデータベースのワークショップにかかる報告書を作成・発行する	同上	2012年2月上旬
	i.マルチメディア研修の実施	適切な外部講師を確保することが容易ではなかった。	2012年2月

3-3 成果の達成状況

成果の達成状況を以下に取りまとめた。

(1) 成果1

指標1.1は既に達成され、指標1.2は近々達成の見込みであるため、若干の遅れがあるものの成果1も産出される見込みである。

成果 1: 海洋保護区のモニタリングを支援する体制が整備される。	
指標: 1.1 海洋保護区の管理・保全に状況に関する情報が更新される。 1.2 モニタリング手順書がパラオ国天然資源・環境・観光省により正式に承認される。	指標の入手手段: 1.1 PICRC の文書 1.2 天然資源・環境・観光省の文書

指標 1.1 に関しては、本プロジェクトにおいて4カ所選定されたMPAとその比較対象地域におけるモニタリングデータはPICRCに蓄積され、そのデータベースは逐次更新されている。指標1.2については、モニタリング手順書案は既に作成され、現在コンサベーションコンソーシアムにおいて検討中である。同コンソーシアムからのコメントを踏まえて最終化の後に、正式な承認を得るため天然資源・環境および観光大臣（以後、環境大臣）に提出されることになっている。なお、同大臣にはモニタリング手順書については説明済みで、この手順書を支持する意向を確認している。

(2) 成果 2

成果 2 にかかる指標は全て達成されているため、成果 2 は既に産出されたと考えられる。

成果 2: 海洋保護区のモニタリングに関連する国際的イニシアティブや MC 参加国・地域、関連機関・研究機関等との連携が強化される。	
指標: 2.1 国際的枠組みおよび関係機関・研究機関の会議・ワークショップなどで、PICRC が 5 件以上の発表を行う。 2.2 PICRC が 20 回以上メディアに取り上げられたり、メディアをとおしてメッセージを発信する。 2.3 PICRC が海洋保護区モニタリングに関するセミナー／ワークショップを MC 参加国・地域に対して 3 回以上実施する。	指標の入手手段: 2.1 PICRC の文書 2.2 MC 参加国・地域、関係する団体、研究機関のウェブサイトや発行文書 2.3 PICRC の文書
補足指標: 2.4 PICRC と国際的イニシアティブや MC 参加国・地域、関連機関・研究機関等との連携が産まれる。	指標の入手手段: 2.4 左記連携

指標 2.1 については、添付の合同評価報告書の Annex6 のとおり、本プロジェクトは関係する 10 の国際会議・ワークショップに参加者を派遣し、本プロジェクトに関する発表を行った。

指標 2.2 については、添付の合同評価報告書の Annex7 のとおり、本プロジェクトに関する記事がパラオで発行されている新聞に 21 回掲載された。

指標 2.3 については、添付の合同評価報告書の Annex8 のとおり、本プロジェクトはミクロネシア連邦 (FSM) およびマーシャル諸島共和国 (RMI) において、MPA モニタリングとデータベースに関するワークショップを計 4 回実施した。加えて、MPA モニタリングに焦点を当てた MC のワークショップを 2010 年 2 月に実施した。

なお上記の指標 2.1~2.3 は、成果 2 を産出するための活動実績を計る上では有効であるが、成果 2 で目指している「PICRC と関係機関との連携強化」を確認することは出来ない。この点については、上表に示す補足指標 2.4 を設け、以下のとおり確認した。

PICRC と関係機関との協力の例としては、南太平洋委員会 (South Pacific Committee : SPC) による PICRC の MPA データベースの構築・改善における支援が挙げられる。両機関の協働は、本プロジェクトが参加者を派遣した「海洋管理区に関する太平洋地域会議 (Pacific Regional Conference on Marine managed Area (2009 年 11 月))」が契機となり、その後 SPC が MC のワークショップにオブザーバーとして参加することをとおして深められた。SPC は 2012 年 2 月に開催される MC ワークショップにも参加予定で、その際データベースに関して協働することとなっている。

3-4 プロジェクト目標の達成状況

指標 1 と補足指標 3 は達成され、指標 2 も近々達成される見込みであるため、プロジェクト目標も達成される見込みである。

プロジェクト目標: 海洋保護区管理に必要なモニタリングに関して、PICRC の技術的能力が強化される。	
指標: 1. PICRC によって開発されたモニタリング手順書に基づき、パラオの海洋保護区 2 カ所においてモニタリングが実施される。 2. 海洋保護区モニタリングにおける PICRC の制度的な役割が明確になる。	指標の入手手段: 1. PICRC およびパラオ政府の文書 2. パラオ政府の文書
補足指標: 3. PICRC の海洋保護区モニタリングにかかる能力が向上する。	指標の入手手段: 3. 国際会議において発表したり、学術誌に投稿した海洋保護区(MPA)モニタリングに関する資料

指標 1 については、添付の合同評価報告書の Annex9 のとおり、現在 4 カ所の MPA におけるモニタリングをそれぞれの MPA が位置する州政府と協働しつつ、継続して実施している。

指標 2 は近々達成されると思われる。現在最終化の段階を迎えているモニタリング手順書案には、PICRC が MPA モニタリングにおいて果たすべき役割として、州政府が十分な能力を醸成す

るまで、州政府と協力してモニタリングを行うことが強く推奨されている。具体的には、モニタリングポイントの選定、データの入力、保存、分析について、州政府は PICRC の能力を活用することが可能とされている。従って、同手順書がパラオ政府に承認されれば、指標 2 は達成されたものと判断される。3-3(1)成果 1 で述べたとおり、同手順書は近々環境大臣に承認される見通しである。

なお、指標 1 はプロジェクト目標を達成する上で必要な活動が実施されたかどうかを計る目安にはなるが、「PICRC の技術的能力」そのものの変化を捉えることは出来ない。また指標 2 については、モニタリング手順書を作成するプロセスにおいて「PICRC の技術的能力」が向上したと考えられるものの、「PICRC の制度的な役割」に重きが置かれ、やはりプロジェクト目標の達成を明確に確認する上で妥当な指標とは言い難い。従って、上表に示した補足指標 3 により、「PICRC の技術的能力の強化」を以下のとおり確認した。

本プロジェクトでは、3-3(2)成果 2 で述べたとおり、多数の国際会議・ワークショップに参加者を派遣し、発表を行ってきた。中にはパラオ側カウンターパートによる MPA モニタリングの結果発表も含まれており、これはカウンターパートの技術力向上の証といえる。発表資料は日本人専門家による監修を受けつつパラオ側カウンターパートが作成するが、こうした機会に発表する資料を作成するためには、モニタリングにかかる総合的な能力が一定レベルに達している必要がある。従来このような発表をする能力は無く、本プロジェクトをとおしてモニタリング計画、実施、データ整理、蓄積（データベース構築）、分析、資料の作成を行う能力が向上したと判断される。

第4章 評価結果

4-1 評価5項目による評価

4-1-1 妥当性

プロジェクトの妥当性は極めて高い。プロジェクト目標および上位目標は関連する日本およびパラオの政策、法律、計画に沿っている。モニタリングの対象地は妥当な基準によって選定され、周辺住民のニーズもプロジェクトと整合している。加えて、我が国の ODA における特徴が、プロジェクトにおいて有効であったことが示された。

(1) 政策との整合性

プロジェクト目標および上位目標は関連する日本およびパラオの政策、法律、計画に沿っている。パラオ側については、①保護区ネットワーク (PAN) 法 (RPPL 6-39)、②MC、③パラオ国家マスター開発計画 2020、④米国との自由連合協定第 6 条 161 項および 162 項、⑤PICRC 設置法 (RPPL 5-17) は全て、本プロジェクトの制度的な妥当性を担保している。①～④は、海洋環境とサンゴ礁の保全は、パラオの国家的優先課題の一つであることを定めている。⑤は、PICRC が海洋研究・研修・教育活動における地域拠点となること、加えて海洋環境の管理・利用・保全に係る支援を行い、観光スポットとしての役割を担うべきと定めている。この他、MPA が位置する州政府では、それぞれの MPA における海洋資源の保全を規定した条例を制定している。

日本側においては、第 4 および 5 回太平洋・島サミットでの共同宣言において、持続可能な開発と自然保護区の管理の重要性が指摘された。我が国の対パラオ援助政策、戦略、計画において環境保全は最優先の課題である。また第三次生物多様性国家戦略 (2007) では、アジア・太平洋地域における MPA のネットワーク化を目標としている。

(2) 対象地域の選定と住民のニーズ

対象地域は適切に選定され、地域住民のニーズもプロジェクトに合致している。本プロジェクトにおけるモニタリング対象地域は、パラオ全土に 34 ある MPA から 4 カ所が選定された。選定条件は、各 MPA の特性やモニタリングを行う州政府の能力などであり、妥当な内容であった。対象 MPA の数は、環境の多様性とプロジェクトにかかる業務量を勘案し、4 カ所が適切と判断される。選定された 4 カ所の MPA 周辺に住む住民は、現金収入源や食料として海洋資源を日常的に利用しており、その持続的な活用のためには資源の保全が重要であることも認識している。

(3) 開発パートナーとしての日本の優位性

我が国はトップドナー国の一つとして、技術協力において豊富な経験を蓄積している。我が国の開発援助において特に留意される側面の一つに、自助努力支援やリーダーシップとオーナーシップの醸成が挙げられる。これらは、自立発展性において不可欠な側面でもある。本プロジェクトの実施においても、これらの点が重視された結果、各種会議での発表、他機関との連携と協働において、パラオ側カウンターパートの強いリーダーシップとオーナーシップを確認することができた。

4-1-2 有効性

本プロジェクトの有効性は高い。プロジェクト目標は達成される見込みであり、2つの成果もその達成に貢献している。

3-4で述べたとおり、プロジェクト目標は達成される見込みである。また、成果1の産出をとおして、パラオ側カウンターパートは4つのMPAでモニタリングを行い、モニタリング手順書案を作成した。これらによってMPAモニタリングにかかるPICRCの技術的能力が向上した。成果2の産出をとおして、パラオ側カウンターパートは国際会議やワークショップに参加して本プロジェクト活動について発表したり、MPAモニタリングについて他の参加者と協議した。これらによって、様々な国のMPAモニタリングにかかる知識を深め、パラオ国内外の関係機関との関係を構築し強化した。このように、2つの成果もプロジェクト目標の達成に貢献していることが明らかである。

しかし、プロジェクト目標達成のための外部条件「モニタリングを担当するPICRCの職員が大きく減らない」が満たされなかった点は有効性を減じた。特に、3-1-2(1)で述べたとおり、前所長、前研究部長、および2名の研究員が退職し、後任職員の採用にも手間取った。これらは、指標2の達成を遅らせている。4-2で後述するとおり、プロジェクトは活動を工夫することにより、進捗の遅延を最低限に留めている。

4-1-3 効率性

本プロジェクトの効率性は中程度である。投入と活動はほぼ適切に実施され、所期の成果も産出されつつある。費用対効果を高める工夫もあったものの、前提条件と外部条件が満たされなかったことによる影響は、効率性を減じた。

(1) 成果の産出

ほとんどの投入は活動実施のために適切に実施され、活動は概ねスケジュールどおり実施され、3-3で述べたとおり2つの成果は予定どおり産出されつつある。主な成果の一つであるモニタリング手順書は、パラオ、FSM、RMIにおいて試行され、5つのMC参加国・地域において実施・適用可能な内容となっている。例えば、モニタリング項目は最低限の内容を網羅するに留めているが、科学的に全て妥当なものとなっている。

(2) 費用対効果

効率性を改善させた点として、まず3-1-1に示したとおり日本人短期専門家派遣および本邦研修を、現地および第三国の専門家の投入によって置き換えた点があげられる。これにより、コストを抑え、言葉の壁が無くなったことで理解が深まり、研修日程の変更などに臨機応変に対応出来たほか、自立発展性においても有用と思われる。

また、ネイチャーコンサーバンシー（TNC）やパラオ保全協会（PCS）といった外部機関の物的・人的なリソースを効率的に活用できたことも指摘される。具体的には、モニタリングを実施する際にPICRCのボートが使えない場合は、燃料やオペレータの日当などの実費のみでボートを両機関から借りることが出来たことや、MPAモニタリングを実施する際PCSが住民への働きかけや、社会経済モニタリングにおいて重要な役割を果たしたことが挙げられる。これらの協働は、

プロジェクトの実施コストを低め、成果の質を向上させる貢献をした。

(3) 阻害要因

前提条件「PICRC の管理体制が安定的に維持される」とプロジェクト目標達成のための外部条件が満たされなかった点（4-1-2にて上述）は、プロジェクトの円滑な実施を阻害し、効率性を減じた。前提条件への影響については、パラオ政府から PICRC に対する補助金が減額されたため、全職員の給与が 2011 年の 7 ヶ月間 15%削減された点あげられる。これにより職員のモチベーションと生産性が低下した。この他、本邦研修「サンゴ礁保全」において日本側の準備が遅延した点は、その研修が有益だっただけに効率性を低下させる一因となった。

4-1-4 インパクト

上位目標の達成を含め、多様な正のインパクトが確認または予見されるため、本プロジェクトのインパクトは高い。

(1) 上位目標の達成見込み

上位目標は主に FSM と RMI を対象として、将来的に達成される見込みがある。

なお、上位目標にある「PICRC の技術的能力」は、指標 1 に示される「モニタリング手順書」だけでは留まらない。また、上位目標の達成に向けては、MC 参加国・地域の実情を踏まえた技術支援の実施やデータベースの構築といった手段も有効と考えられることから、本プロジェクトにおいて実施された MC 参加国・地域に対する技術指導の継続や、プロジェクトで構築されたデータベースの地域的活用についても、補足指標として以下のとおり検討した。

上位目標: PICRC の技術的能力が MC 参加国・地域において活用される。	
指標: 1. PICRC によって開発されたモニタリング手順書が、5つの MC 参加国・地域における MPA 管理に活用される。	指標の入手手段: 1. MC 参加国・地域の文書
補足指標: 2. MC 参加国・地域が、PICRC に対し指導を求めたり、技術支援を受け入れる。 3. MC 参加国・地域に向けた MPA モニタリングの地域データベースが PICRC に設置される。	指標の入手手段: 2. 該当する記録 3. データベース

・指標 1 および 2

指標 1 と 2 は部分的にはあるが、将来的に達成される見込みがある。まず、5つの MC 参加国・地域内における、能力や政治・行政の独立性は様々である。FSM と RMI は他の MC 参加国・地域に比べ、キャパシティは乏しいが独立国である点が、北マリアナ諸島米国自治連邦区と米国グアム準州とは大きく異なる。FSM と RMI に対しては本プロジェクトにおいて延べ 4 回モニタリングとデータベース構築のワークショップを実施していること、加えてこれら 2 カ国には公的な MPA モニタリング手順書が無いことから、本プロジェクトで開発された手順書が活用される見込みは高い。ただし、これら 2 カ国が MPA モニタリングを実施したり、PICRC がそれを支援

する資金は、ミクロネシア保全信託基金（MCTF）の運用益から得られる。運用益の支出は2012年の3月から可能となるが、各参加国・地域はそれぞれ定められた拠出金を信託基金に提供することが、運用益の活用条件である。拠出金の提供は始まっており²、近い将来基金の活用が開始されることが見込まれる。

一方、北マリアナ諸島米国自治連邦区と米国グアム準州はその名の通り米国領の一部であり、米国の基準や規則に沿ったMPAモニタリングが実施される。また技術的および資金的なキャパシティにおいてもFSMとRMIとは大きく異なっている。従って、MPA管理に関し、PICRCの技術的支援を求める見込みは少ないと思われる。

・指標3

MC参加国・地域がMPAモニタリングを定期的実施するようになれば、域内データベースをPICRCに構築することは可能と思われる。PICRCには既にパラオ国内の4MPAにおけるモニタリングデータを集積したデータベースが構築されている。またアメリカ海洋大気圏局（NOAA）からの資金によりデータ管理者を雇用することになっており、継続的にデータベースを管理する体制も整いつつある。域内データベース構築のためには、まず2012年2月に本プロジェクトが開催するMCワークショップにおいて、本件についてMC参加国・地域内で合意を得る必要がある。

次に、本プロジェクトによって開発されたモニタリング手順書に沿ってモニタリングが実施されなくてはならない。MCTFが順調に運用され、支出される体制が整えば、近い将来MC参加国・地域のモニタリングデータがPICRCに蓄積されていくことは十分考えられる。

(2)他のインパクト

負のインパクトは確認されず、以下の正のインパクトが確認・予見された。

第1に、本プロジェクトのニューズレターとして発行したReef Talkが、PICRCのニューズレターに発展した。

第2に、本プロジェクトで開発したモニタリング手順書が環境省によって承認されれば、今後作成される予定のPAN技術委員会³のガイドラインに、その内容が反映される可能性がある。同手順書には、MPAモニタリングにおけるPICRCの役割や、その活動のための資金は環境税：Green Feeであることが望ましい旨が示されている。これらの点も同ガイドラインに含まれれば、PICRCのMPAモニタリングにおいて果たすべき役割が公的に一層明確になり、制度的自立性が強化されることとなる。

第3に、本プロジェクトにおけるモニタリング非対象州において、MPAモニタリングに対する関心が高められた。例として、Koror州はPICRCと共同で社会経済モニタリングを最近開始したこと、また、KayangelおよびNgchesar州は以前よりPICRCがMPAモニタリングを実施していたが、MPA管理に活用するためモニタリング結果をPICRCに照会するようになったことが挙げられる。

第4に、本プロジェクトはパラオのコンサベーションコンソーシアム⁴に対しモニタリング手順

²例として、パラオは既に4百万米ドルを拠出しており更に2百万米ドルの拠出が求められている。FSMはこれまで百万米ドルを拠出済みで、更に百万米ドルの拠出が課せられている。

³PAN法の基で組織される委員会。PANへの登録にあたり州が提出する保護区管理計画などに対し、技術面からの評価を実施し、その結果を大臣に報告する等の役割を担う。

⁴非公式な会合でありながら、パラオで唯一環境保全に関する機関が一堂に会する場として重要な役割を担っている。

書案を含む様々な議題を提示し、同コンソーシアムにおける協議や情報共有を活性化し、ひいてはその強化と参加者間の関係構築を促進した。中核カウンターパートである PICRC の研究部長は、同コンソーシアムにおいて、優れたリーダーシップを発揮しており、本プロジェクトを通じて高めたオーナーシップとマネジメント能力を通じて、コンソーシアムの強化に貢献した。

第5に、本プロジェクトは TNC と共催により 2010 年 2 月に MC ワークショップを実施し、2012 年 2 月にその続きとなるワークショップを開催する予定である。パラオ側カウンターパートは議論をリードし、また技術的に有益なインプットをもたらした。これらは MC の進捗を促進し、また MC 参加国・地域に対して MPA モニタリングの重要性を認識させた。

4-1-5 自立発展性

本プロジェクトの自立発展性は中程度である。現行の政策・制度・法律は、環境保全重視の方向性に沿っているが、PICRC 法が現状に即していない点が懸念である。また、モニタリング手順書の早期承認が待たれる。職員の高退職率などの課題はあるものの PICRC はプロジェクト活動を継続していくための技術力と組織力を有していると判断される。財務的な自立性については、PAN 基金および MCTF が、州政府、MC 参加国・地域、そして PICRC によって活用可能となる見込みである。

(1) 政策、制度、法的側面

現在の国家政策や環境保全に関連する PAN 法などの制度、そして MC を始めとする国際的な枠組み、住民の生計および観光業における重要性などを踏まえると、海洋資源の保全は今後ともパラオの優先政策であり続ける見込みは高い。また、本プロジェクトで開発したモニタリング手順書が環境省に承認されれば、PICRC が MPA モニタリングを継続して支援するための制度的な根拠も確保される。

なお PICRC 法には、PICRC は開設して 2 年後には経済的に自立することが謳われているが、現実として不可能である。PICRC はサンゴ礁の研究・保全・教育を推進する機関として、公共の利益に資しており、そのため毎年政府からの補助金も一定額得ている⁵。現実に即さない現行の PICRC 法は、PICRC の安定した維持・経営における法的な懸念材料の一つといえる。

(2) 組織的側面

本プロジェクトの実施により PICRC は組織的に強化された。プロジェクトにより導入された一連のミーティング、文書作成のためのフォーマット、マネジメントに対する意識とその手法は、職員の情報共有とコミュニケーションを促進し、業務効率を高め、仕事の質を向上させた。こうして強化された PICRC の組織的な能力は、プロジェクト活動の自立発展性における土台として不可欠のものである。

しかし、職員の退職が頻繁であることと適当な後任職員の採用が容易ではない点は、PICRC の自立発展性における構造的な課題である。この傾向は研究職員のみならず事務・管理職員においても見られる。特に所長は 2011 年において 7 カ月間空席であった点は PICRC 全体の運営に影響を及ぼした。現職の所長は 2012 年の大統領選への出馬を公言しており、任期も 2012 年 9 月まで

