



Technical Assistance Report

Project Number: 43427
Regional—Policy and Advisory Technical Assistance (R-PATA)
November 2010

Strengthening Coastal and Marine Resources Management in the Coral Triangle of the Pacific (Phase 2)

(Cofinanced by the Regional Cooperation and Integration Fund
under the Regional Cooperation and Integration Financing
Partnership Facility and by the Global Environment Facility)

ABBREVIATIONS

ADB	–	Asian Development Bank
BMP	–	best management practice
CTI	–	Coral Triangle Initiative
EBFM	–	ecosystem-based fisheries management
GEF	–	Global Environment Facility
ICRM	–	integrated coastal resource management
IFPRI	–	International Food Policy Research Institute
IUCN	–	International Union for the Conservation of Nature
km	–	kilometer
M&E	–	monitoring and evaluation
NGO	–	nongovernmental organization
NPMU	–	National Program Management Unit
PARD	–	Pacific Department
PAS	–	Pacific Alliance for Sustainability
PNG	–	Papua New Guinea
RCIF	–	Regional Cooperation and Integration Fund
RPMO	–	regional program management office
TA	–	technical assistance
TCU	–	TA coordination unit

TECHNICAL ASSISTANCE CLASSIFICATION

Type	–	Regional—Policy advisory technical assistance (R-PATA)
Targeting classification	–	Targeted intervention: geographic
Sector (subsector)	–	Agriculture and natural resources (water-based natural resources management)
Themes (subthemes)	–	Environmental sustainability (natural resources conservation), regional cooperation and integration (other regional public goods), capacity development (institutional development)
Climate change	–	Climate change adaptation
Location impact	–	national (high), rural (medium), regional (high)
Partnership	–	Global Environment Facility

NOTE

In this report, "\$" refers to US dollars.

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In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

I. INTRODUCTION

1. Five Pacific countries (Fiji Islands, Papua New Guinea [PNG], Solomon Islands, Timor-Leste, and Vanuatu), which lie within or border the Coral Triangle of the Pacific,¹ raised key concerns regarding the management of their coastal and marine resources. In response, the Asian Development Bank (ADB) provided a regional technical assistance (TA) grant to prepare a program to strengthen the management of coastal and marine resources in the Coral Triangle.² This proposed phase 2 program will assist PNG, Solomon Islands, and Timor-Leste in fulfilling their Coral Triangle Initiative (CTI) objectives; and engage with the Fiji Islands and Vanuatu in these efforts.³ These five Pacific countries have demonstrated their interest in cooperating with the Global Environment Facility—Pacific Alliance for Sustainability (GEF-PAS).⁴ Since there are strong complementary objectives between the CTI and GEF-PAS objectives, and the Fiji Islands and Vanuatu are eligible for GEF cofinancing, this TA will provide a common approach to integrated marine protected area management with efforts to control damage from pollutants derived from onshore activities.⁵ The TA will also complement ongoing and planned efforts of ADB's Southeast Asia Department,⁶ as well as its development partners (such as the GEF, the United States Agency for International Development,⁷ and the Australian Agency for International Development) in the Coral Triangle, which are all intended to support the Coral Triangle countries in the conservation and management of coral reef and associated habitats for food security and poverty reduction. The governments of the five participating countries were consulted, and agreed with the proposed impact, output, outcomes, implementation arrangements, cost and financing arrangements, and terms of reference for consultants.

II. ISSUES

2. Key coastal and marine resource management issues identified in the five Pacific countries include (i) coastal development and fishing pressures, including overexploitation of coastal areas and overharvesting of valuable species; destructive fishing practices used in the live reef food fish trade; illegal, unregulated, and unreported fishing; and sediment and effluent discharge from the watershed areas; (ii) climate change impacts; (iii) weak management of natural resources systems; and (iv) extremely limited staff and budgetary resources and capacity for public sector environmental

¹ The Coral Triangle is a global center of marine diversity covering 5.7 million square kilometers and containing vast marine resources critical to the economic and food security of an estimated 120 million people.

² ADB. 2008. *Technical Assistance for Strengthening Coastal and Marine Resources Management in the Coral Triangle of the Pacific (Phase 1)*. Manila (TA 6471-REG, approved on 18 July) and Global Environment Facility (GEF) Project Preparation Grant (2008). Other ADB Coral Triangle Initiative (CTI) programs are the ongoing ADB. 2009. *Technical Assistance for Regional Cooperation in Knowledge Management, Policy, and Institutional Support to the Coral Triangle Initiative*. Manila (TA 7307-REG, approved on 8 July) and the proposed regional TA for Strengthening Coastal and Marine Resources Management in the CTI-Southeast Asia.

³ As stated in the CTI national and regional plans of action. The CTI was established in 2007 by the governments of Indonesia, Malaysia, the Philippines, PNG, Solomon Islands, and Timor-Leste, agreeing on core principles and a framework for the development of a CTI plan of action. The plan of action addresses interrelated issues facing the future of coral reefs, fisheries, and food security, which are considered priority development issues that have increasingly threatened a significant proportion of coastal communities.

