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PROJECT PAPER

FOR

SMALL RETF GLOBAL ENVIRONMENT FACILITY GRANT

(US\$ 4.5 MILLION EQUIVALENT)

TO THE UNIVERSITY OF QUEENSLAND

(RECIPIENT)

FOR A REGIONAL

CAPTURING CORAL REEF & RELATED ECOSYSTEM SERVICES PROJECT (P123933)

August 7, 2013

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## CURRENCY EQUIVALENTS

(Exchange Rate Effective {Date 2013})

Currency Unit = Indonesian Rupiah

IDR 1.00 = US\$ 0.00010

US\$1.00 = 9,615.38 IDR

## FISCAL YEAR

January 1 – December 31

## ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
AIGA	Alternative income-generating activity
AusAID	Australian Agency for International Development
BAPPEDA	Badan Perencanaan Pembangunan Daerah (Provincial/District Planning Agency)
BAPPENAS	Badan Perencanaan Pembangunan Nasional (National Development Planning Agency)
BME	Benefit monitoring and evaluation
CAS	Country Assistance Strategy
CBM	Community-based management
CBO	Community-based organization
CCRES	Capturing Coral Reef & Related Ecosystem Services Project
CCU	Country Coordinating Unit
CDD	Community Driven Development
COREMAP	Coral Reef Rehabilitation and Management Program
CRMP	Coral reef management plan
CRTR	Coral Reef Targeted Research & Capacity Building for Management Project
DEPDAGRI	Ministry of Home Affairs
DKP	Ministry of Marine Affairs and Fisheries
EAP	East Asia Pacific
ES	Ecosystem services
GCI	Global Change Institute (University of Queensland)
GEF	Global Environment Facility
IDA	International Development Association
LIPI	Indonesian Institute of Sciences
MCS	Monitoring, control, and surveillance
MMA	Marine management area
MMAF	Ministry of Marine Affairs and Fisheries

M&E	Monitoring and evaluation
MOF	Ministry of Finance
MSP	Marine Spatial Planning
NGO	Non-government organization
NSC	National steering committee
PDO	Project Development Objective
PEA	Project Executing Agency
PEMSEA	Partnership for Environmental Management of the Seas of East Asia
PES	Payment for ecosystem services
PIC	Pacific Island Countries
PNG	Papua New Guinea
PNPM	National Program for Community Empowerment, Indonesia
PPCR	Pilot Program on Climate Resilience
PRPD	Philippines Rural Development Project
PSC	Provincial steering committee
REDD+	Reducing emissions from deforestation and forest degradation
SEEA	System of Economic and Environmental Accounts
SIDS	Small Island Developing States
SLR	Sea level rise
TA	Technical assistance
UNHAS	Hassanuddin University, Indonesia
UQ	The University of Queensland, Australia
WAVES	Wealth Accounting and Valuation of Ecosystem Services
WB	World Bank

Regional Vice President:	Axel van Trotsenberg
Sector Director:	John A. Roome
Sector Manager:	Iain Shuker
Task Team Leader:	Marea E. Hatzios

**COUNTRY**  
**Project Name**

**TABLE OF CONTENTS**

	<b>Page</b>
<b>I. STRATEGIC CONTEXT .....</b>	<b>9</b>
• Country Context.....	9
• Sectoral and Institutional Context.....	10
• Higher Level Objectives to which the Project Contributes .....	12
<b>II. PROJECT DEVELOPMENT OBJECTIVES .....</b>	<b>12</b>
• PDO.....	12
• Project Beneficiaries .....	12
• PDO Level Results Indicators.....	14
<b>III. PROJECT DESCRIPTION .....</b>	<b>14</b>
Project Components .....	16
• Project Financing .....	19
Project Cost and Financing .....	19
• Lessons Learned and Reflected in the Project Design.....	20
<b>IV. IMPLEMENTATION .....</b>	<b>22</b>
• Institutional and Implementation Arrangements (refer Annex 3).....	22
• Results Monitoring and Evaluation .....	24
• Sustainability.....	25
<b>V. KEY RISKS AND MITIGATION MEASURES .....</b>	<b>25</b>
<b>VI. APPRAISAL SUMMARY .....</b>	<b>26</b>
• Safeguards Policies .....	26
• Procurement and Financial Management.....	28
<b>Annex 2: Detailed Project Description.....</b>	<b>33</b>
<b>Annex 3: Implementation Arrangements .....</b>	<b>40</b>
Implementation of Activities within Countries.....	41

