

パラオ国
国際サンゴ礁センター強化プロジェクト
中間評価調査報告書

平成 17 年 4 月
(2005 年)

独立行政法人 国際協力機構
地球環境部

環境

JR

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序 文

国際協力機構は、パラオ国政府からの技術協力の要請を受け、平成 14 年 10 月から同国において「パラオ国際サンゴ礁センター強化プロジェクト」を開始しました。

本プログラム開始後 2 年 4 か月にあたり、当機構は本プログラムの進捗状況や現状を把握、評価し、同国のプログラム関係者や派遣専門家に対し適切な助言と指導を行うため、平成 17 年 1 月 31 日から 2 月 11 日まで当機構地球環境部自然環境保全チームの山田良春主査を団長とする中間評価調査団を派遣しました。

調査団は、パラオ側メンバーと構成した合同中間評価調査チームとして過去約 2 年 4 か月間の投入実績、活動の達成度を確認し、パラオ国政府関係者との協議及びプロジェクト・サイトでの現地調査実施を通してプログラムの運営や事業内容等に対して必要な提言を行いました。

この報告書が本プロジェクトの今後の推進に役立つとともに、この技術協力が両国の友好・親善の一層の発展に寄与することを期待します。

終わりに、この調査にご協力とご支援をいただいた関係者の皆様に対し、心から感謝の意を表します。

平成 17 年 4 月

独立行政法人国際協力機構

理事 北原 悦男

目 次

序文
目次
略語表
中間評価結果要約表

| | |
|-----------------------------|----|
| 第1章 中間評価の概要 | 1 |
| 1.1. 中間評価調査の目的 | 1 |
| 1.2. 合同中間評価チームの構成 | 1 |
| 1.2.1. 日本側メンバー | 1 |
| 1.2.2. パラオ側メンバー | 1 |
| 1.3. 評価調査の日程 | 2 |
| 第2章 プロジェクトの概要 | 3 |
| 2.1. 背景 | 3 |
| 2.2. プロジェクト概要 (PDM) | 3 |
| 2.2.1. プロジェクトの枠組み | 3 |
| 2.2.2. 上位目標 | 3 |
| 2.2.3. プロジェクト目標 | 3 |
| 2.2.4. プロジェクト成果 | 3 |
| 2.2.5. プロジェクト活動 | 3 |
| 第3章 中間評価の方法 | 5 |
| 3.1. 評価設問と必要なデータ・評価指標 | 5 |
| 3.2. データ収集方法 | 6 |
| 3.3. データ分析方法 | 6 |
| 第4章 プロジェクトの実績 | 7 |
| 4.1. 投入実績 | 7 |
| 4.1.1. 日本側投入 | 5 |
| 4.1.2. パラオ側投入 | 7 |
| 4.2. 活動実績と現状 | 7 |
| 4.3. 成果の達成状況 | 9 |
| 4.4. プロジェクト目標の達成状況 | 9 |
| 4.5. 実施プロセスにおける特記事項 | 9 |
| 4.6. 貢献・阻害要因の総合的検証 | 10 |
| 第5章 評価結果 | 11 |
| 5.1. 評価結果総括 | 11 |
| 5.2. 評価5項目による分析 | 11 |
| 5.2.1. 妥当性 | 11 |
| 5.2.2. 有効性 | 12 |
| 5.2.3. 効率性 | 13 |
| 5.2.4. インパクト | 13 |
| 5.2.5. 自立発展性 | 14 |

| | |
|---------------------------|----|
| 第6章 提言..... | 16 |
| 6.1. 管理部門への提言..... | 16 |
| 6.2. 水族館部門への提言..... | 16 |
| 6.3. 研究部門への提言..... | 17 |
| 6.4. 教育部門への提言..... | 18 |
| 6.5. 水族館、研究、教育・啓発の連携..... | 18 |
| 6.6. 通信技術の活用..... | 18 |
| 6.7. PDM、PO の改定..... | 18 |
| 団長所感..... | 20 |

添付

| | |
|---|----|
| 添付資料 1: 協議議事録..... | 21 |
| Annex 1: Detailed Schedule of Mid-term Evaluation | |
| Annex 2: Current PDM and PO | |
| Annex 3: Evaluation Grid | |
| Annex 4: List of Japanese Experts and JOCVs | |
| Annex 5: List of Machinery and Equipment Provided by Japan | |
| Annex 6: List of Palauan Counterpart Personnel Trained in Japan | |
| Annex 7: List of Palauan Counterpart Personnel | |
| Annex 8: Achievement Grid | |
| 添付資料 2: 質問表及び集計結果..... | 59 |
| 添付資料 3: Palau International Coral Reef Center Act | 65 |
| 添付資料 4: Organization Chart..... | 79 |

略 語 表

| | | |
|-------|--|----------------------|
| GCRMN | Global Coral Reef Monitoring Network | 地球規模サンゴ礁モニタリングネットワーク |
| ICRI | International Coral Reef Initiative | 国際サンゴ礁イニシアチブ |
| ICRS | International Coral Reef Symposium | 国際サンゴ礁シンポジウム |
| JICA | Japan International Cooperation Agency | 独立行政法人国際協力機構 |
| JOCV | Japan Overseas Cooperation Volunteers | 青年海外協力隊 |
| M/M | Minutes of Meeting | 協議議事録 |
| MPA | Marine Protected Area | 海洋保護区 |
| ODA | Official Development Assistance | 政府開発援助 |
| PCC | Palau Community College | パラオ・コミュニティ・カレッジ |
| PCS | Palau Conservation Society | パラオ・コンサベーション・ソサエティ |
| PDM | Project Design Matrix | プロジェクト・デザイン・マトリックス |
| PICRC | Palau International Coral Reef Center | パラオ国際サンゴ礁センター |
| PO | Plan of Operation | 活動計画 |
| R/D | Record of Discussion | 討議議事録 |
| TNC | The Nature Conservancy | ネイチャー・コンサーバシー |

中間評価調査結果要約表

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| 1. 案件の概要 | |
| 国名 | パラオ共和国 |
| 案件名 | パラオ国際サンゴ礁センター強化プロジェクト |
| 分野 | 自然環境保全 |
| 援助形態 | 技術協力プロジェクト |
| 所轄部署 | 地球環境部自然環境保全チーム |
| 協力金額（評価時点） | 約2億900万円 |
| 協力期間 | 2002年10月1日～2006年9月30日 |
| （R/D 締結） | 2002年7月5日 |
| 先方関係機関 | パラオ国際サンゴ礁センター |
| 日本側協力機関 | 環境省、財団法人自然環境研究センター、財団法人熱帯海洋生態研究振興財団、財団法人ふくしま海洋科学館、横浜八景島シーパラダイス |
| <p>1-1 協力の背景と概要</p> <p>パラオ共和国政府は、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啓発活動を行うセンターの設立を計画し、わが国の無償資金協力によって2000年8月に施設が完工（8.3億円）、2001年1月にパラオ国際サンゴ礁センター（PICRC）が開館した。</p> <p>本プロジェクトはPICRCの組織強化・自立発展を支援するため、PICRCの中期戦略計画（Strategic Plan 2002-2006）に即して2002年10月から2006年9月まで4カ年の協力を実施し、センターの研究機能、啓発・教育機能の強化を図ることを目的としたものである。</p> <p>なお、パラオ国際サンゴ礁センターはパラオ国の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啓発活動を行うセンターとしての機能のみならず、地球規模サンゴ礁モニタリングネットワーク（Global Coral Reef Monitoring Network:GCRMN）のミクロネシア地域の拠点としての機能も担っている。</p> | |
| <p>1-2 協力内容</p> <p>(1) 上位目標</p> <p>パラオのサンゴ礁および関連生物の保全・持続的利用が改善される。</p> <p>(2) プロジェクト目標</p> <p>パラオ国際サンゴ礁センターが自立発展するための管理、研究、展示/教育体制が強化される。</p> <p>(3) 成果</p> <p>①組織強化 : センターが組織的・計画的に運営管理される。</p> <p>②水族館運営 : 水族館の展示、運営、維持管理が自立的に行われる。</p> <p>③研究 : サンゴ礁研究・モニタリング機能が確立される。</p> <p>④教育啓発 : 学生・コミュニティを対象とした沿岸資源に関する環境教育の実施能力が高まる。</p> | |

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| (4) 投入 (評価時点) | |
| 日本側： | |
| 長期専門家派遣 | 4名 機材供与 233,277 USドル |
| 短期専門家派遣 | 12名 ローカルコスト負担 181,033 USドル |
| 研修員受入 | 5名 その他 青年海外協力隊隊員 2名 |
| 相手国側： | |
| カウンターパート配置 | 21名 |
| 土地・施設提供 | センター敷地・管理棟 |
| ローカルコスト負担 | 135万USドル (パラオ政府助成金 2002-2004年度) |
| その他 | センター自己収入 487,755 USドル (2003-2004パラオ会計年度) |
| | 研究助成金 427,810 USドル (2003-2004パラオ会計年度) |
| 2. 評価調査団の概要 | |
| 調査者 | (担当分野：氏名 職位) |
| | ①総括・組織運営 : 山田良春 JICA 地球環境部自然環境保全チーム主査 |
| | ②水族館運営 : 安部義孝 ふくしま海洋科学館館長 |
| | ③サンゴ礁研究 : 茅根 創 東京大学理学部地学科助教授 |
| | ④協力計画・環境教育 : 丸尾 信 JICA 地球環境部自然環境保全チーム職員 |
| | ⑤評価・分析 : 川崎博之 アシネット・コンサルティング 部研究員 |
| 調査期間 | 2005年1月31日～2005年2月11日 評価種類：中間評価 |
| 3. 評価結果の概要 | |
| 3-1 成果の達成状況 | |
| (1) 組織強化： | |
| <p>スタッフのモチベーションは非常に高いものの、管理部門責任者が空席であるので人員を配置する必要がある。また、GCRMNの調整業務(NODE)を専任で行う研究員を配置する必要がある。</p> <p>財政面に関しては、水族館入場者収入が大きく増加した。また、運営資金調達のさまざまな手法が予定されており、一部はすでに実施に移されているものの、中長期的財政計画を策定する必要があると思われる。</p> | |
| (2) 水族館管理： | |
| <p>水族館の保守管理は順調に行われているが、来館者をひきつけるためには展示方法やテーマに工夫をすることが必要である。</p> <p>また、そのためにも施設の簡素化やボランティアの活用などについて検討することが必要である。</p> | |
| (3) 研究： | |
| <p>現在12の研究プロジェクトが実施されているが、研究部門のスタッフ数が限られているため、研究部門の中期計画を練り直す必要がある。</p> | |
| (4) 教育・啓発： | |
| <p>環境教育担当部署が水族館部署から独立したのに伴い、学生や地元コミュニティを対象にした教育活動は活発に行われている。今後はさらに、旅行者に対する教育活動、PICRCの水族館部門や研究部門、その他の機関と連携した教育活動も推進していく必要がある。</p> | |

3-2 評価結果の要約

(1) 妥当性

国際サンゴ礁イニシアチブにおいても、太平洋地域におけるサンゴ礁センターの必要性が指摘されており、また日米コモンアジェンダに基づいている技術協力である。政府もパラオ国際サンゴ礁センターアクトを制定しており、パラオのみならず、ミクロネシア地域や世界にとって、PICRCはサンゴ礁センターとして重要な位置付けがあり、そのPICRCを支援する本プロジェクトの妥当性は高い。

(2) 有効性

PICRCのスタッフの数は限られているが、水族館は順調に管理されており、研究部門では12の研究プロジェクトを実施している。また、教育部門の独立により、環境教育活動も活発に行われており、プロジェクト終了時でのプロジェクト目標の達成が見込まれる。

(3) 効率性

日本側からは、専門家、機材、研修員受け入れが計画通りに投入された。一方、パラオ側からもカウンターパート人材や施設などが適宜投入され、パラオ政府からは45万ドルの資金支援が行われている。

日本、パラオの投入は適切に行われ、成果達成のために活用されている。

(4) インパクト

対外的には、地域サンゴ礁モニタリングワークショップの開催や国際サンゴ礁シンポジウムへの参加などを通し、サンゴ礁センターとしてミクロネシア地域および国際的な拠点としての機能を果たし始めている。

一方、パラオ国内においてはパラオコミュニティカレッジや高校との連携による就業体験活動、海洋保全地区におけるモニタリング、旅行社との連携などを通して、海洋環境保全に関する啓発を行っている。

現時点ではプロジェクト活動によるインパクトを正確に把握することはできないが、広く周辺地域まで効果が波及することが見込まれる。

(5) 自立発展性

PICRCのスタッフはモチベーションが高く、また十分に訓練されているが、一部人員が配置されていないポストがある。

財政面に関しては、パラオ政府からの資金援助を受けている他、水族館収入、研究部門のグラント獲得などにより運営資金が賄われている。PICRCの運営はパラオ政府による資金援助が不可欠な状況にある。

研究部門に関しては、研究者の能力や意識は向上しており、12の研究プロジェクトが進行中である。研究の質的向上のためにも、中期研究計画を見直す必要がある。

水族館保守管理は順調に行われているが、水槽の清掃などに手をとられることが多いため、施設の簡素化、ボランティアの活用などによる日常作業の軽減化が必要である。その結果、展示内容の改良に対応することも可能になる。

自立発展性の確保のための様々な活動が準備、実施されているが、自立性はPICRCが地域、世界のサンゴ礁センターとして機能するために必要不可欠である。

3-3 効果発現に貢献した要因

(1) 計画内容に関すること

プロジェクトは国際サンゴ礁イニシアチブ、日米コモンアジェンダの国際的サンゴ礁保全の枠組みの中で計画され、パラオ政府は積極的に政策、財政支援をしている。パラオ政府はサンゴ礁センターの役割を重視し、組織・活動をパラオ国際サンゴ礁センター法としてその存在の法的根拠を与えている。財政的面でも45万USドル/年の補助金拠出により支援をしている。

(2) 実施プロセスに関すること

- ①日本の無償資金協力によるパラオ国際サンゴ礁センター（PICRC）の建設
- ②学術諮問委員会（Scientific Advisory Committee）の設置：国外の研究者を含む学術諮問委員会が設置され、研究部門の研究活動計画に助言をする体制となっている。
- ③民間団体、財団、大学、研究機関からの研究助成金：研究部門は複数の団体、財団、大学、研究機関から研究助成金を受け、共同研究を実施している。
- ④外部機関との連携：PICRCは国際的なサンゴ礁モニタリングネットワーク（Global Coral Reef Monitoring Network：GCRMN）の拠点として、ミクロネシア地域の調査・研究活動を支援する研究センターとして位置づけられており、研究員はGCRMNプログラムの調整・連携業務を担当している。また、水族館部門はふくしま海洋科学館などと友好提携し、運営管理部門ではパラオ国内の民間旅行会社と提携し、センター訪問を組み込んだバックツアーを企画している。財務管理、組織運営に関しては、ハワイ大学や環境NGO（The Nature Conservancy）によるコンサルテーションが行われている。

3-4 問題点及び問題を惹起した要因

(1) 計画内容に関すること

現行のプロジェクトPDMに整合性の取れない部分、外部条件の再考が必要な部分が見られる。プロジェクト関係者で検討しPDMを改訂することが必要である。

(2) 実施プロセスに関すること

カウンターパートの退職、異動により活動の継続性や有効性が損なわれた。運営管理部門の統括担当者が退職し、本調査時点では後任ポストが空席のままであった。運営部門では財務管理システムをコンピュータ化しソフトの更新を行っているが、習熟したスタッフが退職するとシステムそのものの運営に支障をきたしている。研究部門ではGCRMNプログラムの調整業務（NODE）を担当する研究員が退職したため、早急な人員確保が求められる。

3-5 結論

成果の達成状況は、総合的にはおおむね満足できる状態であった。プロジェクトの4つの分野では、それぞれ担当のカウンターパートは熱心に活動に取り組み、専門家や研修などの投入によって能力も向上している。しかし、いくつかの活動は成果がまだ発現していない。

運営管理部門は財政的な自立性の確保のために様々な取り組みを実施しているが、十分な財源はまだ確保できていない。水族館部門は2004年の入場者数が著しく増加したものの、展示に関しては更なる工夫が必要であると判断された。研究部門は研究員のレベルが向上し、論文や報告書による成果の発表も行われ、研究助成金も確保できるようにな

ってきたが、中期的な研究計画の見直しが求められる。環境教育部門は組織改変やカウンターパートの退職、新規採用など活動に取り組む体制が途中で変わったことも影響して、活動が計画通りに実施されなかった。現在は積極的に活動が行われているが、成果が発現するには数ヶ月単位の時間が必要であろう。

3-6 提言（当該プロジェクトに関する具体的な措置、提案、助言）

①運営管理部門

- パラオ国民への PICRC の理解促進、中長期的財務計画作成、自己資金獲得への努力、財政改善策の導入が必要である。
- 空席ポストへの人員配置、スタッフ定着のための対策、各ポストの担当業務の整理が必要である。
- 在庫管理、施設の更新計画を策定し、そのための資金調達計画を策定・実行する必要がある。

②水族館部門

- 保守管理簡素化のための施設導入、適切な展示法、目玉となる展示の設置などを行い、展示内容を充実させる必要がある。
- 施設更新計画の策定、水族館管理法の改善など、水族館運営方針を考える必要がある。

③研究部門

- 効果的な研究活動のための研究計画策定、実験室での研究も含めた研究推進、具体的な環境保全につなげるための関連機関との連携が必要である。
- 研究活動を広範化するための研究環境整備、NODE コーディネータの確保が求められる。
- 研究成果の積極的な公表により、PICRC の位置づけを高める必要がある。

④環境教育部門

- 持続可能な自然資源利用の促進、PICRC の使命や活動内容のパラオ国民への紹介を行う必要がある。
- 海外からの旅行者に対しても教育活動を展開する必要がある。
- サンゴ礁センターとして、様々なレベルの来訪者に対応できる体制整備が必要である。
- 研究部門、水族館部門や他機関との連携により、効果的・効率的な教育活動を行う必要がある。

⑤部門間の連携

- 各部門が相互補完的に連携することにより、効果的な活動を推進することが可能になる。

⑥IT 環境整備

- 情報提供、収集手段としての IT 環境整備が必要である。

⑦PDM 改訂

- 外部条件、目標の再考
- 指標の明確化
- 語句、文法上のミス修正

第1章 中間評価の概要

1.1 中間評価調査の目的

「パラオ国際サンゴ礁センター強化プロジェクト」は2002年10月から4年間の予定で開始されたプロジェクトである。今回の中間調査では、開始後2年4ヶ月を経た本プロジェクトの活動の実施状況や投入実績を把握し、JICA事業評価ガイドラインに基づく評価5項目(妥当性、有効性、効率性、インパクト、自立発展性)による評価を行った。それにより、プロジェクトが順調に効果発現に向けて実施されているかを検証することを目的とした。

また、残りのプロジェクト期間にプロジェクト目標を達成し、プロジェクト終了後の自立発展性を確保するために必要と思われる事項について提言を行うことを目的とした。

1.2 合同中間評価チームの構成

1.2.1 日本側メンバー

- (1) 山田 良春 (総括、組織運営)
JICA 地球環境部自然環境保全チーム 主査
- (2) 安部 義孝 (水族館運営)
ふくしま海洋科学館 館長
- (3) 茅根 創 (サンゴ礁研究)
東京大学理学部地学科 助教授
- (4) 丸尾 信 (協力計画、環境教育)
JICA 地球環境部自然環境保全チーム 職員
- (5) 川崎 博之 (評価・分析)
アイ・シー・ネット株式会社 コンサルティング部 研究員

1.2.2 パラオ側メンバー

- (1) Lolita K. Gibbons (Leader)
Secretary, Board of Directors. PICRC
Private Consultant
- (2) Elbuchel Sadang (Administration)
Minister of Finance
- (3) Brownly Salvador (Environmental Education)
Board Member, PICRC
Governor, Ngerchelong State
- (4) Minoru Ueki (Aquarium Operations)
Board Member, PICRC
Board member, Palau Conservation Society
- (5) Bernie Keldermans (Coral Reef Research)
Board Member, PICRC
Retired Science Coordinator, Ministry of Education

1.3 評価調査の日程

調査期間：2005.1.31～2005.2.11(12日間)

| | 年月日 | | 内容 |
|----|-----------|---|---|
| 1 | 2005.1.31 | 月 | 川崎団員パラオ着 |
| 2 | 2005.2.1 | 火 | 評価調査についての関係者への説明 日本人専門家・C/P との打合せ |
| 3 | 2005.2.2 | 水 | 川崎団員：情報・資料収集 山田団長、安部団員、茅根団員、丸尾団員 パラオ着 |
| 4 | 2005.2.3 | 木 | 大使館表敬 日本人専門家・C/P からの聴き取り 団内打ち合わせ |
| 5 | 2005.2.4 | 金 | 日本人専門家・C/P からの聴き取り 団内打ち合わせ |
| 6 | 2005.2.5 | 土 | フィールド調査 |
| 7 | 2005.2.6 | 日 | 団内打ち合わせ |
| 8 | 2005.2.7 | 月 | (安部団員帰国) 茅根団員：フィールド調査 Palau Conservation Society (PCS) 訪問、意見交換 専門家・C/P からの聴き取り |
| 9 | 2005.2.8 | 火 | 茅根団員：フィールド調査 合同評価会議 |
| 10 | 2005.2.9 | 水 | (茅根団員帰国) 評価結果報告会 ミニッツ準備 |
| 11 | 2005.2.10 | 木 | ミニッツ署名 大使館報告・JICA 事務所報告 |
| 12 | 2005.2.11 | 金 | 山田団長、丸尾団員、川崎団員帰国 |