⁴ The GEF-PAS is a regional effort increasing attention on global environmental concerns that support national development priorities in partnership with the GEF and its agencies. ADB is one of 10 GEF agencies with access to GEF financing for activities that support the achievement of global environmental objectives in areas such as climate change (mitigation and adaptation), biodiversity conservation, and management of international waters.

⁵ The TA first appeared in the business opportunities section of ADB's website on 23 August 2010.

⁶ ADB. 2008. *Technical Assistance for Strengthening Sound Environmental Management in the Brunei Darussalam, Indonesia, Malaysia, and Philippines East ASEAN Growth Area*. Manila (TA 6446-REG).

⁷ The Government of the United States has a financing commitment of \$42.15 million for the CTI in Southeast Asia and the Pacific, of which \$11.4 million, or 27% of the total, is intended for PNG, Solomon Islands, and Timor-Leste.

management programs—all of which are exacerbated by high rates of population growth and rural poverty, creating food insecurity concerns.⁸

3. Coastal resource management lies mostly outside of any effective governance framework. However, the reinvigoration of community-based natural resource management reflecting traditional rights to exclude outsiders from accessing community resources is being strengthened to build a resource management framework. Community-based natural resource management alone is considered insufficient as a means of achieving sustainable coastal and marine resources management. Key limitations include (i) the lack of mechanisms to address external threats such as climate change and its impacts; (ii) the inability to address cumulative effects of multiple communities drawing from linked resources; (iii) the inability to address the influences from factors outside community-controlled resources, such as sediment and nutrient movement, into coastal ecosystems; and (iv) the challenge of managing an increased population, increased commercialization of harvesting, and the impact of new technologies.

4. Most governments are unable to go down to the grassroots level and support the management of coastal and marine resources using an integrated ecosystems approach. In general, existing government resources and organizations are more focused on achieving sector development objectives, rather than on resource management or community well-being goals. As a result, staff levels and skill sets do not match resource management needs. Most of these government agencies do not consider natural resource management policy and legal reform as priorities because of factors such as (i) implementation constraints or limitations at the local level, (ii) lack of understanding of best management practices (BMPs) at the community level, and (iii) overexploitation of resources for economic reasons. Policy and institutional weaknesses are exacerbated by weak monitoring and evaluation and information systems for strategic planning, program implementation, and monitoring of sector performance, among others.

5. Increased management effectiveness requires (i) new approaches and tools to move from species-based management to an area-based management approach; (ii) a shift from the management of coastal waters to managing wider ecosystems, including linkages to catchment land use within a “ridge to reef” approach to manage sediment and nutrient loading into coastal ecosystems; (iii) a change in focus from fish utilization to fisheries management based on habitat management within an ecosystems management model or ecosystem-based fisheries management (EBFM); (iv) establishing linkages between climate change adaptation and integrated coastal resource management (ICRM) and mainstreaming these into national, subnational, and sector development planning; and (v) establishing a system of sustainable financing, including payment for ecosystem services, and orienting financial resources toward the achievement of the CTI national and regional plans of action, which provide the frameworks adopted by the countries to focus work in the CTI.

III. THE PROPOSED TECHNICAL ASSISTANCE

A. Impact and Outcome

6. The TA will help ensure food security for the population in Pacific CTI countries, resulting from the increased resilience of coastal and marine ecosystems. It will support the introduction of more effective management of coastal and marine resources, especially those associated with coral ecosystems, to build their resilience in a period of increased threats arising from human induced and climate change impacts. The TA will contribute toward halting or reversing the expected decline in

⁸ A consequence of increased population levels will be increased reliance on subsistence, village-level socioeconomic systems that currently provide the only social safety net. For coastal communities, this will increase demand for land, water, and coastal resources that are often already stressed.

ecosystem productivity caused by these stressors through more effective management that addresses land and water interactions and the management of threats to coastal habitats arising from local human activities. By maintaining productivity over a longer time frame, local community well-being will be ensured.

B. Methodology and Key Activities

7. The impact and outcomes will be attained through four outputs: (i) capabilities of national and local institutions strengthened for sustainable coastal and marine resource management, (ii) coastal communities experienced in applying best practices in ecosystem-based management and climate change adaptation, (iii) resilience of coastal ecosystems to climate change enhanced, and (iv) effective program management established by ADB and the participating governments. The design and monitoring framework is in Appendix 1, and a detailed description of the program is in Supplementary Appendix 1.