⁵385,000 米ドル (2011 パラオ予算年度)

となっている。不在期間を置かず、適切な人材が次期所長として着任することは、組織的側面における自立発展性において極めて重要である。

この他、本プロジェクトは「モニタリング能力」を向上させる事業であるものの、現行の PICRC5 年戦略には、サンゴ礁モニタリングや MPA モニタリングを行うことが明確に示されてはいない。これは、PICRC が MPA モニタリングに対する支援を、プロジェクト終了後も重点分野の活動の一つとして実施していく上での懸念である。

(3) 財務的側面

現在、PICRC の歳入は政府の補助金、研究プロジェクトへの助成金、寄付、水族館および売店からの収入から成り、総額は概ね安定している。むしろ、現所長が行ったような遊休資産の活用による収入源の追加や、水族館および売店のマーケティングには強化の余地が見られることから、歳入を増やす可能性も十分ある。これらを踏まえると、PICRC が今後存続していく上での財務的な背景は十分確保されていると思われる。

ただし、MPA モニタリング支援にかかる費用は、国内であれば PAN 基金、MC 参加国・地域であれば MCTF から得る必要がある。プロジェクトで開発したモニタリング手順書に、PICRC が MPA モニタリングの支援を行うことと財源は環境税（Green Fee：PAN 基金の財源）であることが示されている。この手順書が承認されれば、PICRC は本プロジェクトで支援した 4 カ所の MPA のみならず PAN に加盟している他の 5 つの MPA のモニタリングを、環境税により支援することが可能となる⁶。環境税は全ての外国人訪問者に課せられており、財源としては安定している。

ただし、本手順書は未だ環境大臣には提出されていない。

MCTF については 4-1-4(1)で述べたとおり、参加国・地域からの拠出金が少しずつ集まって来ており、近い将来 MPA を管理するパラオおよび MC 参加国・地域の政府機関と PICRC のような関係機関によって活用できるようになることが期待されている。

(4) 技術的側面

PICRC のカウンターパートは、本プロジェクト活動を継続するに十分な知識と技術を身につけている。加えて、なお、モニタリング手順書案は 4-1-3 効率性で述べたとおり、サイトでの試行を通じて作成されたもので技術的に見て極めて適切に作成されており、パラオや MC 参加国・地域の州政府においても活用・適用可能な内容となっている。

ただし、PICRC 職員の退職率は高く、とりわけ研究員にはその傾向が顕著である。2 年間プロジェクトのカウンターパートとして経験を蓄積した 2 名の研究員が、進学を目的として退職したことは、大きな人的損失と言える。退職は PICRC における構造的な課題であり、技術や知見が個人ではなく組織に蓄積されるような体制・制度が十分に構築されていないため、技術的な自立性におけるリスクと思われる。

一方、プロジェクトでモニタリングを実施した 4 カ所の MPA が位置する州政府の環境保全担当職員の能力は限られている。具体的には、魚種と数の確認および堆積物のサンプル採取は可能であるが、底質、新加入イシサンゴ、無脊椎動物のモニタリングについては PICRC の支援が不可欠である。モニタリングデータについては、データを保管するコンピュータが無いため全て

⁶資金の拠出ルートとしては、州政府が MPA 管理のために申請した予算の一部が、MPA モニタリング経費として州政府経由で PICRC に支払われるケースと、PICRC が PAN に直接予算を申請するケースの 2 とおりあり得る。

PICRC に蓄積しているが、データ整理、入力、保管、分析は州政府の能力では対応できないのが現状である。PICRC では NOAA からの資金援助によりデータ管理者を新たに採用する予定であり、同職員が今後モニタリングデータを集約・管理することとなる。

FSM と RMI の MPA モニタリング能力は各州政府によって異なっている。FSM の 1～2 州は独自に MPA モニタリングを行うことが可能と思われるが、その他については、基本的に MPA モニタリングを行う上で PICRC の技術的支援を必要としている。

4-2 効果発現に貢献した要因

(1) コミュニケーション

本プロジェクトは、プロジェクトを円滑に実施するため、日・パラオ双方のプロジェクト関係者および PICRC の職員間のコミュニケーションを向上させた。具体的には、プロジェクトの進捗管理、情報共有、課題の協議、合意の形成を目的として隔週のプロジェクト会議、毎週の部長会議、毎月の全職員会議を導入した。パラオ側カウンターパートの 1 人は、本邦研修におけるマネジメントとコミュニケーションに関する研修内容に刺激を受け、帰国後すぐに所属する研究部内でのミーティングを開始した。

(2) オーナーシップ

パラオ人カウンターパートのオーナーシップを醸成し自立発展性を高めるため、日本人専門家は、パラオ人カウンターパートによる自発的なプロジェクトの実施を促進することに特に留意した。例えば、ワークショップや会議において、日本人専門家はしばしば裏方に徹し、プレゼンテーションはパラオ側カウンターパートに任せるようにした。こうした働きかけによりパラオ側カウンターパートのオーナーシップは高められたが、同時にプロジェクトに対する日本側の貢献が見えづらくなる可能性もあった。

(3) 他機関との協力

本プロジェクトは多くの関係機関と積極的に協働した。パラオ天然資源・環境および観光省（以後、環境省）のキャパシティは限られており、TNC や PCS などの関係機関は、パラオと MC 参加国・地域の海洋環境保全において不可欠の役割を果たしている。こうした機関との協働は、本プロジェクトの実施において必要且つ極めて重要であった。協働はプロジェクト活動の質を高め、効率性に寄与し、加えて自立発展性の向上にも貢献すると思われる。

4-3 問題点および問題を惹起した要因

4-1-3 効率性で述べたとおり、核となるカウンターパートの退職、PICRC 職員の給与削減が本プロジェクトの実施に影響を与えた。これらは、前提条件とプロジェクト目標を達成するための外部条件が満たされなかったことを意味している。

4-4 結論

本プロジェクトは、政策、ニーズ、課題に対する解決手段としての側面から見て適切であり、妥当性は極めて高い。プロジェクト目標は 2 つの成果の産出をとおして達成の見込みであるため、有効性は高い。投入は概ね妥当であり、活動についてはコミュニケーション促進、オーナーシッ

プの醸成、他機関との協働を重視して実施した結果、所期の成果が産出されつつある。ただし、前提条件とプロジェクト目標達成のための外部条件が満たされなかった点は、プロジェクトに影響を与えており、効率性は中程度と判断される。上位目標を含め、多様な正のインパクトが確認・予見されているためインパクトも高い。PAN 基金および MCTF が活用されるようになる見込みに基づき、上位目標の達成と自立発展性の財務的側面は確保されていると判断されるが、PICRC 職員の高退職率は、組織的側面、技術的側面における懸念である。従って、自立発展性は中程度と判断される。

第5章 提言と教訓

5-1 提言

5-1-1 プロジェクト終了までに実施すべき提言

(1)

パラオ政府の承認プロセス中ではあるが、モニタリング手順書の開発に当たり PICRC は中心的な役割をはたしている。しかし、一方で、PAN 制度における PICRC の制度的な位置づけは明確ではなく、環境保護施策における PICRC の位置づけを強調していく必要がある。手順書の正式化と PICRC の制度的な位置づけの明確化が不可分であることから、本プロジェクトの成果・結果ならびに保護区ネットワークの枠組みによる MPA 管理の方向性を国民に対して広く知らしめ、もって環境省などの政府機関が PAN の枠組みにおける PICRC の役割を認識・承認することを促進する。

これにより、PICRC が MPA モニタリングについて技術的支援を全ての州を対象に実施し、州の能力強化へとつながる。

(2)

本プロジェクトで開発されたモニタリング手法は地域の実情を科学的にも考慮した内容であることから、本プロジェクトにおける非対象州の住民および州政府が、モニタリング手順書についての理解を深めるため、全国または地方におけるワークショップを開催し、もって手順書の将来的な活用を促進する。

(3)

本プロジェクトは MC において、地域の MPA 管理の改善にむけた科学的なモニタリングを進める上で、主導的な役割を果たしたが、特に FSM や RMI などの地域において、PICRC がモニタリングの能力向上を実施できる事も示してきた。プロジェクトまたは PICRC は、MC に対し、PICRC による FSM や RMI に対するモニタリング実施支援の適切な仕組みの検討を提案する。

(4)

本プロジェクトは、パラオ国のモニタリング実施能力を高め、それは、地域における、モニタリング実施上の連携にもつながった。地域連携の上でこのような協働の取組は今後の参考となるものであり、PICRC はプロジェクト成果品の概要を英語で取りまとめ、広報のみならず海外の科学者と実務者にとっての事例研究として積極的に活用されるようにする。

(5)

上位目標達成については、今後も様々な課題があると思われることから、達成に向けた協働計画を、政府機関、ドナー機関、NGOs などの関係機関と共に作成する。

5-1-2 プロジェクト終了後における提言

(1)

本プロジェクトを通じモニタリング手順書の実務的な業務は成し遂げられ、MPA 管理における有用性が示された。今後は、PAN 法の枠組みに沿った政府の施策のもと、手順書に沿ったモニタリングを継続するために、PICRC は MPA モニタリングを次期 5 年戦略における正式な活動の一つとして位置づける。

(2)

PICRC は科学的助言が実施可能な組織として、MPA 管理能力の向上のためにコンサベーションコンソーシアムにおいて主導的立場を担い、今後、コンソーシアムにおいて国全体の環境保護施策が提言されていくこと。

(3)

PICRC は本プロジェクトで対象外となった州および MC 参加国・地域におけるモニタリング手順書の適用・運用方法に関し、検討を更に進める。

(4)

元 PICRC スタッフや、PCS、TNC といった機関、中央・州政府は本プロジェクト実施にあたり効果的な協働作業をおこなってきた。PICRC は上位目標の達成に向けて、中央政府、州政府、および TNC や PCS などの NGOs との関係を維持・強化する。

(5)

本プロジェクトの成果・結果は、政策や社会経済活動の実行上活用されて行く事が必要不可欠であり、PICRC は PAN 基金を含む政府ならびに準政府機関とこれらを共有し、長期的には、陸域や社会経済など他のデータと組み合わせた、統合的な自然環境モニタリングに活用できるようにする。

(6)

パラオ国内、外双方において PICRC の存在のアピールに貢献したことから、PICRC はプロジェクトが支援したニューズレター、リーフレット、出版物の作成やマスメディア、セミナーを通じた積極的な広報活動を継続する。

(7)

法律で明記されている経済的な自立性(self-sufficiency)が常に問われる中、PICRC は明確なマネジメント戦略を作成し、財務面、制度面、人的資源面、特に財務的自立性の確保を目的とした水族館の運営について検討するとともに、議会に対し PICRC 設置法 (RPPL 5-17) の改正を提案する。

(8)

PICRC は PAN 基金、議会、環境省および州政府が PICRC の機能と役割を認識し、活動を支援するように働きかける。加えて、その際には、上位目標の達成に向けた十分な資源配分がなされることが念頭に置かれるべきである。

(9)

PICRC は、本プロジェクトの成果・結果を効果的に活用し、また関係機関との関係を維持するため、政府、州政府、JICA パラオ事務所、ドナー機関や NGOs などと定期的に会合を持つ。加えて、MC に貢献するために、MC 参加国・地域とのパートナーシップが強化できるような場や機会の設定をおこなう。

5-2 教訓

(1)

PICRC 本体の運営は本プロジェクトには含まれていないものの、プロジェクトの技術的な成果は、健全な組織運営に大きく影響される。財務面と組織面における長期な制度面からの自立発展性の観点からは、特に財務戦略と会計担当職員の状況について、プロジェクトの計画段階

において、関与の可否も含めた検討が必要であった。

(2)

上位目標の達成と自立発展性においては、多くの予測不可能かつ制御できない要因がある。例えば、MCTFはPICRCがMC参加国・地域に対して技術的支援を提供するために必要な制度であるが、MC参加国・地域の個々の財務能力の制約により基金造成は完了しておらず、未だ活用に至っていない。本プロジェクトでは中間レビューを実施していないが、適切な上位目標の設定や各種指標・活動の見直しの機会を設けるために、協力期間中にプロジェクト計画を協議、改訂する場が必要であった。

※フォローアップの検討について

パラオ国全体のMPAモニタリングの体制を効率的に確立させるために、本プロジェクトにより高められたPICRCの技術的能力を活用し、本プロジェクトの対象州以外の州政府担当官等を対象にしたワークショップの開催をJICAのフォローアップ協力として検討している。

付 属 資 料

1. 調査日程
2. 主要面談者リスト
3. パラオ国際サンゴ礁センター組織図
4. サンゴ礁保全専門官所感
5. 協議議事録（M/M）
6. 合同評価報告書および Annex

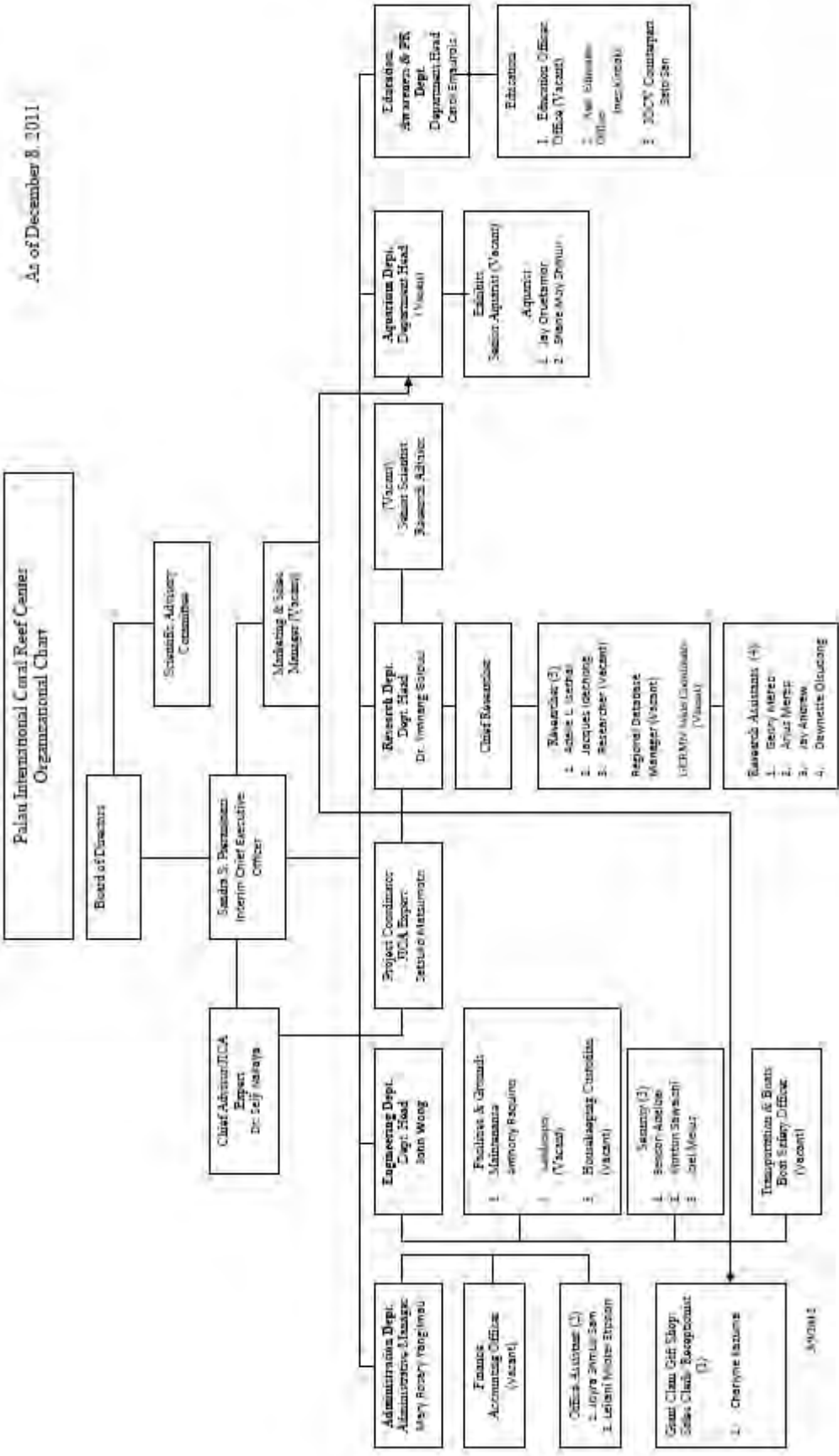
調 査 日 程

- 1月23日（月）成田→グアム→パラオ（鈴木、尼子、宮崎、町田）
- 1月24日（火） 09h00 JICA事務所打ち合わせ
 10h00 国務省表敬・協議
 11h00 日本国大使館表敬
 13h30 PICRC理事会 会長表敬・協議
 14h15 PICRC所長 表敬・協議
 14h30 JICA専門家インタビュー
 16h00 PICRC研究部長および教育広報担当課長打ち合わせ
- 1月25日（水） 09h00 合同評価委員打ち合わせ
 10h00 Speaker, Mr.Noah Idechongとの情報交換
 11h00 Palau Conservation Society 情報収集
 14h00 Protected Area Network 情報収集
 15h00 Nature Conservancy Office 情報収集
 16h00 JICA専門家インタビュー
- 1月26日（木） 08h30～ 団内打ち合わせ、合同評価報告書案作成
 09h30 JICA専門家インタビュー（町田）
 17h00 PICRC配属青年海外協力隊情報収集
 成田→グアム→パラオ（木村）
- 1月27日（金） 08h00～ 現地調査（Ngardmau）
 16h00 Pan FUND 情報収集
- 1月28日（土） 団内打ち合わせ、合同評価報告書案作成
- 1月29日（日） 団内打ち合わせ、合同評価報告書案作成
- 1月30日（月） 09h00 合同評価委員会
- 1月31日（火） 09h30 合同調整委員会、団内打ち合わせ
- 2月1日（水） 10h00 大使館報告、JICA事務所打ち合わせ
- 2月2日（木）【帰国】

主要面談者リスト

貞岡 義幸	在パラオ日本国大使館特命全権大使
安沢 隆男	在パラオ日本国大使館 参事官
林 直子	在パラオ日本国大使館 専門調査員
Victor M. Yano	Minister of State
Patrick U. Tellei	Chairman, Board of Directors, President of Palau Community College
Sandra S. Pierantozzi	Interim CEO, PICRC
Yimnang Golbuu	Chief Researcher, PICRC
Carol Emaurois	Education Director, PICRC
Mr. Noah Idechong	Speaker, the House of Representative
Elbuchel Sadang	Executive Director, Palau Conservation Society
Joe Aitaro	National Coordinator, Palau-Protected Areas Network
Umiich Sengebau	Deputy Director of Conservation, Micronesia Program, Nature Conservancy Office
Akiko Sugiyama	Governor, Ngardmau
Tutii Chilton	PAN Fund Board Chairman
中谷 誠治	チーフアドバイザー、JICA プロジェクト
松本 節子	業務調整、JICA プロジェクト
佐藤 宗範	PICRC 配属青年海外協力隊員

Palau International Coral Reef Center
Organizational Chart
As of December 8, 2011



パラオ国「サンゴ礁モニタリング能力向上プロジェクト」終了時評価調査
調査団員所感（環境省 サンゴ礁保全専門官 尼子直輝）

1. PICRC の活動

パラオ国際サンゴ礁センター（PICRC）は、本プロジェクトの上位目標（「PICRCの技術的能力がミクロネシア・チャレンジ（MC）参加国・地域において活用される」）の達成に資する活動を続けており、モニタリング手法の標準化が進みつつある。しかし、PICRCが広めているモニタリング手法は、パラオ国内ではPAN（Protected Area Network）のモニタリングプロトコルとして正式に位置付けられそうであることに對し、他国ではモニタリング自体への理解が低いとも聞く。パラオ国の一機関であるPICRCに對し、MC参加国・地域全体への効果波及を期待するのは、野心的な目標であり、PICRCはその中で期待に応えていると評価できる。

パラオ国内では、PICRC職員が州職員に對しサンゴ礁モニタリングの手法を教えているが、実際の調査の際は州職員にPICRC職員が同行している。サンゴの専門家ではない州職員を研修によりモニタリング実施者にした実績を評価したいが、そもそも人口2万人のパラオが16の州に分けられ、海洋保護区が州により管理されている点は作業量を増やす原因となりそうである。他方、海洋保護区（MPA）の設置が住民の希望に沿ってボトムアップ方式で行われる点は、地域住民のMPAへの理解につながっているようである。

MPAの効果の評価も行われており、日本よりも進んだ取組がなされている点は、日本も見習いたい。

2. PICRC の運営体制

現CEOのリーダーシップの下、効率的な運営ができるよう改善が行われているようである。また、パラオ国の閣僚、閣僚経験者、有力者等がPICRCの運営にも理事などの立場で関わっており、自然保護NGOとも密接な連携が取られていることは、PICRCのこれまでの運営の成功を示すものと考えられる。

現CEOから指摘があったが、PICRCに会計の知識を持つ人材が必要（現在の組織表ではAccounting Officerが空席になっている）。研究部門、教育部門も人員が少ない中で多くの仕事を持っており、空席となっているポジションをどう埋めるのか、人件費も考慮に入れつつ、検討が必要。

また、PICRCには米国NOAAによってGCRMNのノードコーディネーターのポジションが用意されていたが、現在はNOAA資金がなくなりポジションも無いとのこと。実質的には現在の研究部門がGCRMNの対応をしているようであるが、東アジアノードにおけるコーディネーションのあり方も参考にし、PICRCにおけるGCRMNへの関与について、新体制となったGCRMNのコア・コーディネーション・チームと調整

して欲しい。

3. JICA プロジェクト終了後の PICRC の活動について

PICRC の経営は本評価の対象外であるが、活動に悪影響を及ぼすことのないよう、持続的な財源を確保することが望まれる。Green fee（パラオ出国時に外国人が支払うもの）を財源とする PAN 資金の配分は PAN 資金の理事会により決定されることであるが、MPA を管理する州政府に直接配布されるだけでなく、MPA におけるモニタリングを支援している PICRC に直接配布されることが可能か、PAN 資金理事会で検討されることを望む。

教育活動の中で、パラオの住民に対する普及啓発は随分行われているとの印象を持ったが、直接的にサンゴ礁を利用するダイビング業者やダイビング客に対し、海に入る前に PICRC でパラオの海洋生態系に関する講習を行うなどすれば、ダイビング客の満足度が高くなると同時に入場料収入も見込め、PICRC の知名度も上がると考える。

現在パラオでは世界遺産への推薦がなされているところ、登録がなされれば、資源の管理とともに観光客の管理も求められるため、PICRC を世界遺産の管理計画に関連施設として位置づけ、資源調査(モニタリング)とともに、観光客に対する講習を PICRC で担うなどの役割を果たすことができると考える。遺産登録の暁には、そのための体制の強化と合わせ、検討を望む。

MINUTES OF MEETING BETWEEN
THE JAPAN INTERNATIONAL COOPERATION AGENCY
AND THE AUTHORITIES CONCERNED
OF THE GOVERNMENT OF PALAU
ON JAPANESE TECHNICAL COOPERATION
FOR THE CAPACITY ENHANCEMENT PROJECT FOR CORAL REEF MONITORING

Pursuant to the Record of Discussion and Minutes of Meeting signed between Japan International Cooperation Agency (herein after referred to as "JICA") and Palau International Coral Reef Center (herein after referred to as "PICRC") dated 29 May 2009, the fourth meeting of the Joint Coordinating Committee (herein after referred to as "JCC4") for the Capacity Enhancement Project for Coral Reef Monitoring (hereinafter referred to as "CEPCRM") took place on 31 January 2012 at PICRC, Koror, Palau.