第2章 プロジェクトの概要

2.1. 背景

1994年5月、日米次官級会合においてコモンアジェンダの新たな協力分野の一つに「サンゴ礁」が追加された。また、我が国政府は、翌1995年6月にフィリピンで開催された「国際サンゴ礁イニシアチブ」会合において、「アジア・太平洋地域におけるサンゴ礁研究の拠点としてパラオ共和国（以下、「パ」国）に研究センターを設置することを検討する」旨表明した。その後、我が国は、基礎調査（外務省委託調査）（1995年10月）、JICAプロジェクト形成調査（1996年6月）により案件形成を行った。

「パ」国政府は、サンゴ礁及び関連する海洋生物の研究活動やその保全についての啓発活動を行うセンターの設立を計画し、1996年8月、我が国に対して同センターの建設について無償資金協力を要請した。同要請を受け、1997年2月、JICAは事前調査団を「パ」国に派遣、同調査においては、本センターに求められる機能、運営方式等に関する日米「パ」合同協議を行い、その結果を「Documentation」として各国代表間で署名交換を行った。その後、1997年11月から1998年10月にかけて、日米合同調査1回を含む4次の基本設計調査を実施し、2000年8月に施設が完工（8.30億円）、2001年1月にパラオ国際サンゴ礁センター（PICRC：Palau International Coral Reef Center）は正式に開館した。

我が国は2000年6月から専門家を派遣してPICRCの組織強化に協力してきた。その後、2002年10月に技術協力プロジェクト化が図られ、PICRCの組織強化・自立発展を支援するため、PICRCの中期戦略計画（Strategic Plan 2002-2006）に即し、センターの研究機能、啓発・教育機能の強化を図ることを目的とした4カ年の技術協力プロジェクトが開始された。

2.2. プロジェクト概要 (PDM)

2.2.1. プロジェクトの枠組み

プロジェクト実施期間：2002年10月1日より2006年9月30日

プロジェクトサイト：コロール

実施機関：パラオ国際サンゴ礁センター（PICRC）

2.2.2. 上位目標

パラオのサンゴ礁および関連生物の保全・持続的利用が改善される。

2.2.3. プロジェクト目標

パラオ国際サンゴ礁センターが自立発展するための管理、研究、展示／教育体制が強化される。

2.2.4. プロジェクト成果

- 1.組織強化：センターが組織的・計画的に運営管理される。
- 2.水族館運営：水族館の展示、運営、維持管理が自立的に行われる。
- 3.研究：サンゴ礁研究・モニタリング機能が確立される。
- 4.教育啓発：学生・コミュニティを対象とした沿岸資源に関する環境教育の実施能力が高まる。

2.2.5. プロジェクト活動

- 1-1 人材の拡充および能力強化
- 1-2 財務管理システムの確立
- 1-3 施設営繕・改良
- 1-4 自己収入創出プログラムの計画・実施
- 1-5 各種マーケティング

2-1 展示のレベルアップ

2-2 飼育生物の研究

- 2-3 施設の適正運用・維持管理
- 2-4 海外の水族館等との情報交換
- 2-5 入館者確保の方策実施

- 3-1 モニタリング調査（パーマネントサイトとスポットチェック）
- 3-2 個別研究プロジェクトの実施
- 3-3 GIS 及びデータベース管理
- 3-4 流況及び測深調査
- 3-5 訪問研究者の招致と共同研究の実施
- 3-6 GCRMN ミクロネシア拠点機能の強化
- 3-7 海洋保護区設定に関する調査
- 3-8 研修、ワークショップ及びシンポジウムの開催

- 4-1 スクールサポートプログラムによる環境教育の実施
- 4-2 コミュニティ・アウトリーチプログラムの企画・実施
- 4-3 ミクロネシア地域の海洋科学文献の収集とデータベース化
- 4-4 教員研修の実施
- 4-5 パラオコミュニティカレッジ（PCC）との科学プログラム実施

第3章 中間評価の方法

3.1. 評価設問と必要なデータ・評価指標

JICA 事業評価ガイドラインに基づき、5 項目の評価に関する調査項目を以下のように定めた。

「妥当性」

プロジェクトの上位目標が、パラオ共和国を含むミクロネシア地域社会のニーズに合致しているか、パラオの開発政策と一致しているか調査した。プロジェクト目標が上位目標の達成に貢献し、日本の援助政策とも合致しているかを調べるとともに、プロジェクトデザインの妥当性、プロジェクトの効果が公平に多くの受益者に与えられるかどうかの公平性の視点からの妥当性、日本の技術の優位性という観点から評価した。必要なデータは、プロジェクト関係者・カウンターパートらからの聞き取りに加えて、公式文書からの情報を分析した。

「有効性」

プロジェクト目標が達成されつつあるか中間時点での達成度を判断し、プロジェクトデザインに基づいて、1) PICRC の運営、2) 水族館の運営・展示、3) 調査研究、4) 環境教育の4つの分野のこれまでの実績・達成状況について調査した。PDM に記載された成果の指標を基に、定量的なデータ（年間予算、水族館の入館者、論文数など）の入手、聞き取り調査によって入手したプロジェクト関係者・カウンターパートの自己評価や進捗状況に対する満足度、問題点などの定性的なデータを分析した。

「効率性」

プロジェクトの活動を適正に実施し、成果をあげるために、日本側とパラオ側の投入が適切でタイミングよく行われたか、投入が成果に結びついてきたか、サポートシステムは十分に機能していたかについて分析した。投入された人材、資機材、活動費の定量的データと、聞き取りや質問表による満足度などの定性的データを分析した。

「インパクト」

PICRC による近隣国関係機関との情報交換、研究員の訪問頻度、プロジェクトの活動による PICRC の役割についての国内外研究機関や関係者あるいはセンター訪問観光客の認識、評価を分析した。PICRC で実施されたセミナーやワークショップの数、水族館の入館者数など定量的なデータと、施設の利用状況についての定性的データを分析した。

「自立発展性」

プロジェクトの協力期間が終了した後もパラオ側が自立的に PICRC を運営し、水族館の維持管理や展示、学術的な調査研究、環境教育を継続・発展させていくことができるかを、制度・組織的観点、財務的観点、技術的観点、機材の使用と保守管理の観点から調査した。現時点での人員

配置、予算、歳入表の定量的データやカウンターパートの能力など専門家による定性的評価のデータを分析した。

3.2. データ収集方法

評価に係わるデータは、次のような方法で収集した。

- ① 文献・既存資料：PICRC と関係機関(州政府財務局、パラオ観光局、Palau Conservation Society)から必要資料を入手した。入手文書は、PICRC の 2003 年次報告書、パラオ国際サンゴ礁センター法、州政府 2004 年度予算表、Strategic Plan 2002-2006 の 4 点である。加えて、プロジェクト側で準備された、プロジェクト PDM、活動報告書 (JOCV 報告書も含む)、機材リスト、2004-2005 年次予算計画書、研修報告書、水族館入館者数統計表 2003-2004 年の資料を入手した。
- ② 直接観察：PICRC 内のプロジェクトに関連する水族館の展示や施設の状況、管理備品の使用・管理状況、研究施設・資機材や研究宿泊棟の状態を直接観察した。研究宿泊棟については茅根団員が実際に宿泊し、使い勝手を確認した。カウンターパートの活動状況については、PICRC 内部での活動や Palau Community College (以下、PCC) との連携講座での講義を参観するなど直接活動を観察した。
- ③ 質問票：選択肢回答と自由回答の質問事項を記載した質問票をカウンターパートに配布し、記入後質問票を回収した (別添 2)。
- ④ インタビュー：プロジェクトの専門家、カウンターパートやセンター外部の関係者から、個別に聞き取りを行った。

3.3. データ分析方法

今回実施した中間評価では現行 PDM を基準にして評価し、達成度の状況を判断し問題点の有無を検討した。現地調査では PDM の活動内容、成果の指標、外部条件の取り扱いなど改訂の必要性が提議された。PDM の改訂についてはプロジェクト関係者が継続して検討を重ね、修正することを合同評価会議において合意した。

評価分析を行うにあたっては、事前に実績グリッドと評価グリッドの質問部分を作成して情報とデータの入手方法と確認事項を明らかにした上で調査に臨んだ。

プロジェクトの活動の 4 つの分野 (組織運営、水族館管理、研究、環境教育) については、各担当団員が直接観察した事項やカウンターパートとのインタビューで得た定量的・定性的データを取りまとめ、合同評価会議においてそれらの結果を共有した。

調査データと分析結果は、実績グリッドと評価グリッドに取りまとめた。活動実績の達成状況や評価 5 項目の調査結果については、3 つの定性的な評価段階 (Good、Fair、Unsatisfactory) を設定し、合同評価会議において協議の上判定を下した。

第4章 プロジェクトの実績

4.1. 投入実績

4.1.1. 日本側投入

- ・ 専門家：3分野（組織開発、研究支援、サンゴ・魚類飼育）4名の長期専門家と、サンゴ礁研究関連及び水族館運営を中心に12名の短期専門家が派遣された。（別添1 Annex 4）
- ・ 運営管理費及び資機材：中間評価実施時点までに233,227USドル分の機材と、181,033USドルの活動費が投入された。
- ・ カウンターパート研修：サンゴ礁研究関連及び水族館運営分野の5名のカウンターパートが日本での研修に参加した。1名のカウンターパートは現在、JICAの長期研修員として東京大学大学院修士課程に在学中である。

4.1.2. パラオ側投入

- ・ カウンターパート：センター運営部門に最高執行責任者（CEO）を含む6名、管理部門3名、水族館部門3名、研究部門7名、環境教育広報部門2名の合計21名のスタッフが国際サンゴ礁センター（PICRC）に配属されている（別添1 Annex 7）。しかし、退職した管理部門責任者（Administrative manager）の後任がまだ決まっていない。調査時点で、当ポスト人事は公募中で、近日中に選任される見込みとのことであった。
- ・ 土地、建物と機材：PICRCの土地、管理部門の施設、機材が計画通り投入された。
- ・ 運営管理費：パラオ政府から計画通り年間45万USドルの助成金が手当てされた（45万ドルの助成金は2006年まで継続される予定）。なお、パラオ会計年度は各年の10月から翌年9月までである。

4.2. 活動実績と現状

成果1 組織強化：センターが組織的・計画的に運営管理される。

管理部門の職員に対しては、海外研修（4回）、職員研修（6回）を通して、能力開発を行ってきたが、日本での研修に参加した管理部門責任者が2004年11月に退職し、同ポストは調査時点では空席となっていた。

財務管理に関しては、管理ソフトの更新、オンライン銀行システムの導入などにより改善されつつある。管理部門のスタッフに対する研修を実施し、導入したシステムに習熟することにより、さらに効果的な財務管理が可能になると考えられる。

施設管理に関しては、機材、スペアパーツ等の在庫管理のためのPCが導入された。PICRCの自己収入の1%を将来の施設更新のための基金として積み立てることが計画されているものの、調査時点ではまだ実施されてはいなかった。本年（2005年）末までには実施に移される予定である。

収入増加のためには、水族館入場料収入、ギフトショップの収入増加のために積極的な広報を行っており、マーケティングオフィサーの設置も検討している。また資金調達に関してはハワイ

大学や The Nature Conservancy (TNC) による協力を受けている。TNC からは、ソフト面での支援も受けている。また出資金を得るためのプログラムも開始し、シェル石油からは年間 5,000 ガロンのガソリン (10,000US ドル相当) の供与を受けている。

成果2 水族館運営：水族館の展示、運営、維持管理が自立的に行われる。

水族館運営部において展示基準を作成し、水槽管理のために標準管理手法が導入されている。マングローブ水槽には改善が見られ、多様な魚類等の展示が行われていた。水族館員 2 名が日本での研修への参加を通して飼育技術が向上し、適切に飼育が行われてはいるものの、展示に関してはいくつかの改善の余地のある部分が見られたため、調査団より提言を行った。

水族館施設に関しては、施設部品の在庫管理体制は整い、施設部のスタッフ 1 名は日本での研修に参加し、適切な施設の保守管理が出来る状態となっているが、施設更新を見据えた長期管理計画を策定し、更新のための資金確保を行うことが必要である。

PICRC は、ふくしま海洋科学館、モントレー湾水族館などの関連組織との連携を行っており、ふくしま海洋科学館への特有种の提供、愛・地球博へのパラオオウムガイなど特有种の提供を行うなど、積極的な交流を行っている。

また水族館への来館者数を増加させるために、水族館パンフレットやポスターの作成、旅行社との連携による PICRC 訪問を組み込んだパックスツアーの実施、地元新聞やラジオでの広報、パラオ観光局作成のガイドブックへの PICRC 紹介記事掲載等を行っている。こういった広報の効果もあり、来館者数が 2003 年の 8,166 名から 2004 年の 28,452 名に急増したが、この増加には 2004 年にパラオで開催された各種イベントへの来訪者数の増加も大きく寄与していると考えられるため、この傾向が継続するとは限らず、引き続き魅力のある水族館とするための努力を継続する必要がある。

成果3 研究：サンゴ礁研究・モニタリング機能が確立される。

研究部では、長期モニタリングを行う 16 定点を設置、定点観測を実施し、その結果を 2002 年サンゴ礁白書にまとめた他、4 ヶ所の海洋保護区の効果を評価するためにモニタリングを継続中である。

またサンゴ礁回復調査、海藻分類学、サンゴ産卵生態調査、オニヒトデ調査等の複数の研究プロジェクトを実施し、学術誌や PICRC 技術報告書への掲載を行った他、2003 年に主催した国際ワークショップにおいてセンターの研究活動を発表し、国際的な評価を受けた。さらに 2004 年に沖縄で開催された第 10 回国際サンゴ礁シンポジウムでもポスター発表を行った。今後は PICRC としての研究戦略を策定し、戦略的な研究活動を行うとともに、フィールドベースのモニタリング活動から、より高度な研究への展開が必要である。

研究員は高い意識を持ち、よく訓練もされているものの、12 の研究プロジェクトに対して、常勤研究員が 3 名と少なく、また地球規模サンゴ礁モニタリングネットワークの連携・調整を担ってきた研究者が退職したため、後任者の雇用が求められる。

研究施設は、基本的なモニタリング・研究を進める上では十分であり、調査ボート 4 隻も有効に活用されているものの、今後の研究活動の展開や外来研究者増を見込むと、研究スペースやサンゴ飼育水槽が不足するものと考えられる。

水族館を併設している研究組織であるので、研究内容を水槽での展示を通して訪問者に紹介す

る、水族館の水槽を活用した研究を行うなどの連携を行うことが効果的である。

成果4 教育啓発：学生・コミュニティを対象とした沿岸資源に関する環境教育の実施能力が高まる。

2004年11月に教育部門が広報部門と合流し、さらに2005年1月から新規スタッフを雇用することにより、教育啓発活動は活発化している。

環境啓発活動として、環境ポスターコンテストを2002年から毎年実施している。毎年特定のテーマを設定し、優秀者のポスターの絵をカレンダーにして学校、ドナー等に配布、一部を販売するというものである。ポスターコンテストに先立ち、関連資料を各学校に配布することにより、環境への意識を高める効果がある。

学校を対象とした環境教育活動としては、PICRCのスタッフによる学校訪問活動を2校に対して行った。今後はさらに積極的に学校訪問による環境教育活動を展開する予定である。

これ以外の活動としては、(1)PCCとの連携講座を実施しており、講義、研究室での実習が組み込まれている。過去の受講者のうち1名はPICRCの研究補助員として働いている。(2)就業体験プログラムは、PCC及び高校生を対象に実施しており、それぞれ4～5ヶ月間、学生を受け入れている。

4.3. 成果の達成状況

成果の達成状況をA (Good)、B (Fair)、C (Unsatisfactory) という三段階での評価をした結果、総合的にはおおむね満足できる状態であった(添付資料1 ANNEX 3)。プロジェクトの4つの分野では、それぞれ担当のカウンターパートは熱心に活動に取り組み、専門家や研修などの投入によって能力も向上しているものの、まだ成果の発現に至っていない活動もある。

運営管理部門は財政的な自立性確保のために様々な取り組みを実施しているが、まだ十分な財源は確保できていない。水族館部門は2004年の入場者数が前年に比べ著しく増加したものの、展示に関しては更なる工夫が必要であると思われた。研究部門は研究員のレベルが向上し、論文や報告書による成果の発表も行われ、研究助成金も確保できるようになってきた。環境教育部門は組織改変や人員の交代などにより、当初は活動が計画通りに実施されなかったが、現在は積極的に活動が行われている。今後成果が発現するには数ヶ月単位の時間が必要であると思われる。

4.4. プロジェクト目標の達成状況

プロジェクトの活動状況やカウンターパートの姿勢や能力はおおむね満足できる状況であり、いくつかの活動を除けば順調に進捗し、プロジェクト目標達成に向けて成果も達成されつつある。

4.5. 実施プロセスにおける特記事項

- ① 日本の無償資金協力によるパラオ国際サンゴ礁センター (PICRC) の建設
プロジェクトの開始される前に、国際的なサンゴ礁保全・研究活動に係わる有識者機関の国際サンゴ礁イニシアチブの提言、日米のコモンアジェンダによる合意、パラオ政府の政

策的支援のもとで、日本はサンゴ礁センターを建設した。

② 学術諮問委員会（Scientific Advisory Committee）の設置

国内外の研究者よりなる学術諮問委員会が設置され、研究部門の研究活動計画に助言をす
る体制となっている。

③ 民間団体、財団、大学・研究機関からの研究助成金

研究部門では複数の団体、財団、大学・研究機関から研究助成金を受け、共同研究を実施
している。

④ 外部機関との連携

PICRC は地球規模サンゴ礁モニタリングネットワーク（Global Coral Reef Monitoring
Network : GCRMN）の拠点として、ミクロネシア地域の調査・研究活動を支援する研究セ
ンターとして位置づけられており、研究員は GCRMN プログラムの調整・連携業務を担当
している。また水族館部門はふくしま海洋科学館などと友好提携し、運営管理部門ではパ
ラオ国内の民間旅行会社と提携し、センター訪問を組み込んだパックツアーを企画してい
る。また財務管理、組織運営に関しては、ハワイ大学や環境 NGO（The Nature Conservancy）
によるコンサルテーションが行われている。

4.6. 貢献・阻害要因の総合的検証

プロジェクトのこれまでの進捗に貢献してきた要因としては、まずパラオ政府の積極的な政策、
財政支援が挙げられる。パラオ政府はサンゴ礁センターの役割を重視し、組織・活動をパラオ国
際サンゴ礁センター法としてその存在の法的根拠を与えている。財政面でも 45 万 US ドル／年の
補助金拠出により支援している。ただし、この政府予算は将来にわたって継続されるかどうかは
未定であり、現在の財政状況のまま推移し、本プロジェクト終了後に補助金が停止されると、
PICRC 運営の自立発展性の確保は極めて困難となる。

また、成果やインパクトの発現がみられた研究部門については、カウンターパートの資質に加
え日本人の専門家が集中して効率よく投入されたことが貢献要因であったと考えられる。

一方阻害要因としては、スタッフが流動的であり定着しないことが挙げられる。PICRC の運営
能力を向上させるためには、習熟したスタッフの確保が必要であり、そのための対策の検討が必
要である。

第5章 評価結果

5.1. 評価結果総括

プロジェクトの「妥当性」、「効率性」「インパクト」については三段階評価で A (Good)、「有効性」と「自立発展性」は B (Fair) と判断された。プロジェクトの意義やサンゴ礁センターの役割については、政策的にも高く評価され妥当性があり、日本とパラオ両政府のプロジェクトへの人材、資金の投入は適切に実施されるなど高い効率性を示し、活発な研究活動は成果を続々と上げておりインパクトを高める結果となった。

一方、プロジェクトの開始以降、職員の離職によって育成された人材が流出し、いくつかのポストが欠員となったままであることが、有効性、自立発展性にとってマイナス点となり、満足できる状況に達していないと判断された。自立発展性については、特に財政面での不安定さが指摘され、プロジェクトの協力期間が終了した後の財源確保のための活動を実現することが求められた。

5.2. 評価5項目による分析

5.2.1. 妥当性

世界中のサンゴ礁研究者や関係者で構成される国際サンゴ礁イニシアティブ (ICRI) が提唱した「大洋州地域におけるサンゴ礁研究の拠点の必要性」に基づき、生物・文化の多様性、サンゴ礁へのアクセスのしやすさや政治的な安定性から、パラオがその候補地となり、日本の無償資金協力により、パラオ国際サンゴ礁センター (PICRC) が設立された。

パラオ政府も 1998 年に「パラオ国際サンゴ礁センター法」を成立させ、センターの設立と運営に積極的に係わり、国際的な研究センターとして自立した運営を目指すことを明記している。また、PICRC は中期計画「戦略計画 2002-2006」を取りまとめ、PICRC の方針を明確にしている。

プロジェクトは、パラオの貴重な沿岸環境、サンゴ礁を保全することを上位目標に掲げている。環境保全と自然資源の持続的な利用はパラオの開発政策、パラオ社会のみならず、地域社会、国際社会のニーズに合致している。

日本は、アメリカ合衆国と共に 1993 年 7 月に打ち出した日米コモン・アジェンダにおいて、生物多様性に富む重要な海洋生態系であるサンゴ礁保全の重要性に言及し、パラオやミクロネシア地域での環境保全分野への支援を重視することを公表した。自然環境保全と持続的な開発は日本の重要な援助政策のひとつである。