8. **Output 1: Capabilities of national and local institutions strengthened in sustainable coastal and marine resources management.** The TA will support the strengthening of national and local institutions and stakeholders in ICRM and EBFM through (i) the conduct of a wide range of national- and local-level training courses aimed to refocus sector agencies away from an economic utilization to an increasingly resource management and climate adaptation orientation; and (ii) the establishment or improvement of an enabling environment for institutionalizing effective ICRM and EBFM.⁹ The latter will involve the following activities, among others: (i) enhancement of the policy and legal framework for sustainable financing options and organizational reform leading to the adoption of a “whole of government” perspective for strategic planning, monitoring, and detailed ICRM and EBFM planning; (ii) building of public sector legal capacity and promoting the participation of private sector lawyers in environmental matters and in international and regional law networks; and (iii) synthesis of BMPs, successes, and lessons for use in developing legal and policy reform road maps with priority reforms drafted, including at the provincial and local level; and (iv) development of coastal and marine information systems and building of resource information capacity in national and local government agencies.

9. **Output 2: Coastal communities experienced in applying best practices in ecosystem-based management and climate change adaptation.** Stakeholders will be supported in customizing and adapting natural resource management approaches to local conditions to make them more effective. BMPs in ICRM and EBFM will be identified, agreed, and used to strengthen the policy, legal, and institutional reform agenda as well as planning procedures to support local-level implementation. ICRM plans will be developed to define management priorities at the ecosystems level and above, and spatial plans will be taken down to the community level, where local management plans will be prepared by those with responsibility at the provincial and local levels. About 48 pilot demonstration projects on ecosystem-based management, including climate change adaptation, will be implemented by designated community-based organizations that will be provided with small grants. The progress of implementation of these pilot projects will be evaluated through an annual participatory stakeholder program that will identify achievements, successes, and constraints.

10. **Output 3: Resilience of coastal ecosystems to climate change enhanced.** A climate change adaptation program will be linked to ICRM to increase the resilience of coastal ecosystems to climate change. The program will support the five Pacific countries in (i) conducting climate vulnerability assessments; (ii) developing climate adaptation measures with TA provided by

⁹ About 1,000 trainees from government agencies, nongovernment organizations, and other stakeholders in the five participating countries will benefit from various training courses to be conducted under the TA (see Supplementary Appendix 2 for details).

scientists to coastal communities; (iii) creating wide public awareness of climate change challenges and threats to coastal ecosystems, including human communities; and (iv) developing knowledge products related to (a) methods and procedures for the characterization of future climate risks, (b) guidelines for BMPs in multi-scale vulnerability assessment, and (c) guidelines for completing adaptation planning and its integration with ICRM and EBFM planning.

11. Output 4: Effective program management established by ADB and the participating governments. A program management system will be set up, consisting of a TA coordination unit (TCU) within ADB's Pacific Department (PAR), a regional program management office (RPMO) to be located in PNG, and national program management units (NPMUs) in each of the five participating countries. A program performance management system will be designed and installed in the ADB-TCU and the NPMUs, which will include the agreed performance indicators, targets, and data and/or information sources, as defined in the design and monitoring framework. An international program coordinator and a program management consultant (firm) will be engaged by ADB to support the countries in program planning, implementation, and liaison with ADB and the CTI regional secretariat.

C. Cost and Financing

12. The TA is estimated to cost the equivalent of \$18,500,000, of which \$1,150,000 will be financed by ADB's Technical Assistance Special Fund (TASF-IV) and \$800,000 will be financed on a grant basis by the Regional Cooperation and Integration Fund¹⁰ under the Regional Cooperation and Financing Partnership Facility. The GEF will provide \$13,100,000 equivalent as a grant¹¹ to be administered by ADB. The Australian Institute of Marine Science will provide about \$450,000 equivalent in-kind contribution on a tied basis, which will not be administered by ADB. The remaining \$3,000,000 will be contributed by the five participating governments¹² through in-kind counterpart support services and related costs. The cost estimates and financing plan are in Appendix 2.

D. Implementation Arrangements

13. **Executing and implementing agencies.** ADB will be the executing agency, through PAR, and will exercise overall responsibility for the coordination, supervision, and implementation of all project activities. The execution of the TA will be the responsibility of the following agencies: (i) Fiji Islands: Department of Environment under the guidance of the Integrated Coastal Management Committee; (ii) PNG: Department of Environment and Conservation; (iii) Solomon Islands: Ministry of Environment and Conservation Management and Ministry of Fisheries and Marine Resources; (iv) Timor-Leste: National Directorate of Fisheries and Aquaculture, Ministry of Agriculture and Fisheries; and (v) Vanuatu: Department of Environment, Ministry of Lands and Natural Resources. The TA will be implemented over a 4-year period commencing on 1 January 2011 and ending on 31 December 2014.

14. **Program management.** A TCU will be set up within PAR and will comprise core professional staff, support staff services, and an international program coordinator who will oversee day-to-day TA implementation on behalf of ADB. The TCU will liaise with other relevant ADB units and/or offices, particularly the South Pacific Subregional Office, Pacific Liaison and Coordination Office, PNG Resident Mission, Special Office in Timor-Leste, and focal points concerned in the Regional and Sustainable Development Department and the Southeast Asia Department.

¹⁰ Established by ADB.

¹¹ Breakdown of GEF financing by country is as follows: Fiji Islands, \$1.1 million; PNG, \$4.0 million; Solomon Islands, \$2.9 million; Timor-Leste, \$2.7 million; and Vanuatu, \$2.4 million.