# DATA SHEET

*Regional*

Capturing Coral Reef & Related Ecosystem Services Project

## Small RETF Grant Project Paper

*East Asia/Pacific*

*EASER*

Basic Information			
Date:	22 November 2012	Sectors:	Agriculture and Fisheries
Country Director:		Themes:	Environment, Natural Resources, Biodiversity
Sector Director:	John Roome, EASSD	EA Category:	C
Project ID:	P123933		
Instrument:	Sector Investment Project		
Team Leader(s):	Marea Hatzios		
Recipient The University of Queensland			
Executing Agency: Global Change Institute, The University of Queensland			
Contact:	Melanie King	Title:	Deputy Director, Global Change Institute
Telephone No.:	+61 (7) 3346 9942	Email:	m.king4@uq.edu.au
Project Implementation Period:	Start Date: 10-01-13	End Date:	08-31-18
Expected Effectiveness Date:	09-30-13		
Expected Closing Date:	12-31-18		
Project Financing Data(US\$4.5M)			
<input type="checkbox"/> Loan	<input checked="" type="checkbox"/> Grant	<input type="checkbox"/> Other	
<input type="checkbox"/> Credit	<input type="checkbox"/> Guarantee		
<b>For Loans/Credits/Others</b>			
Total Project Cost:	\$6.5 million	Total Bank Financing :	\$4.5 million
Total Co-financing :	\$2.0 million	Financing Gap :	0
Financing Source		Amount (US\$M)	
BORROWER/RECIPIENT University of Queensland		\$2.0	
IBRD: (WB Parallel Financing from Investment Projects in Indonesia and the Philippines)		(\$ 21.9)	
IDA:			
Others: GEF		\$4.5	
Parallel Financing*: Research Institutions & Organizations		(\$3.9)	
Financing Gap		\$0.0	

Total Direct Finance *Outside direct Project Management and below the line	\$6.5
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### Expected Disbursements (in USD Million)

Fiscal Year	2014	2015	2016	2017	2018				
Annual	700,000	1,000,000	1,000,000	1,000,000	800,000				
Cumulative	700,000	1,700,000	2,700,000	3,700,000	4,500,000				

### Project Development Objective(s)

*The Project Development Objective is to design and support the uptake of innovative models for valuing mangrove, seagrass and coral reef ecosystem services with the potential to enhance the sustainability of marine-based enterprise and marine spatial planning in select coastal communities in Indonesia and the Philippines.*

### Components

Component Name	Cost (USD Millions)
Quantifying the value and market potential of coral reef and mangrove ecosystem services	1.6
Forging community-led innovation in capturing and sustaining benefits from marine ecosystem services and enhancing resilience in the face of climate change	1.7
Promoting behavioral change through outreach, decision support and regional learning from results of field sites	0.8
Project coordination and management	0.4

### Compliance

#### Policy

Does the project depart from the CAS in content or in other significant respects?	Yes [ ]	No [X]
Does the project require any exceptions from Bank policies?	Yes [ ]	No [X]
Have these been approved by Bank management?	Yes [ ]	No [ ]
Is approval for any policy exception sought from the Board?	Yes [ ]	No [X]
Does the project meet the Regional criteria for readiness for implementation?	Yes [X]	No [ ]

#### Safeguard Policies Triggered by the Project

	Yes	No
Environmental Assessment OP/BP 4.01	X	
Natural Habitats OP/BP 4.04	X	
Forests OP/BP 4.36		X
Pest Management OP 4.09		X
Physical Cultural Resources OP/BP 4.11		X
Indigenous Peoples OP/BP 4.10	X	
Involuntary Resettlement OP/BP 4.12	X	
Safety of Dams OP/BP 4.37		X

Projects on International Waters OP/BP 7.50		X
Projects in Disputed Areas OP/BP 7.60		X

**Legal Covenants**

Name	Recurrent	Due Date	Frequency
Not Applicable			

**Description of Covenant**

**Team Composition**

**Bank Staff**

Name	Title	Specialization	Unit	UPI
Marea Eleni Hatzios	Senior Coastal and Marine Specialist	Team Lead	EASER	88693
Harideep Singh	Senior Rural Development Specialist	Senior Rural Development Specialist	EASER	21538
Nina Queen Irving	Senior Program Assistant	Senior Program Assistant	EASER	75930
Minne Kane	Lead Legal Counsel	GA/Negotiations	LEGES	08137
Seble Berhanu	Legal Analyst	Legal Analyst	LEGES	202926
Noel Sta. Ines	Senior Procurement Specialist	Senior Procurement Specialist	EASR1	160430
Stephen Paul Hartung	Financial Management Specialist	Financial Management Specialist	EASFM	332812
Juan Martinez	Sr Social Development Specialist	Safeguards	EASIS	