また、パラオでは 1930 年代から日本のサンゴ礁研究がなされていた歴史的経緯もあり、多くの日本人研究者が訪れており、こうした日本のサンゴ礁研究の経験は、水族館管理の技術とともにプロジェクトに貢献するものと考えられる。

以上の通り、プロジェクトの妥当性については政策レベルでは非常に高いと言えるが、プロジェクトデザインについては、PDM の指標にあいまいな部分がみられ、活動と成果の整合性、外部

条件等に再考の必要があると考えられたため、本調査団の提言を受けプロジェクト側で PDM の見直しをすることになった。

5.2.2. 有効性

PICRC の運営管理能力については、顧客サービスの研修を行い会計システムのオンライン化を進めるなど、ハード、ソフト両面の向上がみられ、限られたスタッフの数ではあるが良く運営されている。また財政的自立に向けての努力も見られ、協賛金や寄付金を募る資金調達プログラムや、PICRC の認知度を高めて自己収入を増大させるための営業戦略を計画・実施している。一部では既に成果が上がっており、例えば水族館の 2004 年度の収入は 2003 年度に比べて約 3.6 倍となっている。

しかし、現在運営管理部長職が空席になっており、出来る限り早急にこのポストへ適切な人材を雇用することが望まれる。なお本調査団が滞在中に、当ポストの公募が行われており、近日中に採用される可能性が高い。また渉外・営業を担当するマーケティングオフィサーの新たな人材雇用もセンターは希望しており、理事会と協議することになった。

センターの財務は依然、パラオ政府からの助成金による部分が大きく、今後自立的にセンターを運営していくためには中長期の経営戦略及び財務計画を策定する必要がある。

水族館の運営管理・展示能力については、水族館部と管理部の 2 名のスタッフは日本での短期研修を受けて技術力が向上し、設備の保守管理、水槽管理は充分に行われている。修理部品に関しては数年分の備蓄があり、データベースによって在庫管理されている。水族館の展示は全般的に良く管理されているものの、応急的に設置されたフェンスなどいくつか改善が必要な部分もあった。またアクアリストが水槽掃除などの日常業務に追われ、企画展示の検討などに十分な時間が取れないことが懸念された。

2004 年度には急激に入館者が増えたが、今後とも入館者の興味をひきつけるためにも将来にわたっての展示計画を作成することが求められる。

サンゴ礁研究については、研究員の調査研究に対する意欲は高く、研究能力も高まっている。常勤の研究者の数は限られているが、現在、12 の研究テーマが進行中で、研究結果は国内外のワークショップやシンポジウムで発表されている。研究内容も質が向上しており、国際的な学術誌に投稿論文が掲載されたものもある。海外研究者との共同研究も進められており、海外からの研究助成金も得られるようになってきている。パラオ国内でもその研究能力は期待されており、海洋保護区のモニタリングを継続的に実施している。

一方、これら研究・モニタリング活動に比して研究員数が不足気味であり、個々の研究員の負担が大きくなりつつある。特に、2005 年から 2 年間、パラオが国際サンゴ礁イニシアティブ (ICRI) の日本との共同事務局を務めることになっているが、域内の調整業務を 3 名の研究員のうちの一人が兼務で担当しなければならず、過剰業務となる恐れがある。また高い研究能力を持ちながら、パラオ国内の他の研究機関との連携及びサンゴ礁保全政策への研究成果の反映が十分とはいえ、パラオ国内での連携強化が課題といえる。

教育啓発分野については、環境をテーマとしたポスターコンテスト、学校訪問プログラム、地域コミュニティでの啓発普及ワークショップなど、いくつかの環境教育プログラムが実施されている。PCC での海洋環境教育講座も実施されている。また、パラオ自然環境関連文献の収集も継続して行われている。

環境教育を担当する環境教育広報部は、プロジェクト当初は水族館部の一課であり 2004 年 10 月から独立した部署となった。また 2005 年 1 月に新たなスタッフが 1 名増員されたが、それまでスタッフは充分とはいえなかった。そのため、プロジェクト開始当初の活動はあまり活発ではなかったが、ようやく活動計画が軌道に乗り始めた。

以上の通り、プロジェクトの総合的な有効性については、組織強化、水族館運営、研究、環境教育に係わる活動は活発に行われている。

成果の達成状況にはばらつきがみられるため、PDM の見直しも含めて活動の優先順位を絞り込み、プロジェクト目標を達成するための有効性を高める必要があるが、プロジェクト目標の全体的な達成度合いは順調に進捗しており、プロジェクト目標はほぼ予定通り達成できるものと推察される。

5.2.3. 効率性

日本からの投入は組織強化、研究支援、水族館運営分野の長期専門家 4 名及び短期専門家 12 名の派遣、調査船や研究用ソフトウェアなどの機材供与が予定通り行われ、PDM に則った活動が行なわれた。各専門家の活動はカウンターパートから高く評価されている。

また 5 名のカウンターパートが、それぞれ運営管理、水族館、補修管理、研究分野で日本での研修に参加した。現在、カウンターパートの 1 名は JICA の長期研修員として東京大学大学院の修士課程に在学中である。

また、環境教育分野のプロジェクトの投入としては青年海外協力隊員（環境教育）の派遣があり、環境教育分野の活動で重要な役割を果たしている。

カウンターパートとして PICRC 全体で 21 人のスタッフが配置されているが、一部空席となっているポストがあり、約 3 分の 1 のスタッフがプロジェクト開始当初から入れ替わっている。

パラオ政府により、土地、建物、施設が十分に提供され、年間 45 万ドルの助成金が提供されている。

日本とパラオの両者の投入は適正に行われ、活動も広範囲にわたり活発に行われているが、中間評価時点では成果の発現に至っていない活動もある。

5.2.4. インパクト

現時点でプロジェクト活動のインパクトを正確に評価することは出来ないが、国内外の広範囲な正のインパクトの兆候がみられる。パラオの教育部門、観光業、水産業へのインパクトも期待できる。

プロジェクトの直接的なインパクトといえるパラオ国際サンゴ礁センター（PICRC）の機能や役割の対外的な認識度については、ミクロネシア地域と世界のサンゴ礁研究者や関係者の間で認識度が高まりつつあるといえる。

PICRC はすでに、域内サンゴ礁モニタリングワークショップを含むいくつかのセミナーやワークショップを企画・実施し、国内外の研究者や関係者がセンターを訪れている。また、外部研究者を世界中から受け入れて、共同研究も実施している。

こうした PICRC の外部研究者を受け入れるための宿泊施設・研究室や調査船は現時点では十分

整っているといえる。しかし、今後より多くの研究者を受け入れるためには、研究室の拡充やオンライン回線など IT 関連施設を充実させることが求められる。

またパラオ国民に対しては、コミュニティでのアウトリーチ活動、PCC との連携プログラム、中学生・高校生に対するプログラム等を行っているものの、PICRC に対するパラオ国民の認知度を高めるためには、さらに積極的な活動が望まれる。

海外からの観光客に対するインパクトとしては、パラオ観光局や旅行会社に水族館の紹介案内やポスターを提供している。いくつかの旅行会社と提携しセンターへのバックツアーを実施している。これらのプロモーション活動も 2004 年度の水族館入館者（合計 28,452 人）の増加に寄与したと思われる。

さらに、海洋保護区のモニタリング活動においては、水産部局や州政府との連携を行っている。また、研究員をミクロネシア地域及び、沖縄で開催された第 10 回国際サンゴ礁シンポジウムに派遣した。

5.2.5. 自立発展性

PICRC の自立発展性については、組織、財政、技術、機材管理の面で検討した。

PICRC の運営組織については、全般的にはそれぞれの部署にいる現在のスタッフはみな意欲的でよく訓練されており、自立的にセンターを運営管理できるようになる期待は高い。運営管理部は、組織強化や活動基金を集める能力強化の研修を環境 NGO (TNC) から受け、スタッフには顧客サービスを向上するための研修を行い、運営管理能力の向上の努力を続けている。しかし、これまで優秀なスタッフはしばしば他機関や民間企業に転職している。また、現時点で運営管理部長ポストは空席となっており、域内調整専任の研究員も不在である。このようなスタッフの入れ替わりや適任者の不在は、プロジェクト目標の達成と安定したセンター運営の障害となる可能性があるため、対策を講じる必要がある。

財政面については、水族館の入場料収入が急増している。また企業からの協賛金や個人からの寄付金プログラムなどの資金調達プログラムは現在進行中であるが、まだまだ小規模の財源しか確保できておらず、PICRC の運営に必要な財源を全ては賄っていない。現状では、パラオ政府による年間 45 万 US ドルの財政支援にセンターの運営経費の多くを依存しており、現時点では完全なセンター自身の収入での自立は難しいと思われる。

PICRC の大きな財源としては研究助成金がある。これまで NOAA、グアム大学、パッカード財団などの支援機関・団体から研究費を受給してきた。PICRC は研究員の能力も高く、施設も良い状態であることから、今後とも研究助成金を増やしていける可能性は高いが、限られた研究員に過大な研究活動を強い、また研究設備が不足することになりかねない。

このように複数の財源に頼らざるを得ない状況におかれていることから、現状の財務分析を行い、現実的な収入予測をもとに 5-10 年の中長期の資金計画を立て、自立発展性を検討することが必要であろう。

技術面の自立発展性では、PICRC の全てのスタッフは、現状では非常にやる気もありよく訓練

され、通常業務をこなしていく能力は安定しているといえる。ただし、優秀な人材の流出・引き抜きが生じており、PICRC が新たな人材を雇用しようとしても、人口の少ないパラオではなかなか優秀な人材を得るのは難しい。

研究員は研究プロジェクトを実施していく高い意欲と能力を有している。研究員の一人はオーストラリアの大学院の博士課程に入学することになっている。別の研究員はすでに JICA の長期研修で東京大学大学院の修士課程に入学している。これら研究員が各々の課程を修了すれば、より研究内容が向上していくものと期待される。

管理部と水族館運営部のスタッフには、施設と機材を修繕管理していく技術的な能力がある。しかし、特に水族館では、水槽掃除などの日常的に繰り返される時間のかかる作業に忙殺されている。そこで、修繕管理作業の簡素化と水槽展示の内容を向上させるために、例えばボランティアの活用や水族館施設の改修の検討が望まれる。

機材の運営管理については、管理部のスタッフは、適切に施設と機材を維持しており、修理部品に関しては、物品目録に基づき 3-5 年分の修理部品を確保している。

しかし、長期的な管理計画を策定することや、大規模修繕や施設の改修に備えて必要な経費を積み立てておくことが望ましい。すでに運営管理委員会は維持管理費として自己収入の 1 パーセントを積み立てておくことを指示しているが、実質的にはまだ積立がなされていない。

現在プロジェクトの活動は活発になされスタッフの能力も高い。ただ、プロジェクトの協力期間終了後の域内あるいは国際センターとしての機能を確保するために、財務分析に基づいて長期計画を見直すことが必要であろう。

第6章 提言

評価結果、調査結果を受けて、プロジェクト活動における提言を部門毎に、また部門横断的な事項についても行った。

各提言については優先付けをし、実施に移すにあたって必要となる投入を勘案の上、実現に移すべく付言した。

6.1. 管理部門への提言

プロジェクトの有効性、効率性、自立発展性の観点から、PICRC 運営についての改善が不可欠である。そのため、以下の事項を実施または強化する必要がある。

(1) 財政部門

パラオ政府からの継続的な財政支援を得るために、税負担者たるパラオ国民の PICRC に対する理解を高める。そのために、6-4 の環境教育の提言に記載の事項等を行う。

将来的に、収入源の変化が見込まれ、また施設更新のための経費が必要となることも考えられるため、中長期的な財政計画を立てる。

PICRC の財政上の自立発展性のために、来館者数の増加、ギフトショップ売り上げの増加、会員収入、資金提供、寄付等により収入を増加させるための方策をとる。また、施設更新経費を確保するための基金設立計画も実行に移す。

財務管理システムが更新されたことに伴うスタッフへのシステム研修を実施する。

(2) 人事部門

空席ポストがあるため、適任人材を充てる必要がある。また収入を増加させるためにも、マーケティングオフィサーポストを設置する。

プロジェクト開始以来、スタッフの退職によりプロジェクトの有効性、効率性、自立発展性に弊害が生じたため、経験豊富なスタッフを確保するための方策を講じる。

各ポストの担当業務を明確にし、俸給表を作成する。

(3) 施設管理

センターの効果的運営のために、施設や機材の修復、更新計画を策定する。

施設部品の在庫管理に加え、センターの施設管理システムの策定や更新を行う。

6.2. 水族館部門への提言

水族館は、PICRC の設立当初はサンゴ礁研究所の附属機関として、地元住民や旅行者がパラオのサンゴ礁を観察するための施設として設立されたが、PICRC の運営上、その重要性は高まってきた。

そのため、以下の各点についての配慮を行うことが必要である。

(1) 水族館提示

水族館員の作業量を低減するために、屋内水槽のうち日光にさらされている水槽に屋根を

設置するなどの改修を施す。

屋外水槽のうち、側面がコンクリート壁になっている部分は、アクリルパネルで置換することにより、横からの観察が可能になり、アルミのフェンスも除去することが可能になる。

入口にふさわしい展示をするために、現在入口に設置されているパラオの地形図を屋内に入れ、その代わりに水槽を設置する。

展示に際しては目玉となる種を選定する。

再訪者数を増やすためには、企画展示を行う。

ワニの展示を再考する。

来訪者の要望を確認するために、アンケートを実施することが効果的である。

(2) 水族館管理

ギフトショップは水族館の収入を増加させる上で重要であるが、改善のために外部人材登用も検討する。

いずれ施設改変の必要が生じるが、その際により効果的かつ効率的な施設を導入するために、施設改変計画を策定する。

「管理部門への提言」に記載の通り、水族館管理を改善するためには様々な手法が考えられるが、具体的な手法については、管理責任者と水族館責任者の間で綿密な打合せをする。

6.3. 研究部門への提言

サンゴ礁研究の国際センターとしての機能を強化するために、以下の提言を行った。

(1) 研究戦略

研究助成金により、研究テーマが多岐に亘っているが、効率的に研究活動を実施するために、センターとしての戦略を策定し、実施中の研究プロジェクトの統合を行う必要がある。研究計画は基礎的なモニタリング、サンゴ礁生態学及び集水域や海洋保護区などの管理への適用に重点を置く必要がある。

研究戦略では、フィールドでの研究やモニタリングを基礎としながらも、次の研究ステップとして、生態系におけるサンゴ礁や研究室での研究へのアプローチも盛り込むべきである。

PICRC での研究成果を環境保全につなげるために、パラオ政府や関連機関との緊密な関係を構築する必要がある。

(2) 研究活動の展開

今後、PICRC での研究が基礎的なモニタリングや研究から発展していくのに伴い、執務室とサンゴ飼育用の水槽が追加的に必要となることが考えられる。さらに、常勤研究員数が研究プロジェクト数に比して少ないため、追加的に研究員を確保する必要がある。

地球規模サンゴ礁モニタリングネットワークの調整業務を専任で行う人材がいないため、PICRC が国際的な機能を果たすためにも専任者の確保が必要である。

(3) 研究成果の公表

PICRC ではサンゴ礁モニタリングを実施してはいるものの、その成果は今までのところまとめられていないので、アトラスやモノグラフとして取りまとめる必要がある。また、年次研究報告の出版も必要である。

JICA は PICRC の研究施設等、研究基盤に対する貢献を行っているので、論文の謝辞での言

及があってしかるべきである。

6.4. 教育部門への提言

PICRC の教育部門には 2 つの側面がある。一方は自然の重要性を伝えることにより、地元住民や旅行者が自然環境を尊重するようにすることであり、他方は PICRC の使命や活動をパラオの人たちに理解してもらうことである。この両面を満たすために、以下の提言を行った。

- (1) 自然環境への影響を与えている層に対しては、自然環境の重要さの気付きを促すのみならず、自然資源の持続的利用がいかに重要であるかを知らしめることが必要である。
- (2) コミュニティでの教育活動に際し、PICRC の使命や活動について紹介を行うことにより、PICRC に対する理解への深まりが期待できる。
- (3) 国際サンゴ礁センターとして、海洋生態系の重要性については旅行者に対しても伝える必要がある。
- (4) サンゴ礁に関する情報センターとしての機能を強化するため、サンゴ礁に関する情報のパンフレットを準備するなどの対応が求められる。
- (5) 研究部門や水族館部門を教育活動に活用するため、研究内容や水族館展示についての最新情報を環境教育広報部に集積しておく必要がある。

6.5. 水族館、研究、教育・啓発の連携

PICRC での活動を効果的かつ効率的に行うため、研究成果を教育活動において活用する、研究成果に基づいた展示を行う、水族館員による教育活動を行うなどの連携が必要である。

6.6. 通信技術の活用

PICRC での活動をより効果的、効率的に行うため、IT を以下の目的のために活用することを提言する。

- (1) PICRC の活動に関する情報公開
- (2) PICRC への来訪者を増加させるためのホームページ内容の充実
- (3) 研究環境についての紹介、研究活動に関する情報提供
- (4) 図書館の整備

6.7. PDM、PO の改定

R/D に署名した当初との状況の変化等により、評価結果及び提言に沿い、以下の通り PDM の変更が必要であると考えられる。

(1) 外部条件

PICRC は自立発展するために収入を増加させるための様々な取り組みを行っており、「The Center is not drastically shifted to be self-supporting financially」という外部条件はもはや内部化が可能であり、変更が必要である。

PICRC の研究資金は増加が見込まれるため、「Research grants are stably secured」は削除すべきである。

(2) 指標

指標に客観性を持たせるため、指標の数値化、検証可能な目標設定をする必要がある。
すでに達成された指標については再検討の必要がある。

(3) 活動

現在及び今後の活動範囲、また提言の内容を反映させて活動内容を再検討する必要がある。

(4) その他

PDM の変更に伴い、PO も修正を行う。

団長所感

今回の評価の結果、以下の点が明らかになった。

1. 部門別評価

プロジェクトの部門別の評価は三段階評価で A から B で、ある程度の成果を示しているといえよう。

- (1) 管理部門は財政的な自立性の確保のために種々の努力を行っているが、その成果は未だ十分に発現するには至っていない。今後、自立性の確保に向けた経営分析を進め、中長期的な戦略及び財政計画の策定が必要である。
- (2) パラオ全体の観光客が増加したこともあり、水族館の 2004 年入場者数の増加が著しいものの、展示に関しては更なる工夫が必要であると判断された。
- (3) 地理的優位性を活かせる研究部門が研究者のレベルを着実に向上させるとともに、研究補助金の確保や共同研究を着実に進めている点が目を引く。
- (4) 教育部門の成果の発現にも、数か月単位の時間が必要であろう。

2. 項目別評価

項目別評価を概説すると、妥当性、効率性及びインパクトは A、有効性、自立発展性は B と判断された。研究部門が成果を挙げている点がインパクトの評価を高めた。一方、プロジェクト開始以降、職員の離職によっていくつかのポストが欠員となったことが有効性、自立発展性に影響した。また、自立発展性の確保には更なる努力が必要である。

3. 今後の課題

プロジェクトは協力期間終了後の自立発展性の確保を目指して種々の努力を行っているが、これらの努力をさらに強化していく必要がある。また、センターにおいては自立発展性の確保に関して種々の検討や解析をおこなっているところであるため、これらの結果に注目していく必要がある。

添付資料

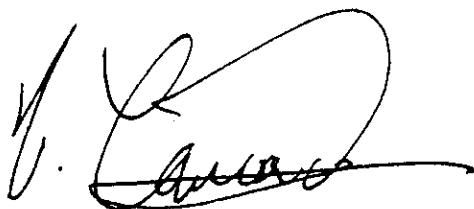
**MINUTES OF MEETING
BETWEEN THE JAPANESE MID-TERM EVALUATION TEAM
AND THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF PALAU
ON JAPANESE TECHNICAL COOPERATION
ON THE PALAU INTERNATIONAL CORAL REEF CENTER STRENGTHENING PROJECT
IN PALAU**

The Japanese Mid-term Evaluation Team (hereinafter referred to as 'the Japanese Team') organised by the Japan International Cooperation Agency (hereinafter referred to as 'JICA'), headed by Mr. Yoshiharu Yamada, visited Palau from 31 January to 10 February, 2005, for the purpose of conducting a mid-term evaluation of the Palau International Coral Reef Center Strengthening Project in Palau (hereinafter referred to as "the Project").

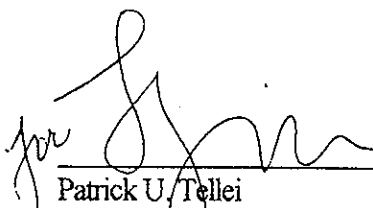
For this purpose, the Japanese Team and the Palauan authorities concerned formed the Joint Evaluation Team (hereinafter referred to as 'the Team'). The Team evaluated performance and achievements of the Project through field visits, interviews and had a series of discussions in respect of desirable measures to be taken by both Governments for the successful implementation of the Project.

The Team agreed on the contents of the Evaluation Report attached, which was accepted by the Joint Coordinating Committee. As a result of the discussions, the Team agreed to recommend to their respective Governments the matters referred to in the attached Evaluation Report.

Koror, Palau, 10 February, 2005



Yoshiharu Yamada
Team Leader
Japanese Mid-term Evaluation Team
Japan International Cooperation Agency,
JAPAN



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

**REPORT ON THE JOINT EVALUATION
OF
THE PALAU INTERNATIONAL CORAL REEF CENTER
STRENGTHENING PROJECT IN PALAU**

1. Introduction

The cooperation project in Palau International Coral Reef Center (hereinafter referred to as "PICRC") started in October 2002, and Japan International Cooperation Agency (hereinafter referred to as "JICA") will cooperate until September 2006. After two (2) years and four (4) months of the implementation, the Joint Evaluation Team (hereinafter referred to as "the Team") was formed for this mid-term evaluation.