¹² Governments of Fiji Islands, Papua New Guinea, Solomon Islands, Timor-Leste, and Vanuatu.

15. At the national level, an NPMU will be set up in each implementing agency to oversee and coordinate the implementation of program activities in the field. The NPMUs will be responsible for (i) preparing the work plan, administering the local contracting services, maintaining program accounts for monitoring expenses, and preparing liquidation reports; (ii) setting up a program performance management system for supervising and monitoring the work program for specific components and activities, linking the national coordinating committees to the CTI monitoring and evaluation system at the CTI Secretariat, and preparing local progress and monitoring reports; (iii) coordinating the local activities of the different program implementers; and (iv) liaising with the national coordinating committees and the GEF focal points in the countries.

16. **Regional coordination.** An RPMO will be established within the PNG Department of Environment and Conservation, which is also the designated focal point for coordination of the CTI regional plan of action. Under the leadership of a regional program manager to be fielded by the program management consultant, the RPMO will be primarily responsible for overall supervision of TA activities in the five countries and for coordination between the NPMUs in the countries and the CTI regional secretariat based in Indonesia, as well as between the NPMUs and the TCU based in PARD. The RPMO will also prepare regular progress reports for submission to the CTI coordination committee and the senior officials' meeting, which will provide oversight supervision for the TA.¹³

17. **Consulting services.** The TA will require 91.5 person-months of international and 423 person-months of national consulting services (Appendix 3). ADB will engage an international program coordinator on an individual basis to serve for 42 person-months and coordinate TA activities, including liaison with the CTI Secretariat and other relevant development partners' activities in the CTI region. A program management consultant (firm) will be recruited to supply 91.5 person-months of international and 423 person-months of national consulting services to support in-country program management and implementation in the five Pacific countries. The firm will also be responsible for the management and administration of various training programs, workshops, conferences, and surveys, including subcontracting of various service providers such as training institutions, local nongovernment organizations, and community-based organizations. To ensure that a firm with strong technical skills and proven program management experience is recruited by ADB, it will be selected using quality- and cost-based selection evaluation (90:10) following ADB's Guidelines on the Use of Consultants (2010, as amended from time to time). In addition, the International Union for the Conservation of Nature Oceania, the World Fish Center, and the International Food Policy Research Institute will be engaged on a single source selection basis to conduct special studies, research, and other selected activities related to climate change adaptation, environmental law and learning, and food security issues for an equivalent of 51 person-months of consultant inputs (Appendix 3).¹⁴

IV. THE PRESIDENT'S RECOMMENDATION

18. The President recommends that the Board approve (i) ADB administering a portion of technical assistance not exceeding the equivalent of \$13,100,000 to be financed on a grant basis by the Global Environment Facility, and (ii) ADB providing the balance not exceeding the equivalent of \$1,950,000 on a grant basis, for Strengthening Coastal and Marine Resources Management in the Coral Triangle of the Pacific (Phase 2).

¹³ A detailed description of the TA implementation arrangements, including the project organization structure and funds flow, is in Supplementary Appendix 3.

¹⁴ These are international and/or regional centers of excellence with qualifications, expertise, and experience in the identified fields of study and which have been working on the solution of issues to be addressed by the project. Other organizations with proven and equivalent skills and capabilities are difficult to find—hence, the proposal for single source selection.

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
<p>Impact</p> <p>Coastal and marine resources ensure sustainable food security for the population in the five Pacific countries.</p>	<p>By 2020, from 2010 baseline:</p> <p>10% increase in area of mangrove forests, seagrass beds, and live coral cover</p> <p>10% increase in biomass of coral reef fishes in managed areas</p> <p>10% increase in total supply of fish and other seafood</p>	<p>Coastal and fisheries resource assessment and monitoring data, including GIS maps</p> <p>Government statistics</p> <p>Baseline surveys of beneficiary households conducted by independent contractor</p>	<p>Assumptions</p> <p>Participating governments are fully committed to the CTI and provide the necessary resources to attain its intended impact and outcome.</p> <p>The participating countries continue to collaborate on common environmental concerns.</p> <p>Risk</p> <p>Climate change effects on coastal ecosystems are too severe to prevent, mitigate, or offset.</p>
<p>Outcome</p> <p>Increased resilience of coastal and marine ecosystems is attained in the five Pacific countries.</p>	<p>By 2014:</p> <p>10%–30% of coral reefs, seagrass beds, and mangrove forests designated as managed areas</p> <p>1,000 km of ICRM</p>	<p>CTI NCC documents</p> <p>CTI secretariat reports</p> <p>Coastal maps and GIS data sets in government departments</p> <p>Local government and program records</p> <p>Reports of fish and reef monitoring surveys and/or studies</p> <p>Project monitoring reports</p>	<p>Assumption</p> <p>Current and future threats to resource status are effectively managed through the application of ecosystem-based coastal and marine management.</p> <p>Risk</p> <p>Participating government agencies are not able to secure full community engagement in program implementation.</p>
<p>Outputs</p> <p>1. Capabilities of national and local institutions strengthened in sustainable coastal and marine resources management</p>	<p>Policy, legal, and regulatory framework for institutionalizing effective ICRM and EBFM established by 2013</p> <p>Coastal and marine resource management policy guidelines and legal and regulatory instruments drafted by 2013</p>	<p>Government and NGO records</p> <p>Community records</p> <p>Training reports and evaluation forms</p> <p>Consultant's quarterly progress, midterm, draft final, and final reports</p> <p>ADB mission reports</p>	<p>Assumptions</p> <p>Government and other stakeholders concerned are fully supportive of coastal and marine resource management.</p> <p>National and local policymakers and legislators are fully supportive of ICRM and EBFM.</p> <p>Training courses are effective and enable the trainees to apply skills learned.</p>