**Non Bank Staff**

Name	Title	Office Phone	City
Melanie King	Deputy Director, GCI	+61 7 3346 9942	Brisbane, Australia

<b>Locations</b>					
<b>Country</b>	<b>First Administrative Division</b>	<b>Potential Pilot Sites</b>	<b>Planned</b>	<b>Actual</b>	<b>Comments</b>
Philippines		Potential sites: Batangas Palawan Central Visayas (Bohol or Negros) Northern Luzon			Batangas and Palawan have the highest probability of inclusion. Site selection will be undertaken in a phased approach and not all sites will be finalized until the end of Year One. CCRES sites will be chosen, and studies carried out to look at scalability of modeling and results.
Indonesia		Potential sites: Biak Raja Ampat Selayar Wakatobi			Site selection will be undertaken in a phased approach and finalized by the end of Year One. CCRES sites will be chosen, and studies carried out to look at scalability of modeling and results.

## I. STRATEGIC CONTEXT

### • Country Context

1. The East Asia-Pacific Region has experienced unprecedented economic growth over the last decade. Despite the global economic slowdown, the region still contributes 30% of global GDP growth, with developing countries' share (excluding China's) increasing in tandem with the newly industrialized economies. The Indo-Pacific and West-Central Pacific region also support large coastal populations where half or more of a nation's population may live within 100 miles of the coast. Of the world's 27 megacities (with populations of over 10 million), 15 are in East Asia. Twelve of these are coastal. Nearly 1 billion people in the region live in low-lying coastal areas exposed to sea level rise and the associated impacts of climate change, such as more frequent and intense cyclones, salt water intrusion and coastal erosion.

2. The Region also supports tremendous marine biodiversity—the world's biodiversity epicenter lies within the Coral Triangle (an area extending from the northern Philippines to Malaysia in the west, East Timor to the South, Eastern Indonesia and PNG to the East, and trailing off to the Solomon Islands toward the Southeast). Here coral reefs are most abundant and diverse and support large populations of poor people with a high dependency on coral reef fisheries for livelihoods and food security. In the Western and Central Pacific, healthy coral reefs and mangroves form the first line of defense against storm surge and sea level rise for low lying islands and atolls. Beyond coastal protection, the rich biodiversity that coral reefs harbor (25% of marine biodiversity is thought to reside in < 0.1% of ocean surface area occupied by coral reefs) also supports world-class dive and beach tourism. Beyond their role in absorbing storm surge, mangroves and seagrass beds also store significant amounts of carbon, stripping CO<sub>2</sub> from the atmosphere and sequestering in their living tissue and the extensive underwater root system and organic soil matrix that may reach several meters in depth. This Blue Carbon represents an undervalued asset that exceeds carbon sequestration rates in terrestrial tropical forests. There is also evidence that coral reefs in the Pacific may serve as foraging areas for some tuna stocks, which frequent outer reef areas of atolls in search of prey at the edge of deep water, pelagic environments. Tuna stocks are a major source of wealth in Pacific Island Countries, although this wealth is not necessarily evenly distributed.

3. While poverty reduction gains continue in the region, more than 450 million people in East Asia-Pacific still live on less than \$2/day. A disproportionate number of these poor are fishers, whose livelihood options are limited and who compete for fewer and fewer fish in open access, and coral reef-based fisheries in a race to the bottom. Women represent nearly half the labor force in fisheries-related production in the region. These regional concerns are especially relevant to the archipelagic countries of Indonesia and the Philippines, with a very high dependency on coastal resources for livelihoods and local economies.

4. Indonesia is a global biodiversity hotspot, harboring among the world's most diverse and extensive rainforest and coral reef ecosystems. But this diversity is under continuous threat. Indonesia's natural capital, which is estimated to be a quarter of its national wealth, is being rapidly depleted. Coastal/marine degradation is a major environmental issue in Indonesia. To address this concern, Indonesia has emerged as a leader in the region in the development of the Coral Triangle Initiative (CTI), building on a 15-year program of community-based

rehabilitation and management of Indonesia's coral reefs (COREMAP). The third and final phase of the WB/GEF Adjustable Program Loan is now under preparation and will support implementation of the CTI's twin goals of food security and marine biodiversity conservation, while investing in the creation of alternative livelihoods that depend on healthy coral reefs.

5. In the Philippines, the loss of natural resources, including loss of critical coastal habitats like mangroves (to aquaculture) and coral reefs (to overfishing and destructive fishing), and decline in fisheries productivity due to overfishing, weak governance and dissipation of natural resource rents, is recognized as a constraint to sustained growth and poverty reduction. A major development challenge is to achieve more sustained and inclusive growth.