1-1. Objectives of the Evaluation

The evaluation activities were performed with the objectives:

- (1) to conduct a comprehensive evaluation of the achievements of the Project in accordance with the original plan described in the Record of Discussion (hereinafter referred to as "R/D"), Project Design Matrix (hereinafter referred to as "PDM") and Plan of Operation (hereinafter referred to as "PO");
- (2) to make recommendations on the Project for future project activities; and
- (3) to review and revise PDM for the remaining cooperation period, if necessary.

1-2. Members of the Joint Evaluation Team

The Team consists of the following members.

(1) Japanese members

- (a) Yoshiharu Yamada (Leader/ Administration)
Chief, Nature Conservation Team, Global Environment Department, JICA
- (b) Yoshitaka Abe (Aquarium Operations)
Director, Aquamarine Fukushima, Marine Science Museum
- (c) Hajime Kayane (Coral Reef Research)
Associate Professor, Department of Earth & Planetary Science, Graduate School of Science, University of Tokyo
- (d) Shin Maruo (Cooperation Planning/ Environmental Education)
Project Officer, Nature Conservation Team, Global Environment Department, JICA
- (e) Hiroyuki Kawasaki (Evaluation/ Analysis)
Senior Consultant, Coral Reef Ecosystem Research, IC Net Limited



(2) Palauan members

- (a) Patrick Tellei (Leader)
Chairman of Board Directors
President, Palau Community College
- (b) Elbuchel Sadang (Administration)
Minister of Finance
- (c) Browny Salvador (Environmental Education)
Governor, Ngerchelong State
- (d) Minoru Ueki (Aquarium Operations)
Board member, Palau Conservation Society
- (e) Bernie Keldermans (Coral Reef Research)
Retired Science Coordinator, Ministry of Education

1-3. **Schedule of Study**

The detailed schedule of the mid-term evaluation study is attached as Annex 1.

2. Outline of the Project

The Technical Cooperation Project, the Palau International Coral Reef Center Strengthening Project (hereinafter referred to as 'the Project') has been implemented since 1 October 2002, based on the R/D, signed on 25 July 2002 between the Government of Japan and the Government of Palau.

As indicated in the R/D, the Project purpose is 'to attain self-sustainability of PICRC, the Center's administrative, research and exhibition / education capacity are strengthened'. Furthermore, the overall goal of the Project is 'Conservation and sustainable use of coral reef ecosystem and related biota in Palau are enhanced'.

The outputs of the Project confirmed in the R/D are:

- (1) The center is administered in organized and planned manner;
- (2) Aquarium is self-sustained in exhibition, operation and maintenance;
- (3) Coral reef research and monitoring function is firmly established; and
- (4) Education division is capable of conducting environmental education on coastal resources for students and community.



3. Methodology of Evaluation

The mid-term evaluation was carried out by the Team consisting of both JICA and Palauan mid-term evaluation teams as described in 1-2. In the first step of the evaluation, the Team reviewed the progress and achievements of the Project referring to the PDM attached as Annex 2. In the next step, the Team analyzed and evaluated the Project from the viewpoints of 'Relevance', 'Effectiveness', 'Efficiency', 'Impact' and 'Sustainability'. Finally, the Team made recommendations on the Project for the improved implementation of the Project and for expected achievements of the Project purpose by the end of the cooperation period.

3-1. Evaluation Questions and Indicator

The questions and indicators for evaluation are indicated in the Evaluation grid, attached as Annex 3.

3-2. Data Collection Method and Analysis

3-2-1. Data Collection Method

The Team (1) carried out a field surveys at the Project sites, (2) collected relevant documents and publications, (3) collected information through questionnaire from concerned personnel, and (4) interviewed Palauan Project personnel, Japanese experts and others concerned.

3-2-2. Criteria of Evaluation for Analysis

(1) **Relevance:**

Relevance of the Project was reviewed as the validity of the Project purpose and overall goal in connection with the development policy of Palau and needs of the beneficiaries.

(2) **Effectiveness:**

Effectiveness was assessed by evaluating the extent to which the Project has achieved outputs and project purpose.

(3) **Efficiency:**

Efficiency of the Project implementation was analyzed focusing on the relationship between outputs and inputs in terms of timing, quality and quantity, and on linkage with other cooperation schemes of JICA and other organizations.



- (4) Impact:
Impacts of the Project activities were identified by focusing mainly on positive and negative impacts caused by the Project, which had not been originally expected in the Project plan.
- (5) Sustainability:
Sustainability of the Project was evaluated in organizational, financial and technical aspects in consideration of the extent to which the achievement of the Project will be sustained or expanded after the assistance period.

4. Project Performance and Implementation Process

4.1 Accomplishment of the Project

Accomplishment of the Project was measured in terms of inputs, activities, outputs and the Project purpose, all of which are indicated in the R/D, PDM and PO.

4.2 Inputs

(1) Japanese side

(a) Experts

(i) Long-term experts

Four (4) long-term experts in total, as of January 2005, have been dispatched in the following fields:

- Chief Advisor
- Research Coordinator
- Organizational Development
- Improvement of Exhibit

(ii) Short-term experts

Twelve (12) short-term experts in total, as of January 2005, have been dispatched in the following fields:

- Organization Development
- Research Advisor
- GIS and Database Management
- Marine-biology and Ecology
- Coral Reef Geology and Chemistry
- Oceanography
- Algae Survey
- Aquarium Facility Operation and Maintenance
- Hydrodynamic Study.

The detailed list of Japanese Experts is contained in Annex 4.



(b) Provision of machinery and equipment

Machinery and equipment listed in Annex 5 have been provided as major items as of January 2005.

(c) Training of Palauan counterpart personnel in Japan

Five (5) of Palauan counterpart staff have participated in short-term training by January 2005 and one (1) in long-term training in Japan. The fields of the short-term training courses are as follows:

- Handling and Feeding Technique of Fish (Fish Pathology)
- Water Quality Monitoring and Analysis
- Management and Maintenance of the Aquarium
- Image Analysis Technique for Coral Reef GIS
- Marketing

(d) Japan Overseas Cooperation Volunteers (hereinafter referred to as "JOCV")

Two (2) JOCV in the field of Environmental Education were dispatched as of January 2005.

The list of JOCV is contained in Annex 4.

(2) Palauan side

(a) Assignment of counterparts and other personnel

Twenty-one (21) counterpart personnel have been assigned for the Project in PICRC as of January 2005.

List of Palauan counterpart personnel assigned to the Project is shown in Annex 7.

(b) Budgetary allocation by Palauan side

US\$ 450,000 have been allocated per year as an operational cost for PICRC from Palauan F.Y. 2002 to F.Y. 2005.

(c) Provision of land, building and facilities

4-3. Activities

Activities consist of twenty-three (23) fields as indicated in the original PDM. The activities completed and ongoing at the time of evaluation are summarized as Annex 8.

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4-4. Outputs

Accomplishment of each output is as follows:

(1) Output 1: The center is administered in organized and planned manner.

| Verifiable Indicators | Results (as of January 2005) |
|--|--|
| 1-1) Number of trained staff | The Government of Palau appointed twenty-one (21) staff to PICRC. A number of staff members have attended 6 in-house training courses on custom service. JICA has provided the overseas training on marketing, aquarium, maintenance and research for five (5) staff members so far. |
| 1-2) Increase of ratio / annual amount of self-revenue | The income of aquarium increased 3.6 times in 2004 compared with that in 2003 to US\$ 104,805. |

(2) Output 2: Aquarium is self-sustained in exhibition, operation and maintenance.

| Verifiable Indicators | Results (as of January 2005) |
|---|--|
| 2-1) Stabled rearing | Well maintained |
| 2-2) Periodical updates of exhibition | Need more ideas and invention for exhibition to increase visitor's interest. |
| 2-3) Operation of facility without major disruption | Well maintained |
| 2-4) Periodical Maintenance of Facility | Well maintained |

(3) Output 3: Coral reef research and monitoring function is firmly established.

| Verifiable Indicators | Results (as of January 2005) |
|---|---|
| 3-1) Monitoring: 14 permanent sites and 100 spot checks | Well managed. Permanent monitoring sites increased to 16 sites. |
| 3-2) Monitoring data entered into GIS | Basic GIS was completed. The researcher on GIS is currently studying in MSc course at the University of Tokyo under the JICA long-term training program. |
| 3-3) Scientific Publication: more than 5 | On-going. Several papers are in preparation by researchers. As a result of the Project, one paper has been published in "Coral Reefs" which is one of leading scientific journals in marine science |
| 3-4) Training, workshops and symposium: | On-going. Pre-10 th ICRS and Regional |

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| more than 5 | Coral Reef Monitoring workshop were held in PICRC. |
| 3-5) Technical assistant to States and National Governments: more than 4 | On-going. Marine Protected Areas (hereinafter referred to as "MPAs") monitoring are in progress. |

(4) Output 4: Education division is capable of conducting environmental education on coastal resources for students and community.

| Verifiable Indicators | Results (as of January 2005) |
|--|--|
| 4-1) School support program: all the elementary and secondary students are educated in the program | Planned summer school program was completed. Lectures in PCC are on-going. Education programs in 17 elementary schools and 5 high schools in total were implemented. |
| 4-2) Community outreach program: implemented in all the states | On-going. In the relation to MPAs, community outreach education programs have also implemented at two states so far. |
| 4-3) Reference database: compiled and open to the public | Marine scientific works acquired are over 1,000. Digitalization of database on collected reference is on schedule. Compiled data will be open to the public on the official website. |

4-5. Project purpose

Accomplishments of the Project purpose are as follows.

Project Purpose: To attain self-sustainability of PICRC, the center's administrative, research and exhibition / education capacity are strengthened.

| Verifiable Indicators | Results (as of January 2005) |
|--|--|
| 1) Quality and quantity of PICRC personnel | The capability and motivation of staff are very high. However, vacant position of administrative manager need to be filled and a researcher is needed to be recruited exclusively in charge of the task of the NODE coordinator. |
| 2) Financial soundness | Self-revenue such as income from aquarium is increasing. Several fundraising programs including sponsorship and private contribution program have been established, |
| 3) Contents of research program | Currently twelve research projects are in |

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| | progress. Since the number of researchers is limited, it is necessary to revise the strategic plan on research activity. |
| 4) Aquarium exhibition, operation and maintenance | The operation and maintenance for current exhibition are well managed. Further ideas and innovations will be needed to improve exhibition for visitor's attention. |
| 5) Contents of education program | Many education activities have been done for students and local communities. Besides them, education for tourists and education activities in collaboration with Research Department, Aquarium Operations Department and other relevant organizations are needed. |

5. Evaluation Results

5-1. Relevance

Since the International Coral Reef Initiative pointed out the necessity of a Pacific research center on coral reef, Palau has a good reputation for the center such as a unique mix of culture, biodiversity, accessibility to the reef habitats and political stability. The Government of Japan and the United States, as part of environmental protection in the both countries' Common Agenda, agreed to establish the research center in Palau. The Government of Palau also endorsed the agreement by enforcing the Palau International Coral Reef Center Act to mandate the function of the center. Under such circumstances, the validity of the Project in connection with the development policy of Palau and needs of the beneficiaries not only in Palau society but also in regional and international society are high at the policy level.

The Project is relevant from the viewpoints as mentioned above.

5-2. Effectiveness

Although the number of PICRC staff is limited, the operation of the PICRC and aquarium are well managed. The researchers have high motivation for research and currently twelve research projects are in progress. Environmental Education and Public Relations Department became independent from Aquarium Operations Department in October 2004 and runs several programs including environment education and community outreach programs.

Effectiveness in achieving the Project Purpose has been raised in the activities for institutional strengthening of aquarium operation, research projects and environmental education.

5-3. Efficiency

JICA dispatched four (4) long-term experts and twelve (12) short-term experts (Annex 4) to the Project and delivered necessary equipment (Annex 5) for the Project activities on schedule. JICA also provided short-term training in Japan for five (5) Palauan counterparts (Annex 6) and one (1) long-term training for a researcher who enrolled in MSc course at the University of Tokyo, Japan. The Government of Palau provided appropriate inputs to the project such as land, facilities, counterparts, and operating expense. The Government of Palau allocated US\$ 450,000 annually in the national budget for the PICRC since the Project has commenced.

Inputs both from Japan and Palau were sufficient and used appropriately in order to achieve the Project Outputs.

5-4. Impact

Since PICRC has held a regional coral reef monitoring workshop and Pre 10th International Coral Reef Symposium and received overseas researchers, PICRC is beginning to demonstrate the function of regional and international center for coral reef research. As the domestic activities, PICRC organizes internship and career-up programs for Palau Community College and High Schools of which students work at PICRC for 4-5 months. Those students were trained sufficiently and became interested in marine environment and conservation. PICRC also initiated communication and promotional activities to increase visitors to PICRC, and then Palau Visitors Authority and tour operators are provided with aquarium flyers and posters. PICRC is working with several new tour operators to be engaged in package tours to the center. In conjunction with fishery sector and the State Government, the researchers at PICRC are monitoring MPAs to assess the effectiveness of the zoning and conditions of the protected areas.

At the moment the Impact of the Project Activities cannot be measured precisely but it shows signs of positive influence in the wider national and regional areas. In particular, impacts on tourism, fishery and education sector in Palau will be expected.

5-5. Sustainability

In the institutional aspect, the present staff in each department are highly motivated and well-trained. However, in some aspects such as vacant position of administrative manager (soon to be recruited) and an overloaded researcher in a position to conduct

ordinary researches with responsibility as a NODE coordinator would be constraints to achieve the Project Purpose and sustainable management.

In the financial aspect, the Government of Palau is very supportive to allocate the national budget at the moment. PICRC has its own revenue which gradually increase from the aquarium, and promotes fundraising programs such as sponsorship and private contribution in order to become a self-sustaining center. However, the income from the aquarium and grant from sponsors are insufficient and PICRC could not operate without the budget from the Government of Palau

In the research aspect, the capability and motivation of researchers are high, and they are also very active. Several research grants support research activities. However, twelve (12) research projects are in progress although the number of researchers is limited. It will be necessary to review the research strategic plan in order to sustain activities and to up-grade research quality.

In the maintenance and operation aspect, the Engineering Department and Aquarium Operations Department provide good maintenance of the facilities and equipment at the present. However, in particular for aquarium, the staff are engaged in routine and time-consuming work of cleaning up aquarium tanks. It is recommended to consider utilization of volunteers or to do a minor renovation of the facilities in order to simplify maintenance work and to improve aquarium exhibitions

The result of the evaluation indicates that various activities are in implementation or in preparation towards sustainability. Self-sustainability after the cooperation period should be secured in order to extend the role of regional and international center.

5-6. Conclusion

Relevance: As evaluated, the Project is highly relevant to the national policy and international agreement.

Effectiveness: The Project has not been so effective due to insufficient staffing. Also, most of the activities in the Project were at the preparation stage, and some of the achievements have not materialized.

Efficiency: Inputs from both sides were sufficient and used appropriately.

Impacts: The Project is causing positive impacts at national, regional, and international levels. However, most of the activities in the Project were at the preparation stage, and some of the achievements have not materialized.

Sustainability: The Project is not expected to be sustainable after the cooperation period since the project is raising 46 % of annual expenditure, and maintenance reserve fund is being implemented, which is essential for replacement and up-grading of facilities and equipment. The fund needs to be reinforced.

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6. Recommendations

Based on the evaluation by the Team, the following measures, which are at various stages of implementation, should be taken, further strengthened or continued, taking into account their priorities and required resources for each measure.

6.1. Administration/Management

From the viewpoint of efficiency, effectiveness, and sustainability of the Project, establishment of improved management of PICRC is indispensable. For that purpose, the following measures should be taken or further promoted.

(1) Finance

- In order to secure continuous financial support in the future from the government, further understanding by the Palauan people, as taxpayers, is necessary. For this purpose, continuous and further efforts are recommended such as those listed in "6.4 Education" below.
- Mid-term and long-term financial plan should address the following facts; (1) there may be changes in financial resources in the future, and (2) the facilities and equipment will require more frequent repairs and renovation that needs financial resources in the near future.
- Continuous and further efforts are necessary for fund-raising for the sustainability of PICRC, efforts should be strengthened, such as increase of visitors, sales of the museum shop, membership fees, sponsorship, endowment fund and others. In addition, maintenance reserve fund should be functional as planned.
- Introduction of improved financial management system is necessary with training of the system to the staff.

(2) Personnel

- There are some vacancies in PICRC. The vacancies should be filled in with qualified persons. For example, a new position of a marketing officer should be created in order to achieve efficient management of the center and promote activities for in-come generation by the center.
- Since the commencement of the Project, a number of staff have resigned, which is a constraint to the effectiveness, efficiency and sustainability of the Project. Measures are necessary to secure experienced staff in PICRC.
- Job description for each position should be clearly defined and the salary scale should be prepared.

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(3) Management of Properties

- In the near future, repair and replacement of the facilities and equipment are expected. In this regard, it is recommended that a plan for repair and replacement of facilities, equipment and renovation be developed. The plan will contribute to the efficient management of PICRC.
- In addition to the storage of spare parts, management system of the properties of PICRC should be developed or modified for the efficient management of the properties.

6.2. Aquarium

The aquarium was originally established, as annexed to the research institute, visitor center for the tourists and residents who enjoy and study the Palauan coral reef through the glass windows. However, functions of the aquarium have been established in Palau society as well as in tourism, and the function of the aquarium is becoming more important to the society and to the management of PICRC.

In this regard, the following measures should be considered for an improved management of the aquarium:

(1) Exhibition

- For the purpose of contributing to the sound management of the whole institution, indoor aquarium system should be modified for easier maintenance. Two acrylic water tanks exposed to sunlight should be shaded with roof and be changed the exhibition theme accordingly. Even the largest tank, if the exhibit theme is changed, top of the tank may be covered with roof. These modifications will reduce the workload of aquarists reducing their time for cleaning the glass windows for sufficient sunlight required for coral breeding.
- Among outdoor exhibitions, there are two tanks whose sides are concrete walls with fences. The fences were added to the top of the concrete walls supposedly to prevent visitors from approaching the water surfaces too closely, where sharks are observed. The walls should be replaced with acrylic panels so that the water tanks can be observed from the side without approaching the waters. This modification should be given the highest priority for the effective exhibit.
- Entrance of the facility is its face and symbolic exhibition is recommended. The model of the Palauan topography would be replaced with a symbolic cylindrical tank well fit for the entrance. Choice of species will be important job of the aquarists for the tank. The topographic model would be moved to an indoor space, which will avoid degradation of the model by direct sunlight.
- Exhibit theme could be extended to the broader range of areas including the offshore of coral reef, and the deep sea to select the ICON species. It is

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necessary to determine the ICON species, and to fix a breeding condition for the purpose to keep ICON species should be prepared.

- Special exhibition is the most effective means to attract repeaters. Space for the special or temporary exhibits could be found at outdoor area. Such exhibit would be recommended as “ Japanese Goldfish”
- Management of the gift shop needs to be improved. Management of the shop should be assigned to a suitable person or introduce resource for the job from the outside.
- The exhibition of the crocodile needs improvement. From the viewpoint of animal right, the priority is rather high. Move the exhibit to the outdoor exhibition area must be discussed.
- To know the needs of visitors efficiently, suggestion box needs some improvement. Questionnaires for the visitors may be an effective tool, which may be delivered to the visitors.

(2) Management of the Aquarium

- In the near future, repair and replacement of the facilities and equipment are expected. At a time of replacement, more cost effective and efficient one can be installed. In this regard, it is recommended that a plan for repair and replacement of facilities, equipment and renovation be developed. The plan will contribute to the efficient management of aquarium.
- As addressed in the Administration/Management above, there are several ways to improve the management of the aquarium. Detailed measures should be elaborated by those responsible for the management and the aquarium.

6.3. Research

The following items are recommended mainly to reinforce the functions of PICRC as an international center for coral reef research.

(1) Research Strategy

- The research projects are diversified according to their funds. For efficient research activities, development of a strategic research plan to unite some of the on-going research projects is necessary. In the plan, emphasis would be placed on basic monitoring, coral reef ecology, and application of their research to management of, for example, watersheds and MPAs.
- In the strategic plan, they should indicate the direction of next-stage scientific research including approaches to coral reefs at ecosystem level, and/or laboratory-based works, while their basis should be on the field-based research and monitoring
- Closer relationship with relevant government offices and contribution to the

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Government of Palau are recommended for further environmental conservation and for the support to PICRC by the Government.

(2) Expansion of research activities

- If the research activities of PICRC will be expanded beyond basic monitoring and research activities, (i) additional office space and (ii) additional coral tanks are necessary. In addition, additional researchers will be necessary since the number of full-time researchers is small in comparison with the research projects.
- A researcher is absent who works exclusively for the NODE of Global Coral Reef Monitoring Network, and another researcher is working for the NODE as well as for other research projects. In order to reinforce the international function of PICRC, it is recommended that a researcher be recruited for the NODE.

(3) Publication of the research results

- PICRC has been conducting coral reef monitoring and the results have not been compiled so far. The results are recommended to be compiled as an atlas or monogram. Also, publication of annual research report is recommended.
- JICA should be properly acknowledged in papers that used PICRC and/or its facilities since JICA has made important contribution to the center in various ways that should be acknowledged.