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
	<p>Coastal and marine resource management policy guidelines and legal and regulatory instruments approved by national/local government authorities by 2014</p> <p>Organizational reform and retooling of government agencies concerned completed by 2014</p> <p>Skills upgrading for about 1,000 trainees from relevant government agencies and NGOs completed by 2014</p>		
<p>2. Coastal communities experienced in applying best practices in ecosystem-based management and climate change adaptation</p>	<p>By 2013: 3 biodiversity conservation plans for Malaita and Isabel provinces in Solomon Islands and for Kimbe Bay in PNG completed</p> <p>By 2014: 48 community pilot demonstration projects implemented</p>	<p>Local government records and monitoring reports</p> <p>Community records</p> <p>Technical reports</p> <p>Project monitoring reports</p> <p>Consultant's quarterly progress, midterm, draft final, and final reports</p>	<p>Assumptions</p> <p>Current and future threats to resource status are effectively managed through the application of ecosystem-based coastal and marine management.</p> <p>Communities are willing to participate in ecosystem-based management.</p>
<p>3. Resilience of coastal ecosystems to climate change enhanced</p>	<p>By 2014: Habitat maps and climate change vulnerability assessments for 2,200 km of coastline prepared</p> <p>Adaptation measures to increase the resilience of coastal and marine ecosystems demonstrated in 15 communities</p> <p>Climate change adaptation measures integrated in ICRM plans of 2–3 districts</p>	<p>National and local government agency reports</p> <p>Draft and approved government policy guidelines</p> <p>Government legal gazettes</p> <p>Project monitoring reports</p> <p>Consultant's quarterly progress, midterm, draft final, and final reports</p>	<p>Assumption</p> <p>National and local policy makers and legislators are fully supportive of ICRM and EBFM.</p>

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
4. Effective program management established by ADB and the participating governments	<p>Program implementation completed on time and within budget</p> <p>M&E system developed and established in NPMUs and aligned with CTI M&E</p> <p>Project information documents uploaded onto the CTI website</p> <p>Regular coordination meetings conducted with NCCs, CTI secretariat, and other CTI regional projects</p>	Project monitoring reports RPMO and NPMU progress and annual reports	Assumption Participating governments fulfill their commitment to set up and operate NPMUs using their own resources.
Activities with Milestones		Inputs	
1. Capabilities of national and local institutions strengthened for sustainable coastal and marine resources management		ADB: \$1.95 million	
1.1 Conduct institutional assessment of national and local government agencies concerned with mandates in ICRM and EBFM to identify areas for strengthening (completed by month 12)			
1.2 Evaluate the institutional capacity and capability of local NGOs to support government in the management of ICRM and EBFM initiatives (completed by month 12)			
1.3 Review current mechanisms for government-nongovernment agency coordination in ICRM and EBFM (completed by month 12)			
1.4 Review existing policy, legal, and regulatory framework for ICRM and EBFM in the five countries to identify areas for enhancement or strengthening (completed by month 16)			
1.5 Implement organizational restructuring and reform systems in government agencies concerned based on prior needs assessment (completed by month 24)			
1.6 Draft a sustainable financing policy for submission to government decision makers (completed by month 28)			
		GEF \$13.10 million	
1.7 Develop and implement policy reform and legal roadmap for ICRM and EBFM in the five countries (completed by month 36)			
1.8 Draft provincial legal frameworks for ICRM and EBFM for PNG and Solomon Islands (completed by month 36)			
1.9 Provide training and capacity building to environmental law societies in Fiji Islands, Solomon Islands, Timor-Leste, and Vanuatu (completed by month 36)			