6. The Government of the Philippines has joined the Bank's partnership with WAVES (Wealth Accounting and Valuation of Ecosystem Services [www.worldbank.org/programs/waves](http://www.worldbank.org/programs/waves)). Under the WAVES initiative, the Philippines is one of several pilot countries that will include natural capital accounting, using the new UN System of Economic and Environmental Accounts standard (SEEA) to inform economic, environmental and natural resources management decisions, and will pilot new methods to measure and account for ecosystem services (including coral reefs), which are not currently part of SEEA. Furthermore, the Government of the Philippines and the World Bank are partnering on the Philippines Rural Development Project (PRDP, which aims to promote inclusive growth in rural areas by increasing rural incomes and enhancing farm and fishery productivity in targeted program areas. Through the promotion of more inclusive rural development by supporting smallholders and fisher-folk, the project aims to increase their marketable surpluses, and improving access to markets.

7. The Pacific Islands Ocean Region covers some 40 million square kilometers of the earth's surface, and is home to a wealth of ocean resources and biological diversity whose use is essential to the economies and development of Pacific Island Countries (PICs). There are enormous challenges confronting the region's ocean resources and the benefits they provide, including overexploitation of fisheries, destruction of natural habitats, and pollution. The Bank has been assisting countries in the region to access adaptation funds from the donor community to build resilience to climate change in coupled human and natural ecosystems. In addition to supporting implementation of coastal infrastructure management and Ecosystem-Based Adaptation under the Pacific Islands Pilot Program on Climate Resilience, the Bank has financed the planting of 37,000 mangroves in Kiribati to reduce climate vulnerability. With the launch of the new Global Partnership for Oceans in Rio last June, the Bank is now in the process of preparing an IDA-financed Pacific Islands Regional Oceanscape Program to help PICs capture more of the benefits that ocean ecosystem services provide. These include highly productive tuna stocks and other marine fisheries, marine tourism based on outstanding biological and cultural assets, and the natural coastal defense that healthy coral reefs and mangroves provide.

- **Sectoral and Institutional Context**

8. Coastal and Marine Resources, and their associated ecosystem services in the region are linked to globally important Marine Biodiversity, and underpin a huge part of the regional economy. Although this wealth of natural capital has the potential to be a major driver of inclusive green growth in East Asia and the Pacific, huge challenges will need to be overcome.

These include resource governance regimes which allow open access and short term development planning, failure to account for environmental externalities and impacts on future generations when calculating economic benefits, inadequate scientific information to inform decisions on tradeoffs—including how natural and social systems can interact to build resilience or undermine it--and the relationship between ecosystems services, food security and livelihoods in poverty alleviation strategies. Coral reefs and associated near-shore ecosystems (e.g., mangroves and seagrass beds) reach the height of their expression in an area called the Coral Triangle (which includes parts of Malaysia, Eastern Indonesia, the Philippines, East Timor, Papua New Guinea and the Solomon Islands), These icons of marine biodiversity and ecosystem productivity are under severe threat from overexploitation and destructive use. Despite their unequivocal importance to human well-being and economic activity, the services provided by these ecosystems are routinely taken for granted by communities, industry and policy makers alike. That the natural capital these ecosystems represent is not considered in the same light as other economic resources, contributes to their ongoing demise and encourages ad hoc decision making that would not be acceptable in the management of other capital resources.

9. Capturing the economic and cultural values of marine natural capital through valuation of Ecosystem Services, and quantifying the cost of lost services due to environmental degradation, has the potential to transform the development and stewardship of coastal areas by translating ecological value into intuitive and financial terms for local stakeholders as well as policy makers. This knowledge can be harnessed by decision support tools which can help to build the political rationale for change. Together with marketable goods and provisioning services, marine and coastal ecosystems also provide a range of non-market goods and services such as regulating global carbon and nitrogen cycles and protecting shorelines. Local and global drivers of change influence each of these services and it is imperative that management and policy be suitably informed to ensure the continued supply of the ecosystem services on which human well-being and prosperity depend.