As a result of the discussions, JICA and PICRC approved the following documents, and also reached an agreement on the following principle points:

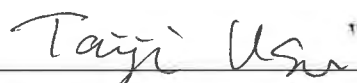
I. Documents

1. JCC4 document (attachment 1)
2. Summary of Joint Evaluation on Capacity Enhancement Project (attachment 2)

II. Principle points:

1. JCC members accept the Evaluation Study Report and take necessary actions.
2. The Ministry of Natural Resources, Environment and Tourism officially adopts the monitoring protocol.
3. The project shares the monitoring protocol with stakeholders in Palau and MC partners.
4. Project completes on 25 July 2012 as scheduled.

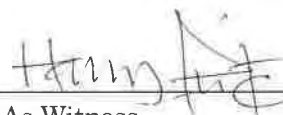
Koror, January 31, 2012



Mr. Taiji Usui
Resident Representative,
Japan International Cooperation Agency,
Palau Office



Dr. Patrick U. Tellei
Chairman,
Board of Directors,
Palau International Coral Reef Center



As Witness
Honorable Harry Fritz,
Minister,
Ministry of Natural Resources,
Environment and Tourism

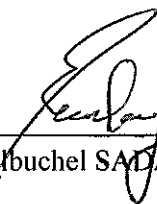


**REPORT OF THE JOINT TERMINAL EVALUATION
ON
THE CAPACITY ENHANCEMENT PROJECT FOR CORAL REEF
MONITORING (CEPCR)**

January 30, 2012

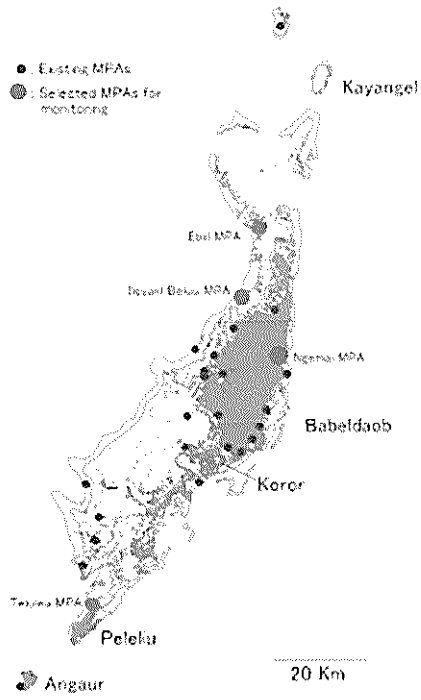


Mr. Kazunobu SUZUKI
Leader,
Japanese Evaluation Team,
Japan International Cooperation Agency



Mr. Eibuchel SADANG
Leader,
Palauan Evaluation Team,
Executive Director, Palau Conservation
Society

MAP



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ACRONYMS

CEPCRM	Capacity Enhancement Project for Coral Reef Monitoring
CI	Conservation International
FSM	Federated States of Micronesia
GF	Green Fee
JCC	Joint Coordination Committee
JET	Joint Evaluation Team
JICA	Japan International Cooperation Agency
MC	Micronesia Challenge
MCT	Micronesia Conservation Trust
MCTF	Micronesia Conservation Trust Fund
MICS	Marshall Islands Conservation Society
MNRET	Ministry of Natural Resource ,Environment and Tourism
MPA	Marine Protected Area
MRD	Marine Resource Division
NOAA	National Oceanic and Atmospheric Administration
OEPPC	Office of Environmental Planning and Policy Coordination
OERC	Office of Environment Response and Coordination
PALARIS	Palau Automated Land and Resource Information System
PAN	Protected Area Network
PANF	Protected Area Network Fund
PCC	Palau Conservation Consortium
PCC	Palau Community College
PCS	Palau Conservation Society
PDM	Project Design Matrix
PICRC	Palau International Coral Reef Center
PO	Plan of Operation
RMI	The Republic of the Marshall Islands
SPC	Secretariat of the Pacific Community
TNC	The Nature Conservancy

全体

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Annex 2: Latest Plan of Operations (PO2)

Annex 3: Evaluation Grid

Annex 4: Inputs from the Japanese Side

Annex 5: Inputs from the Palauan Side

Annex 6: List of the conferences and workshops of relevant international frameworks, related organization and research institutions in which the project participated

Annex 7: List of published News Paper Articles on the Project

Annex 8: Outline of MPA monitoring Workshops

Annex 9: Outline of MPA monitoring at the selected four MPAs

Annex 10: CEPCRM Activities from July 2009 to August 2011

Annex 11: Monitoring Sheet based on the drafted PO3

1. Introduction

1.1 Objectives of the Joint Evaluation

The joint evaluation on the Capacity Enhancement Project for Coral Reef Monitoring (the evaluation) was conducted with the following objectives:

- (1) To verify the accomplishments of the Project compared to those planned;
- (2) To identify obstacles and/or facilitating factors that have affected the implementation process;
- (3) To analyze the Project in terms of the five evaluation criteria (i.e. Relevance, Effectiveness, Efficiency, Impact, and Sustainability); and
- (4) To make recommendations on the Project regarding the measures to be taken for the remaining period as well as the post-project period.

1.2 Members of the Joint Evaluation Team

(1) The Japanese Side

No.	Name	Responsibility	Occupation	Period (arr. – dep.)
1	Kazunobu SUZUKI (Mr.)	Team Leader	Advisor, Forestry and Nature Conservation Division 1, Global Environment Department, JICA	23 Jan – 2 Feb 2012
2	Tadashi KIMURA (Mr.)	Coral Reef Conservation	Member Technical Advisory Committee Global Environment Department, JICA	26 Jan – 2 Feb 2012
3	Naoki AMAKO (Mr.)	Nature Conservation Policy	Assistant Director, Biodiversity Policy Division, Nature Conservation Bureau, Ministry of the Environment	23 Jan – 1 Feb 2012
4	Hiroyuki MIYAZAKI (Mr.)	Cooperation Planning	Forestry and Nature Conservation Division 1, Global Environment Department, JICA	23 Jan – 2 Feb 2012
5	Kenichi MACHIDA (Mr.)	Evaluation Analysis	Consultant, Kaihatsu Management Consulting, Inc.	23 Jan – 2 Feb 2012

(2) The Palauan Side

No.	Name	Responsibility	Occupation
1	Mr. Elbuchel SADANG	Team Leader	Executive Director, Palau Conservation Society
2	Mr. Joe Aitaro	Member	Protected Area Network Coordinator, Ministry of Natural Resources, Tourism and Environment
3	Ms. Akiko Sugiyama	Member	Governor of Ngardmau State
4	Mr. Umiich Sengebau	Member	Deputy Director, The Nature Conservancy, Micronesia Programme

1.3 Schedule of the Evaluation Study

The review of the Project was conducted from 24th to 27th of January, 2012. The Joint Evaluation Team (the Team) collected the information through questionnaires and a series of interviews with the Japanese Experts, Palauan counterparts and parties concerned. Based on the results of the review, the Team prepared a draft evaluation report and finalized it through a series of discussions from January 28th to 30th

2. Outline of the Project

2.1 Background of the Project

Palau International Coral Reef Center (PICRC) was constructed by grant-aid from the government of Japan and launched in January 2001 to provide a forum for coral reef research and education. Japan International Cooperation Agency (JICA) implemented a 4-year technical Cooperation Project to strengthen the main functions of PICRC between 2002 and 2006. At the completion of the project, the evaluation team made recommendations including: (1) PICRC should reflect their research result to strengthen policy for establishment and evaluation of Marine Protected Areas (MPAs), and (2) PICRC should improve institutional capacity as a hub of the Micronesia region in monitoring of coral reefs.

In the last decade, Palau enacted the Protected Areas Network Act (RPPL 6-39) to provide a framework for national and state governments' collaboration in protecting the nation's biodiversity by managing MPAs. Moreover, Palau and the other Micronesian jurisdictions declared the Micronesia Challenge (MC) in 2006. There has been an increasing expectation for PICRC's technical support on monitoring to measure effectiveness of the management of MPAs.

Upon the request of the Government of Palau, a JICA study team visited Palau in 2008 to discuss the possibilities of further collaboration and agreed on a technical cooperation project titled "Capacity Enhancement Project for Coral Reef Monitoring" (CEPCRM).

The project commenced in July 2009 and is planned to be closed in July 2012. Now, the

remaining cooperation period is about six months, so terminal evaluation was conducted in accordance with the record of discussions.

2.2 Summary of the Project

(1) The Project Purpose:

The technical capacity of PICRC is enhanced in monitoring required for management of Marine Protected Area (MPA)

(2) The Overall Goal:

The technical capacity of Palau International Coral Reef Center (PICRC) is utilized in five Micronesia Challenge (MC) Jurisdictions

(3) The Outputs:

Output 1: The system to support the monitoring on MPA is developed

Output2: The partnership is enhanced between PICRC and international initiatives, five MC Jurisdictions, related organizations and research institutions

3. Basic Project Plan for Evaluation

For evaluation of a technical cooperation of JICA, Project Design Matrix (PDM) and Plan of Operations (PO) are used as basic project plans. The latest PDM (PDM1), attached as Annex 1, was approved by Joint Coordinating Committee (JCC) in October 2009. The latest PO (PO2), attached as Annex 2, was approved by JCC in May 2010.

4. Methodology of the Evaluation

4.1 Data Collection Method

The Team collected necessary information through reviewing relevant documents and interviewing with the Japanese Experts, Palauan counterparts and parties concerned.

4.2 Items of Analysis

(1) Accomplishment of the Project

The accomplishment of the Project was measured in terms of the Inputs, the Outputs and the Project Purpose in comparison with PDMI as well as the additional indicators specified in the evaluation grid (Annex 3).

(2) Implementation Process

The implementation process of the Project was reviewed to see if the Activities have been implemented according to PO2, and to see if the Project has been managed properly as well as to identify obstacles and/or facilitating factors that have affected the implementation process.

(3) Five Evaluation Criteria

The project was evaluated based on the study results from the five viewpoints; relevance, effectiveness, efficiency, impact and sustainability. Definition of the five criteria is described below. The evaluation result at each viewpoint is represented on a scale of five grades; very high, high, moderate, low and very low.

(a) Relevance : Relevance of the Project was reviewed to see the validity of the Project Purpose and the Overall Goal from several viewpoints such as the needs of the beneficiaries, policies of Palau and Japan and Suitability as a means to address the issue.

(b) Effectiveness : Effectiveness was analyzed by evaluating the extent to which the Project has achieved.

(c) Efficiency : Efficiency of the Project implementation was analyzed focusing on the relationship between the Outputs and Inputs in terms of timing, quality, and quantity.

(d) Impacts : Impacts of the Project were forecasted by referring to positive and negative impacts caused by the Project.

(e) Sustainability : Sustainability of the Project was analyzed in institutional, financial and technical aspects by examining the extent to which the achievement of the Project would be sustained and/or expanded after the Project is completed.

5. Summary of Accomplishment and Implementation Process of the Project

5.1 Inputs

(1) The Japanese Side

Summary of Inputs from the Japanese Side is shown in the table below, and their details are described in Annex 4. There are a few differences between the plan and accomplishment in the dispatch of short-term experts and training in Japan. The technical inputs on IT/GIS planned from short-term expert and training in Japan were replaced by a local consultant. As additional inputs, training in Japan on Aquarium Maintenance¹, dispatch of a short-term expert, workshop facilitator, and the employment of a third country consultant on socio-economic monitoring were conducted.

Other inputs from the Japanese side have been carried out as planned. Two long-term experts, chief advisor and coordinator, have been on service to date. A short-term expert on MPA Monitoring/Management was timely dispatched. Major equipment provided consists of vehicle, monitoring tools, and GIS data base equipment. Project operation costs were disbursed mainly for maintenance of the aquarium, implementation of MPA monitoring in and outside Palau, and participation to conferences/workshops.

¹ Airfare was paid by the Project and other costs were provided by Aquamarine Fukushima.

Table 1: Summary of Inputs from the Japanese Side

Items	Plan	Accomplishment
Dispatch of Experts	<ol style="list-style-type: none"> 1 Long-term experts: <ol style="list-style-type: none"> 1.1 Chief Advisor 1.2 Coordinator 2 Short-term expert: <ol style="list-style-type: none"> 2.1 Monitoring Planning 2.2 MPA management 2.3 IT(Information Technology)/Database administration 	<ol style="list-style-type: none"> 1 Long-term experts: <ol style="list-style-type: none"> 1.1 Chief Advisor 1.2 Coordinator 2 Short-term expert: <ol style="list-style-type: none"> 2.1 MPA Monitoring/ Management 2.2 Workshop Facilitation 3 Local and third country experts <ol style="list-style-type: none"> 3.1 Socioeconomic Monitoring 3.2 Database construction
Provision of Equipment	<ol style="list-style-type: none"> 1. Vehicle 2. Monitoring equipments 3. Aquarium spare parts 4. GIS and database system devices 5. Other equipments necessary for the implementation of the Project 	As planned \$ 124,950.54
Training in Japan	<ol style="list-style-type: none"> 1. Coral reef conservation 2. MPA management 3. Coral reef monitoring 4. GIS/IT(Information Technology) 	<ol style="list-style-type: none"> 1. Monitoring of coral reefs and adjacent ecosystems for MPA management (2 persons) 2. Aquarium Maintenance 3. Coral reef conservation
Disbursement of project operation cost	Not planned	\$ 430,773.99

(2) The Palauan Side

Summary of Inputs from the Palauan Side is shown in the table below, and its details are described in Annex 5. Some gaps are observed in the Palauan counterpart allocation chart in Annex 5. The CEO of PICRC, supposed to be the project manager, was vacant from Aril to September 2011, so the chief researcher/ head of research department tentatively bear the responsibility of the CEO during the period. Moreover, currently one counterpart in the aquarium department and two in the engineering department have not been filled after their resignation last year. Facilities and Equipment have been allocated as plan. A part of project operation costs have been borne by the Palauan side as planned.

Table 2: Summary of Inputs from the Palauan Side

Items	Plan	Accomplishment
Allocation of Counterparts	<ol style="list-style-type: none"> 1. Chief Executive Officer 2. Administration Officers 3. Researchers 4. Engineers 5. Aquarists 6. Education Officer(s) 	<ol style="list-style-type: none"> 1. Chief Executive Officer as the Project Director 2. 1 Researcher as the Project Manager 3. 3 Researchers 4. 2 Engineers 5. 3 Aquarists 6. 2 Education officers 7. Administration officers <p>Total accumulated number of assigned counterparts: 25 The number of currently assigned counterparts: 16</p>
Facilities and Equipment	<ol style="list-style-type: none"> 1. Land, buildings and facilities necessary for the Project 2. Room space and necessary infrastructure facilities for installation and storage of the equipment 3. Offices and basic logistics facilities for the JICA experts 4. Other facilities mutually agreed upon as necessary 	As planned
Arrangement of project operation costs	Administration and operational costs	<p>As planned \$43,685</p> <p>The following portions of costs of utilities, fuel (vehicles), and supplies</p> <ul style="list-style-type: none"> ➤ 30% of the costs used by research and education departments ➤ 10% of the const used by administration, engineering, and aquarium departments

5.2 Outputs

(1) Output 1

Output 1 is likely to be created, because indicator 1.1 is already attained and indicator 1.2 and 1.3 are likely to be attained.

Output 1: The system to support the monitoring on MPA is developed	
Indicators:	Means of verifications:
1.1 Information related to management and conservation of MPA is updated.	1.1 Documents of PICRC
1.2 The monitoring protocols are approved as official monitoring protocols by Ministry of Natural Resources, Environment and Tourism.	1.2 Documents of MRD

Indicator 1.1 has been attained. The monitoring data of the 4 MPA sites and their control sites has been accumulated in PICRC, and the database has been updated.

Indicator 1.2 is likely to be attained soon. Currently, the draft monitoring protocols is being reviewed in Palau Conservation Consortium (PCC) until the early February 2012. Then the draft will be finalized based on the comments from PCC and be submitted to the Minister of Natural Resources, Environment & Tourism (NRET). Once the minister approves it, the protocol will become an official monitoring guideline for PAN. The minister has unofficially agreed to adopt the protocol as an official document. This process will be completed over the next a few months.

(2) Output 2

Output 2 has already been created, as all indicators from 2.1 to 2.4 are attained.

Output 2: The partnership is enhanced between PICRC and international initiatives, five MC Jurisdictions, related organizations and research institutions.	
Indicators:	Means of verifications:
2.1 PICRC makes 5 presentations at the conferences and workshops of relevant international frameworks and related organization or research institutions by the end of the Project.	2.1 Documents of PICRC
2.2 PICRC produces 20 different publications or announcements through media by the end of the Project.	2.2 Web sites or papers of MC countries and /or regions, related organizations and research institutions
2.3 The seminars and/or workshops on MPA monitoring for five MC Jurisdictions are conducted by PICRC 3 times by the end of the Project.	2.3 Documents of PICRC
Additional indicator:	Means of verifications:
2.4 Collaboration was initiated between PICRC and international initiatives, five MC	➤ Initiation of collaboration

Jurisdictions, related organizations and research institutions	
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Indicator 2.1 has already been attained. The project has participated in 10 relevant international conferences or workshops, and given a presentation at each occasion. The list of the participated conferences or workshops is shown in Annex 6.

Indicator 2.2 has already been attained. The project has been reported 21 times on news papers published in Palau. The list of articles is shown in Annex 7.

Indicator 2.3 has already been attained. The project has conducted a workshop on MPA monitoring and database in FSM and RMI in total four times. A regional workshop on MPA monitoring was carried out in February 2010 and its continuative workshop will be held in February 2012. The outline of the workshops is summarized in Annex 8.

Additional indicator 2.4 has been attained. For example, PICRC has been consulting with South Pacific Committee (SPC) on database to modify and improve it. The relationship between the two organizations was initiated at one of participated conferences, Pacific Regional Conference on Marine managed Area.

5.3 Project Purpose

The project purpose is likely to be achieved, since indicator 1 and 3 are attained and indicator 2 seems to be attained soon.