6-4 Education

Education activities by PICRC are categorized into two types. One is to change the behavior to the nature of the Palauan people and tourists to PICRC by introducing relevant information on the importance of nature. And the other is to raise the recognition of the mission and activities of PICRC to the Palauan people. For effective accomplishment of these two objectives, the following is recommended;

- For effective contribution to resources management, education activities should focus more on the advantage of sustainable use of natural resources further than the awareness toward the environment. This would be effectively targeted at the groups causing impacts against the nature.
- For raising the recognition of PICRC among Palauan people, mission and activities of PICRC should be introduced to the people in outreach education activities in local communities.
- As an international center, PICRC should play a role of raising the awareness of tourists who visit PICRC on the importance of marine ecosystem.
- In order to respond to visitors' needs, it is recommended that information service in PICRC be reinforced. For example, some leaflets for further information on coral reef are prepared, and an aquarist is ready for questions on

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demand.

- As PICRC has research department and aquarium, education activities need to be done by utilizing these activities. For this purpose, updated information on research activities and aquarium exhibition should be compiled into Environmental Education and Public Relations Department.

6-5 Collaboration of research activities, aquarium operation and public awareness

For implementing PICRC activities effectively and efficiently, collaboration of research activities, aquarium operation and education is needed, such as dissemination of the research results in education activities, exhibition based on the research activities and education program by aquarists.

6-6 Information Technology

Nowadays, information technology (IT) is part of every aspect of everyday life and business. In order to achieve further efficiency and effectiveness in activities of PICRC, utilization of IT is recommended for the following;

- (1) dissemination of the information on the activities of the center
- (2) reinforcement of the contents of the official website of the aquarium to invite more visitors from the world
- (3) introduction of improved research environment and dissemination of the information on research activities
- (4) improvement of the library

In Palau, infrastructure for IT is still in its early stage of development. Availability of technology should be taken into account.

6-7 Revision of PDM and PO

The Team identified differences between the expectations and/or forecasts at the time of the R/D signing and the present situations, and found that some modifications in the PDM were necessary due to the deviations and for other reasons, and to reflect the results of the evaluation and the recommendations. It is recommended that the R/D be revised considering the following points, but not limited to:

(1) Important Assumptions:

- PICRC is taking various measures to raise incomes for self-sustainability. "The Center is not drastically shifted to be self-supporting financially is not applicable for the time being. This needs some modification.
- It has become clear that research grants to PICRC can be increased through the efforts by PICRC. "Research grants are stably secured" should be deleted.

- In order to secure objectivities in the indicators, it is suggested that quantitative and verifiable targets be introduced.
 - Some of the targets in the indicators have already been achieved, such as 14 coral reef monitoring sites. These targets need to be reviewed.
- (3) Activities: Activities should be reviewed considering the coverage of the present and the future project activities, and the recommendations, such as addition of "questionnaire on the aquarium"
- (4) Correction of Wording: Some wording need to be corrected, such as "environment impact assessment" in means of verification should be read as "environmental assessment" or "environmental impact assessment" as in the Palauan legislation.
- (5) Grammatical corrections: Some grammatical corrections are necessary.
- (6) Revision of PO: The PO should be revised in order to reflect the changes in the PDM.

Attachment

- Annex 1: Detailed Schedule of Mid-Term Evaluation
- Annex 2: Current PDM and PO
- Annex 3: Evaluation Grid
- Annex 4: List of Japanese Experts and JOCVs
- Annex 5: List of Machinery and Equipment Provided by Japan
- Annex 6: List of Palauan Counterpart Personnel Trained in Japan
- Annex 7: List of Palauan Counterpart Personnel
- Annex 8: Achievement Grid

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Detailed Schedule of Mid-Term Evaluation Team for Palau International Coral Reef Center Strengthening Project

| Date | Activities | Accommodation |
|--------------|---|---------------|
| Jan.31(Mon) | Dr. KAWASAKI arrives at Palau | Koror |
| Feb. 1(Tue.) | 9:30: Explanation of Evaluation Method, Meeting with Japanese experts / Counterparts (CP) | Koror |
| 2(Wed) | Arrival of Mr. YAMADA, Mr. ABE, Dr. KAYANE and Mr. MARUO in Palau | Koror |
| 3(Thu.) | 10:00: Courtesy call to Embassy of Japan 11:20: Internal Meeting 13:30: Meeting with Japanese experts / CP 17:00: Internal Meeting | Koror |
| 4(Fri.) | 9:00: Meeting with Japanese experts / CP 15:00: Internal Meeting | Koror |
| 5(Sat.) | 10:30: Field Survey Collection of Data | Koror |
| 6(Sun.) | Collection of Data 17:00: Internal Meeting | Koror |
| 7(Mon.) | (Mr. ABE leaves Palau) Field survey (Dr. KAYANE) 10:30: Visit PCS 13:30: Meeting with Japanese experts / CP | Koror |
| 8(Tue.) | Field survey (Dr. KAYANE) 10:30 Joint Evaluation Meeting | Koror |
| 9(Wed.) | (Dr. KAYANE leaves Palau) 10:00 Report of Evaluation result | Koror |
| 10(Thu.) | 10:00: Sign on Minutes of Meeting 15:00: Report to the Embassy of Japan / JICA Palau Office | Koror |
| 11(Fri.) | Leave Palau | |

Project Design Matrix (PDM)
Palau International Coral Reef Center Strengthening Project

Duration: 10/1/2002~9/30/2006

Executing Organization: Palau International Coral Reef Center (PICRC)

| Narrative Summary | Objectively Verifiable Indicators | Means of Verification | Important Assumptions |
|---|---|--|--|
| <p>Overall Goal:</p> <p>Conservation and sustainable use of coral reef ecosystem and related biota in Palau are improved.</p> | <ol style="list-style-type: none"> 1. Improvement of national policy and institutional arrangement on coral reef conservation based on scientific research / study outcomes. 2. Enhanced conservation consciousness of Palauan people | <ol style="list-style-type: none"> 1. Designation of Marine Protected Areas 2. Application of scientific outcomes to environment impact assessment 3. Questionnaire and interview | <p>Drastic change of marine environment parameters such as sea water temperature is not occurred.</p> |
| <p>Project Purpose:</p> <p>To attain self-sustainability of PICRC, the center's administrative, research and exhibition / education capacity are strengthened.</p> | <ol style="list-style-type: none"> 1. Quality and quantity of PICRC personnel 2. Financial soundness 3. Contents of research program 4. Aquarium exhibition, operation and maintenance 5. Contents of education program | <ol style="list-style-type: none"> 1. Center's annual reports 2. Budgetary summaries, balance sheets, profit and loss statements 3. Scientific reports and research outcomes 4. Exhibits, operation and maintenance records of aquarium 5. Education activities record | <ol style="list-style-type: none"> 1. Coral reefs in Palau are not heavily affected by terrestrial development activities. 2. Conservation policy and strategy of Palau government is not changed drastically. |
| <p>Outputs:</p> <ol style="list-style-type: none"> 1. Administration Center is administered in organized and planned manner. 2. Aquarium Operation Aquarium is self-sustained in exhibition, operation and maintenance. 3. Research Coral reef research and monitoring function is firmly established. 4. Education Education division is capable of conducting environmental education on coastal resources for students and community. | <ol style="list-style-type: none"> 1-1. Number of trained staff 1-2. Increase of ratio / actual amount of self-revenue 2-1. Stabled rearing 2-2. Periodical updates of exhibition 2-3. Operation of facility without major disruption 2-4. Periodical Maintenance of Facility 3-1. Monitoring: 14 permanent sites and 100 spot checks 3-2. Monitoring data entered into GIS 3-3. Scientific Publications: more than 5 3-4. Training, workshops and symposium: more than 5 3-5. Technical Assistant to States and National governments: more than 4 4-1. School support program: all the elementary and secondary students are educated in the program 4-2. Community outreach program: implemented in all the states 4-3. Reference database: compiled and open to the public | <ol style="list-style-type: none"> 1-1. Personnel allocation / Training record 1-2. Budgetary summaries, balance sheets, profit and loss statements 2-1. Aquarium inventory / operation and maintenance record 2-2. Accident-recovery records 3-1. Monitoring record 3-2. Monitoring record in GIS 3-3. Scientific publications and reports 3-4. Training records and participants number 4-1. School support program records 4-2. Activity records 4-3. Cataloged references | <ol style="list-style-type: none"> 1. The Center is not drastically shifted to be self-supporting financially. 2. Research grants are stably secured. |

| | | |
|---|---|--|
| <p>4 Activities:</p> <p>1. Administration</p> <p>1-1 Staff enhancement and capacity building</p> <p>1-2 Establishment of financial management system</p> <p>1-3 Facility maintenance and improvement</p> <p>1-4 Planning and implementation of revenue generation program</p> <p>1-5 Marketing activities</p> <p>2. Aquarium Operation</p> <p>2-1 Renewal and improvement of exhibition</p> <p>2-2 Research on rearing species</p> <p>2-3 Proper operation and maintenance of facility</p> <p>2-4 Exchange of resources and information with overseas institutions</p> <p>2-5 Obtaining increased number of visitors</p> <p>3. Research</p> <p>3-1 Monitoring surveys (permanent sites and spot checks)</p> <p>3-2 Research projects</p> <p>3-3 GIS and database management</p> <p>3-4 Current and bathymetry study</p> <p>3-5 Facilitating visiting researcher and collaborative research</p> <p>3-6 Strengthening function as GCRMN Node</p> <p>3-7 Surveys of Marine Protected Areas</p> <p>3-8 Holding trainings, workshops and symposiums</p> <p>4. Education</p> <p>4-1 Provision of environmental education under the school support program</p> <p>4-2 Planning and implementation of community outreach program</p> <p>4-3 Development of collection and database of published marine scientific works about Micronesia</p> <p>4-4 Teacher's training</p> <p>4-5 Science program with Palau Community College</p> | <p>Inputs:</p> <p>1. Palauan side</p> <p>(1) Counterpart assignment</p> <p>1) Chief executive officer 1</p> <p>2) Administration 2</p> <p>3) Development 2</p> <p>4) Research 4</p> <p>5) Aquarium 3</p> <p>6) Education 1</p> <p>7) Engineering 2</p> <p>(2) Provision of land, facility and equipment</p> <p>(3) Budgetary arrangement to PICRC by the Government of Palau</p> <p>2. Japanese side</p> <p>(1) Long-term experts</p> <p>1) Chief advisor / Institutional development 1</p> <p>2) Research Coordinator 1</p> <p>3) Resident aquarist 1</p> <p>(2) Short-term experts</p> <p>Several per year</p> <p>(3) Training of Palauan personnel in Japan</p> <p>1) Short-term training: around 2 per year</p> <p>2) Long-term training: around 2 during the project period</p> <p>(4) Provision of machinery and equipment</p> <p>(5) Project activity support measures</p> <p>((6) JOCV in environmental education 1)</p> | <p>1. Turnover of counterparts is low.</p> <p>2. Number of tourists visiting Palau is not drastically decreased</p> <hr/> <p>Pre-conditions</p> <p>The Government of Palau provides grant to balance PICRC's operational budget.</p> |
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ANNEX 3 Evaluation Grid

*Evaluation was made with the following marks A: Good, B: Fair, C: Unsatisfactory

| Criteria | Evaluation inquiry | | Indication | Required data or Information | Information Source | Methods | Findings | Evaluation |
|-----------|---|---|---|---|---|----------------------------|--|------------|
| | | | | | | | | |
| Relevance | Relevance of Regional and/or Country Needs | Are there any needs to establish PICRC in Palau? | Is the center officially recognized? | public statement | Project documents, Japan-US common agenda, ICRI documents | Document Review | International Coral Reef Initiative (ICRI) expressed the necessity of a Pacific coral reef research center. Palau was a selected place which has the unique mix of culture, biodiversity, accessibility to the reefs and political stability. Japan and United States agreed with an environmental initiative in two countries' Common Agenda and to establish the coral reef research center in Palau. | A |
| | Relevance of Overall goal | Is the Overall Goal consistent with the government policy of Palau? | Is the center is officially recognized? | Original PDM | National development policy | Document Review | The Palau International Coral Reef Center Act signed into law in 1998. | A |
| | Relevance of Project Purpose | Does the Project Purpose contribute to the achievement of the Overall Goal? | Is the role of the center recognized in the region? | Original PDM | Strategic Plan2002-2006 | Document Review | The activities and role of PICRC are recognized regionally and internationally. | A |
| | Are Project Purpose and Overall Goal consistent with ODA policy of Japan? | Are there any changes on ODA policies of the Government of Japan and / or JICA? | | Original PDM | Project documents, Japan-US common agenda, ICRI documents | Document Review | Japanese Government's focal area in Palau and the Micronesia Region include assistance in natural environment conservation sector. JICA's emphasis is on conservation of the natural environment for sustainable development. | A |
| | Relevance of Project Design | Are relationships among Overall Goal, Project Purpose, Outputs, Activities and Inputs designed in PDM | | Original PDM | Project Documents, JICA Experts, Counterparts | Document Review | The modification of PDM is recommended. | B |
| | Relevance from the view point of social justices | Are there any benefits widely to those who are not direct target of the project? | | | Project Documents, JICA Experts, Counterparts | Document Review, Interview | All the elements of the project activities are considering awareness of coral reef ecosystems and natural conservation in Palau. The Government of Palau places emphasis on conserve the unique coral reef ecosystems in Palau and use natural resources sustainably. Natural resources are the most valuable for fishery, tourism industry and most of stakeholders. They will be benefited through the outputs of the project. | A |
| | Sustainability of Japanese technology | Is Japanese technology suitable to Palau situation? | | | Project Documents, JICA Experts, Counterparts | Document Review, Interview | Experiences in Japanese coral reef research, aquarium operation will be useful for improving staff's capability to organize and manage their activities. Moreover, there is a history that the coral reef studies in Palau by Japanese researchers had initiated since 1930's. | A |
| | Overall Evaluation of Relevance | | | At the policy level, the project is relevant. | | | | A |

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|---------------|--|---|---|--|---|----------------------------|---|-----------------|
| Effectiveness | Achievement of Project Purpose | To what extent has the project achieved and is predicted to achieve the project purpose? | Extent and Condition of achievement of Outputs | Progress reports | Project Documents, JICA Experts, Counterparts | Document Review, Interview | Achievement level of the Project Purpose so far is satisfactory. It is likely that the Project Purpose will be accomplished as scheduled. | A ⁻ |
| | Improvement of administration / management capability of PICRC | Is the staff's capability for operation improving? | Condition of achievement of Outputs | Annual management / activities plan | Project Documents, JICA Experts, Counterparts | Document Review, Interview | Although the number of staff is limited, the operation of the PICRC and Aquarium are well managed. PICRC provide better customer service training for staff to provide better hospitality and improved service. However, since the post of administrative manager is vacant at this moment, an appropriate personal would be recruited as soon as possible. | A ⁻⁻ |
| | | Is the management of PICRC improved? | Increasing the revenue managed by PICRC itself | Ratio of self-revenue | Project Documents, JICA Experts, Counterparts | Document Review, Interview | The administration is conducting and planning several fund raising programs and marketing for increasing the income and public awareness. The ratio of self-revenue is increased. For example, the income from Aquarium increased 3.6 times in 2004 compared with that in 2003. It is, however, required a mid-term and/or long-term financial perspective plan to stabilize a self-sustaining management. | B |
| | Improvement of management / exhibition capability of Aquarium | Is the staff's capability for operation improving? | Increasing the degree of visitor's satisfaction for the exhibition and facilities | Visitor's satisfaction | Project Documents, JICA Experts, Counterparts | Document Review, Interview | The exhibits of the aquarium are generally maintained in good condition. However, there are some exhibits degraded in quality. Since the number of visitors to Aquarium in 2004 was dramatically increased, further exhibition plan will be required in order to sustain attractiveness. | B |
| | Improvement of research capability | Do the research staff conduct research / monitoring activities by themselves? | Self-planning and reporting for their own research topics | Research / Monitoring plan and reports | Project Documents, JICA Experts, Counterparts | Document Review, Interview | The researchers have high motivation for research and well trained. Although the number of full-time researcher is limited, twelve research projects are in progress simultaneously. Insufficient researchers may constrain the achievement of project purpose. In particular, the absence of a researcher assigned exclusively to a NODE task is a serious problem to respond to Palau's role in ICRI secretary. | A ⁻⁻ |
| | | Is the contents of research activities improved? | C/P will publish scientific papers as the first author | Number of papers and name of journals | Project Documents, JICA Experts, Counterparts | Document Review, Interview | The researchers have high motivation for research and well trained. They have achieved and are now preparing to publish papers in International journals. It is expected that contents will improve. | B |
| | Establishment of environmental education system | Is the staff's capability for operation improving? | C/P will organize programs | Text book, activity plan | Project Documents, JICA Experts, Counterparts | Document Review, Interview | In the past, the staff in the Environmental Education and Public Relations Department was not sufficient though the new staff member was recruited in January 2005. | B ⁺ |
| | | Has the number of participants who have attended educational programs in the center increased | Are Participant's interest and recognition increased? | Participant's satisfaction | Project Documents, JICA Experts, Counterparts, JOCV | Document Review, Interview | Several programs including environmental education and community outreach programs are on-going and participants who attended such programs have increased in number. However, the schedule of some program is delayed. | B |

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|------------|-------------------------------------|--|---|------------------------|---------------------------------|----------------------------|---|----------------|
| | Overall Evaluation of Effectiveness | | Effectiveness in achieving the project purpose has not been materialized yet although the activities on institutional strengthen, aquarium operation, research projects and environmental education are quite active. | | | | B ⁺ | |
| Efficiency | Japanese Inputs | Long-term experts | Is the experts sufficient? | number of experts | Project documents | Document Review, Interview | Four (4) long-term experts have been dispatched on schedule and their activities are in line with the PDM. Counterparts are generally satisfied with the experts. | A |
| | | Short-term experts | Is the experts sufficient? | number of experts | Project documents | Document Review, Interview | Twelve (12) short-term experts have been dispatched on schedule and their activities are highly appreciated by the counterparts. | A |
| | | Training of C/P in Japan | Is the training appropriate? | number of participants | Project documents | Document Review, Interview | A total of five (5) counterparts have received training in the field of administration, aquarium, maintenance and research in Japan as planned. The training courses were useful for the respective counterparts, most of the counterparts had greater appreciation for the practical and individual part of the training. Currently one counterpart is studying in MSc course at University of Tokyo under the long-term training course provided by JICA. | A |
| | | Provision of Equipment | Is the equipment | list of equipment | Project documents | Document Review, Interview | Equipment was supplied on time and well used. They have been utilized effectively for the Project activities. | A |
| | | Operating expenses | Is the running cost sufficient? | data on expenditure | Project documents | Document Review, Interview | The operating funds were provided on schedule. | A |
| | Palau Inputs | Counterparts | Is the C/P sufficient? | number of counterparts | Project documents, experts | Document Review, Interview | Currently twenty one (21) staffs to the Project. Actually the counterparts of the Project. Most of the counterparts are knowledgeable and well-educated (trained). However, there are vacancies in the posts and some counterparts have resigned. | A ⁻ |
| | | Land, building, facilities | Is the facilities sufficient? | | Project documents | Document Review, Interview | Land for the PICRC, a building for the Engineering Department and facilities are all provided satisfactory by the Government of Palau. | A |
| | | Budgetary arrangement | Is the running cost sufficient? | data on expenditure | Project documents, experts | Document Review, Interview | The budgetary arrangement was provided on schedule. | A |
| | Degree of Outputs achieved | Are outputs reasonable compared with the amount of inputs? | | annual report | Project documents, experts, C/P | Document Review, Interview | The achievement of outputs is reasonable compared with the inputs. The activities are so far wide raging but in some cases such as institutional strengthen are not in-depth. | A ⁻ |
| | Efficiency of supporting system | Has supporting committee in Japan functioned well? | | | Experts | Document Review, Interview | The short-term experts were dispatched appropriately. | A |

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| | Inputs from other scheme | How do the experts collaborate with the JOCVs? | | | Project documents, experts, C/P, JOCV | Document Review, Interview | JOVCs have important roles in Environmental Education program of PICRC. | A |
| | Overall Evaluation of Efficiency | | Inputs both from Japan and Palau were sufficient and used appropriately. | | | | | A |
| Impact | Roles / Functions of PICRC | Do the center frequently exchange relevant information and researchers to relevant institutions in neighbor countries? | Increase the number of PICRC facilities users, and the number of domestic, regional and international workshop / seminars at PICRC | Records of seminars, workshops, researchers visited | Project documents, experts, C/P | Document Review, Interview | The PICRC organized several seminars and workshops including regional coral reef monitoring workshop. A PICRC researcher also visited as a NODE coordinator to Micronesia. The PICRC researchers also participated in the 10th ICRS in Okinawa, Japan. These kind of activities are increased. However, the researcher assigned to a NODE task has resigned. The vacancy of a researcher will obstruct the implementation of international and regional activities. | B |
| | | Do the national and international researchers recognize PICRC and use the facilities frequently? | Increase the number of application submitted by external researchers | Records of seminars, workshops, researchers visited | Project documents, experts, C/P | Document Review, Interview | In 2004, PICRC hosted over 50 visiting scientists from around the world. The biggest groups were the GEF/WB targeted research groups on remote sensing and coral disease and the bio-prospecting group from Japan. | A |
| | | Have the visiting researchers satisfied the PICRC facilities? | | Records of seminars, workshops, researchers visited | Project documents, experts, C/P | Document Review, Interview | The facilities including accommodation, laboratory and boats are still in good conditions. PICRC currently have four out-engine boats which visiting researchers can rent at researcher's discount rate. However, the IT facility is insufficient. | A ⁻ |
| | Unexpected Impact | How do overseas tourists / divers recognize the PICRC ? | Increase the number of visitors to the Aquarium | Records of visitors | Project documents, experts, C/P | Document Review, Interview | PICRC organized communication and promotional activities to increase visitors to the Center. Palau Visitors Authority and tour Operators are provided with Aquarium flyers and posters. PICRC is working with several new tour operators to engage in package tours to the center. These promotions may contribute to the increment of visitors (total 28,452) to Aquarium in 2004. | A |
| | Overall evaluation of Impacts | | At the moment the Impact of the project activities cannot be measured precisely but it shows positive signs of influence in the wider national and regional areas. The impact on Tourism, Fishery and Education sector in Palau will be expected. | | | | | A ⁻ |