10. As coastal development in the region is driving conversion of natural habitats, exposing large areas of marine space to climate related impacts, and outpacing the provision of key public sector services, Marine Spatial Planning (MSP) is being used increasingly by Local Government to rationalize the use of marine and coastal space within their jurisdiction, If properly designed in consultation with local stakeholders, MSP can serve as an integrative tool to help strengthen resource management and biodiversity conservation by identifying the best locations for economic development compatible with conservation and sustainable use, enhance resilience to climate change impacts, and resolve user conflicts among competing economic sectors. . Similarly, within Marine Protected Areas, the majority of which are designated for multiple use, with only a small core area demarcated as “No Take”, zoning of the surrounding space for compatible, sustainable use and developing the criteria for effective management remains a challenge without adequate scientific information. The CCRES project can help fill this information gap by mapping and assessing the value of coastal natural capital (e.g., coral reefs, mangroves, seagrass beds) in terms of the flow of key ecosystem services to surrounding communities. Identifying ways to enhance ES flows and to better capture the value from these services as inputs to sustainable economic development, climate resilience and the delivery of other social and environmental benefits, are important objectives to which CCRES will contribute.

- **Higher Level Objectives to which the Project Contributes**

11. The CPSEs of Indonesia and the Philippines focus on poverty reduction through Community Driven Development (CDD), employment opportunities through private sector led growth (small and medium enterprise in rural areas) and equality of growth, and effective natural resources management through better governance. In Indonesia, with Green PNPM - National Program for Community Empowerment - (focusing on payment for ecosystem services as the basis for community cash transfers) and COREMAP-CTI under development, the CCRES Project has a unique opportunity to align with, and add value and targeted technical assistance to these Bank operations. Similar opportunities exist to influence CDD projects in the Philippines, including the Philippines Rural Development Project, targeting coastal municipalities vulnerable to climate change and overfishing. In the Pacific, the Bank's engagement strategy emphasizes expanding regional partnerships and South-South Learning, introducing innovation through new knowledge products and financing mechanisms, and building resilience to climate change. The CCRES Project is highly consistent with these CPS priorities.

## II. PROJECT DEVELOPMENT OBJECTIVES

- **PDO**

12. *The Project Development Objective is to design and support the uptake of innovative models for valuing mangrove, seagrass and coral reef ecosystem services with the potential to enhance the sustainability of marine-based enterprise and marine spatial planning in select coastal communities in Indonesia and the Philippines.* CCRES will finance ecological and economic valuation studies, develop innovative tools and models to support decision-making and new opportunities for "eco-business" development, and communicate results through knowledge management to promote uptake. This will be achieved through CCRES's three integrated components: (i) Quantifying the value and market potential of coral reef and mangrove ecosystem services; (ii) Forging community-led innovation in capturing and sustaining benefits from marine ecosystem services and enhancing resilience in the face of climate change, and (iii) Promoting behavioural change through outreach, decision support and regional learning from results in selected field sites.

- **Project Beneficiaries**

13. It is envisaged that while the CCRES Project will be working primarily at the local level with district government and local communities, all information and resources will be made available through the Project's stakeholder networks for dissemination and uptake into other regional, national and local level beneficiaries. The Project has therefore identified two levels of beneficiaries or stakeholders and the level of engagement will be dependent upon whether the Project will be working with them directly in the field, or whether they are part of the broader communication and engagement community.

12. The main project beneficiaries at provincial, district or local levels of government (as appropriate within each country), and local businesses and communities at the field sites, will benefit from the Project's use of information, innovative decision support tools modeling and other communication tools to demonstrate the differences in resource benefit flows from alternative uses of coastal habitats which result in the capture or loss of ecosystems services and economic value of these gains or losses. The project will apply this information to improve current business practices and the potential to create new businesses around well managed flows of ecosystem services linked to new markets or "eco-business".

14. The primary beneficiaries of CCRES results (e.g., valuation studies, marine spatial plans, eco-business modeling) will be those stakeholders the Project seeks to directly engage with in working together to practically apply the findings in the field, and to ensure the uptake of the results into Government plans, business practices or community awareness of the links between ecosystem health and sustainable resource use. This tier of beneficiaries includes:

- Provincial, District and Local level government agencies and decision-makers (e.g. land use planners, MPA managers, fisheries and tourism officials) within Indonesia and the Philippines encompassing the field sites.
- Local businesses and communities at the field sites with whom the component teams will be working to apply the Project's findings, and who would directly benefit from the application of the results and application.