Project purpose: The technical capacity of PICRC is enhanced in monitoring required for management of Marine Protected Area (MPA)	
Indicators: 1. The monitoring is implemented based on protocols developed by PICRC at 2 MPAs of Palau. 2. The institutional role of the PICRC in MPA monitoring is clarified.	Means of verification: 1. Documents of PICRC and Palau government. 2. Documents of Palau government.
Additional indicators: 3. The MPA monitoring capacity of PICRC is improved.	Means of verification: 3. Materials on MPA monitoring for presentation in international conferences or submitting to journals

Indicator 1 is attained and relevant activities will be continuously implemented during the cooperation period. The project has been monitoring 4 MPAs in collaboration with corresponding state governments. The outline of the monitoring is described in Annex 9.

Indicator 2 seems to be attained soon. Currently the project puts every effort to clearly state

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the role of PICRC in terms of MPA monitoring on official documents. Most prospective one is the monitoring protocol. The role of PICRC on MPA monitoring is clearly described in the protocol. The protocol is likely to be approved as an official document of MNRET as explained in 5.2 (1) Output 1. Another possibility is that the role of PICRC is stated in the guideline of PAN Technical Committee, but the committee has not been created yet. It has been delayed and difficult to predict future time line of this process.

Additional indicator 3 has been attained. Palauan counterparts now become able to present the MPA monitoring results in international conferences, though it was not possible when the project commenced. It has proven that they enhanced the capacity to plan and conduct MPA monitoring and also to analyze data and prepare the report on the result of the monitoring.

5.4 Implementation Process of the Project

(1) Progress of the Activities

The accomplishment of the activities is outlined in Annex 10, and progress of each activity is depicted in Annex 11. Activities for the output 1 have been conducted as planned except for activity 1.6: Draft the monitoring protocols reflecting activities 1.1-1.5. As described in 5.2 (1) Output 1, it will be completed in February 2012.

Although all the indicators for the output 2 are already attained, three activities are lag behind the schedule as specified in Annex 11. The delayed activities are as follows;

- f: Provide brochures on 1) current situation, of MPAs based on the monitoring results, 2) PICRC monitoring capacity and 3) protocols to the relevant stakeholders.
- g: Make and issue reports related to monitoring and database workshops in FSM and RMI.
- i: Multimedia training (Producing PICRC demonstration DVD)

Activity f), g), and i) are expected to be completed in March, early February, and February respectively. Cause of delay of activity f) and g) is limited manpower. While activity i) was forced to be postponed due to unavailability of an external lecturer on multimedia. The project is able to catch up on the progress of all these activities for the next a few months.

(2) Other Issues for the Project Implementation Process

a) Communication

One of successful efforts by the project to progress the activities is to improve the communication among Japanese and Palauan project members as well as the staff of PICRC. The project introduced biweekly project meeting, weekly directors' meeting and all PICRC staff meeting aiming at monitoring the progress of the project, information sharing, and consensus building. One of Palauan counterparts, who participated in training in Japan, learned importance of communication, and he initiated internal meeting in his department after the training. These meetings have contributed to efficiency of work and synergy between different departments.

b) Ownership

In order to nurture the Palauan ownership and strengthen the sustainability of the project, the Japanese experts have paid careful attention to motivate and facilitate the Palauan counterparts to implement the project proactively. In accordance with this idea, the Japanese experts have often acted as a supporting role and request the Palauan counterparts to do a presentation in a conference or workshop. It has enhanced Palauan counterparts' ownership of the project as expected, but it might create an impression that the contribution of the Japanese side is not visible.

c) JCC

JCC meeting has taken place three times since the commencement of the project. Apart from its basic functions to report, discuss and agree the issues of the project, it effectively functioned as a serious deadline of delayed activities. JCC contributed to driving forward the project.

d) Collaboration with Organizations concerned

The project has actively worked with many related organizations in various ways. As MNRET has limited capacity, related organizations such as TNC, PCS, etc. fulfill an indispensable function in marine environmental conservation in Palau and the MC jurisdictions. Collaboration with those organizations is necessary and important for the project. The collaboration has enriched the project activities, improved efficiency, and will contribute to sustainability.

6. Summary of Evaluation based on Five Evaluation Criteria

6.1 Relevance

Relevance of the project is regarded as very high. The project purpose and overall goal are aligned with relevant policies, laws, plans in Japan and Palau. The 4 target MPAs were appropriately selected and the needs of communities near the MPAs are consistent with the project. Moreover, Japan's ODA experiences in the field of marine resource are usefully utilized.

(1) Consistency with Policies

The project purpose and overall goal are well aligned with the related policies, strategies and laws of Palau and Japan. On the Palauan side, Protected Area Network Act, Micronesia Challenge, Palau 2020 National Master Development Plan, section 161 of 6th article in the Compact with Free Association with the United States and PICRC Act (RPPL 5-17) provide an institutional relevancy to the project. The first three policies and laws stipulate that the conservation of marine environment and coral reef as one of prioritized national agenda of Palau. The last one specifies that the mission of PICRC is to act as a sustainable regional center for marine research, training and education and also to support management, utilization and conservation of marine environment and be a tourist attraction. Moreover, the state governments in which MPA exists constitute laws to conserve marine resources in each specified area.

On the Japanese side, the joint declarations at the 4th and 5th Pacific Islands Leaders Meetings state the importance of sustainable development and management of nature reserve. Environmental conservation is the most prioritized issue in Japan's ODA policy, strategy and plan for Palau, and also education and tourism are focused areas for assistance. National Strategy for the Conservation and Sustainable Use of Biological Diversity (2007 Version) targets that networking of MPAs in Asia and Pacific areas.

(2) Appropriateness of Pilot Sites and Needs of the Communities

The target areas were appropriately selected and the needs of communities in the target areas are consistent with the project. 4 MPAs were selected as pilot monitoring sites from 34 MPAs in Palau based on the several criteria such as the characteristics of MPAs, capacity of state government, etc. The number of pilot sites², 4, was appropriate from the view points of diversification of site situations and workload to the project. Communities of the 4 pilot sites are closely related to marine resources in terms of their source of income and dairy food. They are aware of the importance of marine resource conservation for its sustainable use.

(3) Advantage of Japan as a Cooperation Partner

Japan has been accumulated abundant experiences on technical cooperation as one of leading donor countries. One of aspects which careful attention paid in Japan's ODA is to encourage self-reliant effort, strengthen the leadership and ownership of recipients, because these issues are an important background for sustainability. The same aspects have carefully been concerned in this project, so Palauan counterparts' leadership and ownership have been strengthened and observed particularly in presentation, networking and collaboration with relevant organizations.

6.2 Effectiveness

Effectiveness of the project is judged as high, because the project purpose is likely to be attained.

(1) Achievement of the Project Purpose

The project purpose is expected to be achieved soon as described in 5.3 Project Purpose. The two outputs have been significantly contributed to the achievement of the project purpose. Through creating output 1, Palauan counterparts have experienced MPA monitoring and preparation of the monitoring protocol, these enhanced their technical capacity. From creation of the output 2, Palauan counterparts have participated workshops and international conferences for presentation of the project and discussion on the MPA monitoring. These experiences have enriched the knowledge of MPA

² Data has been collected from in total 24 stations (3 stations x 8 sites (4 MPAs and 4 reference sites)).

monitoring various countries and facilitated networking with related organizations domestically and internationally.

However, the project has faced serious hardships that were not controllable by the project. The hardships were that precondition and important assumption for the project purpose were not fulfilled as explained in 6.3 Efficiency. It affected the smooth project implementation e.g. delay of attainment of indicator 2. The several efforts of the project to minimize the delay and push the activities forward are shown in 5.4 (2) Other Issues for the Project Implementation Process. Specifically, the project facilitated communication, enhanced the Palauan counterparts' ownership to the project, effectively used JCC, and actively worked with relevant organizations.

6.3 Efficiency

Efficiency of the project is estimated moderate. The activities have been implemented nearly on schedule, and two outputs are being created as planned. Almost all inputs were appropriately provided for conducting the activities, and even some of them enhanced the cost effectiveness. However, turnover of key Palauan counterparts and squeezed government budget to PICRC affected the progress of the project.

(1) Creation of the Outputs

As mentioned in 5.2 Outputs, the two outputs are being created as planned. Only indicator 1.2 for the output 1 "The monitoring protocols are approved as official monitoring protocols by Ministry of Natural Resources, Environment and Tourism" has not been attained. As the positive reaction was seen from the Minister of Natural Resource, Environment and Tourism on the monitoring protocol, this indicator is likely to be met before closing the project.

The monitoring protocol has been drafted quite appropriately from a technical standpoint. The protocol was drafted and modified reflecting the results of practices on the fields in Palau, FSM, and RMI, so that the protocol is feasible and applicable to the 5 MC jurisdictions. For example, the monitoring items in the protocol are limited to meet minimum requirement but scientifically reasonable.

The timing of the inputs and quality are well qualified and contributed to the smooth project implementation. Secondly, attention has been paid to facilitating communication, nurturing sense of ownership, collaborating with other organizations in project implementation, and this has contributed to creating the quality outputs.

(2) Inputs from the Japanese side

As described in 5.1 Inputs (1) the Japanese side, inputs from the Japanese side were mostly conducted appropriately, and even some of inputs were modified to improve the cost-effectiveness. Dispatch of a short-term expert and training in Japan in the field of IT/GIS were replaced by a local consultant. Similarly, a socio-economic expert was mobilized from a third country instead of a

Japanese expert. These modifications lowered the project costs, created better understanding by canceling a language barrier, enhanced convenience and sustainability. The project operation cost was sufficiently and timely disbursed by the Japanese side, and it facilitated the smooth implementation of the project activities.

However, there was a room to enhance efficiency. Training in Japan on coral reef conservation was delayed for three months due to time consuming arrangement on the Japanese side. Since it was quite useful training stimulated participant's sense of management, it must have been carried out as scheduled.

(3) Inputs from the Palauan side

5.1 Inputs (2) the Palauan side shows that the inputs from the Palauan side were conducted as planned except for the allocation of counterparts. The turnover of key counterparts has frequently occurred, and it has delayed the project implementation. For example, the former head of research department resigned one month later the project started. The CEO of PICRC was vacant for 6 months, so the current head of research department had to temporarily carry the responsibility. Moreover, two of four researchers, who had worked with the Japanese expert for more than 2 years, resigned, and one of two posts has not been filled yet. All these incidences increased a burden to the head and staff of research department, it plays a central role in the project, and it affected the progress of the project activities.

Moreover, salary of all PICRC staff was decreased by 15% for about 7 months in 2011 due to a reduction³ of government fund to PICRC. This measure spoiled motivation and lowered productivity of the staff during the period. As many of PICRC staff are assigned as the Palauan counterparts to the project, this incident impeded the progress of the project.

These situations means that the precondition to commence the project "The governing structure of PICRC is stably maintained." and the important assumption for the project purpose "PICRC personnel assigned for monitoring is not decreased drastically." were not fulfilled. Remarkable project efforts should be valued for implementing activities and creating the outputs generally as planned, despite these changes in the external conditions. The project could have been conducted far more efficiently if these changes did not occur.

Not only negative aspects but several positive aspects, which enhanced the efficiency of the project, have been seen on the Palauan side. The new CEO of PICRC has improved the internal communication, motivated all staff, and increased the source of fund. Improvement in management of PICRC provides a positive impact to the project. Moreover, TNC and PCS contributed to enhance the efficiency of the project through providing human and physical resources. Specifically, the two organizations assisted MPA monitoring and training in Palau, FSM, and RMI. They also extended use of their boats for free⁴ while a boat of PICRC was not functional. It has improved the cost effectiveness of the project.

³ from \$450,000 (Oct.2009-Nov.2010) to \$372,000 (Oct.2010-Nov.2011)

⁴ Fuel and fee for a boat driver were paid.

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6.4 Impacts

Impacts from the project are regarded as high. The overall goal is expected to be achieved targeting FSM and RMI in the future. Apart from the overall goal, several positive impacts are seen, but no negative impact is predicted.

(1) Achievement of the Overall Goal

The overall goal is likely to be achieved in the future focusing on FSM and RMI. Attainment of all indicators 1, 2 and 3 are all feasible if the MC jurisdictions can access MC trust fund. The fund will become available as soon as each MC jurisdiction complete contribution.

Overall goal: The technical capacity of Palau International Coral Reef Center (PICRC) is utilized in five Micronesia Challenge (MC) Jurisdictions	
Indicators: 1. Monitoring protocols developed by PICRC is utilized for management of MPA on five MC Jurisdictions	Means of verification: 1. Documents of member countries and/or regions of MC
Additional indicators: 2. MC jurisdictions consult with and/or accept technical assistance from PICRC. 3. A regional database of MPA monitoring is established in PICRC for MC jurisdictions	Means of verification: 2. Relevant records 3. Database

- Indicator 1 and 2

It is not predictable that the indicator 1 and 2 be attained in the future. There is a difference among the 5 MC jurisdictions in capacity to conduct MPA monitoring and independency. FSM and RMI do not have sufficient capacity and official MPA monitoring protocols, but they are independent countries. These countries are likely to utilize the monitoring protocol developed by the project and need a technical support from PICRC when they conduct MPA monitoring. MC trust fund is the money source for them to manage their MPAs, but they need to put a certain amount of contributions to their MC account in order to tap in it. The contribution from each MC jurisdiction is on progress⁵. The disbursement of the MC fund will become possible from March 2012. Moreover, not only government entities which are responsible for marine resource protection, but also other organizations such as PICRC are eligible to apply MC trust fund⁶. It is expected that PICRC work with these MC jurisdictions using MC trust fund in the future.

⁵ Palau has allocated 4 million USD and need to add 2 more million USD. FSM has allocated 1 million USD and need to add another 1 million USD.

⁶ PAN and PAN fund are the organizations which screen the application. FSM and RMI entrust Micronesian conservation trust board to bear the responsibility.

On the other hand, Guam and Saipan are a part of the United States, so they have their own MPA management system and enough capacity to monitor MPA. Therefore, they may share the related information with PICRC, but they are not likely to utilize the protocol and request technical assistance from PICRC.

- Indicator 3

It seems to be possible to accumulate MPA data in Micronesia region in PICRC, if the jurisdictions conduct MPA monitoring. The project has established the database for the 4 MPAs. PICRC is now recruiting a data manager utilizing a fund from NOAA, so PICRC will be able to maintain and update the database continuously and even expand it. Firstly, the MC jurisdictions need to agree on the establishment of the regional MPA database in PICRC on the occasion of the next MC workshop⁷. Secondly, MPA monitoring must be conducted in accordance with the protocol. Relevant data from a few MC jurisdictions will possibly be shared with PICRC in the future.

(2) Other Impacts

A newsletter of the project, Reef Talk, has up-scaled to a newsletter of whole PICRC. The newsletter is expected to be issued even after the project end.

It is highly expected that a guideline for PAN technical committee be prepared by reference to the monitoring protocol, if the protocol is approved as an official document of PAN. The protocol states that PICRC should support MPA monitoring tapping in PAN fund, so the guideline may also state it. It will facilitate to ensure a sustainable financial resource for PICRC to assist monitoring.

Some non-targeted state governments become interested in MPA monitoring stimulated by the project activities such as MPA monitoring, public relations, and environmental education. For example, Koror state government started conducting socio-economic monitoring in collaboration with PICRC. Moreover, Kayangel and Ngchesar state governments, which are not the selected as a monitoring site but PICRC has collected data on marine resources, asked PICRC their data for the sake of their MPA management.

The project has activated and strengthened Palau Conservation Consortium and networking among the members. The consortium is informal but an exclusive platform in which all parties concerned with environment issues in Palau meet and discuss the issues. The project has presented several agendas including the monitoring protocol for discussion and asking for comments from members. Through the process of discussion and information sharing among the members, the consortium is being vitalized. A Palauan counterpart, head of the research department, is a member of the consortium and has played a leading role in it. He's enhanced sense of ownership and management also contributed to the strengthening of the consortium.

The project has pushed forward the process of MC and created the awareness on MPA monitoring. The project has organized the 2nd MC Meeting of the MC Measures Working Group and

⁷ It is planned to be held in February 2012.

PICRC/JICA Coral Reef Monitoring Project Workshop in collaboration with TNC, and is organizing the next meeting on February 2012. Palauan counterparts technically contributed to making the workshop for participants through providing technical inputs and leading discussions.

6.5 Sustainability

Sustainability of the project is regarded as moderate. Although there are a few issues such as turnover of staff, PICRC has sufficient technical and organizational capability to continue the project activities. Regarding financial sustainability, PAN fund and MC trust fund are likely to be available for state government, each MC jurisdiction, and even PICRC in the future.

(1) Political, Institutional and Legal Aspects

It is sure that the conservation of marine resources and environment will remain as a prioritized national agenda in Palau. The project activities will never lose political ground for their continuation. Continuous support to MPA monitoring by PICRC will obtain an institutional ground if the monitoring protocol is officially approved.

However, there is one concern on the PICRC Act. The law states that PICRC should be self-sufficient in two years after inauguration, but it is not feasible in reality. As PICRC's responsibility is to contribute to public interest through working on marine environment, the law needs modification reflecting PICRC's public role and responsibility.

(2) Organizational Aspects

PICRC has been strengthened through the implementation of the project. A series of regular meeting, reporting formants, sense of management and its techniques were all introduced by the project. These have facilitated information sharing, economized on time, and improved quality of work of PICRC. Such strengthened organizational capacity of PICRC will act as a foundation of sustainability.

Frequent turnover of the staff and difficulty in recruiting a qualified replacement are serious issues for sustainability. As explain in 6.3 (3) Inputs from the Palauan side, these problems affected the project implementation. It will continue to be one of structural risks in PICRC.

As shown in the project name, "monitoring" is the main activity of the project. However, coral reef monitoring or MPA monitoring is not specifically described in the current 5-year strategic plan of PICRC, but seems to be interpreted a part of MPA research. This will not help facilitating PICRC to pay attention to continuous support to MPA monitoring.

(3) Financial Aspects

The government of Palau has kept allocating a certain portion of the budget⁸ to PICRC. It seems to be continued for the time being, because the government acknowledges the important role of

⁸ \$385,000 was allocated.

PICRC. Other sources of budget are grant for research projects, donation, income from the aquarium and shop. The accumulated amount of fund from these sources is relatively constant and even can be increased. It may be financially feasible that PICRC continues its regular operation except for MPA monitoring.

If the monitoring protocol is officially approved as it is, and PAN fund become available for PICRC to support state governments on MPA monitoring, continuity of project activities will be financially ensured in Palau. Apart from the 4 MPAs targeted in the project, PICRC may assist more MPAs in the future. Source of PAN fund is Green fee levied on all foreign visitors, so the fund appears to be sustainable. However, the protocol has not been approved by the minister of NRET.

PICRC's future activities for the MC jurisdictions seem to be sustainable. MC jurisdictions will be able to access to MC trust fund soon as discussed in 6.4 (I) Achievement of the Overall Goal.

(4) Technical aspects

Palauan counterparts in PICRC now have enough skills and knowledge to continue the project activities. Moreover, as described in 6.3 (1) Creation of the Outputs, the monitoring protocol is appropriately developed by the project from the technical standpoint, and it should be feasible for the state government in Palau as well as MC jurisdictions.

On the state governments in which the 4 MPAs exist, staff responsible for MPA monitoring can count the number of fishes and collect sediment samples but need technical assistance on monitoring coral cover and recruitment, invertebrate, and sea grass. Monitoring data has been accumulated in PICRC not in each state government. Data cleaning, analysis, and storage are beyond the capacity of state governments. A data manager to be hired by PICRC will continue to manage the data in the future.

Technical capacity of FSM and RMI is diverse state by state. A few states in FSM may be possible to continue MPA monitoring, but it may be difficult for others to do it without technical support from specialized agencies such as PICRC.

7. Conclusion

The project will continue to be appropriate from the viewpoints of priority, needs and means as addressing the issue. The inputs and activities have been appropriate to create the quality outputs. Specifically, qualified human resource from both sides and activities focused on such aspects as facilitating communication, nurturing sense of ownership, collaborating with other organizations in project implementation were valuable.

The efforts of the project should be valued for appropriately implementing the activities, creating the outputs and achieving the project purpose, even though the precondition and important assumption for the project purpose are not fully met. In particular, frequent turnover of key Palauan counterparts and budget cutback from the government, both of which are not controllable by the project, seriously affected the project.

Because of active project activities, several positive impacts are seen and expected. Since the project act as a major player in marine resource conservation in Palau, parties concerned such as non-targeted state governments and relevant organizations are positively simulated and/or activated.

Technical capacity of PICRC is sufficient and the monitoring protocol is technically appropriate for sustainability. PAN, PAN fund, MC and MC trust fund give a ground for financial sustainability of the project, though the details of these systems are not clearly designed yet. However, it is expected that the two kinds of funds will be soon accessible for PICRC and government organizations in charge of MPA monitoring.