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|----------------|----------------------|---|---|-----------------|----------------------------------|---------------------------------|---|---|----------------|
| Sustainability | Institutional aspect | Is the staff and researchers continuing to work at PICRC? | Current staff can deal with all activities | Job description | Project documents, experts, C/P | Document Review, Interview | The present staff in each Department are highly motivated and well trained. However, the staff often transferred to other institutions and private companies. Currently the posts of an administrative manager and a researcher assigned exclusively to a NODE task are vacant. A shake-up in the staff member and lack of appropriate personal will make a difficulty to achieve project purpose and sustainable management. | B | |
| | | Will the policy on Strategic Plan 2002-2006 be continued? | Results of mid-term evaluation | Strategic Plan | Project documents, experts, C/P | Document Review, Interview | The Board of PICRC and the Government of Palau had authorized the PICRC Strategic Plan 2002-2006. PICRC is now considering and preparing a further mid-term strategic plan to continue the activities on the basis of the present strategic plan. | A | |
| | | Are there any mid-term and long-term developing programs? | Continue on-going activities and apply further programs | activity plans | Project documents, experts, C/P | Document Review, Interview | PICRC has received Institutional and Fundraising capacity training working with TNC consultants to improve a fundraising plan, and given staff training to improve custom service. However, some well-trained personals resign their positions and it may constrain to achieve the project purpose. It may need to appropriate personal to the vacant position and to consider staff allocation. | B | |
| | Financial aspect | Is there financial support by the government of Palau continuing after the project completed? | | | National development plan | Project documents, experts, C/P | Document Review, Interview | The president of Palau and the Government of Palau has expressed to continue 450,000 US\$ financial support to PICRC until at least the end of the project. However, the government's financial support after the project completed is not confirmed yet. | B ⁻ |
| | | Will the revenue of PICRC sustain or increase? | Increase or stable the number of visitors | | Data on visitors | Project documents, experts, C/P | Document Review, Interview | Currently fundraising activities are under reviewing on the basis of TNC consultation. Self-revenue such as the income from Aquarium is increased. Fundraising programs including sponsorship programs and private contribution programs are also on-going. However, these activities may not secure to obtain a necessary fund to operate the PICRC. A mid-term or long-term in 5-10 years plan based on financial analysis may be needed. | B ⁻ |
| | | Will the research grant be contributed to the center continuously? | Continue on-going research activities and to apply further research plans | | Number of submitted applications | Project documents, experts, C/P | Document Review, Interview | Several research grants have been applied and granted for 3-5 years research programs. For example, 11 out of 13 applications to NOAA were succeed to obtain research grants. Other sponsors are University of GUAM and Packard foundation. PICRC has high potential to increase research grants, however, the limited number of researchers and facilities may constrain to conduct over-capacity research works. | B |

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| Technical aspect | Are the counterparts capable of continuing the activities after the cooperation period? | (Qualitative measure) | Evaluation by experts | Project documents, experts, C/P | Document Review, Interview | All staff in PICRC have a high motivation and well-trained under the current condition. In technical sustainability, their capabilities to deal with daily activities are good and sustain. While PICRC would hire a new staff, it is difficult to find and recruit excellent staff from the small populated country such as Palau | B |
| | Do the researcher have the willingness and capability to conduct collaborative research works with international researchers? | (Qualitative measure) | Evaluation by experts | Project documents, experts, C/P | Document Review, Interview | The researchers have high motivation and capability to carry out research projects. One researcher currently enroll in a PhD course at the university in Australia. Another one has already enrolled in a MSc course at the University of Tokyo under a long-term training program provided by JICA. While these researchers would completed their program, it would be expected that the quality of research contents should be up-graded. | A ⁻ |
| Maintenance and operation of equipment | Will the staff sustain their capability to maintain facilities | (Qualitative measure) | Evaluation by experts | Project documents, experts, C/P | Document Review, Interview | The staff of Engineering and Aquarium Operations Department have a technical capability to maintain the facilities and equipment. However, in particular for Aquarium, the staff are engaged in routine and time-consuming work to clean up aquarium tanks. It is recommended to consider utilization of volunteers or to do a minor renovation of the facility in order to simplify Engineering work and to improve aquarium exhibition. | B |
| | Will the equipment provided by the project maintained and utilized properly? | Difficulty for equipment / spare parts supply | Equipment / spare parts inventory | Project documents, experts, C/P | Document Review, Interview | The staff of Engineering Department provide the facilities and equipment with proper Engineering. The spare parts are also well stocked for 3-5 years on the basis of equipment inventory. It may, however, be required to make a long-term Engineering plan and to raise necessary fund for large-scale Engineering works and reconstruction of facilities. Although the directive from Board of Directors to allocate 1% of self revenue that are eligible for indirect cost to be set aside for Engineering purpose, it has not initiated yet so far. | B ⁻ |
| Overall evaluation of sustainability | | The current activities is well maintained. A financial analysis may be needed in order to revise a long-term strategy after the cooperation period in order to confirm the role of regional and international center. | | | | | B |

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Annex 4. List of Japanese Experts and JOCVs

| Category | Name of experts | Fields | Period of assignment |
|--|-------------------------|---|-------------------------|
| 1. Long-term experts * over 1 year assignment | Dr. Ken OKAJI | Research Coordinator | 2002/10/01 ~ 2003/11/29 |
| | Mr. Toshikazu NAGASHIMA | Chief Advisor/Organizational Development | 2003/06/08 ~ 2005/06/07 |
| | Mr. Keiichiro TESHIMA | Improvement of Exhibit | 2003/01/12 ~ 2004/01/13 |
| | Dr. Hideki YUKIHIRA | Research Coordinator | 2003/11/22 ~ 2005/11/21 |
| 2. Short-term experts | Dr. Akira KASAI | Chief Advisor/Organizational Development | 2002/10/01 ~ 2003/06/19 |
| | Dr. Masao WATANABE | GIS and Database Management | 2002/10/06 ~ 2002/11/09 |
| | Dr. Hideo OOBA | Research Advisor | 2002/11/11 ~ 2002/11/30 |
| | Dr. Hiroomi UCHIDA | Research Advisor | 2002/11/24 ~ 2002/12/22 |
| | Dr. Tsuyoshi YOSHIDA | GIS and Database Management | 2003/1/16 ~ 2003/02/13 |
| | Dr. Makoto OOMORI | Marine-biology and Ecology | 2003/07/19 ~ 2003/07/29 |
| | Dr. Hajime KAYANE | Coral Reef Geology and Chemistry | 2003/07/20 ~ 2003/07/27 |
| | Dr. Kazuo NADAOKA | Oceanography | 2003/07/22 ~ 2003/07/30 |
| | Dr. Hideo OOBA | Algae Survey | 2004/03/22 ~ 2004/04/17 |
| | Dr. Akira KOMODA | Aquarium Facility Operation and Maintenance | 2004/04/27 ~ 2004/05/25 |
| | Dr. Tsuyoshi YOSHIDA | Data Management by GIS | 2004/05/17 ~ 2004/06/14 |
| Dr. Keita FURUKAWA | Hydrodynamic Study | 2004/10/23 ~ 2004/11/05 | |
| 3. JOCVs | Ms. Yukie KITAJIMA | Environmental Education | 2002/7 ~ 2004/8 |
| | Mr. Akihiro NAKAHATA | Environmental Education | 2004/7 ~ 2006/8 |

Annex 5. List of Machinery and Equipment Provided by Japan

| Fiscal Year | 2002 | 2003 | 2004 | TOTAL |
|--------------------|--|--|---|------------|
| Total Value (US\$) | 61,640.00 | 65,464.41 | 106,122.85 | 233,277.00 |
| Items | Cash Register (1) Apparatus for financial management (1 set) Depth echo sounder (1) Color printer (1) Apparatus for education (1) Personal computer (3) Apparatus for laboratory (1 set) | Digital camera (2) Underwater thermometer (12) Microscope (1) Dryer (1) Boat engine (1) Desk-top computer (1) Computer as Server (1) Trailer (1) Projector (1) GIS Software (1 set) | Research boat (1) 4WD vehicle (1) Apparatus for metrological (2 sets) Spare parts for Aquarium | |

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Annex 6. List of Palauan Counterpart Personnel Trained in Japan

| No. | Name of counterpart | Job Title | Title of training course | Period |
|-----------------------------|--------------------------|------------------------|---|-------------------------|
| Short-term Trainings | | | | |
| 1 | Mr. Asap BUKURROU | Aquarist | Handling and Feeding Technique of Fish (Fish Pathology) | 2002/02/02 – 2002/04/20 |
| 2 | Mr. Singeo FRANZ | Aquarist | Water Quality Monitoring and Analysis | 2002/10/22 – 2002/12/17 |
| 3 | Mr. John Wong | Chief Engineer | Management and Maintenance of the Aquarium | 2002/11/13 – 2002/12/10 |
| 4 | Mr. David Koro IDIP | Researcher | Image Analysis Technique for Coral Reef GIS | 2003/03/24 – 2003/04/24 |
| 5 | Ms. Tiffany B. RENGULBAI | Administrative Manager | Marketing | 2004/01/13 – 2004/02/15 |
| Long-term Training | | | | |
| 1 | Mr. David Koro IDIP | Researcher | MSc in the University of Tokyo | 2004/03/30 – 2006/03/31 |

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| | Position | | 2002 | 2003 | 2004 | 2005 |
|-------------------------|------------------------|----------------|------|------|------|------|
| Administration | | | | | | |
| Mr. Francis Matsutaro | CEO | 1999-2004.12 | | | | |
| Mr. Fabian Iyar | CEO | 2004.8- | | | | |
| Ms. Tiffany Rengulbal | Administrative officer | 1999.9-04.11 | | | | |
| Ms. Angeles Yangilmau | Financial Officer | 2002.6.- | | | | |
| Mr. Sirino Hideo | Development Officer | 2002.8.- | | | | |
| Ms. Kelsong Nolan | Sales clerk | 2000.1- | | | | |
| Ms. Maelee Sokau | Sales clerk | 2004.8- | | | | |
| Ms. Ebita Andres | Sales clerk | 2000.1-04.12 | | | | |
| Ms. Felisa Kintoki | Sales clerk | 2004.12- | | | | |
| Research | | | | | | |
| Mr. Yimmang Golbuu | Chief researcher | 2002.1- | | | | |
| Mr. Steven Victor | Researcher | 2002.2- | | | | |
| Mr. Jason Kuartel | NODE Coordinator | 2004.1-2005.1 | | | | |
| Ms. Lorita Penland | Researcher | 2000.9-2004.8 | | | | |
| Mr. Davit Koro IDIP Jr. | Researcher | 2000.9- | | | | |
| Ms. Charlene Mersai | Researcher | 2004.12- | | | | |
| Ms. Gerda Ucharm | Assistant Re. | 2004.9- | | | | |
| Mr. Arius Mereb | Assistant Re. | 2000.9- | | | | |
| Mr. Jim Kloulechad | Assistant Re. | 2000.6- | | | | |
| Aquarium | | | | | | |
| Mr. Kambes Kesolei | Chief Aquarist | 2000.2- | | | | |
| Mr. Singeo Franz | Aquarist | 2000.8- | | | | |
| Mr. Jay Oruetamor | Aquarist | 2004.10- | | | | |
| Mr. Asapu Bekurrau | Aquarist | 2000.2-2004.7 | | | | |
| Engineering | | | | | | |
| Mr. John Wong | Chief Eng. | 2000.8- | | | | |
| Mr. Antonio Raquinio | Engineer | 2000.8- | | | | |
| Mr. Masao Udui | Boat Operator | 2002.2- | | | | |
| Education | | | | | | |
| Ms. Carol Emaurois | | 2000.4- | | | | |
| Ms. Shellie Ngirmeriil | | 2000.11-2004.8 | | | | |
| Ms. Tublai B. Ililau | | 2005.1- | | | | |
| Security | | | | | | |
| Mr. Andres Ngiraked | | 2000.2- | | | | |
| Mr. Wilbur Telei | | 2003.3- | | | | |
| Mr. Jefferson Michael | | 2003.4- | | | | |
| Mr. Antonio Leoncio | | 2002.7- | | | | |
| Custodian | | | | | | |
| Ms. Ngetual Oiwil | | 2002.4- | | | | |

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Achievement level was measured with the following marks A: Good B: Fair C: Unsatisfactory

| Evaluation Inquiry | Information Required | Information Source and Data Collection methods | Findings | Evaluation |
|-----------------------|--|--|---|----------------|
| Achievement of Inputs | | | | |
| Japan's Input | Long-term experts, Field of expertise, numbers, timing and period of dispatch | Project reports, interview form the project team | Four (4) long-term experts (over 1 year assignment) have been dispatched as planned. The details including name, specialty, period dispatch are described in ANNEX 4. | A |
| | Short-term experts, Field of expertise, numbers, timing and period of dispatch | Project reports, interview form the project team | Twelve (12) short-term experts have been dispatched so far as planned. The details including name, specialty and a period of dispatch are described in ANNEX 4. | A |
| | Provision of Technical Equipment, Timeliness, Main equipment, Cost | Project reports, interview form the project team | All the equipment including a vehicle, machine and materials were purchased as planned. The details including list of equipment and total value are described in ANNEX 5. | A |
| | Training of C/P, Field of expertise, numbers, timing and period of the trainings | Project reports, interview form the project team | Five (5) counterparts have participated in training courses in Japan so far as planned. The details of counterpart personnel trained in Japan are described in ANNEX 6. One counterpart is currently enrolled in a MSc course at the University of Tokyo under JICA long-term training program. The participants evaluated that the training courses were relevant to their needs though in a short period. | A |
| | Operational cost | Project reports, interview form the project team | The operational cost was allocated on schedule, and spent for operating the project activities as planned. The amount of annual cost in the US dollars is as follows: Fiscal year 2002 \$41,254 Fiscal year 2003 \$53,425.36 Fiscal year 2004 \$86,353.32 | A |
| Palau's Inputs | Counterpart assignment | Project reports, interview form the project team | Currently six (6) staff at Administration including CEO, three (3) at Engineering Department, three (3) at Aquarium Operations Department, seven (7) at Research Department and two (2) at Environmental Education and Public Relations Department are assigned in PICRC. The details are described in ANNEX 7. The administrative manager is still vacant, thus it is a constraint to achieve efficient management of PICRC. | A ⁺ |
| | Provision of Land, building, facility | Project reports, interview form the project team | Land, a building for Engineering Department and facilities are provided by the Government of Palau as planned. | A |
| | Budgetary arrangement | Project reports, interview form the project team | The budgetary arrangement by the Government of Palau was provided on schedule. Fiscal year 2002 \$450,000 Fiscal year 2003 \$450,000 Fiscal year 2004 \$450,000 | A |

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| Overall Achievement of Input | | | Planned inputs were achieved on schedule. | A |
| Achievement of Outputs | | | | |
| Achievement of Output I Administration : Center is administered in organized and planned manner | 1-1. Staff enhancement and capacity building | Project report, interview from the project team | The trainings for administration including four (4) overseas and six (6) in-house trainings have been implemented. The ex-administrative manager had participated in a short-term training in Japan but she has resigned and the position is remains vacant. | A ⁺ |
| | 1-2. Establishment of financial management system | Project report, interview from the project team | The financial management system in PICRC is in progress. The accounting software was updated from QuickBooksPro '99 to QuickBooksPro 2001. The on-line banking system was introduced to be able to check daily activities, transactions and the PICRC account. In-house training for the staff member will be needed in some aspects to familiarize new system and software in order to operate the system more efficiently. | B ⁺ |
| | 1-3. Facility maintenance and improvement | Project report, interview from the project team | The computerized equipment tracking and inventory system with a lap-top computer provided by JICA in the Engineering Department was introduced. The inventory of the equipment, spare parts, and other donated items are updated into the database. A Engineering fund program to reserve 1% of total revenue annually for Engineering purpose has been planned but it has not yet implemented so far. By this year end, the fund will be on reserve fund account. | B |
| | 1-4. Planning and implementation of revenue generation program | Project report, interview from the project team | The plan of revenue generation programs is in progress. The programs including a business plan of the Aquarium and gift shop and other fundraising programs were supervised by the University of Hawaii Pacific Business Center and The Nature Conservancy (TNC). TNC has also provided capacity assessment and training. The consultation with TNC is in progress. The Sponsorship Program to obtain supports for PICRC activities from local clubs and organizations was also launched. At the present, Shell Inc as one of major donor pledges 5,000 gallons fuel contribution (\$10,000 worth). It will be expected to extend this program to secure self revenue of PICRC. | B |
| | 1-5. Marketing activities | Project report, interview from the project team | For marketing purpose and public awareness, leaflet of Aquarium was produced. The joint package tour between PICRC and tour operators were organized to attract visitors to PICRC and consequently to increase self revenue. PICRC released the information of the center and activities to the local press and radio station, and established an information booth at the airport shared with Dolphins Pacific. PICRC is also presented in the guide book produced by Palau Visitors Authority. PICRC may create a position of a marketing officer. | B ⁺ |
| | 2-1. Renewal and improvement of exhibition | Project report, interview from the project team | The Aquarium Operation Department established standards in exhibiting organisms, and is applying and implementing Standard Operating Procedures in maintaining tanks. Mangrove tanks have been improved with variety of fishes and other organism. The aquarists now have the skill to collect their own nautilus and other aquarium fish species. However, there are some exhibits degraded such as concreta walls of outside ponds, a fence and an empty aquarium tank. | B ⁺ |

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| Achievement of Output 2 Aquarium operation : Aquarium is self-sustaining in exhibition, operation and maintenance | 2-2. Research on rearing species | Project report, interview from the project team | The exhibiting animals are appropriately handled by the staff of Aquarium. Further collaboration with Research and Environmental Education and Public Awareness Department will be necessary to enhance public awareness programs. | B |
| | 2-3. Proper operation and maintenance of facility | Project report, interview from the project team | The facilities of Aquarium are sufficiently maintained by the staff. The inventory database for spare parts was completed. The staff are able to maintain equipment in proper manner. A long-term plan for replacement of Aquarium machineries and renovation will be needed to reserve sufficient fund for future expense. | B |
| | 2-4. Exchange of resources and information with overseas institutions | Project report, interview from the project team | Two (2) staff member of Aquarium Operation Department and one of Engineering Department have participated in short-term training courses in Japan and had a connection to Japanese Aquarium such as Fukushima Aquarium. PICRC has communications with various organizations, institutes, and aquariums including Monterey Bay Aquarium, Aquarium of the Pacific, National Museum of Marine Biology and Aquarium, International Society for Mangrove Ecosystems and Fish Base. PICRC is also provided endemic species of Palau to Fukushima Aquarium as a friendship aquarium of PICRC for exhibition in Japan, and preparing to display endemic species such as Palau Nautilus at Aichi Expo. 2005, Japan in July 2005. | A |
| | 2-5. Obtaining increased number of visitors | Project report, interview from the project team | PICRC have distributed posters, brochures for international trade shows and local events. PICRC has organized tours of the aquarium for familiarization groups, media and film groups through Palau Visitors Authority. Visitors are able to access PICRC website through a link at the new Palau Visitors Authority website. Joint Tour Package between PICRC and tour operators such as Dolphins Pacific are formed to guide visitors to Aquarium. These efforts may contribute to the increment of visitors to Aquarium which dramatically increased from 8,166 in 2003 to 28,452 in 2004. It is, however, uncertain whether this tendency will continue in the future. The continuous invention of exhibition is essential to attract more visitors to Aquarium. | A ⁺⁺ |
| | 3-1. Monitoring surveys (permanent sites and spot checks) | Project report, interview from the project team | The Research Department has surveyed a total of sixteen (16) long-term monitoring sites, and then resulted the status of the reef for 2002. Some of the monitoring data were analyzed and presented at the Palau Coral Reef Conference 2003 and reported in the Proceedings of the Conference. The number of permanent monitoring sites increased from 14 to 16 but some data analysis are in progress. The researchers participated in the 10th International Coral Reef Symposium 2004 in Okinawa, Japan and presented a poster presentation of "Status and recovery of Palau's reefs after the 1998 Bleaching Event". A report entitled "The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2004. NOAA" was completed and submitted to NOAA. | A ⁺ |
| 3-2. Research projects | Project report, interview from the project team | The Research Department is carrying out various research projects as follows: * Coral reef recovery study: Data is being collected and a report is in preparation. To date one-year worth of coral transplant survivorship and recruitment data have been collected. * Algal phonology study: Data is still being collected. Collected 99 algal and 8 seagrass species, so far. All specimens are preserved at the specimen room. Algal database with links to specimen photo now available. These results should be published in scientific journals in order to up-grade the quality of research activities. * Coral Spawning & Reproduction: Published a peer-reviewed paper in Coral Reefs. An oral presentation of "Timing of coral spawning in Palau" at the Palau Coral Reef Conference 2003 and the article in the Proceedings of the Conference. A poster presentation at the 10th International Coral Reef Symposium. Collected 197 hard coral species. All specimens are stocked at the specimen room. * Crown of Thorns Starfish (COTS) study: An oral presentation of the study on "Annual reproduction cycle of COTS" at the Palau Coral Reef Conference 2003 and an article in the Proceedings of the Confere | A* (See note) | |