15. The secondary stakeholders or beneficiaries will be those individuals, organizations and project managers of regional projects who will receive the Project results through mechanisms outlined in the broader communication and engagement strategy. This tier of beneficiaries includes:

- Following the additional stakeholder analysis under Component III, a sub-set of MPA managers, coastal resource managers and policy officers from government agencies, as well as key NGOs within the target countries will be identified. The information they receive from the CCRES Project will assist them in strengthening their strategies and practices, as well as making a clearer case for aligning conservation with sustainable use of marine ecosystems.
- GEF and World Bank projects including COREMAP-CTI, Philippines Rural Development Project, Vietnam Coastal Resources for Sustainable Development Project, the Pilot Program on Climate Resilience (PPCR) in the Western Pacific, and the Pacific Regional Oceanscape Program (PROP), a regional IDA APL under preparation. These projects will also be recipients of the knowledge products offered by CCRES.
- Other programs to be coordinated include Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), Wealth Accounting and Valuation of Ecosystem Services Project (WAVES), GEF International Waters Focal Area, IW: Learn, and Global Partnership for Oceans.
- International community of coral reef, mangrove and seagrass researchers and practitioners, climate scientists and environmental engineers, natural resource economists, behavioural economists, governance experts and modelers.

16. Managers and policy makers from the public sector, NGOs and CBOs will also benefit from the information as the information and knowledge from the CCRES Project will assist them in strengthening strategies and practices, as well as making a clearer case for aligning conservation with sustainable use of marine ecosystems.

- **PDO Level Results Indicators**

17. The Project results indicators reflect the expected outcomes under the three Project components: (i) quantifying the value and market potential of ecosystem services; (ii) forging community-led innovation in capturing and sustaining benefits from marine ecosystem services; (iii) promoting behavioural change through outreach, decision support and regional learning from results of selected field sites. Project outcome and intermediate level indicators are described in the Results Framework (Annex 1).

18. The Key PDO level results indicators for each theme are as follows:

- Innovative models developed at two or more sites by the project, demonstrating explicit links between ecosystem health, the value of ecosystem services, and their distribution among stakeholders. The focus will be on the number of novel methodologies developed for valuing ecosystem services which are implemented into management plans at selected field sites and in project designs for national and regional projects e.g., WAVES, COREMAP-CTI etc. This will be measured through surveying the project sites adopting the models and relate to **Component 1: Quantifying the value and market potential of ecosystem services.**
- New or improved business models directly or indirectly linked to coastal and marine zone ecosystem services developed in at least two sites. The unit of measure will be the number of sites with business models developed and will be measured through surveys of eco-business stakeholders. This indicator will relate to **Component 2: Forging community-led innovation in capturing and sustaining benefits from marine ecosystem services.**
- Project-developed models and knowledge products informing the design of regional and national projects, development plans or policies and community based coastal resources management plans are available. This result will relate to **Component 3: Promoting behavioural change through outreach, decision support and regional learning from results of selected field sites.**

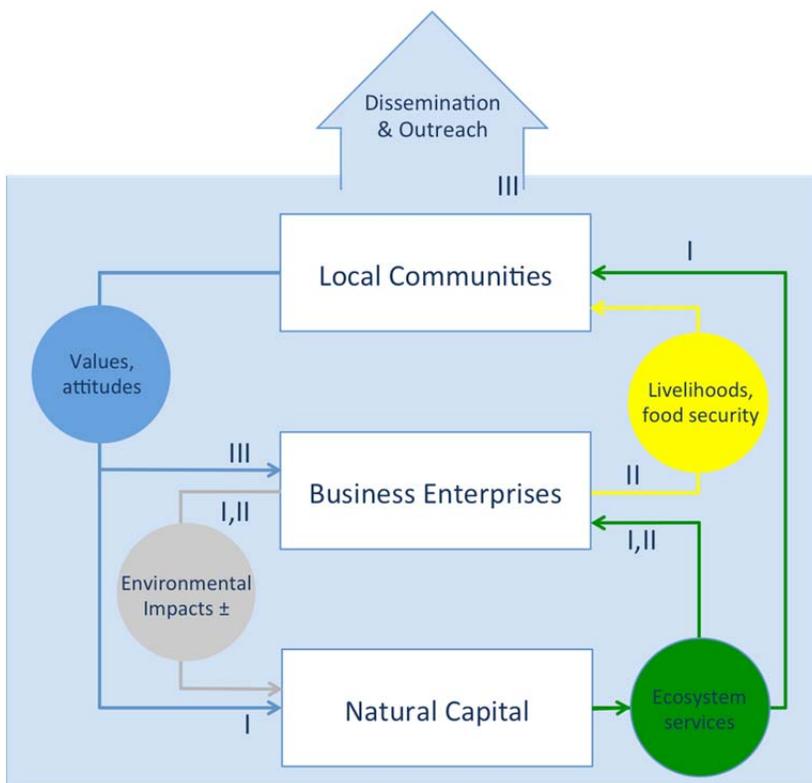
### III. PROJECT DESCRIPTION

19. The Project seeks to make explicit the value of “blue” natural capital and ecosystem services to coastal communities and other stakeholders in the management of a country’s natural assets for sustainable development. Through ecosystem services valuation the Project will demonstrate the fundamental relationships between the ecological value of intact coral reef,

seagrass and mangrove ecosystems and the economic value and market potential of their ecosystem services, how these are tied to healthy, resilient systems and the routine distribution of economic benefits that can bring transformational change in sustaining the welfare of coastal communities. By making the connections to values and benefits explicit, CCRES will demonstrate the fundamental links between—and the need to maintain and conserve—the elements of biological community structure and function with the economic benefits derived from the ecosystem services.