8. Recommendations and Lessons Learned

8.1 Recommendations

8.1.1 Recommendations for the remaining period of the Project

The Evaluation Team recommends as follows;

(1) The Team found that PICRC played important roles in developing a monitoring protocol for effective management of MPAs in Palau which was in the process of authorization by the Palauan Government. However, the Team also found the institutional role of PICRC within the PAN mechanism was not clear and more effort was needed to emphasize and promote PICRS's mandate into national policy of environmental conservation. Recognizing that authorization of the protocol is indispensable for clarifying the institutional role and the function of PICRC, it is strongly recommended that the Project campaign its outputs/results and further direction of the MPA management by PAN mechanism for public to encourage the government such as MNRET to facilitate the process of authorization and recognize the responsibilities of PICRC for implementing PAN mechanism. As a result of authorization, it is expected that PICRC provide technical inputs for all states to develop MPA management plans. This could contribute to capacity development of local states.

(2) The Team found the monitoring method developed by the Project was very innovative for management of MPAs with sufficient scientific standard adapted to the national and local capacity. To utilize this achievement, the Team recommends the Project to organize national/local workshops to promote a better understanding of this achievement by the external stakeholders including local communities and state governments.

(3) It should be mentioned that the Project has been working as a core institution of the Micronesia Challenge to lead scientific monitoring for better management of MPAs in the region. The project also showed ability of the PICRC to support capacity building on monitoring within the region especially FSM and RMI. Therefore the team recommends that the Project/PICRC request the MC to find appropriate mechanism for supporting FSM and RMI to conduct national monitoring with assistance

of PICRC.

(4) The team recognized that the project had built the national capacity on monitoring and these activities also enhanced the regional capacity collaborating with the MC, a regional program. As this joint effort could be a useful case study for regional cooperation, the team recommends the Project that it publish the summary of the Project products in English and thereby proactively present the Project results both to the public and in international communities of scientists and practitioners.

(5) Though PICRC is supposed to encounter difficulties to achieve Overall Goal, it is recommended that the project make a collaboration plan toward achievement of overall goal in close consultation and cooperation with its partners (government, foreign aid donors and NGOs).

8.1.2 Recommendations for the post-project period

The Evaluation Team recommends as follows;

(1) Recognizing that the Project had accomplished development of the practical monitoring protocol, which demonstrated the modality of usability of marine protected area management, it is recommended that PICRC consider strategies to continuously implement monitoring activities based on this protocol under the official/governmental program supporting PAN mechanisms, and that PICRC itself put a monitoring activities as official position in its strategy plan such as next five year plan.

(2) It is also recommended that PICRC lead the Conservation Consortium to improve capacity of MPA management focusing on the responsibility of PICRC as a scientific advisory institution for the government. It is expected that the consortium will consider national policy on environmental conservation and PICRC play a key role of the body.

(3) It is recommended that PICRC further explore possible applications of such protocol for regular MPA monitoring in states outside the scope of the Project and MC jurisdictions.

(4) Former staff of PICRC, local partners such as PCS, TNC, the central and state governments collaborated with PICRC to implement the project effectively. It is recommended that PICRC continue to maintain and strengthen the network with those government agencies and NGOs toward the achievement of the overall goal.

(5) Considering that the Project outputs/results must be applied to actual policy implementation and socio-economic development, it is recommended that the Project outputs/results be shared with the government or semi government organizations concerned, including the board of PAN fund. From a

long-term point of view, the Project outputs/results should be verified and applied through multi-stakeholders dialogues to fit the need of government and local society for future integrated natural environmental monitoring in combination with other data sources (e.g., terrestrial area and socio-economy).

(6) The Project developed communication materials such as newsletter, leaflet, and publication, and intensively implemented public relations activities through mass media and seminars. This could contribute to improve the visibility of PICRC both in Palau and international arenas. Thus, it is recommended that PICRC continue its present works even after the termination of the Project.

(7) Considering that PICRC has been facing challenges of self-sufficiency, it is recommended that PICRC develop a clear management strategy and that PICRC request National Congress to amend current PICRC Act (RPPL 5-17), which takes financial, institutional and human resource aspect into consideration, particularly the operation of the Aquarium to ensure financial sustainability.

(8) It is also recommended that PICRC encourage PAN fund, National Congress, MNRET and state governments to fully recognize PICRC's function and its role and to take necessary measures to support its activities. Furthermore, careful consideration on financial aspect is needed to ensure the adequate human resources for successful achievement of the overall goal.

(9) To utilize the Project outputs/results effectively as well as to maintain partnership with organizations concerned for the Project, it is recommend that PICRC organize regular meetings with participation of various stakeholders from central government, state governments, JICA Palau and relevant partners including foreign aid donors and NGOs to exchange views and discuss future perspectives . At the same time, future possible occasion to enhance partnership with MC jurisdictions to contribute to the Micronesia Challenge is expected.

8.2 Lessons Learned

The Evaluation Team identified the lessons described below, learned from the experience knowledge acquired from the implementation of the Project.

(1) Although the issue of institutional management of PICRC is not covered by the Project, technical achievement including development of technical method/tool is dependent on the sound institutional management. For long-term institutional sustainability, financial and administrative aspects, *inter alia* financial strategy planning and accounting staff allocation should have been taken into consideration from the planning stage of the project.

(2) There are many unforeseeable conditions to judge achievement of the overall goal and

sustainability, For example, MCTF is also necessary system for PICRC to provide technical assistance to MC jurisdictions, yet the fund has not been disbursed mainly due to financial constraints of MC jurisdictions. Considering that these are uncontrolled factor for the Project, project design should be discussed and modified at the appropriate time during the course of the Project to set adequate overall goal.

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ANNEXES

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Annex 1: Latest Project Design Matrix (PDM1)

Approved on October 14, 2009

Project Title: The Capacity Enhancement Project for Coral Reef Monitoring

Duration: 7/2009 – 7/2012 (3 years)

Project Area: Republic of Palau

Target Group: Palau International Coral Reef Center (PICRC), Ministry of Natural Resources, Environment and Tourism, State Government and local residents

Narrative Summary	Objective Verifiable Indicators	Means of Verifications	Important Assumptions
<p>Overall Goal: The technical capacity of Palau International Coral Reef Center (PICRC) is utilized in five Micronesia Challenge (MC) Jurisdictions</p> <p>Project Purpose: The technical capacity of PICRC is enhanced in monitoring required for management of Marine Protected Area (MPA).</p>	<p>Monitoring protocols developed by PICRC is utilized for management of MPA on five MC Jurisdictions</p> <ol style="list-style-type: none"> The monitoring is implemented based on protocols developed by PICRC at 2 MPAs of Palau. The institutional role of the PICRC in MPA monitoring is clarified 	<p>Documents of member countries and/or regions of MC</p> <ol style="list-style-type: none"> Documents of PICRC and Palau government. Documents of Palau government. 	<p>The policy of Palau Government in marine conservation is not drastically changed.</p>
<p>Outputs:</p> <ol style="list-style-type: none"> The system to support the monitoring on MPA is developed. The partnership is enhanced between PICRC and international initiatives, five MC Jurisdictions, related organizations and research institutions. 	<ol style="list-style-type: none"> Information related to management and conservation of MPA is updated. The monitoring protocols are approved as official monitoring protocols by Ministry of Natural Resources, Environment and Tourism. PICRC makes 5 presentations at the conferences and workshops of relevant international frameworks and related organization or research institutions by the end of the Project. PICRC produces 20 different publications or announcements through media by the end of the Project. The seminars and/or workshops on MPA monitoring for five MC Jurisdictions are conducted by PICRC 3 times by the end of the Project. 	<ol style="list-style-type: none"> Documents of PICRC Documents of MRD Documents of PICRC Web sites or papers of MC countries and /or regions, related organizations and research institutions Documents of PICRC 	<p>PICRC personnel assigned for monitoring is not decreased drastically.</p>

<p>Activities:</p> <p>1.1 Review the current situation in conservation and management of MPA and monitoring activities for coral reef ecosystems, conducted by PICRC</p> <p>1.2 Select target MPAs for monitoring in consultation with local communities and administrative agencies related to MPAs, based on activity 1.1</p> <p>1.3 Promote participation of local communities and officials of State Government in the monitoring activities through the knowledge dissemination and awareness raising.</p> <p>1.4 Prepare the monitoring plan based on standardized regulations of Palau and of other international initiatives or related agencies.</p> <p>1.5 Monitor the selected MPAs according to the monitoring plan prepared.</p> <p>1.6 Draft the monitoring protocols reflecting activities 1.1-1.5</p> <p>2.1 Submit the information on monitoring to international initiatives, related organizations and research institutions.</p> <p>2.2 Disseminate the current situation of the MPAs revealed by the monitoring to the local communities, tourists and medias.</p> <p>2.3 Disseminate the MPA monitoring protocols developed by PICRC through the implementation of seminars and workshops for five MC Jurisdictions.</p>	<p>Japan side</p> <p><u>long term experts</u></p> <p>(1) Chief Advisor (2) Coordinator</p> <p><u>Short term experts</u></p> <p>Several experts to cover following fields:</p> <p>(1) Monitoring Planning (2) MPA management (3) IT(Information Technology)/Database administration</p> <p><u>Machinery and Equipments</u></p> <p>(1) Vehicle (2) Monitoring equipments (3) Aquarium spare parts (4) GIS and database system devices. (5) Other equipments necessary for the implementation of the Project</p> <p><u>Training in Japan or in the third countries</u></p> <p>Several trainings per year in the following fields;</p> <p>(1) Coral reef conservation (2) MPA management (3) Coral reef monitoring (4) GIS/IT(Information Technology)</p>	<p>Palau side</p> <p><u>Counterpart personnel</u></p> <p>(1) Chief Executive Officer (2) Administration Officers (3) Researchers (4) Engineers (5) Aquarists (6) Education Officer(s)</p> <p><u>Facilities and Equipments</u></p> <p>(1) Land, buildings and facilities necessary for the Project (2) Room space and necessary infrastructure facilities for installation and storage of the equipment (3) Offices and basic logistics facilities for the JICA experts (4) Other facilities mutually agreed upon as necessary</p> <p><u>Budgetary Arrangement to PICRC by the Government of Palau</u></p> <p>Administration and Operational costs</p>	<p><u>Pre-conditions</u></p> <p>The governing structure of PICRC is stably maintained.</p>
<p>Input:</p>	<p><u>Japan side</u></p> <p><u>long term experts</u></p> <p>(1) Chief Advisor (2) Coordinator</p> <p><u>Short term experts</u></p> <p>Several experts to cover following fields:</p> <p>(1) Monitoring Planning (2) MPA management (3) IT(Information Technology)/Database administration</p> <p><u>Machinery and Equipments</u></p> <p>(1) Vehicle (2) Monitoring equipments (3) Aquarium spare parts (4) GIS and database system devices. (5) Other equipments necessary for the implementation of the Project</p> <p><u>Training in Japan or in the third countries</u></p> <p>Several trainings per year in the following fields;</p> <p>(1) Coral reef conservation (2) MPA management (3) Coral reef monitoring (4) GIS/IT(Information Technology)</p>	<p><u>Palau side</u></p> <p><u>Counterpart personnel</u></p> <p>(1) Chief Executive Officer (2) Administration Officers (3) Researchers (4) Engineers (5) Aquarists (6) Education Officer(s)</p> <p><u>Facilities and Equipments</u></p> <p>(1) Land, buildings and facilities necessary for the Project (2) Room space and necessary infrastructure facilities for installation and storage of the equipment (3) Offices and basic logistics facilities for the JICA experts (4) Other facilities mutually agreed upon as necessary</p> <p><u>Budgetary Arrangement to PICRC by the Government of Palau</u></p> <p>Administration and Operational costs</p>	<p><u>Pre-conditions</u></p> <p>The governing structure of PICRC is stably maintained.</p>

1. At least 2 sites with 2 control sites for each MPA
- 2.1. 5 presentations; for example, 1 in Coral Reef Symposium, 1 in Asia-Pacific Coral Reef Symposium, 1 in Pacific Science Congress, 2 in ICRI meetings

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Annex 2: Latest Plan of Operations (PO2)

Approved on May 14

Monitoring Sheet based on PO2

as of 11/1/2010

Activity	Description	Responsible Party	Year												Deliverables	Reporting Mechanism				
			2010																	
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec						
1. The activities to support the monitoring of LIPs developed	Review the current situation concerning the management of LIPs and monitoring activities for core and local shops conducted by PICRC	Collect information on gaps, local shop regulations and monitoring status of existing LIPs in Palau and the other LDC jurisdictions																Meeting (Feb 2 & 3)	Report: List of LIPs	
		Identify gaps in management and monitoring of local shops as well as indicators to be monitored in Palau and the other LDC jurisdictions by holding and sharing the data																	Meeting (Feb 2)	Report: LIPs
		Identify issues in management and monitoring of local shops as well as indicators to be monitored in Palau and the other LDC jurisdictions by holding and sharing the data																	Meeting (Feb 2)	Report: LIPs
		Identify issues in management and monitoring of local shops as well as indicators to be monitored in Palau and the other LDC jurisdictions by holding and sharing the data																	Meeting (Feb 2)	Report: LIPs
	Select the LIPs to be the monitoring pilot communities with local communities and different sub-agencies related to LIPs based on active	Identify the gaps of PICRC to conduct current monitoring and if necessary, supply equipment and human resources to start the project																	Meeting (Feb 2)	Report
		Identify issues and select target LIPs for the project in Palau based on articles 1.1 and 1.2.1 and through meetings with relevant agencies and stakeholders																	LIPs (Feb 2)	Meeting report
		Obtain consensus on the selected LIPs from relevant agencies and stakeholders																	Meeting (Feb 2)	Report: Minutes of meeting
	Provide the participation of local communities and officials of State Government in the monitoring activities through the knowledge dissemination and awareness raising	Hold meetings with local communities and staff of state governments of the target areas and other communities on monitoring																	LIPs report (Feb)	Report: Minutes of meeting
		Conduct on-site training on monitoring methods (based on 1.2.1)																	LIPs (Feb)	Report
		Engage and train local communities and staff of state governments in the targeted areas of the project and build its status and capacities of those																	LIPs (Feb)	Report
Prepare the monitoring plan based on standardized regulations of Palau and other international initiatives related agencies	Collect the information on regulations of international initiatives and Palauan government in relation to LIPs monitoring																	Meeting (Feb)	Report	
	Prepare the monitoring plan for LIPs based on active monitoring model																	Meeting (Feb)	Report	
	Obtain approval of monitoring plan from PICRC and relevant agencies and organizations																	Meeting (Feb)	Report: Minutes of meeting	
	Conduct the monitoring with PICRC and stakeholders according to the plan - conduct shops including monitoring in the field will be held in the other LDC jurisdictions when necessary.																	LIPs (Feb)	Report	
Monitor the selected LIPs according to the monitoring plan prepared	Conduct the surveys on database																	LIPs (Feb)	Report	
	Update the monitoring data on database (to be used PICRC collaborate with F4 ARE)																	LIPs (Feb)	Report	
	Conduct the surveys on database																	LIPs (Feb)	Report	
	Update the monitoring data on database (to be used PICRC collaborate with F4 ARE)																	LIPs (Feb)	Report	
Develop the monitoring protocols including sub-articles 1.1.1.1	Develop sub-articles 1.1.1.1																	Meeting (Feb)	Report	
	Prepare comprehensive monitoring protocol based on the activities																	Meeting (Feb)	Protocol	
	Submit the monitoring protocols to the Ministry of Finance, Resources, Environment and Tourism, and PIC as well as other relevant agencies																	Meeting (Feb 2)	Report	
2. The partnership or alliances between PICRC and international initiatives related agencies, national organizations and research institutions	Submit the information on monitoring to international initiatives related organizations and research institutions	Provide information related to sub-articles 1.1.1.1.1 and national team to related international initiatives agencies organizations and research institutes																Meeting (Feb)	Minutes	
		Provide monitoring information to the related international initiatives agencies organizations and research institutes. For GO, PICRC collaborate with F4 ARE.																	Meeting (Feb)	Report
	Coordinate the content of the LIPs as related monitoring to the local communities, boards and media	Review and publish the activities and the status of core shops and cut of LIPs based on the monitoring results through the media such as newspapers, TV, and web sites, events, forums and international conferences																	Meeting (Feb 2)	List of information and publications
		Provide updates on current status of LIPs in relation to the monitoring results to municipal offices, board of information offices, and related stakeholders																	Meeting (Feb)	Minutes
	Coordinate the LIPs monitoring protocols developed PICRC through the implementation of seminars and workshops for the LDC jurisdictions	Provide the monitoring protocols developed PICRC to the other LDC jurisdictions through the implementation of seminars and workshops																	Meeting (Feb 2)	Report
		Provide updates of the monitoring protocols to the other LDC jurisdictions																	Meeting (Feb 2)	Report
		Provide updates of the monitoring protocols to the other LDC jurisdictions																	Meeting (Feb 2)	Report

Legend:

Activities that may take place at a given time
 Monitoring method: Data collection from field to collect data such as site based monitoring plan, a plan covering who, when, how, how often to monitor including budget and facilities needed.
 Protocol: Comprehensive description of monitoring procedures including selection of target LIPs and monitoring life, sampling design, data management and statistical analysis, as well as a list of sharing information.

Annex 3: Evaluation Grids

1. Evaluation Grid 1: Project Performance Record

Categories	Questions		Information to be collected	Information sources
		Sub-categories		
1. Inputs				
1-1 Inputs from the Japanese side	<ul style="list-style-type: none"> Plan and performance of the inputs Gap between the plan and performance 		Plan and performance of the followings; <ul style="list-style-type: none"> Dispatch of experts Training in Japan or third countries Provision of equipment Operational cost 	<ul style="list-style-type: none"> The project
1-2 Inputs from the Palauan side	<ul style="list-style-type: none"> Plan and performance of the inputs Gap between the plan and performance 		Plan and performance of the followings; <ul style="list-style-type: none"> Allocation of counterpart personnel Facilities and equipment Administration and operational costs 	<ul style="list-style-type: none"> The project
2. Overall goal				
2-1 Achievement of the overall goal	<ul style="list-style-type: none"> Is the indicator "Monitoring protocols developed by PICRC is utilized for management of MPA on five MC Jurisdictions" likely to be achieved in the future? 		<ul style="list-style-type: none"> Progress of preparation and approval of the monitoring protocol Agreement on MPA monitoring among MC jurisdictions Implementation of the agreement in the 2nd meeting of the MC measures working group Intentions of the MC jurisdictions 	<ul style="list-style-type: none"> The project Report on monitoring workshops in FMS and RMI MNRET MC coordinator or the Office of Environment Responses and Coordination
	<ul style="list-style-type: none"> Additional indicators for the overall goal <ul style="list-style-type: none"> ➤ Is PICRC likely to act as a regional data base center for MC jurisdictions? ➤ Is PICRC likely to act as a regional MPA monitoring center for MC jurisdictions? ➤ Is PICRC likely to act as a regional training center on environmental conservation for MC jurisdictions? 		<ul style="list-style-type: none"> Intentions of the MC jurisdictions 	<ul style="list-style-type: none"> The project MNRET MC coordinator or the Office of Environment Responses and Coordination
3. Project purpose				
3-1 Achievement of the project purpose	<ul style="list-style-type: none"> Is the indicator 1 "The monitoring is implemented based on protocols developed by PICRC at 2 MPAs of Palau" likely to be achieved by the end of the project? 		<ul style="list-style-type: none"> Information on the monitoring of the targeted 4 MPAs Sharing of role in MPA monitoring among 	<ul style="list-style-type: none"> Monitoring reports and records Staff in charge of

Questions		Information to be collected	Information sources
Categories	Sub-categories		
	<ul style="list-style-type: none"> • Is the indicator 2. "The institutional role of the PICRC in MPA monitoring is clarified" likely to be achieved by the end of the project? • Additional indicators for the project purpose <ul style="list-style-type: none"> ➢ How much has the MPA monitoring capacity of PICRC been improved? 	PICRC, stage governments and communities	the monitoring in PICRC <ul style="list-style-type: none"> • Staff in charge of the monitoring in the state governments • Communities in the states
		<ul style="list-style-type: none"> • Corresponding official documents • Process and progress of official endorsement 	<ul style="list-style-type: none"> • MNRET • The project
		<ul style="list-style-type: none"> • Change in the capacity of monitoring planning • Change in the capacity of monitoring implementation • Change in the capacity of monitoring data management • Change in the capacity of monitoring result utilization 	<ul style="list-style-type: none"> • The project
4. Outputs			
4-1 Creation of the output 1	<ul style="list-style-type: none"> • Is the indicator 1.1 "Information related to management and conservation of MPA is updated" created or likely to be created? 	<ul style="list-style-type: none"> • Updated information • Monitoring database • Reported information in mass media 	<ul style="list-style-type: none"> • The project
	<ul style="list-style-type: none"> • Is the indicator 1.2 "The monitoring protocols are approved as official monitoring protocols by Ministry of Natural Resources, Environment and Tourism" created or likely to be created? 	<ul style="list-style-type: none"> • Monitoring protocol • Official document of approval (Regal and institutional ground of the monitoring protocol should be clarified) • Process and progress of official endorsement 	<ul style="list-style-type: none"> • The project • MNRET
	<ul style="list-style-type: none"> • Additional indicators for the output 1 <ul style="list-style-type: none"> ➢ Is the support of MPA monitoring regarded as a responsibility of PICRC and its relevant staff 	<ul style="list-style-type: none"> • Prospect on MPA monitoring by tapping PAN fund • Documented TOR of PICRC and its relevant staff 	<ul style="list-style-type: none"> • PAN • PICRC
4-2 Creation of the output 2	<ul style="list-style-type: none"> • Is the indicator 2.1 "PICRC makes 5 presentations at the conferences and workshops of relevant international frameworks and related organization or research institutions by the end of the Project" created or likely to be created? 	<ul style="list-style-type: none"> • Reported materials • Report on participating conferences/workshops 	<ul style="list-style-type: none"> • The project
	<ul style="list-style-type: none"> • Is the indicator 2.2 "PICRC produces 20 different publications 	<ul style="list-style-type: none"> • Reported/ exposed information in mass 	<ul style="list-style-type: none"> • The project