Activities with Milestones	Inputs	
1.10 Design, develop, and deliver para-legal training in support of the provincial legal frameworks for PNG and Solomon Islands (completed by month 40)	Workshops, training, seminars, and conferences	2,367.00
1.11 Conduct various short-term courses, overseas study tours, exchange programs, and other capacity-building activities for national and local government staff and NGO personnel (months 19–48)	Surveys and studies	4,629.00
1.12 Develop a CTI Pacific best practices and lessons learned manual (completed by month 45)	Miscellaneous administration and support costs	279.00
2. Coastal communities experienced in applying best practices in ecosystem-based management and climate change adaptation	Contingencies	1,302.00
2.1 Review available data on resource status and ongoing ICRM and EBFM programs and projects in the five Pacific CTI countries (month 12)	AIMS \$450,000	
2.2 Conduct environmental and socioeconomic baseline surveys, connectivity studies, and climate change risk and vulnerability assessment in identified priority seascapes in the Pacific Coral Triangle region (completed by month 24)	Item	Amount (\$'000)
2.3 Conduct remote sensing and ground truthing of marine habitats in about 2,200 km ² of coastal ecosystem (completed by month 24)	Consultants	
2.4 Develop national ICRM planning procedures integrating climate risk assessment and climate adaptation for adoption by all stakeholders concerned (completed by month 24)	-Remuneration and per diem	30.00
2.5 Develop a coastal sector database and management information systems for Vanuatu, Timor-Leste, PNG, and Solomon Islands (completed by month 30)	Workshops, training, seminars, and conferences	40.00
2.6 Prepare biodiversity conservation plans for Malaita and Isobel provinces in the Solomon Islands (completed by month 30)	Surveys and studies	357.00
2.7 Prepare eight ICRM plans for selected demonstration areas in the five countries, covering an area of 280,000 hectares, based on the national ICRM planning guidelines developed earlier (completed by month 36)	Contingencies	23.00
2.8 Prepare national marine conservation plans for Timor-Leste and Vanuatu (completed by month 44)	Government \$3.00 million	
2.9 Prepare marine management plan for the Kimbe Bay marine management area (completed by month 30)	Item	Amount (\$'000)
2.10 Review policy and institutional arrangements for sustainable financing and design and establish pilot sustainable financing programs in PNG, Timor-Leste, and Vanuatu (completed by month 40)	Workshops, training, seminars, and conferences	178.00
2.11 Develop and implement 48 community-level demonstration ICRM projects in five countries (completed by month 44)	Surveys and studies	1,044.00
2.12 Design and implement public awareness programs on ICRM and EBFM at national and local levels in the five countries (completed by month 44)	Miscellaneous administration and support costs	1,460.00
3. Resilience of coastal ecosystems to climate change enhanced	Contingencies	318.00
3.1 Conduct remote sensing and ground truthing of marine habitats in about 2,200 km ² of coastal ecosystem (completed by month 24)		
3.2 Conduct climate change risk and vulnerability assessment in identified seascapes (completed by		

Activities with Milestones	
<p>month 24)</p> <p>3.3 Formulate adaptation measures in collaboration with local and provincial governments (completed by month 30)</p> <p>3.4 Incorporate adaptation measures in local planning and demonstrate those at local scales (completed by month 44)</p> <p>3.5 Document and disseminate lessons learned to provincial and national governments and upload on the IW:LEARN website (completed by month 44)</p> <p>4. Effective project management established by ADB and the participating governments</p> <p>4.1 Set up adequately staffed and equipped TA coordination unit, RPMO, and NPMUs at ADB, PNG, and in the five Pacific CTI countries (completed by month 2)</p> <p>4.2 Procure required goods and services, including consultants and various contractors (completed by month 6)</p> <p>4.3 Develop project performance management system consistent with the CTI M&E framework and train NPMU staff on its use (completed by month 12)</p> <p>4.4 Establish linkages with the CTI Secretariat and other CTI projects in Southeast Asia and the Pacific (completed by month 12)</p> <p>4.5 Conduct baseline survey of beneficiary households (completed by month 12)</p> <p>4.6 Conduct regular M&E of project activities (completed by month 48)</p> <p>4.7 Upload project information and documents on the IW:LEARN website (completed by month 48)</p> <p>4.8 Conduct midterm review of the project (around month 24)</p> <p>4.9 Prepare quarterly progress reports (from months 4 to 48)</p> <p>4.10 Prepare TA completion report (completed by month 48)</p>	

ADB = Asian Development Bank, AIMS = Australian Institute of Marine Science, CTI = Coral Triangle Initiative, EBFM = ecosystem-based fisheries management, GEF = Global Environment Facility, GIS = geographic information system, ICRM = integrated coastal resource management, km = kilometer, km² = square kilometer, M&E = monitoring and evaluation, NCC = national coordinating committee, NGO = nongovernment organization, NPMU = national program management unit, PNG = Papua New Guinea, RPMO = regional program management office, TA = technical assistance. Source: Asian Development Bank.