20. The Project will forge community-led innovations in capturing and sustaining these benefits by generating model frameworks for eco-business development (or by strengthening the value chains of existing eco-businesses) to better highlight and harvest the values accruing from the ecosystems on which their business success depends. CCRES will also promote the application and uptake of these model approaches in local planning frameworks.

21. CCRES will focus on countries and sites in the Coral Triangle (Indonesia and the Philippines, where coral reef and related ecosystem services are critical to livelihoods, food security and climate resilience. The Project will support selected sites on the ground in Indonesia and the Philippines to demonstrate key elements of the PDO, with links to COREMAP-CTI in Indonesia and the Philippines Rural Development Project (See Box 1 for illustrative activities in Pilots). To the extent possible and where there is demand, the Project Executing Agency (the Global Change Institute of the University of Queensland) will seek collaborative partnerships in parallel with CCRES to expand activities into the Western Pacific where CCRES could add value to ongoing work by other organizations, particularly in the area of coral reef ecosystem services and climate resilience.



**Figure 1:** Conceptual model of the links between coastal ecosystems, businesses and communities. CCRES will show how ecosystems and ‘eco-businesses’ can positively influence each other, providing sustainable benefits for local communities and demonstrating the economic importance of ecosystem health. The three CCRES Components will connect with the system where indicated by the numerals I, II or III.

## **Project Components**

### **Component I: Quantifying the value and market potential of coral reef and mangrove ecosystem services (GEF US\$1.6 M; Co-Financing US\$0.8 M) (see Annex 2 for a detailed description of Component I)**

22. Translating ecological value into meaningful terms for local stakeholders as well as policy makers, Component I of CCRES aims to demonstrate how ecosystem services can be accurately valued and systematically managed to deliver pro-poor, pro-environment outcomes, and to help build the political rationale for change.

23. Working at a number of field sites in Indonesia and the Philippines, Component I will first quantify the value of key coral, mangrove and seagrass ecosystem services as a function of system state. Services include reef fisheries, ornamental species (i.e. the aquarium trade), island stability, prestige diving tourism, blue carbon, and cultural benefits. By making the links between ecosystem state and ecosystem services explicit, stakeholders will gain greater insight into how reef health affects them.

24. Visualizing these consequences is an important step in building greater constituency for reef stewardship and management. Further, by estimating the real costs of allowing reef ecosystems to degrade, a compelling case can be made at a governmental level on the threats to food security and community welfare, and the need to mitigate costs through improved management.

25. The Component will also help operationalize the use of ecosystem services for marine spatial planning. Innovative tools for marine reserve design and modeling flows of services will be tailored to the specific needs of people and eco-businesses in tropical coastal areas. Tools will be developed and customized to allow stakeholders to visualize the production and flows of ecosystem services and therefore evaluate the consequences of different scenarios for development and management. Examples of questions that local stakeholders will be able to later answer based on these tools will include: How should eco-businesses be distributed to maximize potential synergies while ensuring that ecosystem function is maintained at sufficiently high levels to sustain enterprise? Which coastal areas are best set aside for conservation purposes? Where might marine reserves have the greatest benefit to fisheries? Who would benefit from an improvement in watershed management?

### **Component II: Forging community-led innovation in capturing and sustaining benefits from marine ecosystem services and enhancing resilience in the face of climate change (GEF US \$1.7 M; Co-Financing US\$0.6 M) (see Annex 2 for a detailed description of Component II)**

26. Through the development of sustainable alternative enterprises and new income generating opportunities, communities can be empowered to move away from unsustainable coastal resource use practices and towards activities that support improved ecosystem health, increased production outcomes, and greater resilience achieved through livelihood diversification.

27. Component II will draw on the results of Component I to propose and develop customized business models that, once implemented, can support the health of marine and coastal ecosystem services. Component II will examine how investment in marine and coastal ecosystem services and the strengthening of community livelihoods and resilience to climate variability might be operationalized in proposed eco-business models that can feed into alternative livelihoods options.