Categories	Questions		Information to be collected	Information sources
		Sub-categories		
	<ul style="list-style-type: none"> or announcements through media by the end of the Project" created or likely to be created? Is the indicator 2.3 "The seminars and/or workshops on MPA monitoring for five MC Jurisdictions are conducted by PICRC 3 times by the end of the Project" created or likely to be created? Additional indicators for the output 2 <ul style="list-style-type: none"> ➤ What cooperation and/or agreement on MPA monitoring has been engaged between PICRC and MC jurisdictions 	<ul style="list-style-type: none"> media such as TV, radio, magazines, newspapers, and websites Records of the workshops and seminars Responsibility of PICRC on MPA monitoring which agreed among MC jurisdictions Progress of biological monitoring in FMS and RMI introduced by the project Current situation of other relevant issues 	<ul style="list-style-type: none"> The project The project MNRET MC coordinator or Office of Environment Responses and Coordination 	
5. Activities				
5-1 Activities for the output 1	<ul style="list-style-type: none"> Has "1.1 Review the current situation in conservation and management of MPA and monitoring activities for coral reef ecosystems, conducted by PICRC" been appropriately carried out? 		<ul style="list-style-type: none"> Report of the review 	<ul style="list-style-type: none"> The project
	<ul style="list-style-type: none"> Has "1.2 Select target MPAs for monitoring in consultation with local communities and administrative agencies related to MPAs, based on activity 1.1" been appropriately carried out? 		<ul style="list-style-type: none"> Report on the selection 	<ul style="list-style-type: none"> The project
	<ul style="list-style-type: none"> Has "1.3 Promote participation of local communities and officials of State Government in the monitoring activities through the knowledge dissemination and awareness raising" been appropriately carried out? 		<ul style="list-style-type: none"> Report on the knowledge dissemination and awareness raising Views of parties concerned 	<ul style="list-style-type: none"> The project Governments of the 4 states Communities of the 4 states The project
	<ul style="list-style-type: none"> Has "1.4 Prepare the monitoring plan based on standardized regulations of Palau and of other international initiatives or related agencies" been appropriately carried out? 		<ul style="list-style-type: none"> Monitoring reports 	<ul style="list-style-type: none"> The project
	<ul style="list-style-type: none"> Has "1.5 Monitor the selected MPAs according to the monitoring plan prepared" been appropriately carried out? 		<ul style="list-style-type: none"> Monitoring reports 	<ul style="list-style-type: none"> The project
	<ul style="list-style-type: none"> Has "1.6 Draft the monitoring protocols reflecting activities 1.1-1.5" been appropriately carried out? 		<ul style="list-style-type: none"> Monitoring protocol CPUe 	<ul style="list-style-type: none"> The project
5-2 Activities for the output 2	<ul style="list-style-type: none"> Has "2.1 Submit the information on monitoring to international initiatives, related organizations and research institutions" been appropriately carried out? 		<ul style="list-style-type: none"> Submitted information Reports on the participation of workshops/conferences 	<ul style="list-style-type: none"> The project
	<ul style="list-style-type: none"> Has "2.2 Disseminate the current situation of the MPAs revealed by the monitoring to the local communities, tourists 		<ul style="list-style-type: none"> Reported/ exposed information in mass media such as TV, radio, magazines, 	<ul style="list-style-type: none"> The project

Categories	Questions		Information to be collected	Information sources
		Sub-categories		
	and medias" been appropriately carried out?		newspapers, websites, and leaflet prepared by the project	
	<ul style="list-style-type: none"> Has "2.3 Disseminate the MPA monitoring protocols developed by PICRC through the implementation of seminars and workshops for five MC Jurisdictions" been appropriately carried out? 		<ul style="list-style-type: none"> Reports on the seminars and workshops 	<ul style="list-style-type: none"> The project
6. Implementation process				
	<ul style="list-style-type: none"> To what aspects have the Japanese experts paid special attention in technology transfer? What are the effects from such efforts? 		<ul style="list-style-type: none"> Views of parties concerned 	<ul style="list-style-type: none"> The project
	<ul style="list-style-type: none"> Has the poor communication in PICRC been solved? How has the communication in the project members (Japanese experts and Palauan counterparts) affect the progress of the project activities? 		<ul style="list-style-type: none"> Views of parties concerned 	<ul style="list-style-type: none"> The project
	<ul style="list-style-type: none"> Did the project team monitor the progress of the project appropriately? How have the monitoring results been utilized? 		<ul style="list-style-type: none"> Views of parties concerned Internal monitoring report 	<ul style="list-style-type: none"> The project
	<ul style="list-style-type: none"> How has the financial trouble of PICRC affected the project? Have appropriate Palauan counterparts been allocated to the project? 		<ul style="list-style-type: none"> Views of parties concerned Views of parties concerned 	<ul style="list-style-type: none"> The project The project
	<ul style="list-style-type: none"> Was JCC functioned as expected for smooth implementation of the project? Which relevant organizations are particularly important to the project? 		<ul style="list-style-type: none"> Views of parties concerned 	<ul style="list-style-type: none"> The project
	<ul style="list-style-type: none"> What influence have the organizations given to the project? 		<ul style="list-style-type: none"> Views of parties concerned 	<ul style="list-style-type: none"> The project

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2. Evaluation Grid 2: 5 evaluation criteria

Categories	Questions		Information to be collected	Information sources Categories
	Sub-categories			
1. Relevance				
1-1 Priority	<ul style="list-style-type: none"> Are the project purpose and overall goal aligned with the development policies, institutions, and plans of the RoP? Is PICRC appropriate organization to implement the project aiming at achieving the overall goal and project purpose? 	<ul style="list-style-type: none"> Validity of MC, Palau 2020 National Master Development Plan, and Establishment Law of PICRC (1999) Other relevant policies, laws and institutions Regal and institutional ground of PICRC 	<ul style="list-style-type: none"> MNRET and Relevant government agencies of RoP PICRC The project MNRET and Relevant government agencies of RoP PICRC Establishment Law of PICRC (1999) 	
	<ul style="list-style-type: none"> Are the project purpose and overall goal aligned with the development policies, institutions, and plans of the state governments? 	<ul style="list-style-type: none"> Development and/or environmental protection plans of the 4 states 	<ul style="list-style-type: none"> Governments of the 4 states 	
	<ul style="list-style-type: none"> Are the project purpose and overall goal aligned with the ODA policy of Japan and Country Strategy of JICA? 	<ul style="list-style-type: none"> Validity of The 3rd and 4th Pacific Islands Leaders Meetings, country strategy of JICA for Palau, National Strategy for the Conservation and Sustainable Use of Biological Diversity (2007 Version), cool earth partnership 	<ul style="list-style-type: none"> JICA 	
1-2 Needs	<ul style="list-style-type: none"> Are the project purpose and overall goal aligned with the needs of the target groups? 	<ul style="list-style-type: none"> Needs and issues of the communities of the 4 states 	<ul style="list-style-type: none"> Communities of the 4 states 	
1-3 Suitability as a means	<ul style="list-style-type: none"> Are the 4 MPAs appropriate for monitoring sites? Is the number of monitoring sites, 4, appropriate? Does Japan have technological advantages? 	<ul style="list-style-type: none"> Report on the selection of the 4 MPAs Views of parties concerned Japan's technological advantages Japan's ODA experiences of the similar sector Transferred technologies unique to Japan 	<ul style="list-style-type: none"> The project MNRET NGOs The project The study team 	
2. Effectiveness				
2-1 Achievement of the project purpose	<ul style="list-style-type: none"> Is the project purpose likely to be achieved? → refer evaluation grid 1: : Project Performance Record 	<ul style="list-style-type: none"> Project performance record Views of parties concerned 	<ul style="list-style-type: none"> Project performance record The project 	
2-2 Logic	<ul style="list-style-type: none"> Are the outputs sufficient to achieve the project purpose? 	<ul style="list-style-type: none"> Result of reconsideration on whether the outputs sufficiently planned to achieve the project purpose Effects from quality and timing of the outputs Other factors contributing to achieve the project 	<ul style="list-style-type: none"> PDM Project performance record The project 	

Questions		Information sources Categories
Categories	Sub-categories	
	<ul style="list-style-type: none"> • Are the pre-condition and important assumptions still upheld? • If not, how does it affect the achievement of the project purpose? • What are the contributing and disturbing factors to achieve the project purpose? • How has the project dealt with the disturbing factors? 	<ul style="list-style-type: none"> • Synergic effect between the two outputs purpose • Change in The governing structure of PICRC (The governing structure: budget, staff, organization, and institution) • Change in the number of PICRC personnel assigned for monitoring • Views of parties concerned
3. Efficiency		
3-1 Outputs	<ul style="list-style-type: none"> • Have the outputs been generated as planned? → refer evaluation grid 1: Project Performance Record • Are the inputs and activities sufficient to achieve the project purpose? 	<ul style="list-style-type: none"> • Project performance record • Views of parties concerned
3-2 Logic	<ul style="list-style-type: none"> • Are the pre-condition and important assumptions still upheld? • If not, how does it affect the creation of the outputs? • What are the contributing and disturbing factors to create the outputs? • How has the project dealt with the disturbing factors? 	<ul style="list-style-type: none"> • Result of reconsideration on whether the inputs and activities sufficiently planned to create the outputs • Effects from quality and timing of the inputs and activities • Other factors contributing to create the outputs • Synergic effect between the inputs and activities • Change in The governing structure of PICRC (The governing structure: budget, staff, organization, and institution) • Change in the number of PICRC personnel assigned for monitoring • Views of parties concerned
3-3 Cost-effectiveness	<ul style="list-style-type: none"> • Have the project tried to reduce the inputs maintaining the same quality of the outputs? Might it be possible? • Are there any inputs or activities which have not contributed well to the creation of the outputs? 	<ul style="list-style-type: none"> • Project performance record • Views of parties concerned

Questions		Information to be collected	Information sources Categories
Categories	Sub-categories		
	<ul style="list-style-type: none"> • Have the project tried to enlarge the outputs with the same inputs? Might it be possible? • Are there any inputs which have not been fully utilized to the creation of the outputs? 	<ul style="list-style-type: none"> • Project performance record • Views of parties concerned 	<ul style="list-style-type: none"> • The project • Governments of the 4 states
4. Impact			
4-1 Achievement of the overall goal	<ul style="list-style-type: none"> • Is the overall goal likely to be achieved? → refer evaluation grid 1: Project Performance Record • How long will it take to achieve the overall goal? 	<ul style="list-style-type: none"> • Project performance record • Views of parties concerned 	<ul style="list-style-type: none"> • Project performance record • The project
4-2 Logic	<ul style="list-style-type: none"> • Is the project purpose sufficient to achieve the overall goal? 	<ul style="list-style-type: none"> • Result of reconsideration on whether the project purpose sufficiently planned to achieve the overall goal • Effects from quality and timing of the achieved project purpose • Other factors might be contributing to achieve the overall goal • Necessary activities can be conducted by the end of the project so as to facilitate achievement of the overall goal, e.g. promotion of the monitoring protocol 	<ul style="list-style-type: none"> • PDM • The project
	<ul style="list-style-type: none"> • What are the foreseeable contributing and disturbing factors to achieve the overall goal? • What are the possible countermeasures against the disturbing factors? 	<ul style="list-style-type: none"> • Views of parties concerned 	<ul style="list-style-type: none"> • The project • MC coordinator or the Office of Environment Responses and Coordination
4-3 Goal setting	<ul style="list-style-type: none"> • Is the indicator appropriate to judge the achievement of the overall goal? • Is the indicator easily available? 	<ul style="list-style-type: none"> • Indicators and means of verification 	<ul style="list-style-type: none"> • PDM • The project
4-4 Risks	<ul style="list-style-type: none"> • Is the important assumption for achieving the overall goal is appropriate? • Will the pre-condition and important assumptions be upheld continuously? 	<ul style="list-style-type: none"> • Pre-condition and important assumptions • Prospect on the policy of MPA management in RoP 	<ul style="list-style-type: none"> • PDM • The project • MNRET
4-5 Other impacts than the overall			

Questions		Information to be collected	Information sources Categories
Categories	Sub-categories		
<ul style="list-style-type: none"> Impact on policy, institution, law, and standard Impact on society, economy, and culture Impact on technology Impact on environment Negative impact Degree of contribution 	<ul style="list-style-type: none"> Are there any impacts on relevant policy, institution, law, and standard? If there are, what indirect impacts are expected to what target groups Are there any social, economic, and cultural impacts on the communities in the selected 4 states? Are such impacts likely to occur? Are any new technologies or knowledge generated as an impact of the technology transfer by the project? Are such impacts likely to occur? Have the monitoring results at the 4 MPAs been improved? Are such impacts likely to occur? Are there any negative impacts from the project? What are the possible countermeasures against the negative impacts? Has the project highly contributed to creating the above mentioned impacts? Are there any factors which contributed to creating the above mentioned impacts? 	<ul style="list-style-type: none"> Relevant policy, institution, law, and standard Change in income Change in social activities Change in culture Corresponding new technologies or knowledge Monitoring database Monitoring reports and records Views of parties concerned Views of parties concerned 	<ul style="list-style-type: none"> MNRET Related government agencies and NGOs The project Communities of the 4 states Related government agencies and NGOs The project Communities of the 4 states Related government agencies and NGOs MNRET State governments Bureau of Protected Area Network MC coordinator or the Office of Environment Responses and Coordination PICRC State governments
5. Sustainability 5-1 Policies, institutions, laws, etc	<ul style="list-style-type: none"> Are the existing policies, institutions, laws, etc., which facilitate continuing and extending the project activities, likely to be valid into the future in the 5 MC jurisdictions? Are the new relevant policies, institutions, laws, etc., which facilitate continuing the project activities, likely to be created in the future in the 5 MC jurisdictions? 	<ul style="list-style-type: none"> Intention of government agencies which are responsible for relevant policies, institutions, laws, etc. Prospect on the attainment of the indicator 2 for the project purpose Situation of other 4 MC jurisdictions 	
5-2 Organizational capacity	<ul style="list-style-type: none"> Do the 5 MC jurisdictions have sufficient human resources and 	<ul style="list-style-type: none"> Staff allocation of PICRC Functional organizational structure of PICRC 	

Questions		Information to be collected	Information sources Categories
Categories	Sub-categories		
	organizational capacity to continue and extend the project activities?	<ul style="list-style-type: none"> • Effective and efficient operation of the aquarium • Allocation of the staff in charge of MPA and/or monitoring in state governments • Response from communities • Role sharing in MPA monitoring among PICRC, stage governments and communities; its ideal and reality. • Situation of other 4 MC jurisdictions • Prospect on the budget of PICRC • Prospect on MPA monitoring by tapping PAN fund or other resources • Cost sharing of MPA monitoring among PICRC, stage governments and communities • Financial capacity of state governments • Situation of other 4 MC jurisdictions 	<ul style="list-style-type: none"> • Communities of the 4 states • MC coordinator or the Office of Environment Responses and Coordination
5-3 Financial capacity	<ul style="list-style-type: none"> • Can the 5 jurisdictions secure the fund to continue and extend the project activities? 	<ul style="list-style-type: none"> • The project • PAN, PAN Fund, and MNRET • PICRC • State governments • Communities of the 4 states • Bureau of Protected Area Network • MC coordinator or the Office of Environment Responses and Coordination 	
5-4 Technologies	<ul style="list-style-type: none"> • Are the technologies and knowledge for MPA monitoring likely to be used in RoP, FMS, and RMI into the future? 	<ul style="list-style-type: none"> • Degree of acceptance of the technologies and knowledge for MPA monitoring • Condition of machinery and equipment • Countermeasures for technology lost resulted from resignation and/or relocation of staff and communities responsible for MPA monitoring • Situation of FMS and RMI 	<ul style="list-style-type: none"> • The project • PICRC • State governments • Communities of the 4 states
5-5 Disturbing factors	<ul style="list-style-type: none"> • Do the identified negative impacts affect the sustainability of the project? • Are there any factors disturbing the sustainability of the project 	<ul style="list-style-type: none"> • Identified negative impacts in 4. Impact • Views of parties concerned 	<ul style="list-style-type: none"> • The project • State governments • Communities of the 4 states

Annex 4: Inputs from the Japanese Side

1. Dispatch of Experts

1.1 Plan

[Long-term]

- (1) Chief Advisor
- (2) Coordinator

[Short-term]

Several experts to cover following fields:

- (1) Monitoring Planning
- (2) MPA management
- (3) IT(Information Technology)/ Database administration

1.2 Accomplishment

(1) Japanese Experts

Name	Assignment	Period
【Long-term】		
Nakaya Seiji	Project Chief Advisor	7/26/2009-to date
Takeda Shingo	Project Coordinator	7/26/2009- 8/6/2010
Matsumoto Setsuko	Project Coordinator	7/20/2010-to date
【Short-term】		
Tadashi Kimura	MPA Monitoring/Management	2/14/2010-2/21/2010
Matsumoto Setsuko	Workshop Facilitation	2/13/2010-2/21/2010

(2) Palauan and Third Country Experts

Name	Assignment	Period
Supin Wongbusarakum (The Nature Conservancy)	Socioeconomic Monitoring	7/9/2010-7/21/2010, 11/15/2010-12/31/2010
Conrad Ellechel (Core Solutions)	Database construction	9/20/2010-10/30/2010, 1/24/2011-2/28/2011

2. Provision of Equipment

2.1 Plan

- (1) Vehicle
- (2) Monitoring equipments
- (3) Aquarium spare parts
- (4) GIS and database system devices
- (5) Other equipments necessary for the implementation of the Project

2.2 Accomplishment

JFY 2009

Date	Item	Unit Amount (JPY)	Unit Amount (\$)	Unit	Cost(JPY)	Cost(\$)
2009.08.13	LCD monitor		399.00	1		399.00
2009.11.09	Printer, Photocopy and Fax machine		1,740.00	1		1,740.00
2010.01.29*	Projector		3,515.00	1		3,515.00
2010.03.05	Car		35,972.49	1		35,972.49
Total						\$41,626.49

JFY 2010

Date	Item	Unit Amount (JPY)	Unit Amount (\$)	Unit	Cost(JPY)	Cost(\$)
2010.04.10	Microscope objective lens	88,000		1	88,000.00	
2010.04.10	Microscope objective lens	138,000		1	138,000.00	
2010.04.10	Microscope objective lens	30,000		1	30,000.00	
2010.04.13*	Digital Camera		1,298.00	1		1,298.00
2010.04.13*	Digital camera and housing set		1,790.00	2		3,580.00
2010.04.13*	External HD		721.00	1		721.00
2010.04.13*	Easel flip chart set		245.55	1		245.55
2010.04.13*	PA Sound System		1,480.00	1		1,480.00
2010.04.13*	Desktop PC		1,905.00	1		1,905.00
2010.04.13*	Waterproof paper		116.00	10		1,160.00
2010.04.13*	GPS		254.00	4		1,016.00
2010.04.13*	Secci disk		129.00	4		516.00
2010.04.13*	Fiberglass Tapes		81.00	25		2,025.00
2010.04.13*	Thermometer		290.00	6		1,740.00
2010.04.13*	Fins		168.30	7		1,178.10
2010.04.13*	Wetsuits		233.75	7		1,636.25
2010.04.13*	BC Jacket		556.75	7		3,897.25
2010.04.13*	Regulator		556.75	7		3,897.25
2010.04.13*	Octopus		187.00	7		1,309.00
2010.04.13*	Dive Computer & Pressure gauge		446.25	7		3,123.75
2010.04.13*	Masks		72.25	7		505.75
2010.04.13*	Snorkel		41.65	7		291.55
2010.04.13*	Glove		29.75	7		208.25
2010.04.13*	Mesh Bag		44.20	7		309.40
2010.04.13*	Weight Belt		10.20	7		71.40