COST ESTIMATES AND FINANCING PLAN
(\$'000)

Item	ADB- TASF ^a	RCIF ^b	GEF	Total Cost
	Amount	Amount	Amount	
A. Financing				
1. Consultants				
a. Remuneration and per diem				
i. International consultants (184.5 person-months)	492.00	492.00	2,381.00	3,365.00
ii. National consultants (423.0 person-months)	19.50	19.50	1,168.00	1,207.00
b. International and local travel	64.50	64.50	490.00	619.00
c. Reports and communications	9.00	9.00	186.00	204.00
2. Equipment ^c	0.00	0.00	298.00	298.00
3. Workshops, training, seminars, and conferences ^d	153.00	53.00	2,367.00	2,573.00
4. Surveys and studies ^e	214.00	114.00	4,629.00	4,957.00
5. Miscellaneous administration and support costs ^f	135.00	35.00	279.00	449.00
6. Contingencies	63.00	13.00	1,302.00	1,378.00
Subtotal (A)	1,150.00	800.00	13,100.00	15,050.00
B. Australian Institute of Marine Science^g				
1. Consultants				30.00
2. Workshops, training, seminars, and conferences				40.00
3. Surveys and studies				357.00
4. Contingencies				23.00
Subtotal (B)				450.00
C. Government Financing^h				
1. Workshops, training, seminars, and conferences				178.00
2. Surveys and studies				1,044.00
3. Miscellaneous administration and support costs				1,460.00
4. Contingencies				318.00
Subtotal (C)				3,000.00
Total				18,500.00

ADB = Asian Development Bank, GEF = Global Environment Facility, RCIF = Regional Cooperation and Integration Fund under the Regional Cooperation and Integration Financing Partnership Facility.

^a ADB's Technical Assistance Special Fund (TASF-IV).

^b Established by ADB.

^c Includes equipment to be used in the conduct of field surveys (e.g., global positioning system) and pilot demonstration projects (e.g., fish/beche-de-mer processing equipment). These will be turned over to the government agencies concerned at technical assistance completion.

^d Technical assistance funds can be used for staff travel for meetings and conferences as resource persons.

^e Includes support for pilot demonstration projects on ecosystem-based fisheries management and climate change adaptation to be implemented by local communities.

^f Includes support staff costs, communications and transport costs, public awareness campaigns, reports, publications, and knowledge products, among others.

^g To be financed on a tied basis and will not be administered by ADB.

^h Governments of the Fiji Islands, \$700,000; Papua New Guinea, \$1.0 million; Solomon Islands, \$600,000; Timor-Leste, \$300,000; and Vanuatu, \$400,000. All contributions will be in kind.

Source: Asian Development Bank estimates.

OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

A. Introduction

1. This appendix provides a summary of the consulting services required during technical assistance (TA) implementation and the type of technical services and/or specialist inputs to be provided under five contract packages: (i) one international program coordinator to be hired directly by the Asian Development Bank (ADB), international, 42 person-months; (ii) one international program management consultant (firm) to be recruited through quality- and cost-based selection (90:10), 91.5 person-months international and 423.0 person-months national;¹ and (iii) three international organizations: the International Union for the Conservation of Nature (IUCN)-Oceania (20 person-months), the World Fish Center (19 person-months), and the International Food Policy Research Institute (IFPRI) (12 person-months) to be engaged through single source selection.² These consultants will be engaged following ADB's Guidelines on the Use of Consultants (2010, as amended from time to time). The outline terms of reference are given below and the organization of the consulting services and detailed terms of reference are in Supplementary Appendix 4.

B. International Program Coordinator (individual consultant, 42 person-months)

2. An international program coordinator will be engaged directly by ADB to manage the operations of the TA coordination unit at ADB and provide TA and support to the participating countries during TA implementation. He or she will (i) liaise closely with the program management consultant (firm) to ensure that work planning, financial management, and program reporting are consistently applied using an agreed format and agreed timelines; (ii) review work plans and budgets; (iii) review procurement documentation; and (iv) report on program progress to ADB. He or she will also oversee the implementation of the single source selection contract packages (IUCN, World Fish Center, and IFPRI) and the production of their respective deliverables.

C. Program Management Consultant (firm) (international, 91.5 person-months; national, 423.0 person-months)

3. An international consulting firm will be engaged by ADB to serve as the program management consultant with responsibility for the provision of day-to-day technical and administrative support to the national program management units in the participating countries in program implementation, including (i) detailed work planning, (ii) coordinating demonstration implementation, (iii) procurement of goods and services, (iv) financial management, and (v) documentation and reporting. The consulting firm will provide the services of the following consultants: (i) a regional program manager and a deputy program manager and/or principal training coordinator, to be based at the regional program management office in Papua New Guinea, to coordinate program inputs and ensure consolidation of country reports and documents (including country work plans, progress and financial reports, and statement of expenses) and reporting these to the program coordinator; (ii) five country program

¹ Given the need to ensure that a firm with the technical skills and program management experience is recruited by ADB, a heavier weight will be given to the technical merits of the proposals. Hence, the program management consultant will be selected using quality- and cost-based selection evaluation (90:10).

² These are international/regional centers of excellence with qualifications, expertise, and experience in the identified fields of study and which have been working on the solution of issues to be addressed by the project. Other organizations with proven and equivalent skills and capabilities are difficult to find—hence, the proposal for single source selection.

management teams with two staff: a senior financial manager and a procurement and/or contracts manager;³ and (iii) short-term technical specialists, both international and national, who will provide specialized inputs in the conduct of studies and various technical analyses, depending on the specific requirements of the countries (Table A3).