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| <p>Achievement of Output 3</p> <p>Research : Coral reef research and monitoring function are firmly established</p> | <p>3-3. GIS and database management</p> | <p>Project report, interview from the project team</p> | <p>The Research Department completed and submitted the Seagrass Habitat Map report to The Nature Conservancy.</p> <ul style="list-style-type: none"> - Established a database of coral specimens. - Established a database of seagrass & algae specimens. - An oral presentation of "Monitoring and classification of Palauan Reefs" at the 7th annual meeting of Japanese Coral Reef Society 2004 - A poster explaining PICRC's Coral Reef Monitoring Activities <p>The result should be compiled in the atlas or monogram and released to relevant institutes and public..</p> | <p>A</p> |
| | <p>3-4. Current and bathymetry study</p> | <p>Project report, interview from the project team</p> | <p>Published three peer-reviewed papers in scientific journals.</p> <ul style="list-style-type: none"> - An oral presentation of "Effects of land use change on coastal coral reefs, Palau, Micronesia" at the Palau Coral Reef Conference 2003 and an article in the Proceedings of the Conference - Oral presentation of the effects of land use on estuarine corals at the American Society of Limnology and Oceanography (ASLO 2004) conference - Oral presentation on the trapping of fine sediments on the mangrove fringed estuaries, Palau at the 10th International Coral Reef Symposium - Oral presentation of "The application of ecotoxicology to the protection of tropical aquatic ecosystems" at the Fourth World Congress of Society of Environmental Toxicology and Chemistry (SETAC) and 25th Annual Meeting in North America - Two PICRC technical reports. | <p>A</p> |
| | <p>3-5. Facilitating visiting researcher and collaborative research</p> | <p>Project report, interview from the project team</p> | <p>PICRC's collaborative research works are in progress or at preparatory phase. Publications are available only from the Watershed Project at the moment.</p> <ul style="list-style-type: none"> * Global Environment Facility/World Bank (GEF/WB) targeted research on remote sensing with Dr. Peter Mumby from University of Exeter, et al. * GEF/WB targeted research on coral disease with Dr. Drew Harvell from Cornell University, et al. * Survey on Acroporid corals (size & density) examining coral recovery with Dr. Robert van Woesik of Florida Institute of Technology * Phenological study on marine algae, Padina spp. with Dr. Hideo Ohba of Tokyo University of Marine Science and Technology * Coral spawning study with Dr. Robert Richmond of University of Hawaii * Hydrodynamic study with Dr. Keita Furukawa of National Institute for Land and Infrastructure Management * Watershed Project with Dr. Robert Richmond of University of Hawaii and Dr. Erik Wolanski of Australian Institute of Marine Science | <p>A</p> |
| | <p>3-6. Strengthening function as GCRMN Node</p> | <p>Project report, interview from the project team</p> | <p>The Research Department responded as a NODE coordinator in as following manners;</p> <ul style="list-style-type: none"> - Oral presentations on the roles of the Micronesian country nodes and regional node at the Palau Coral Reef Conference 2003 and articles in the Proceedings of the Conference - Published two reports in "Status of Coral Reefs of the World, 2002 & 2004". - At the "Workshop on Micronesia Coral Reef Status 2004", the regional node coordinator assisted national node coordinators from Chuuk, Kosrae, Marshalls, Micronesia, Pohnpei and Yap to produce posters on coral reef status in each country, which were presented at the 10th ICRC. - A poster presentation of "Coral Reefs of the Pacific's smallest islands" at the 10th International Coral Reef Symposium - Gave a Reef Check training course to dive operators in Palau and a report will be submitted to MAREPAC (Marine Resources Pacific Consortium). - Reef Check training in Yap <p>However, the previous researcher assigned to a NODE task has resigned, and a replacement researcher has not been recruited yet so far.</p> | <p>B</p> |

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| | 3-7. Surveys of Marine Protected Areas | Project report, interview from the project team | The Research Department is currently carrying out four (4) MPAs monitoring for evaluation and effectiveness of MPA. - Habitat mapping of MPAs and coral disease survey will also be conducted in MPAs. - Working with state governments (Koror State, Kayangel, Ngchesar, and Ngarchelong) on socio-economic impacts of MPAs. The monitoring work is in progress. | B ⁺ |
| | 3-8. Holding trainings, workshops, and symposiums | Project report, interview from the project team | - Fish monitoring training -June 2002 - Palau Coral Reef Conference, June - July 2003 - Algae identification Workshop by Dr. Ohba, March 2003 - Coral identification Workshop by Dr. Uchida May 2003 - Seagrass training to state conservation officers, February 2004 - Workshop on Micronesia Coral Reef Status, May 2004 - Coral identification Workshop by Dr. van Woosik, June 2004 - A Reef Check training, October 2004 Regional and international symposium were also organized such as Regional Coral Reef Monitoring Workshop and Pre-10th International Coral Reef Symposium in 2004. PDM indicators should be modified.. | A* (See note) |
| Achievement of Output 4 Education: Education division is capable of conducting environmental education on coastal resources for students and community | 4-1. Provision of environmental education under the School Support Program | Project report, interview from the project team | One of School Support Program organized by the Environmental Education and Public Relations Department is environmental calendar to collect drawings from school students for raising awareness of the importance of natural conservation. The Department has printed year 2003, 2004 calendars. The staff visited only 3 schools. Unable to reach the target of 9 schools for school year 2002-2003. Because PICRC's school visits were not on the Ministry of Education calendar of events, it was difficult to insert new activities in the middle of the school year at that time. But as for F.Y. 2005, they have done education programs in 22 schools. | B ⁺ |
| | 4-2. Planning and implementation of community outreach program | Project report, interview from the project team | Five(5) community workshops and trainings conducted by visiting scientists with the Environmental Education and Public Relations Department were opened to the public. In attendance were mostly staff from collaborating agencies such as Palau Conservation Society. The community based outreach programs have been implemented at only two communities including Ngarchelong State. The implementation was not on schedule. . | B |
| | 4-3. Development of collection and database of published marine scientific works about Micronesia | Project report, interview from the project team | The collection of references has increased by 50%. To date, marine scientific works acquired is over a 1,000. These collections were provided to the library by Coral Reef Research Foundation, TEL, and The Nature Conservancy. This is an on-going activity as long as there are scientific papers being written about Palau's marine life. It is important to maintain and update the collection and will require a staff dedicated to this activity. | B |
| | 4-4. Teacher's training | Project report, interview from the project team | The Environmental Education and Public Relations Department n discussed with the Minister of Education and Chief of Curriculum and Instruction about possibilities for Ministry of Education to take advantage of PICRC's resources, including teacher's training and science fair. Chief of Curriculum and Instruction informed the division on summer plans for teachers with summer classes, PEC, and teacher's convention, and other back-to-back activities for teachers that have been scheduled. However, the actual activities has not been accomplished. | B ⁻ |

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| | 4-5. Science program with Palau Community College | Project report, interview from the project team | The Environmental Education and Public Relations Department provided instruction for 3 courses: Marine Biology (Fall semester), Oceanography (Spring Semester), and Field Studies (Summer Semester). The Department also established relationship with Palau Community College library and University of Hawaii Hamilton Library. However, the number of students from PCC who have attend the environmental education class are limited. It is necessary to attract more students. | B |
| Overall Achievement of Outputs | | | The Project activities in the various fields are actively implemented but the outputs have not been materialized yet so far. | B ⁺ |
| Achievement of Project Purpose | To attain self-sustainability of PICRC, the Center's administrative, research and exhibition / education capacity are strengthened | Project report, interview from the project team | Most of activities and outputs are in progress to accomplish the project purpose. | B ⁺ |
| Overall Achievement of Project Purpose | | | Most of activities and outputs are in progress to accomplish the project purpose. | B ⁺ |

88

APL

質問表及び集計結果

Dear Sir/Madam

This questionnaire survey aims at collecting necessary information, opinions, and comments of relevant persons/organizations regarding the Project for the Palau International Coral Reef Center Strengthening Project in Palau assisted by Japan International Cooperation Agency (referred to as 'JICA' hereinafter) and its impact on your activities.

You are kindly requested to fill in the following questionnaire. Answers to be obtained from this survey would be solely utilized by JICA to evaluate and improve its Course.

INFORMATION PROVIDED BY RESPONDENTS TO THIS QUESTIONNAIRE WILL BE USED FOR INTERNAL PURPOSES ONLY, AND UNDER NO CIRCUMSTANCES WILL IT BE PROVIDED OR FORWARDED TO OTHER PARTIES.

Thank you

Questionnaire for the Project Counterparts

Name: _____ Male/Female: _____

Position: _____

Your task: _____

Name of your counterpart (JICA expert): _____

Month and year which you joined the group: _____

1. Name of your responsible task or research topics at the Palau International Coral Reef Center (referred to as "PICRC" hereafter).

| | |
|-----------------|--|
| Tasks | |
| | |
| | |
| Research topics | |
| | |
| | |

1.2 How do you consider the roll of PICRC in Palau and Micronesia region?

2. Where do you most require the assistances from JICA experts

| Your task / research topics | Practical technique | Knowledge | References | Supervise | Equipment |
|-----------------------------|---------------------|-----------|------------|-----------|-----------|
| | | | | | |
| | | | | | |
| | | | | | |

Assistance needed: A. Most needed B. Very much needed C. Much needed
D. Little needed E. Not needed

Comments (Particular technology you wish to learn and etc.)

3. How do you evaluate Japanese long term and short term experts?

Long term expert

- A. Excellent B. Good C. Fair D. Poor E. Very poor

Short term experts

Name:

- A. Excellent B. Good C. Fair D. Poor E. Very poor

Name:

- A. Excellent B. Good C. Fair D. Poor E. Very poor

Name:

- A. Excellent B. Good C. Fair D. Poor E. Very poor

4. If you have experienced counterpart training in Japan, how do you evaluate the course?

| Title of course | Practical | Lecture | Usefulness |
|-----------------|-----------|---------|------------|
| | | | |

- A. Excellent B. Good C. Fair D. Poor E. Very poor

5. If you have participated in the in-house training course, workshop or symposium at PICRC, how do you evaluate the course/workshop/symposium?

| Title of course/workshop/symposium | Practical | Lecture | Usefulness |
|------------------------------------|-----------|---------|------------|
| | | | |
| | | | |
| | | | |

- A. Excellent B. Good C. Fair D. Poor E. Very poor

6. Please state any issues you are conducting or learning at this moment that would be used for coral reef conservation in Palau.

Thank you very much

質問票結果

1. 質問票回収結果内訳

| | | |
|--------|----------|-----|
| 質問票回収率 | 13人/15人 | 87% |
| 内訳 | 男 | 9人 |
| | 女 | 4人 |
| 所属 | 運営管理部 | 3人 |
| | 水族館運営部 | 5人 |
| | 環境教育広報部 | 2人 |
| | 研究部 | 3人 |
| 勤続年数 | 2002年～ | 8人 |
| | 2003年1月～ | — |
| | 2003年6月～ | — |
| | 2004年1月～ | — |
| | 2004年6月～ | 4人 |
| | 2005年1月～ | 1人 |

2. 回答結果

2-1. 選択式設問

(*5段階評価：5.大変必要である、4.必要である、3.まあまあ必要である、2.あまり必要でない、1.全く必要性がない。各選択項目ごとに回答者の評価点の平均値を求めた)

| 質問項目 | 選択項目 | 平均点 |
|--------------------------------|--------|-----|
| JICA および専門家に望む支援の内容 | 実践的な技術 | 4.4 |
| | 知識 | 4.3 |
| | 文献・情報 | 3.4 |
| | 指導 | 3.2 |
| | 機材 | 4.5 |
| 派遣された専門家の評価 | 長期専門家 | 5 |
| | 短期専門家 | 5 |
| 日本での研修に対する評価(*回答者のうち3名のみ研修経験有) | 実技 | 4.7 |
| | 講義 | 3.7 |
| | 有効性 | 4.0 |

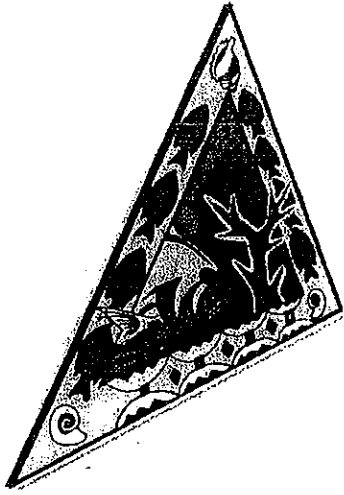
| 質問項目 | 選択項目 | 平均点 |
|---|------|-----|
| センター内での研修、セミナー、シンポジウムの評価（* 回答者のうち6名が参加経験有） | 実技 | 4.2 |
| | 講義 | 4.2 |
| | 有効性 | 4.7 |
| | | |

2-2.二者択一・記述式設問

| 質問項目 | 結果 | |
|--------------------------------|-----|----|
| 日本・パラオ側のプロジェクトへの投入は充分だったか | はい | 5人 |
| | いいえ | 4人 |
| | 無回答 | 4人 |
| 「いいえ」と回答した理由（複数回答有） | | |
| 水族館のスタッフの数が足りない | | 2人 |
| 空席となったポストのリクルートがまだなされていない | | 2人 |
| 修繕積立金、基金の確保が難しい | | 2人 |
| | | |
| プロジェクトの活動の成果は達成できると思うか？ | はい | 7人 |
| | いいえ | 2人 |
| | 無回答 | 3人 |
| 「いいえ」と回答したその理由（複数回答有） | | |
| 自主財源、水族館入場料、補修部品の修繕費積立金の不足 | | 2人 |
| 研究には時間がかかる | | 1人 |
| 達成できると思うが、残り2年足らずというのは無理である | | 1人 |
| プロジェクト目標を達成できると思うか？ | はい | 4人 |
| | いいえ | 8人 |
| | 無回答 | 1人 |
| 「いいえ」と回答したその理由（複数回答有） | | |
| 自主財源を確保するのは困難 | | 5人 |
| 訓練された人材の不足、業務量に対してスタッフの数が足りない | | 3人 |
| パラオの観光客達が大きく伸びないと入館料の増収も期待できない | | 2人 |

2-3. 記述式設問

| 質問項目 | 回答コメント（複数回答有） | 結果 |
|------------------------------|---|-----|
| パラオ国際サンゴ礁センターの役割についてどう思っているか | 国内外の人々にパラオのサンゴ礁・海洋生態系についての理解を深めさせる | 13人 |
| | ミクロネシアのサンゴ礁研究、環境保全の中心地である | 13人 |
| | 世界的な重要なサンゴ礁研究センターである | 3人 |
| | 政治家、政策決定者へ海洋環境保全に関する提言をする | 4人 |
| | | |
| パラオの沿岸域管理・環境保全についてどう思うか | パラオのサンゴ礁、海洋環境保全について一般の人々へのより一層の情報提供、啓発が必要 | 4人 |
| | 研究成果、情報を政策決定者と共有し沿岸域管理政策、海洋保護区策定に生かす | 5人 |
| | 研究部門の研究活動から、海洋生物・環境について多くのものが学べている | 1人 |



PALAU INTERNATIONAL CORAL REEF CENTER

ENABLING ACT: RPPL 5-17

AN ACT to establish a non-profit public corporation, to be named the Palau International Coral Reef Center, to conduct coral reef and related marine research and education.

AN ACT

To establish a non-profit public corporation, to be named the Palau International Coral Reef Center, to conduct coral reef and related marine research and education.

THE PEOPLE OF PALAU REPRESENTED IN THE OLBIL ERA KELULAU DO ENACT AS FOLLOWS:

1 Section 1. Short title. This Act may be cited as the "Palau International Coral Reef
2 Center Act of 1998."

3 Section 2. Legislative purpose. For generations, the coral reefs surrounding the
4 islands of Palau have protected and sustained the people of Palau by providing sheltered harbors,
5 food, building materials, shells for jewelry and utensils, and even betelnut lime. Traditionally,
6 Palau's chiefs have enforced conservation practices in managing the reefs. Recent economic
7 expansion and interaction with regional neighbors and political allies, especially the United
8 States and Japan, however, has led to greater exploitation of the coral reefs for tourism, the
9 harvesting of marine life for food and other products, research into the development of
10 pharmaceuticals, and the gathering of aquarium fishes and invertebrates. As a result of this
11 expanded use of our natural marine resources, some areas of Palau's coral reef system are
12 already severely degraded. This disturbance to our marine environment is critical, because
13 damage to one part of our ecosystem can cause unknown imbalances that upset and negatively
14 impact other areas of our natural environment.

15 In addition to recognizing the importance of maintaining the quality of the marine
16 environment for Palauan citizens and their children, the Olbil Era Kelulau recognizes that the
17 Republic is in a position to play an active role in the international and regional community
18 efforts to study, manage and protect the marine environment. The purpose of this Act is to
19 establish a self-sustaining, non-profit coral reef center and marine park that will provide a forum
20 for coral reef studies, research and education. The Center is designed to assist in improving the
21 management, use and conservation of Palau's and the world's marine environment, in addition
22 to serving as a tourist attraction. In cooperation with Japan, the United States and other
23 countries, the Center will insure that future generations will enjoy the reefs as this and prior
24 generations have.

1 Section 3. Mission statement and objectives. The mission of the Center is to create
2 a self-sustaining center of excellence for marine research, training and education activities. The
3 Center's primary objectives will be to:

4 (a) Carry out research that will enhance the state of knowledge in Palau and the world
5 about coral reef systems (and associated marine environments), and the conservation and
6 management thereof, especially for the Asia/Pacific region;

7 (b) Educate the public about the ecological, economic and cultural importance of coral
8 reefs and their associated marine habitats;

9 (c) Provide facilities to support research, professional training, workshops and
10 conferences in coral reef/marine environment research, sustainable management and related
11 activities;

12 (d) Generate revenues which will be utilized in a manner that allows the Center to
13 become financially self-sustaining over time;

14 (e) Collaborate and exchange information with other coral reef/marine environment
15 research, education, and training institutions and organizations, and disseminate information to
16 the public and to interested individuals and private businesses;

17 (f) Provide information, expertise, assistance and other relevant support to any local
18 government or private agency or non-government organization whose mission requires operating
19 in the marine environment;

20 (g) Establish a training program directed towards integrating sustainable coral
21 reef/marine environment management and tourism, with an emphasis on ecotourism;

22 (h) Within 120 days after the effective date of this Act, develop a marine science and
23 technology certification program in collaboration with Palau Community College; and to assist the
24 College on an ongoing basis to develop and implement related college programs, particularly
25 through the College's Continuing Education and extension programs.

26 (i) Provide educational resources and assistance for development of marine environment
27 studies programs for the entire Palau education system; and

28 (j) Provide information and technical support to Palau's traditional chiefs in their role
29 of managing the reefs and implementing traditional conservation practices.

30 Section 4. Definitions. As used in this Act:

31 (a) "Board" means the Center's Board of Directors.

1 (b) "Center" means the Palau International Coral Reef Center created by this Act.

2 (c) "CEO" means the Chief Executive Officer of the Center.

3 (d) "Director" means a member of the Board.

4 (e) "Foreign entity" means any person who is not a citizen of the Republic and not
5 authorized to do business in the Republic, or any other legally cognizable entity in which a
6 person who is not a citizen of the Republic owns any interest and which is not authorized to do
7 business in the Republic.

8 (f) "Non-profit Public Corporation" means a public corporation which may enter into
9 income-generating activities but is not designed to pay dividends on invested capital nor to fund
10 other public sector activities.

11 (g) "President" means the President of the Republic of Palau.

12 (h) "Public Corporation" means an autonomous entity wholly-owned by the National
13 Government.

14 (i) "Republic" means the Republic of Palau.

15 (j) "Technical Working Group" means the Palau Aquarium and Research Center
16 Advisory Group as established by Executive Order No. 144, or its successor.

17 **Section 5. Establishment of non-profit corporation.**

18 (a) The Palau International Coral Reef Center is established as a non-profit public
19 corporation which shall operate in the form and manner prescribed by this Act.

20 (b) The Center shall be subject to the corporate laws of the Republic to the extent such
21 laws do not conflict with this Act or in any manner distort the public character of the Center.

22 (c) The existence of the Center shall be perpetual.

23 (d) The Center is not organized for profit and shall be strictly limited to scientific,
24 research and educational purposes. The Center may not issue any stock. No part of the
25 Center's assets, income or earnings may be distributed to any Director, Officer, employee or
26 any private individual, except that reasonable compensation may be paid for services rendered
27 to or for the Center. No Director, Officer or employee of the Center, or any private individual,
28 may receive any share of the distribution of any of the Center's assets on the dissolution of the
29 Center. No part of the activities of the Center may include (i) carrying on propaganda, (ii)
30 attempting to influence legislation, except that members of the Center's Board and personnel of
31 the Center may testify or make other appropriate communications where formally requested to

1 do so by a legislative body or a committee or a member thereof in matters concerning legislation
2 relating to the public purposes of the Center or public appropriations to programs and activities
3 of the Center, or (iii) participating or intervening in (including the publication or distribution of
4 statements), or contributing to, any political campaign on behalf of any candidate for public
5 office. All fees and charges collected and contributions received from public or private donors
6 shall be used by the Center for the purposes set forth in this Act.