2010.04.13*	Weight		5.10	10		51.00
2010.07.22	Telephone set		202.96	1		202.96
2010.10.05	24-Port Gigabit Switch		345.00	1		345.00
2010.10.05	Switch 8-Port for Database		159.95	1		159.95
2010.10.05	Paper shredder		89.95	1		89.95
2010.11.23	Crucibles		27.70	40		1,108.00
2010.11.24	Beakers		10.90	40		436.00
2010.11.25	Beakers		31.90	40		1,276.00
2010.11.24	External Hard Drive		185.00	1		185.00
2010.12.13	External Hard Drive		380.00	1		380.00
2010.05.18	Banner double sided		635.00	1		635.00
2010.12.16	Desk-top Computer		974.00	1		974.00
2011.01.24	Digital camera & housing set		1,280.00	1		1,280.00
2011.2.07	Projector		1,170.00	1		1,170.00
2011.3.02	Statistics software		5,730.00	1		5,730.00
2011.03.03	Desktop Computer (Dell)		1,279.00	1		1,279.00
2011.03.29	Dive Computer		685.00	1		685.00
<i>Total (Currency)</i>					¥256,000	\$48,101.36

*Date of Handover Equipment

JFY 2011

Date	Item	Unit Amount (JPY)	Unit Amount (\$)	Unit	Cost(JPY)	Cost(\$)
2011.07.23	Dive Computer		650	1		650
2011.07.23	Oven		4858.59	1		4858.59
2011.07.23	Analytical Balance		4899	1		
2011.07.23	Burner		4858.59	1		4858.59
2011.09.26	Pressure water pump		2136.55	1		2136.55
2011.10.3	BCD		699	1		699.00
2011.10.3	Dive Computer		695	2		1,390.00
<i>Total (Currency)</i>						\$14,592.73

Hand Carried Equipment

Date	Item	Unit Amount (JPY)	Unit Amount (\$)	Unit	Cost(JPY)	Cost(\$)
2009.08.05	Note PC	175,000.00		1	175,000.00	
2009.08.05	Printer	22,500.00		1	22,500.00	
2009.08.05	Projector	55,000.00		1	55,000.00	
2009.11.05	BCD		648.00	1		648.00
2009.11.05	BCD		648.00	1		648.00

2009.11.05	Regulator		498.00	1		498.00
2009.11.05	Dive Computer		538.00	1		538.00
2009.11.06	Digital camera set		1,543.00	1		1,543.00
2009.11.06	Wide conversion lends		492.00	1		492.00
2009.11.06	Underwater strobe		1,157.00	1		1,157.00
2009.11.30	Video Camera		1,308.00	1		1,308.00
2009.11.30	Housing for Video Camera		4,552.00	1		4,552.00
2009.12.12	Digital camera set		1,543.00	1		1,543.00
2009.12.15	Regulator		498.00	1		498.00
2009.12.15	Dive Computer		538.00	1		538.00
2010.02.17	GPS		819.00	1		819.00
2010.03.24	New Boat Top Cover		454.00	1		454.00
Total					¥252,500.00	\$15,236.00

Grand Total					¥508,500.00	\$119,556.58
					(\$5,393.96)*	\$124,950.54

* Exchange rates 2009.08.05 1\$ = ¥95.11
 2010.04.10 1\$ = ¥93.46

3. Training in Japan

3.1 Plan

Several trainings per year in the following fields;

- (1) Coral reef conservation
- (2) MPA management
- (3) Coral reef monitoring
- (4) GIS/IT(Information Technology)

3.2 Accomplishment

Name	Position	Subject of training	Period	Output
Adelle L. Isechal	Researcher, Research Department	Monitoring of coral reefs and adjacent ecosystems for MPA management	11/1-12/2/2009	Output I (monitoring)
Geory Merep	Research Assistant, Research Department	Monitoring of coral reefs and adjacent ecosystems for MPA management	11/1-12/2/2009	Output I (monitoring)
Mr. Shane Moy Shumull	Aquarist, Aquarium Department	Aquarium Maintenance*	8/31-10/01/2010	Output (aquarium maintenance) 2
Mr. Yimnang Golbuu	Chief Researcher/Head of Research Department	Coral reef conservation	12/05-12/24/2010	Output I (management)

* Airfare was paid by the Project and other cost was provided by Aquamarine Fukushima.

4. Disbursement of project operation cost

4.1 Plan

It was not planned.

4.2 Accomplishment

(Unit:
USD)

Relevant outputs	JPY 2009	JPY 2010	JPY 2011*	Total
Output 1: The system to support the monitoring on MPA is developed.	82,381.52	144,062.10	97,143.82	323,587.44
Output 2: The partnership is enhanced between PICRC and international initiatives, five MC Jurisdictions, related organizations and research institutions.	29,378.38	48,677.53	29,130.65	107,186.55
Total	111,759.89	192,739.63	126,274.47	430,773.99

* JPY 2011 covers period from 1 April 2011 to 31 December 2011

Local cost including amounts purchasing small scale equipment

Annex 5: Inputs from the Palauan Side

1. Allocation of Counterparts

1.1 Plan

- (1) Chief Executive Officer
- (2) Administration Officers
- (3) Researchers
- (4) Engineers
- (5) Aquarists
- (6) Education Officer(s)

1.2 Accomplishment

- (1) Chief Executive Officer as the Project Director
- (2) 1 Researcher as the Project Manager
- (3) 3 Researchers
- (4) 2 Engineers
- (5) 3 Aquarists
- (6) 2 Education officers
- (7) Administration officers

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List of Counterpart Personnel

2012/1/26

No.	Name	Title in PICRC	Assigned Period	2009				2010				2011				2012				Remarks
				7	8	9	10	1	2	3	4	5	6	7	8	9	10	11	12	
1	Dr. Patrick U. Tellei	Board of Directors, PICRC	7/2009-to date	██████████				██████████				██████████				██████████				Project Director
2	Fabian B. Iyar	Chief Executive Officer	7/2009-4/2011	██████████				██████████				██████████				██████████				Project Manager
3	Sandra S. Pierantozzi	Chief Executive Officer	10/2011-to date	██████████				██████████				██████████				██████████				Project Manager
4	Laurinda Mariur	Head, Administration Department	7/2009-12/2009	██████████				██████████				██████████				██████████				
5	Mary Yangilmau	Head, Administration Department	11/2009-to date	██████████				██████████				██████████				██████████				
6	Steven Victor	Researcher / Head, Research Department	7/2009-7/2009	██████████				██████████				██████████				██████████				
7	Yimnang Golbuu	Chief Researcher / Head, Research Department	7/2009-to date	██████████				██████████				██████████				██████████				Project Manager Apr.-Sep 2011
8	Noelle Wenty Oldiais	Researcher, Research Department	7/2009-9/2011	██████████				██████████				██████████				██████████				
9	Lukes Isechal	Researcher, Research Department	7/2009-to date	██████████				██████████				██████████				██████████				
10	Jacques Idechong	Researcher, Research Department	12/2009-12/2011	██████████				██████████				██████████				██████████				
11	Shirley Dirreblekku Koshiha	Researcher, Research Department	12/2011-to date	██████████				██████████				██████████				██████████				
12	Geory Mereb	Research Assistant, Research Department	7/2009-to date	██████████				██████████				██████████				██████████				
13	Arius Merep	Research Assistant, Research Department	7/2009-to date	██████████				██████████				██████████				██████████				
14	Jay Andrew	Research Assistant, Research Department	7/2009-to date	██████████				██████████				██████████				██████████				
15	Dawnette Oisudong	Research Assistant, Research Department	7/2009-to date	██████████				██████████				██████████				██████████				
16	John Wong	Head, Engineering Department	7/2009-to date	██████████				██████████				██████████				██████████				
17	Antonio Raquino	Technical Assistant, Engineering Department	7/2009-to date	██████████				██████████				██████████				██████████				
18	Jeff Michaels	Landscaper, Engineering Department	7/2009-3/2011	██████████				██████████				██████████				██████████				
19	Masao Udui	Boat Safety Officer, Engineering Department	7/2009-8/2011	██████████				██████████				██████████				██████████				
20	Kambes Kesolei	Head, Aquarium Department	7/2009-8/2011	██████████				██████████				██████████				██████████				
21	Jay Oruetamor	Aquarist, Aquarium Department	7/2009-to date	██████████				██████████				██████████				██████████				
22	Singeo Franz	Aquarist, Aquarium Department	7/2009-9/2009	██████████				██████████				██████████				██████████				
23	Shane Moy Shmull	Aquarist, Aquarium Department	10/2009-to date	██████████				██████████				██████████				██████████				
24	Carol Emaurois	Head, Education and Public Relations Department	7/2009-to date	██████████				██████████				██████████				██████████				
25	Ines Kintoki	Assistant Education Officer, Education and Public Relations Department	7/2009-to date	██████████				██████████				██████████				██████████				

Note

* Total accumulation number of counterpart personnel

25

* Number of currently working counterpart personnel

16

2. Facilities and Equipment

2.1 Plan

- (1) Land, buildings and facilities necessary for the Project
- (2) Room space and necessary infrastructure facilities for installation and storage of the equipment
- (3) Offices and basic logistics facilities for the JICA experts
- (4) Other facilities mutually agreed upon as necessary

2.2 Accomplishment

As planned.

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3. Arrangement of project operation costs

3.1 Plan

Administration and operational costs

3.2 Accomplishment

As of 01/27/2012(Unit: USD)

Description		10/1/2009-09/30/2010	10/1/2010 - 12/31/2011	Remarks
1	Personnel (Staff time)	85,246.21	103,386.00	The following portions of employment costs of the counterparts > 25%: Counterparts in research and education departments > 10%: Counterparts in administration, engineering, and aquarium departments
2	Facility/Equipment	300,000.00	311,100.00	The following portions of costs of Facility/Equipment as of purchased (Most of them are existing facilities.) > 25%: Facility/Equipment in research department and laboratory > 10%: Office and furniture > 3%: Building > 10%: Vehicles
3	Utilities (Electricity/Water/Sewer)	10,640.00	17,407.00	The following portions of costs of utilities > 30%: Research and education departments > 10%: Administration, engineering, and aquarium departments
4	Boat	8,250.00	6,030.00	Costs of a boat if rented 201\$ x 30 times = 6,030\$
5	Fuel (Vehicles)	2,700.00	2,842.00	The following portions of costs of fuel > 30%: Fuel used by research and education departments > 10%: Fuel used by administration, engineering, and aquarium departments
6	Supplies	3,000.00	7,096.00	The following portions of costs of supplies > 30%: Supplies used by research and education departments > 10%: Supplies used by administration, engineering, and aquarium departments
Total		409,836.21	447,861.00	

Note 1: Palauan Fiscal Year starts from October 1 and ends September 30.

Annex 6: List of the conferences and workshops of relevant international frameworks and related organization or research institutions

No.	Conference Name	Place		Date	Participants
1	Japan Coral Reef Society Meeting	Okinawa	Japan	November 2009	Geory Mereb, Lukes Isechal
2	Pacific Regional Conference on Marine managed Area	Moorea	French Polynesia	15-19 November 2009	Shingo Takeda, Yimnang Golbuu
3	5th International Coral Reef Initiative (ICRI) East Asia Regional Workshop	Hoian	Vietnam	8-11 December 2009	Seiji Nakaya, Fabian B. Iyar
4	Micronesians in Island Conservation Network workshop	Koror	Palau	January 2010	Seiji Nakaya, Fabian B. Iyar
5	2nd Meeting of the MC Measures Working Group and PICRC/JICA Coral Reef Monitoring Project Workshop	Koror	Palau	February 2011	All PICRC researchers and JICA experts
6	2nd Asia Pacific Coral Reef Symposium	Phuket	Thailand	20-24 June 2010	Seiji Nakaya, Fabian B. Iyar
7	6th International Coral Reef Initiative (ICRI) East Asia Regional Workshop	Phuket	Thailand	26-28 June 2010	Seiji Nakaya, Fabian B. Iyar
8	10th Meeting of the Conference of the Parties to the Convention on Biological Diversity (COP10)	Nagoya	Japan	18-29 October 2010	Fabian B. Iyar
9	1st Conference/Workshop of Coastal Ecosystems Conservation and Adaptive Management (CECAM)	Manila	Philippines	20-21 June 2011	Seiji Nakaya, Dr. Patrick U. Tellei
10	7th International Coral Reef Initiative (ICRI) East Asia Regional Workshop	Siem Reap	Cambodia	9-13 October 2011	Seiji Nakaya, Lukes Isechal

Annex 7: List of published News Paper Articles on the Project

No.	Title	Newspaper Name	Date
1	Palau Japan holds 1st meeting for improvement of coral reef monitoring	Palau Horizon	2009/9/22
2	PICRC, JICA to sign \$2M in technical assistance for coral reef monitoring	Tia Belau	2009/9/28
3	PICRC staffers to attend JICA special training	Island Times	2009/10/23
4	Workshop on coral reef monitoring in Palau ongoing	Palau Horizon	2/15-19/2009
5	Micronesia Challenge to develop coral reef monitoring protocol	Palau Horizon	2/26-28/2010
6	JICA donates car to PICRC	Palau Horizon	2010/3/9
7	JICA hands over new monitoring and research equipment to PICRC	N/A	2010/4/1
8	JICA, Palau holds 2nd JCC meeting	Tia Belau	2010/5/12
9	PICRC selects 5 states as MPA's	Palau Horizon	2010/5/17
10	PICRC/JICA CEPCRM Project trains state conservation officers	Tia Belau	5/24-27/2010 6/7-10/2010
11	JICA evaluates PICRC CEPCRM Project	Palau Horizon	2010/6/2
12	Palau Aquarium receives over 100k worth of equipment from Japan	Palau Horizon	2010/7/13
13	Training in socioeconomic monitoring starts this week	Palau Horizon	7/12-8/13/2010
14	Ngardmau almost complete with MPA management plan	Palau Horizon	2010/10/8
15	JICA, PICRC signs \$2M technical assistance	Tia Belau	2010/10/14
16	Palau, Japan ink 3rd JCC report	Island Times	2011/1/28
17	PICRC/JICA CEPCRM trains Nimpal community on monitoring methods	Tia Belau	3/7-10/2011
18	PICRC/JICA coral reef project conducts community outreach in Peleliu	Island Times	2011/5/27
19	PICRC launches MC Database	Island Times	2011/6/23
20	Tellei talks on PICRC,CEPCRM @ JICA/JST conference	Island Times	2011/7/15
21	New equipment from JICA CEPCRM help increase sediment processing capacity	Island Times	2011/9/6

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Annex 8: Outline of MPA monitoring Workshops

1. Workshop in an individual MC jurisdiction

Period	Target MC jurisdiction	Participants from the target MC jurisdiction	Participants from the project	Main activities
Feb 9 – 22, 2011	Pohnpei, FSM	Conservation Society of Pohnpei, Micronesia Conservation Trust, Marine Resources Department	Golbuu, Isechal, Idechong, Olsudong, Andrew, Nakaya, Matsumoto	Share monitoring methods, data collection, introduction of database
March 6 13, 2011	Yap, FSM	Nimpal, Marine Resources Department, YapCap	Golbuu, Isechal, Idechong, Oldiais, Olsudong, Merep, Nakaya, Matsumoto	Share monitoring methods, data collection, introduction of database
August 7 – 16, 2011	Chuuk, FSM	Chuuk Conservation Society, Department of Marine Resources	Golbuu, Isechal, Oldiais, Olsudong, Andrew, Bukurrou, Nakaya	Share monitoring methods, data collection, introduction of database
June 23, 2011	Palau	Palau Conservation Society, Office of Environment Response and Coordination (OERC), Plau Automated Land and Resource Information System (PALARIS), PAN, TNC, Marine Resources Department, Micronesia Challenge Regional Office	All researchers, Emaurois, Nakaya, Matsumoto	Introduction of database
October 17 – 29, 2011	Marshall Islands	Marshall Islands Conservation Society, Marshall Islands Marine Resources Authority, Office of Environment Planning and Policy Coordination (OEPPC)		

2. Regional Workshop for all MC jurisdictions

2.1 Period: February 15-19, 2010

2.2 Participants

No	Country/Classification	Participant	Agency / Organization	Expertise/Contribution
1	FSM	Alissa Takesy	FSM PAN	PAN Coordinator
2	Kosrae	Steve Palik	KIRMA	Marine
3		Marston Luckymis	KCSO	Marine/Socioeconomic
4		Blair Charley	KIRMA	Data
5	Pohnpei	Eugene Joseph	CSP	Marine/ Socioeconomic
6		Selino Maxin	CSP	Marine
7		Dave Mathias	MRD	Marine
8	Chuuk	Curtis Graham	CCS	Marine/ Socioeconomic
9	Yap	Vanessa Fread	YapCAP	Marine/ Socioeconomic
10		Thomas Gorong	Nimpal	Marine
11		Mike Hasurmai	Yap MRD	Marine
12	RMI	Doreen deBrum	MIMRA	PAN Coordinator
13		Albon Ishoda	MICS	Marine/ Socioeconomic
14		Kaminaga Kaminaga	OEPPC	Marine?
15		Michael Honeth	RMIEPA	
16		Darren Nakata	MIMRA	Integrated Marine Resource Manager
17	CNMI	John Starmer	CRM	Marine
18		Brooke Nevitt	?	Socioeconomic
19		Marianne Teregeyo	Special Assistant to the Secretary of Lands and Natural Resources CNMI Department of Lands and Natural Resources	
20	Guam	David R. Burdick	GCMP	Marine
21		Rondney Brent Tibbatts (Mr.)	DAWR	Marine
22		Tammy Jo Andersom Taft	RARE	Socioeconomic
23	Palau	Anu Gupta	PCS	Marine
24		Asap Bukurrow	PCS	Marine
25		Madelsar Ngiraingas	PALARIS	Socioeconomic
26	PICRC Board	Parick U. Tellei	Chairman, PICRC Board	Observer
27		Lolita K. Gibbons-Decherong	Secretary/Treasurer, PICRC Board	Observer
28		Bernie Keldermans	Member, PICRC Board	Observer

29		Andrew Tabelual	Member, PICRC Board	Observer	
30	JCC	Ieibrang U. Olkeriil	Director, Koror State	Observer	
31		Romana Anastacio	Gov, Ngchesar State	Observer	
32		Akiko Sugiyama	Gov, Ngardmau State	Observer	
33		Vicky Kanai	Gov, Airai State	Observer	
34		Umiich Sengebau	TNC	Observer	
35		PICRC	Fabian B. Iyar	CEO	Presenter
36	Noelle Wenty Oldiais		PICRC/CEPCRM	Marine	
37	Adelle L. Isechal		PICRC/CEPCRM	Marine	
38	Jacques W. Idechong		PICRC/CEPCRM	Marine	
39	John Wong		PICRC/CEPCRM	Engineer/Coordinator	
40	Kambes Kesolei		PICRC/CEPCRM	Aquarist/Coordinator	
41	Carol Emaurois		PICRC/CEPCRM	Education/Coordinator	
42	Michelle H. Bai		CEPCRM	Coordinator	
43	JAPAN GOV./JICA		Yoshiyuki Sadaoka	Embassy of Japan	Presenter
44		Makoto Noda	JICA	Observer	
45		Maya Nakanishi	JICA/PICRC	Receptionist	
46	Resource persons	Seiji Nakaya	JICA/CEPCRM	Planning Team	
47		Tadashi Kimura	JICA/JWRC	Presenter	
48		Setsuko Matsumoto	JICA/CSJ Co. Ltd.	Facilitator	
49		Shingo Takeda	JICA/CEPCRM	Planning Team	
50		Trina Leberer	TNC	Planning Team	
51		Steven Victor	TNC	Planning Team	
52		Yimnang Golbuu	PICRC/CEPCRM	Planning Team	
53		Charlene Mersai	MCRO	Planning Team	
54		Scott Atkinson	SV	Facilitator	
55		Richard Margoluis	FOS	Facilitator	
56		Peter Houk	PMRI	Presenter	
57		Supin Wongbusarakum	UH	Presenter	
58		Christy Loper	NOAA	Presenter	
59		Alison Green	TNC	Presenter	
60		Lihla Noori	MCT	Observer	
61		Caroline Vieux	SPREP	Coral Reef Monitoring	
62		Janna Shackeroff	NOAA	Observer	
63		Franck Magron	SPC	Presenter	
64		American	Alice Kathryn Lawrence		Observer

65	Samoa	Sarah Lune Huet Emihizer		Observer
66	Others	Frank Isao	MIC/PIMPAC	Observer
67		Eric Conklm	TNC	Observer
68		Michael Gilbeaux	LMMA Network	Observer
69		Steve McKagan	NOAA/PIRC/Habitat/C NUL	Observer
70		John Nevill	WCPA Australia	Observer
71		Debbie Gowensmith	HCSNetwork	Observer

2.3 Objectives

- (1) Introduce PICRC/JICA project to the MC jurisdictions
- (2) Gain better understanding of:
 - Status of MPAs in each jurisdiction,
 - Management issues in the different MC jurisdictions that monitoring efforts can focus on, both ecological and social,
 - Status of monitoring including, objectives of monitoring, indicators, limitations, strengths/weakness, needs in each jurisdictions, (based on information already provided in the 1st MC Measures Meeting in June 2008 and any new information as preparatory work for this workshop)
- (3) Gain knowledge of different methods available for ecological and social monitoring, for assessing both the status of the health of the resources and the effectiveness of management strategies
- (4) Identify and agree on an essential set of indicators for both status and effectiveness for the MC and methods that we will test and recommend for adoption
- (5) Identify specific capacity needs and strategies to fill these needs to implement the protocol in each MC jurisdiction
- (6) Develop a framework for testing and adopting monitoring protocols, including timeframe and responsibility of each body/agency in the MC Measures Working Group.