Table A3: Breakdown of Project Management Consulting Services

Consultant	Number of Person-Months		
	International	National	Total
Regional program manager	12.0		
Deputy program manager/principal training coordinator		36.0	
Senior program and finance manager (1 person x 5 countries x 45 months)		225.0	
Procurement manager (1 person x 4 countries x 20 months)		80.0	
Subtotal	12.0	341.0	353.0
Short-Term Technical Specialists			
Papua New Guinea			
Organizational assessment specialist	2.0		
Organizational systems specialist	6.0		
Organizational change mentor		6.0	
Organizational charter expert		3.0	
Organizational strategic planner		14.0	
Policy expert	2.0	2.0	
Legal draftsman		3.0	
Marine management planner		2.0	
Remote sensing specialist	6.5		
Beche-de-mer production specialist	2.0		
Beche-de-mer marketing specialist	2.0		
Sustainable financing specialist	2.0		
Resource economist (sustainable development)		3.0	
Resource economist (livelihood development)		2.0	
Monitoring and evaluation specialist	2.7		
Training and knowledge coordinator		9.0	
Solomon Islands			
Fisheries socio-economist	1.0		
Fisheries lawyer	5.0		
Remote sensing specialist	2.0		
Monitoring and evaluation specialist	1.8		
Training and knowledge coordinator		9.0	
Sustainability indicators specialist		2.0	
Vanuatu			
Integrated coastal resource management specialist	7.0		
Remote sensing/habitat mapping specialist	6.0		
Carbon forestry project development specialist	3.0		
Sustainable financing specialist	1.0		
Monitoring and evaluation specialist	1.5		
Training and knowledge coordinator		9.0	
Timor-Leste			
Corporate systems specialist	10.0		
Change management specialist	10.0		
Legal and policy review specialist	1.0		
Marine biodiversity planner	1.5		
Sustainable financing specialist	1.0		
Monitoring and evaluation specialist	1.5		

³ Except for the Fiji Islands, where one person will handle both finance and procurement matters.

Consultant	Number of Person-Months		
	International	National	Total
Training and knowledge coordinator		9.0	
Fiji Islands			
Monitoring and evaluation specialist	1.0		
Training and knowledge coordinator		9.0	
Subtotal, short-term technical specialists	79.5	82.0	161.5
Total	91.5	423.0	514.5

Source: Asian Development Bank estimates.

D. Law and Learning (IUCN, 20 person-months, single source selection)

4. IUCN (Oceania) will be contracted to support the development of legal capability in the Coral Triangle Initiative (CTI)-Pacific countries as part of the wider IUCN Environmental Law Commission Program. Its scope of work will cover two main parts: strengthening of environmental law and facilitated regional learning. Part A will include (i) building public and private sector environmental law capacity through a regional public sector legal network linked to regional networks and through awareness building and training, and (ii) supporting the strengthening of legal governance through development of Environmental Law associations. Part B will involve the development of a regional learning forum that will compare progress and performance across countries and then synthesize these into best practices. IUCN as chair of the regional environment roundtable will work with each country program to develop an agreed timeline and format for the regional learning program. It will report on the findings of each Roundtable forum on regional learning and how these should be reflected in future work planning. Their report will be submitted to ADB and the national coordinating committees (for CTI countries) and National Advisory Committees (for the non-CTI countries) in a scorecard review format. As best practices are identified, these will be collated into integrated coastal resource management best management practice guidelines for dissemination to interested parties.

E. Climate Change Adaptation (World Fish Center, 19 person-months, single source selection)

5. WorldFish will provide the services of a team of consultants comprising a policy adviser, climate risk specialist, coastal resources specialist, resource economist, social development specialist, and communications specialist to develop knowledge products on climate change and transfer the knowledge and skills to national counterparts. The products to be developed by the team will include (i) guidelines and training materials for the development of future climate scenarios using integrated risk characterization; (ii) guidelines and training materials for multi-scale vulnerability assessment; and (iii) procedures for climate change adaptation including policy, planning, and implementation. All knowledge products will be institutionalized into the integrated coastal resource management and ecosystem-based fisheries management implementation programs with technical and training support provided by WorldFish.

F. Climate Change, Development Strategy, and the Coral Triangle Initiative-Pacific Coastal Communities (IFPRI, 12 person-months, single source selection)

6. The IFPRI will carry out a study on the economic impacts of climate change on coastal and marine resources and use the results of the economic analysis to prepare a development strategy for coastal communities in the CTI-Pacific countries. The study will (i) review the relationship among population, food security, and natural resource use; (ii) include modeling of

scenarios of population growth, climate change, and their impact on food security and coastal and marine resources; (iii) assess current economic development plans to ascertain benefits to coastal communities; (iv) evaluate the economic benefits of climate proofing for prototype projects; and (v) formulate strategies for improving food security for coastal communities over the medium to long term. The study will be conducted by a team of specialists in climate change, resource economics, food security, and development strategy formulation.