7 (e) To the extent consistent with the overall purposes of the Center, the provisions of this
8 Act, and other applicable law, the Center shall be established, administered, and operated in
9 such a way as to qualify as a "private foundation" within the meaning of that term in Section 509
10 of the United States Internal Revenue Code. If the Center is determined to have private
11 foundation status under Section 509 of the United States Internal Revenue Code, then:

12 (1) The Center shall distribute its proceeds for each taxable year at such time
13 and in such manner as not to become subject to the tax on undistributed income imposed
14 by Section 4942 of the Internal Revenue Code of 1986 or corresponding provisions of
15 any subsequent U. S. Federal tax laws;

16 (2) The Center shall not engage in any act of self-dealing as defined in section
17 494(d) of the U. S. Internal Revenue Code of 1986 or corresponding provisions of any
18 subsequent U.S. Federal tax laws;

19 (3) The Center shall not retain any excess business holdings as defined in
20 Section 4943(c) of the Internal Revenue Code of 1986 or corresponding provisions of any
21 subsequent U. S. Federal tax laws;

22 (4) The Center shall not make any investments in such manner as to subject it
23 to taxation under Section 4944 of the Internal Revenue Code of 1986 or corresponding
24 provisions of any subsequent U. S. Federal tax laws; and

25 (5) The Center shall not make any taxable expenditures as defined in Section
26 4945(d) of the Internal Revenue Code of 1986 or corresponding provisions of any
27 subsequent U.S. Federal tax laws.

28 (f) Notwithstanding any other provisions of this Act, the Center shall not carry on any
29 other activities not permitted to be carried on:

1 (1) by a corporation exempt from U.S. Federal income taxation under Section
2 501(c)(3) of the U. S. Internal Revenue Code of 1986 or the corresponding provision of
3 any subsequent U. S. Federal tax laws; or

4 (2) by a corporation, contributions to which are deductible under Section
5 170(c)(2) of the U. S. Internal Revenue Code of 1986 or the corresponding provision of
6 any subsequent U. S. Federal tax laws.

7 **Section 6. Corporate status; powers.** To achieve the purposes and subject to the other
8 provisions of this Act, the Center shall possess and exercise the following powers through its
9 Board of Directors to:

10 (a) operate and manage the Center and related facilities and marine parks, and to adopt,
11 alter, and use a corporate seal;

12 (b) adopt, amend, and repeal bylaws governing the conduct of its business and the
13 exercise of its authority;

14 (c) sue and be sued in its corporate name;

15 (d) acquire in any lawful manner, real, personal or mixed property, either tangible or
16 intangible, and to hold, maintain, use, sell, lease or otherwise dispose of such property. No
17 property transferred from the national government shall be mortgaged or otherwise encumbered
18 without the prior approval of the Olbiil Era Kelulau;

19 (e) retain and terminate the services of employees, agents, attorneys, auditors, and
20 independent contractors upon such terms and conditions as it deems appropriate;

21 (f) borrow or raise any sum of money needed to achieve the Center's objectives, and to
22 issue bonds or notes for that purpose, provided, however, that the Center may not issue a bond
23 except pursuant to a law expressly authorizing such bond issue;

24 (g) make any lawful contracts;

25 (h) appoint the Chief Executive Officer;

26 (i) charge reasonable fees for the use and enjoyment of the Center;

27 (j) accept, receive, disburse and expend moneys from foreign governments and other
28 moneys, public or private, made available by grant, loan or endowment, to accomplish, in whole
29 or in part, any of the purposes of this Act;

1 (k) foster economic activities and to cooperate with other institutions within or without
2 the Republic in supporting activities for the preservation and study of coral reefs or the
3 responsible cultivation and harvesting of marine organisms;

4 (l) promote the education of Palauan citizens in matters related to the intrinsic value,
5 conservation and efficient usage of the coral reefs and other marine organisms;

6 (m) educate tourists in the non-destructive enjoyment and observation of the coral reef
7 environment;

8 (n) engage in all lawful commercial activities which will further the development of the
9 preservation and study of the coral reefs and other marine organisms;

10 (o) adopt procurement policies substantially similar to those set forth in 40 PNC Chapter
11 6; and

12 (p) have and exercise all powers necessary and lawful to effectuate the purposes of this
13 Act.

14 Section 7. Board of Directors; selection, terms, vacancies, quorums and
15 compensation.

16 (a) All powers vested in the Center shall be exercised by the Board of Directors, except
17 to the extent that this Act delegates powers to other persons or the Board lawfully delegates
18 powers to other persons by majority resolution.

19 (b) The Board shall consist of: 9 voting directors; the Chief Executive Officer, who
20 shall be a non-voting director; and, for the first two years of the existence of the Center, the
21 Director of the Bureau of Natural Resources and Development and the Minister of
22 Administration; who shall be ex-officio, non-voting directors. Each voting director shall be
23 appointed by the President with the advice and consent of the Senate. Appointment and
24 confirmation shall be subject to the following criteria and guidelines:

25 (1) A majority of the voting directors shall be Palauan;

26 (2) At least 3 of the voting directors shall be non-Palauan in order to assure that
27 links with other countries and non-profit institutions are established;

28 (3) At least 1 director shall be a member of the Technical Working Group, as
29 long as the Group may continue to exist;

30 (4) Voting directors must have a college degree in the field of business, marine
31 science, education or equivalent experience in the specified fields;

1 (5) No voting director may simultaneously serve as an employee of the Center;
2 and

3 (6) Each voting director shall also have experience in one or more of the
4 following areas:

- 5 (A) Tropical marine education or research;
- 6 (B) Public or private fundraising;
- 7 (C) Conservation of marine resources;
- 8 (D) Aquarium or marine park management; and
- 9 (E) Employment by or association with multi-lateral donors that focus on
10 sustainable development in the region.

11 (c) The Board shall organize by electing one of its voting directors as Chairman and
12 another as Vice Chairman. The Chairman and the Vice Chairman may be removed from office
13 by a vote of not less than 5 directors. The Board shall designate a Secretary, who may be a
14 member of the Board, to keep accurate minutes and records of the Board.

15 (d) Voting directors shall initially serve terms as follows: three for four years, three for
16 three years and three for two years; thereafter, all voting directors shall serve four-year terms.
17 No director may serve beyond the expiration of his term. The President shall assign initial terms
18 to directors as he chooses, prior to the Senate confirmation process. The President shall make
19 his initial appointments to the Board within 30 days after the effective date of this Act. All
20 subsequent appointments must be made within 30 days after a preceding appointment is rejected
21 or a vacancy occurs. Any director appointed to fill a vacancy on the Board occurring prior to
22 the expiration of the term for which his predecessor was appointed shall be appointed by the
23 President, with the advice and consent of the Senate, for the remainder of the term. A Director
24 may only be removed by a 2/3 vote of the Board.

25 (e) Any 5 voting directors shall constitute a quorum. The concurrence of a majority of
26 at least a quorum shall be necessary for any official action taken by the Board, unless otherwise
27 provided herein. No vacancy of a directorship shall impair the right of the quorum to exercise
28 the rights and perform the duties of the Board.

29 (f) Those directors who are state or national government employees or who are
30 employees of the Public Utilities Corporation, Palau National Communications Corporation or
31 other public corporation may not receive compensation from the Board. The Board shall

1 determine the compensation, if any, of directors who are not employees of the national or any
2 state government. The Board shall establish the salary of the CEO.

3 (g) As soon as practicable, but in no event later than 15 days after the Senate
4 confirmation of at least 5 directors, and annually thereafter, the Board shall meet for the purpose
5 of electing its officers for the following year. The Board shall meet regularly at the call of the
6 Chairman, or by petition of 5 Directors.

7 **Section 8. Appointment of Chief Executive Officer.** The Chief Executive Officer shall
8 be appointed and may be removed by the Board pursuant to its bylaws. The CEO shall report
9 directly to the Board.

10 **Section 9. Powers and duties of the Chief Executive Officer.** The Chief Executive
11 Officer of the Center shall have the following powers and duties:

12 (a) To manage and ensure the efficient operation of the Center;

13 (b) To recruit, select, hire and terminate all employees of the Center, including a Chief
14 Science Officer, and to contract for management, professional, legal, accounting, training,
15 concessionaire, and technical advisory services;

16 (c) To direct the Center's fundraising efforts and to report on those efforts to the Board;

17 (d) To ensure that the missions of the Center, as set forth in this Act, are carried out;

18 (e) To approve appropriate requests to use the Center's facilities;

19 (f) To attend all meetings of the Board and report on the affairs of the Center;

20 (g) To keep the Board advised on the needs of the Center;

21 (h) To approve demands for payment of obligations within the purposes and amounts
22 authorized by the Board;

23 (i) To prepare or cause to be prepared all plans and specifications for the construction
24 and repair of facilities, vehicles, vessels, and equipment owned or operated by the Center;

25 (j) To be employed exclusively by the Center and to devote his or her entire working
26 time to the business of the Center under the general direction of the Board;

27 (k) To provide monthly financial statements to the Board, and such other financial or
28 other reports as the Board may require; and

29 (l) To cause to be published within 60 days after the end of each fiscal year, a financial
30 and operations statement showing the result of operations for the preceding fiscal year and the
31 financial status of the Center on the last day thereof.

1 Section 10. Appointment of Science and Policy Advisory Committee. The Board
2 shall appoint a Science and Policy Advisory Committee composed of willing members of the
3 business and scientific community to advise the Board on matters of Board policy, management,
4 scientific research and education. The number of members of the Science and Policy Advisory
5 Committee shall be set forth in the Center's bylaws.

6 Section 11. Equal Access. The Center, taking into account budgetary, planning and
7 facility limitations, shall strive to provide equal access to the Center's facilities to all foreign
8 nations and entities seeking to conduct well defined research projects and to provide educational
9 opportunities in the field of coral reef/marine management and preservation.

10 Section 12. Research Library. The Center shall maintain a research library which will
11 serve as a central depository for all materials gathered from research projects conducted in
12 Palau.

13 Section 13. Revenues. The Board, within six months of the initial operation of the
14 Center, shall provide the Olbiil Era Kelulau with proposed legislation regarding the distribution
15 of revenues resulting from research projects conducted in Palau.

16 Section 14. Tourist Training. The Board shall, within 90 days of the appointment of
17 Directors, devise a training program for tourists and tour guides, to be conducted through the
18 Center, to protect the marine environment of Palau. The training program shall include a fee
19 structure for such training.

20 Section 15. Marine Park. The Board shall, within six months of the appointment of
21 Directors, devise a proposal for the development of marine parks within the Republic of Palau.
22 Copies of such report shall be presented to the President, the Vice President and members of the
23 Olbiil Era Kelulau with proposed legislation to implement the proposal.

24 Section 16. National and State Tax and Regulatory Status. The Center shall be
25 exempt from national and state taxes, fees and regulations only as set forth herein.

26 (a) The Center shall be exempt from the National Gross Revenue Tax, Import Tax, and
27 all state taxes.

28 (b) All foreign entity suppliers of products and services to the Center, and their
29 independent contractors that provide such products during and related to the original construction
30 of the Center's facilities, shall be exempt from their respective Gross Revenue Tax, and Import
31 Tax, except as otherwise provided herein.

1 (c) All foreign entity suppliers of products and services to the Center, and their
2 independent contractors that provide such products after initial construction of the Center, or
3 after the Center opens, whichever occurs first, shall not be exempt from applicable Gross
4 Revenue Taxes, Import Taxes and applicable fees.

5 (d) Employees of the Center shall pay applicable Wages and Salary Taxes.

6 (e) The Center shall be exempt from any charges for public lands easements.

7 (f) The Center shall not be exempt from paying all fees incurred by it for electricity,
8 water and sewerage services.

9 (g) The Center shall be liable for any contributions to the social security system or
10 pension plan as is or may be required by law.

11 (h) Foreign entities transacting business with the Center are exempt from any otherwise
12 applicable foreign investment permit requirements, specifically 28 PNC Chapter 1, only to the
13 extent of transactions with the Center, except that each foreign entity must pay workers hired
14 for any work or project to be carried out within the Republic a minimum wage during such
15 project of not less than the minimum wage paid to Palau national government employees.

16 (i) The Center shall endeavor to negotiate with the States of the Republic regarding all
17 other regulatory matters.

18 **Section 17. Public meetings and official meetings.** All meetings of the Board shall be
19 open to the public and official documents shall be available for public inspection.

20 **Section 18. Review of contracts.** The Board shall insure that all legal agreements and
21 contracts are reviewed as to form and legality by the Attorney General or other attorney.

22 **Section 19. Budget preparation: self-sufficiency plan.**

23 (a) The CEO shall prepare, in advance of each fiscal year, an annual budget for the
24 Center, taking into consideration anticipated revenues, capital and operational expenditures and
25 the marine research and education plan prepared by the Science Officer. The Center shall use
26 the same fiscal year as the National Government of the Republic. The budget shall indicate the
27 operational, capital, and maintenance requirements of the Center that will be met with the
28 anticipated revenues of the Center and such essential requirements which cannot be met without
29 an increase in the rate of revenues or outside financial assistance. The annual budget shall be
30 reviewed and approved by the Board.

1 (b) Within 180 days after the effective date of this Act, the CEO and the Board shall jointly
2 submit to the OEK a written plan designed to make the Center financially self-sufficient within 2
3 years after the Center has been officially opened for operation.

4 **Section 20. Reporting; audits.**

5 (a) The CEO shall keep accurate records of the Center's business. Such records shall
6 include accountings of all income, expenditures and assets, both tangible and intangible,
7 and liabilities of the Center.

8 (b) The Board shall adopt and maintain a system of accounting which is in accordance
9 with generally accepted accounting principles applicable to public corporations. The system
10 adopted shall require that:

11 (1) The CEO employ a firm of independent certified public accountants who shall
12 examine the Center's records and report to the Board, at least annually, upon the status
13 of the financial records and accounts maintained by the Center; copies of any audit
14 reports shall be furnished to the President and the OEK.

15 (2) The Board shall report to the President and the OEK on the affairs of the
16 Center. It shall present an annual report within 60 days after the end of each fiscal year
17 and, if requested by the President or the OEK, shall present special reports within 30
18 days after the end of each intervening quarter.

19 (3) The Public Auditor shall conduct an annual audit of the Center.

20 **Section 21. Manual of Administration.** The Board shall establish a Manual of
21 Administration to include rules and regulations governing the selection, promotion, performance
22 evaluation, demotion, suspension, dismissal, and other disciplinary rules for employees of the
23 Center. Employees of the Center shall be eligible to participate in any health insurance plan,
24 life insurance plan, retirement fund and workmen's compensation fund available to Republic of
25 Palau employees. The Center shall contribute to such programs on the basis of periodic billings
26 as determined by the governing authorities thereof. The employees of the Center shall be
27 exempt from the provisions of the Palau National Public Service System Act.

28 **Section 22. Corporate debts and obligations.** Unless otherwise expressly provided by
29 law, the National Government shall not be liable for any debts incurred by or obligations
30 imposed upon the Center.

1 Section 23. Government assistance to the Center in carrying out its function. For
2 the purpose of aiding in the planning, undertaking or carrying out of the provisions of this Act
3 and of the projects contemplated herein, and the subsequent operation of the Center, the
4 Republic and any ministry, bureau, agency, authority or political subdivision thereof, may,
5 unless otherwise prohibited by law:

6 (a) Dedicate, sell, convey, lease or otherwise transfer interests in real or personal
7 properties, rights, or privileges that it may have to the Center subject to approval under
8 applicable law;

9 (b) With the agreement of a majority of voting Board members, incur expenses on behalf
10 of the Center subject to reimbursement in accordance with law under such terms and conditions
11 as may be agreed upon with the Board;

12 (c) Do any and all things necessary or helpful to aid or cooperate in the planning or
13 carrying out of the duties, powers and obligations of the Board in effecting the purposes of the
14 Center;

15 (d) Subject to applicable law, lend or advance, grant or contribute funds to the Center,
16 and provide for or waive the repayment of any such funds loaned or advanced; and

17 (e) Subject to applicable law, contract with or furnish services to the Center upon such
18 terms and conditions as may be agreed upon with the Board.

19 Section 24. Indemnification. The Center shall indemnify and hold harmless all
20 directors, officers and employees from all claims related to the matters contained in this Act, and
21 arising from acts within the scope of their respective duties. This indemnification shall not be
22 available with regard to intentional or reckless wrongful acts.

23 Section 25. Transition. Prior to the appointment of directors of the Board by the
24 President and their confirmation by the Senate, the Vice President or his designee, with the
25 advice of the Technical Working Group established by Executive Order 144 or its successor,
26 shall oversee and manage the Center pursuant to this Act and the appropriate Executive Order.

27 Section 26. Authorization. The sum of \$150,000 is authorized to be appropriated for
28 fiscal year 1999 for site preparations and initial operations of the Center.

29 Section 27. Intellectual property rights.

30 (a) All scientific discoveries or other forms of intellectual property made or acquired by
31 any employee of the Center or any person working on behalf of the Center shall be the property

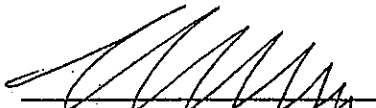
1 of the Center and the Republic of Palau. The Center shall be entitled to all revenues from the sale,
2 lease or other use of any intellectual property.

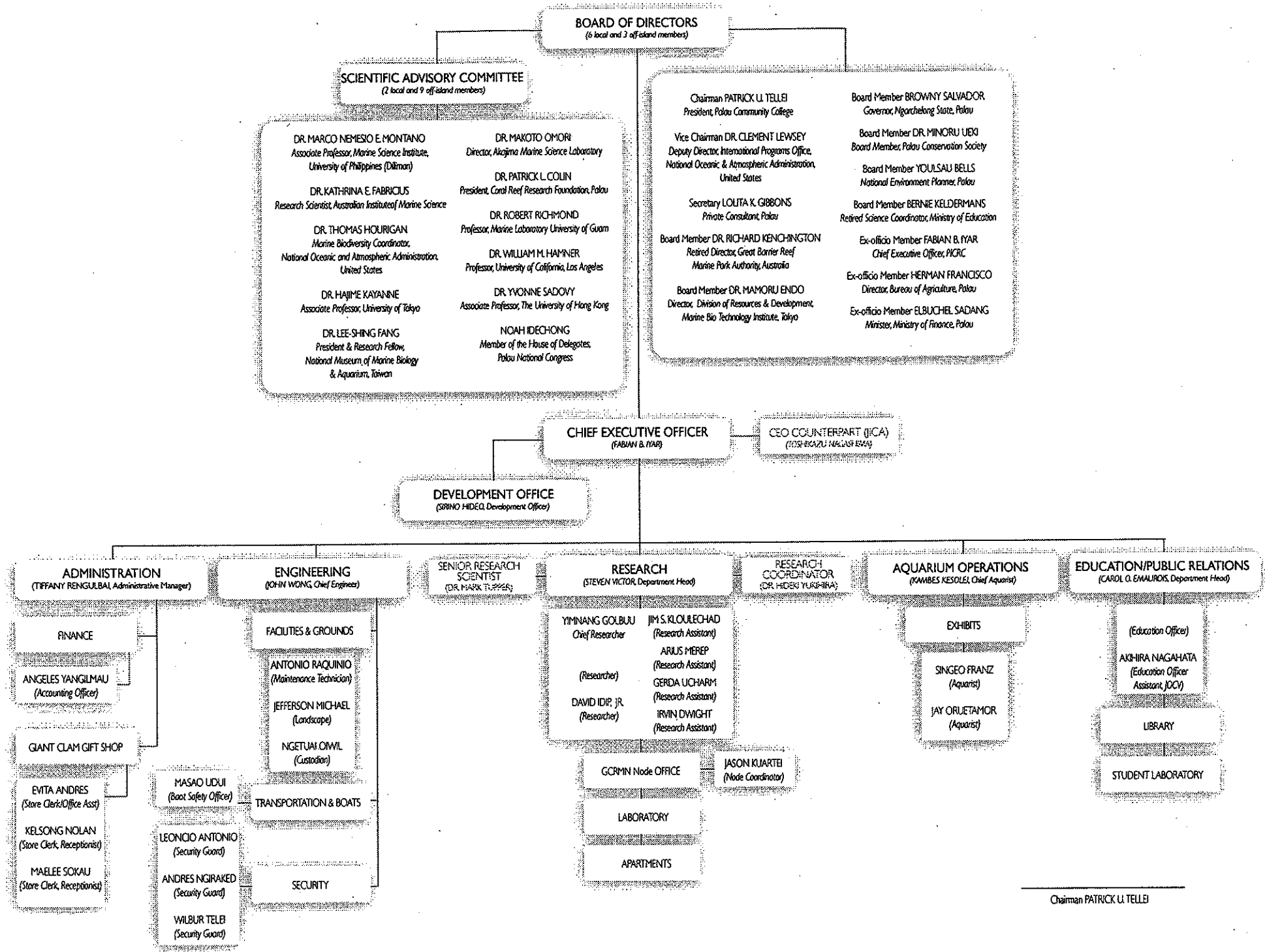
3 (b) Every person that works for or on behalf of the Center shall sign a contract whereby
4 that person agrees that the Center and the Republic of Palau shall own the rights to any intellectual
5 property created, developed or acquired by that person during the time that person works for or on
6 behalf of the Center. Prior to hiring any employees, the Center shall draft an employment contract
7 that shall be reviewed by the Attorney General. The contract shall contain a provision to carry out
8 the requirements of this subsection.

9 **Section 28. Effective Date.** This Act shall take effect upon its approval by the President
10 of the Republic, or upon its becoming law without such approval, except as otherwise provided
11 by law.

PASSED: November 6, 1998

Approved this 20th day of November, 1998


Kuniwo Nakamura, President
Republic of Palau



Chairman PATRICK U. TELLEI