2.4 Main activities

- Overview of current status and issues of management and monitoring of MPAs
- Discussion on indicators and methods
- Planning for doable monitoring
- Discussions on farther steps taken

2.5 Result

- (1) Participants were informed of PICRC/JICA project
- (2) Participants gained a better understanding of:
 - Status of MPAs in each jurisdiction,
 - Management issues in the different MC jurisdictions that monitoring efforts can focus on, both ecological and social,
 - Status of monitoring including, objectives of monitoring, indicators, limitations, strengths/weakness, needs in each jurisdictions,

- (3) Participants gained knowledge of different methods available for ecological and social monitoring, for assessing both the status of the health of the resources and the effectiveness of management strategies
- (4) Participants identified and agreed on an essential set of indicators for both status and effectiveness for the MC and methods that we will test and recommend for adoption
- (5) Participants identified specific capacity needs and strategies to fill these needs to implement the protocol in each MC jurisdiction
- (6) Participants developed a framework for testing and adopting monitoring protocols, including timeframe and responsibility of each body/agency in the MC Measures Working Group.

2.6 Way forward

PICRC/JICA project started producing monitoring plan, trained rangers, selected pilot sites, establish database, started collecting monitoring data, disseminate information, shared monitoring methods with partners of FSM and Marshall Islands

Annex 9: Outline of MPA monitoring at the selected four MPAs

1. Implementation Structure of the monitoring of the four MPAs

1.1 Summary

Items	Contents
Name of MPA (State)	Ebiil (Ngerchelong), Ileyakl Beluu (Ngardmau), Ngemai (Ngiwal) and Teluleu (Peleliu)
Staff in charge in the state government	See table below
Staff in charge in PICRC	Researchers (Isechal, Andrew, Merep, Olsudong, Mereb)
Task sharing	State government: Field work, collect sediment traps PICRC: Field work assistance, data entry/analysis
Resource form the state government	Rangers
Remarks	Turnover of state rangers

1.2 Staff in charge in the state government

States	Ecological monitoring	Socioeconomic monitoring
Ngarchelong State	Mechaet Temong (resigned)	Not conducted
	Telei Dingilius (resigned)	
	Hadley Renguul	
Ngiwal State	Junior Leroy	Sofla Orukei
	Feliciano Udui (passed away)	Benina Titus
	Ismael Renguul	
Peleliu State	Marc Solang	Erico Malone
	Fix Dwight	Rachel Hosei
Ngchesar State	Verano Ngirkelau	Sekund Kintarø
	—	Christa Eldebechel
Ngardmau State	Ngirachewes Aderkeroi	Elizabeth Ngirmekur
	Alson Ngiraiwet (resigned)	Cyrus Renguul
	Renguul Masahiro	

2. Monitoring Accomplishment

No.	Date of trip	Venue	Objectives
1	2010/8/30-8/31	Teluleu	Site visit
2	2010/9/1	Ngemai	Site visit
3	2010/9/15	Ileyakl Beluu	Site visit
4	2010/9/28	Ngemai	Fish, traps
5	2010/9/30	Ileyakl Beluu	Fish, traps
6	2010/10/15	Teluleu	Conduct Fish Survey of 3 monitoring sites Retrieve sediment traps
7	2010/11/6	Ngiwal	Retrieve sediment traps and redeploy new traps
8	2010/11/8	Ngardmau/Ngiwal	Retrieve sediment traps and redeploy new traps
9	2010/11/26	Peleliu/Teluleu	1. Retrieve sediment trap materials 2. Conduct fish monitoring at 3 control stations

10	2010/12/3	Ngemai	1. Conduct Sea grass Survey 2. Conduct benthic survey at 2 monitoring stations
11	2010/12/6	Ileyakl Beluu	Benthic Survey
12	2010/12/7	Ngemai	Benthic Survey
13	2010/12/8	Teluleu	Conduct benthic survey of 3 monitoring sites
14	2010/12/9	Teluleu	sea grass/Benthic
15	2010/12/10	Ileyakl Beluu	Benthic Survey
16	2011/1/11	Ebiil & Ngardmau	benthic surveys, deploy sensors
17	2011/1/12	Ebiil Control	Benthic surveys
18	2011/1/13	Ngiwal, Ngchesar, Airai	Sediment
19	2011/1/14	Peliliu	Deploy sensor
20	2011/2/3	Iliakel beluu	Recruit survey of 3 stations in MPA and 3 station in control
21	2011/3/8	Ngiwal	Retrieve sediment traps and redeploy new traps
22	2011/3/9	Ngardmau and Ngermeduu	Retrieve sediment traps and redeploy new traps
23	2011/4/12	Ngiwal	Retrieve sediment traps and redeploy new traps
24	2011/4/11	Ngardmau	Retrieve sediment traps and redeploy new traps
25	2011/4/12	Teluleu	Conduct Quarterly Fish Count
26	2011/4/14	Ebiil	Benthic-recruit and Quaterly fish survey
27	2011/4/15	Ngemai	Benthic: recruit, pictures
28	2011/4/20	Iliaklbeluu	Quarterly fish count
29	2011/4/21	Ngemai	Quarterly fish count and invertebrate survey of 4 new established sites including the 2 already established sites (total of 6)
30	2011/4/28	Ngemai	Quarterly fish count and invertebrates survey on 2 of the sites
31	2011/5/11	Ngardmau	Retrieve sediment traps and redeploy new traps
32	2011/5/13	Ngiwal	Rangers to retrieve sediment traps and redeploy new traps. Jay to deliver gas and pick up sediment
33	2011/6/8	Ngardmau	Deliver gas and oil for rangers to retrieve and deploy sediment traps
34	2011/6/9	Ngiwal	Pick up sediment traps from Ngiwal

35	6/28-30/2011	Peleliu (28th), Ngarchelong (29th), Ngardmau (29th), Ngiwal (30th)	Deploy temperature logger at Peleliu, Ngardmau, Ngiwal
36	2011/7/5	Ngardmau	Retrieve sediment traps and redeploy new traps
37	2011/7/4	Ngiwal	Rangers to retrieve sediment traps and redeploy new traps. Jay to deliver gas and pick up sediment
38	2011/7/6	Ngiwal	Rangers to retrieve sediment traps and redeploy new traps. Jay to deliver gas and pick up sediment
39	2011/7/18	Teluleu	Conduct Quarterly Fish Count
40	2011/7/19	Ebiil	Conduct Quarterly Fish Count
41	2011/7/20	Ileyakelbeluu	Conduct Quarterly Fish Count
42	2011/7/21	Ngemai	Conduct Quarterly Fish Count
43	2011/7/27	Ngerchelong	Re-take benthic pictures on 2 incomplete sites
44	2010/7/28	Ngardmau and Ngarchelong	1) Re-take benthic pictures on 1 incomplete sites 2) Practice training of Ngarchelong rangers during fish count in Ebiil
45	2011/8/23	Ngiwal	Jay to deliver gas for rangers retrieve and redeploy sediment traps
46	2011/8/24	Ngiwal	Jay to pick up retrieved sediment traps from Ngiwal
47	2011/8/24	Ngardmau	Retrieve sediment traps and redeploy new traps.
48	2011/9/1	Peleliu	Retake benthic pictures
49	2011/9/1	Peleliu	Retake benthic pictures
50	2011/9/28	Peleliu	Retrieve Temperature logger
51	2011/9/29	Ngarchelong, Ngardmau, Ngermeduu	Retrieve Temperature logger at Ngarchelong, and retrieve/redeploy traps at Ngardmau
52	2011/10/5	Ngardmau	Conduct Fish Count in Ngardmau

53	2011/10/6	Ngarchelong	Conduct Fish Count in Ngarchelong
54	2011/10/7	Ngiwal	Conduct Fish Count in Ngiwal
55	2011/10/12	Ngiwal, Ngarchelong, Ngardmau	Deploy Temperature logger at Ngiwal, Ngarchelong, Ngardmau
56	2011/10/13	Ngiwal	Training on Secci disk and retrieve sediment trap in Ngiwal
57	2011/10/18	Peleliu	Fish Count in Teluleu
58	2011/10/28	Ngardmau/Ngarmeduu	Pick up sediment traps and Secci disk training in Ngardmau & Ngardmau
59	2011/11/15	Ngiwal	Provide training on Secci disk
60	2011/11/28	Ngardmau	Measure visibility in Ngardmau
61	2011/12/20	Ngardmau/Ngiwal Ngarchelong	Pick up temperature logger
62	2011/12/28	Ngardmau/Ngarmeduu	Measure visibility in Ngardmau, Ngardmau
63	2011/12/29	Ngiwal	Measure visibility in Ngiwal
64	2012/1/6	Peleliu	Install temperature logger
65	2012/1/9	Ngiwal, Ngarchelong, Ngardmau	Install temperature logger
66	2012/1/24	Ngiwal, Ngardmau, Airai, Ngechsar	Measure visibility

Annex 10: CEPCRM Activities from July 2009 to August 2011

Capacity Enhancement Project for Coral Reef Monitoring” (CEPCRM) started in July 2009 to achieve outputs, purpose and overall goal described below. After commencement of the project, the detail plan of operation was prepared and approved at the 1st Joint Coordination Committee Meeting in September. Since then, basic information on management of MPAs and monitoring was collected, target MPAs for monitoring were selected, monitoring plan was finalized and states’ officers were trained for monitoring. PICRC researchers have been assisting the state rangers to collect monitoring data and extended technical collaboration with the counterparts in FMS and RMI. Based on the experience we have had, the MPA monitoring protocol was drafted.

Activity	Progress
1.1. Review the current situation in conservation and management of MPA and monitoring activities for coral reef ecosystems, conducted by PICRC.	<ul style="list-style-type: none"> • Compiled information on existing MPAs in Palau and other MC jurisdictions. There are 34 MPAs in Palau. 23 out of 34 are for conservation of fisheries resources and 6 are no-entry MPAs. • Made reconnaissance visits to 16 MPAs. • Co-hosted a workshop to discuss MPA monitoring in the MC region in February 2010. Issues on management and monitoring were identified. Minimum set of ecological and socioeconomic indicators as well as measuring methods were identified.
1.2. Select target MPAs for monitoring in consultation with local communities and administrative agencies related to MPAs, based on activity 1.1.	<ul style="list-style-type: none"> • Analyzed the monitoring capacity of PICRC • Selected pilot MPAs based on criteria: Ebiil Conservation Area (CA) (Ngarchelong), Illeyakl Beluu (Ngardmau), Ngemai (Ngiwal), Teluleu CA (Peleliu). • Consultation with stakeholders and relevant agencies (MCRO, TNC, LMMA, PALARIS, PAN Office, Belau National Museum, PCS, OEK) and obtained consensus on the selected MPAs on February 25, 2010. • Procured necessary equipment for monitoring
1.3. Promote participation of local communities and officials of State Government in the monitoring activities through the knowledge dissemination and awareness raising.	<ul style="list-style-type: none"> • Held a meeting with governors or representatives of Ngarchelong, Ngardmau, Ngiwal, Ngchesar and Peleliu to explain the project (March 19, 2010). Obtain community consensus and MOU for monitoring in May 2010. • Community meetings held in Ngiwal (July, 2010), Ngarchelong (July 2010), Ngardmau (Oct. 2010 & Mar. 2011) and Peleliu (May 2011) • Monitoring methods were explained to the major stakeholders in 4 states in March 2011. • Training for ecological monitoring was conducted on taking photo quadrat, fish surveys, invertebrate survey and coral recruit surveys. For Ngardmau and Ngiwal, training was provided for sedimentation processing in May-June 2010 • Supplementary training for fish count/estimation was conducted until July 2011 • Training for socioeconomic monitoring was conducted between Jul-Aug and Dec 2010.
1.4. Prepare monitoring plan based on standardized regulations of Palau and other international	<ul style="list-style-type: none"> • Reviewed Palau and regional regulations and initiatives. • Monitoring plan (framework) has been revised and presented to and approved in the Conservation Practitioners’ Meeting by relevant agencies, including PICRC, EQPB, PAN, TNC, MCRO, OERC,

initiatives or related agencies	<p>PALARIS and PCS, on January 14, 2011.</p> <ul style="list-style-type: none"> • Monitoring plan was finalized in July 2011 • Socioeconomic workshop was held to discuss how socioeconomic monitoring can be combined with ecological monitoring in the future in Palau and the MC region in June 2011
1.5. Monitor the selected MPAs according to monitoring plan prepared	<ul style="list-style-type: none"> • First round of ecological monitoring of fish, benthic and invertebrates at all the 4 MPAs has been completed. • Socioeconomic monitoring was conducted in Ngiwal in August 2010. • Database for ecological monitoring data was constructed and started to be used by PICRC researchers. • Collaborative data collection and introduced the monitoring database to MC partners were conducted in Pohnpei, Yap and Chuuk of FSM as well as The Republic of Marshall Islands, in February, March, August and October 2011, respectively. Reports are being prepared.
1.6. Draft the monitoring protocols reflecting activities 1.1 – 1.5.	<ul style="list-style-type: none"> • Outline of the monitoring protocol was discussed among members of the Palau Conservation Consortium. • Comprehensive MPA monitoring protocol was drafted. • The protocol is to be submitted to the Ministry of Natural Resources, Environment and Tourism and officially approved in January 2012. • The protocol is submitted to MC and other relevant agencies in 2012.
2.1. Submit the information on monitoring to international initiatives, related organizations and research institutes.	<ul style="list-style-type: none"> • Web page (http://cepcrm.org) was created and maintained. • Eight issues of newsletters and a brochure were produced and distributed. • 5 oral presentations and 3 poster presentations were made at international/ regional conferences¹. • Poster presentations were made at 3 international/ regional conferences. • A number of articles were published on local newspapers • PICRC news was aired in OTV weekend news program monthly from June 2011 • Results of MPA monitoring data in Palau will be introduced in ICRS to be held in Australia in 2012.

¹ Oral presentations: Pacific Regional Conference on Marine Managed Area, French Polynesia (Nov. 2009), 5th ICRI East Asia Regional Workshop, Vietnam (Dec 2009), MIC Meeting, Palau (Jan. 2010), 2nd Asia Pacific Coral Reef Symposium, Thailand (June 2010), 6th CIRI East Asia Regional Workshop, Thailand (June 2010), Coastal Ecosystem Conservation and Adaptive Management 1st National Conference, Philippines, (June 2011), 7th ICRI East Asia Regional Workshop, Cambodia (Oct. 2011);
Poster presentation: Pacific Regional Conference on Marine Managed Area, French Polynesia (Nov. 2009), JCRS, Japan (Nov. 2009), 5th, 6th and 7th CIRI East Asia Regional Workshop (Vietnam Dec. 2009, Thailand June 2010, Cambodia Oct 2011).

Annex 11: Monitoring Sheet based on the drafted PO3

As of 12/27/2011

Year	2012												Person in charge	Expected outputs			
	Month	1	2	3	4	5	6	7	8	9	10	11			12		
JICA Study Team																	
JCC (Joint Coordination Committee)																	
															Terminal Evaluation JCC4		
															JCC2	JCC3	
1.1	Review the current situation in conservation and management of MPA and monitoring activities for coral reef ecosystems, conducted by PICRC.	1.1.1	Collect information on types, locations, regulations and monitoring status of existing MPAs in Palau and the other MC jurisdictions												Yimnang, Nakaya (Lukes)	Report (List of MPAs)	
		1.1.2	Visit existing MPAs in Palau and verify existing literature												Yimnang, Lukes, Jack	Report by Lukes	
		1.1.3	Identify issues on management and monitoring of coral reefs as well as indicators to be monitored in Palau and the other MC jurisdictions by holding workshops with the other MC personnel.												Yimnang (Lukes), Nakaya	Report	
		1.2	Select target MPAs for the monitoring in consultation with local communities and administrative agencies related to MPAs, based on activity 1.1.												Yimnang, Nakaya	Report	
1.2	Promote the participation of local communities and officials of State Government in the monitoring activities through the knowledge dissemination and awareness raising.	1.2.1	Analyze the capacity of PICRC to conduct coral reef monitoring and, if necessary, supply equipment and train personnel to start the project.														
		1.2.2	Identify issues and select target MPAs for the project in Palau based on activities 1.1 and 1.2.1, and through meetings with relevant agencies and stakeholders												Jack, Lukes, Yimnang	Meeting/ report	
		1.2.3	Obtain consensus on the selected MPAs from relevant agencies and stakeholders												Yimnang,	Report, Minutes of meeting	
		1.2.4	Supply equipment required for monitoring based on Activity 1.2.3												John, Sesauko	Report	
1.3	Prepare the monitoring plan based on standardized regulations of Palau and other international initiatives or related agencies.	1.3.1	Hold meetings with local communities and staff of state governments of targeted areas and obtain consensus on monitoring												Lukes (report), Carol	Report, Minutes of meeting	
		1.3.2	Conduct on-site training in monitoring methods based on 1.3.1.												Jack/Noelle	Report	
		1.3.3	Lecture and train local communities and staff of State governments in the targeted areas of the project, and analyze issues and capacities of those.												Jack/Noelle	Report	
1.4	Obtain approval of monitoring plan from PICRC and related agencies and/or organizations	1.4.1	Collect the information on regulations of international initiative(s) and Palauan government in relation to MPA monitoring												Noelle, Takeda	Report	
		1.4.2	Prepare the monitoring plan for MPAs based on activities mentioned above.												Yim	Report	
		1.4.3	Obtain approval of monitoring plan from PICRC and related agencies and/or organizations												Yimnang	Report, Minutes of meeting	
1.5	Monitor the selected MPAs according to the monitoring plan prepared.	1.5.1	Conduct the monitoring with PICRC and stakeholders according to the plan (Workshops including monitoring in the field will be held in the other MC Jurisdictions when the trainings on database												Arius, Lukes, Jack (Field)/Lukes, new researcher (report)	Report	
		1.5.2	Conduct the trainings on database												Conrad, Lukes, Jack	Report	
		1.5.3	Update the monitoring result on database (For GIS, PICRC collaborates with PALARIS)												Uly, Lukes, Jack	Report	

2	The partnership is enhanced between PICRC and international initiatives, five MC Jurisdictions, related organizations and research institutions.	Draft the monitoring protocols reflecting activities 1.1-1.5.	Summarize activities 1.1-1.5.	1.6.1	Prepare comprehensive monitoring protocol based on the summary	Yimnang	Report
				1.6.2	Submit the monitoring protocol to the Ministry of Natural Resources, Environment and Tourism, and MC as well as other relevant agencies.	Noelle/Neil/ Yimnang	Protocol
				1.6.3	Disseminate the information** through the project web site	Yimnang, Nakaya	Report
				a	Disseminate the information by the project newsletters	Carol, Researchers	Web site upload
				b	Disseminate the information through OTV programs	Carol, Researchers	Newsletters
				c	Carry out workshops to introduce MC partners established survey methods and database.	Carol, Researchers	OTV programs/DVD
				d	Carry out community outreach in selected states of Dalau	Yim, Carol, Setauko	Workshops
				e	Provide brochures on 1) current situation of MPAs based on the monitoring results, 2) PICRC monitoring capacity and 3) protocols to the relevant stakeholders.	Carol, Researchers	Reports
				f	Make and issue reports related to monitoring and database workshops in FSM and RMI.	Carol, Researchers	Brochures
				g	Attend conferences to introduce the project outcomes (monitoring results, MPA current situations and protocols) PI and Australia	Yim, Jack	Reports
				h	Multimedia training (Producing PICRC demonstration DVD)	CEO, Researchers, Nakaya	Presentation
i	Evaluate utilization of the monitoring protocols by the other MC Jurisdictions.	Carol, Setauko	Report				
j		Yimnang, Nakaya	Report				

Legends

Actual Performance

Completed

Delayed

Activities that must take place at a given time.

Monitoring method: detail description of how to collect data such as line transect; Monitoring plan: a plan covering who, when, how, how often to monitor including budget and facilities needed;

Protocol: Comprehensive description of monitoring procedures including selection of target MPAs and monitoring sites, sampling design, data management and statistical analysis, as well as ways of sharing information.

* such as ICR

** What kind of info? 1) Info on our activity/monitoring, 2) info on MPA/coral reefs that we found by monitoring and 3) monitoring protocols

(all)