28. Bringing ‘whole of system’ thinking to the way coastal communities develop businesses linked to ecosystem services, the work will demonstrate how community-led innovation can generate sustainable alternative livelihoods that satisfy the *triple bottom line* of social, environmental and financial performance.

29. Component II will develop a sequential, structured process aimed at proposing eco-business models that can empower and enable communities to transform their local economies to more sustainable ‘blue’ economies”. These economies should build on the natural capital concept, whereby natural capital assets such as mangroves, reefs and seagrass meadows are explicitly managed to sustain flows of ecosystem services. To achieve this objective and working closely with local communities and integrating with Components I and III at key points, Component II will scope the local and external business environments, identify and assess the individual and interactive performance of potential eco-business models that are able to support and enhance ecosystem service values. These then can feed into projects in the region, such as COREMAP-CTI and the Philippines Rural Development Project which are promoting alternative livelihood options for impoverished fishing communities, whose coral reef fisheries are heavily overfished.

**Component III: Promoting behavioral change through outreach, decision support and regional learning from the results at field sites (GEF US \$0.8 M; Co-Financing US\$0.6 M) (see Annex 2 for a detailed description of Component III)**

30. Component III will work with a number of key stakeholders on the ground to share the project products and findings and help channel these into appropriate policy and management outlets. Component III will focus on the effective uptake of knowledge generated from Components I and II, with the key objectives to include: (i) the effective interpretation of the Project results into appropriate formats for the various stakeholder audiences, (ii) ensuring the Project results are incorporated into current GEF and World Bank regional projects and future project design frameworks.

31. Component III will develop a series of strategies and activities designed to: facilitate the uptake of the valuation and eco-enterprise models into policy, management and future project

design, and; increase the awareness and understanding of communities at the field sites of the linkages between the services the coastal and marine ecosystems provide and their livelihoods and health. This will be undertaken through reciprocal engagement with stakeholders, placing strong emphasis on local partnerships, local leadership, and culturally responsive approaches to gathering information about the desires, attitudes, and current behaviours of individuals in demonstration sites. In this context, Component 3 will develop communication tools and social marketing messages to sensitize communities to the issues, inform local government about tradeoffs involved in different decisions regarding the use of marine space and natural capital, and help communities visualize the future under different climate scenarios and management regimes in which ecosystems services are sustained or lost.

**Component IV: Project Coordination and Management: (GEF US \$0.4 M)**

32. This component involves the overall coordination and management of Project implementation. A dedicated Project Coordination Unit will be established in the Global Change Institute at the University of Queensland, which will serve as the Project Executing Agency (PEA). The PEA will oversee project implementation, Monitoring and Evaluation, outreach and communication activities, and future planning (including development activities to identify future co-financing and new partnerships).

**Box 1: CCRES Pilot: What’s involved?**

**Step 1: Scoping**

- Using established in-country networks, CCRES teams will undertake a process of on-the-ground scoping, determining where and with whom the project can best engage in the form of field sites, and building new networks in the process.
- At each identified field site, existing information will be collated on resource condition trends, business activities, population statistics, etc. and knowledge gaps will be identified.
- Pertinent logistics (e.g., access to markets) and national policy will be assessed for opportunities and constraints.

**Step 2: Engagement**

- Networks of influence will be characterized to determine the individuals and channels through which ‘change’ happens.
- Protocols will be developed to value coral reef and related ecosystem services, and to understand how the flow of benefits to various community groups is affected by governance structures. Ecosystem services will be inventoried and stocks and flows will be provisionally mapped, feeding into:
- Social-ecological systems maps will be developed, detailing interactions between

ecosystems services and people, and will be used to construct simulation models that can identify feedback loops, thresholds and flash points.

### **Step 3: Delivery**

- Models of ecosystem functions and services will be developed that can be used to inform innovative, comprehensive decision support systems for marine reserve design which help optimize management objectives.
- Planning frameworks will be developed that incorporate models of ecosystem functions and services and decision support systems developed to respond to stakeholder demand (e.g., local government, communities).
- Explicit values will be provided for a suite of coastal ecosystem services, ready to feed into systems of national wealth accounting (e.g., WAVES).
- Ecosystem services will be used as a basis for nurturing profitable, community-based businesses that will offer products and services that present consumers with a clear value proposition while contributing to, and benefiting, from coastal zone ecosystem health.
- Synthesis materials will be produced, detailing how the CCRES models may be replicated at other sites, forming a toolkit for use by in-country business entrepreneurs.
- Information and knowledge products will be shared with the Strategic Partnership for East Asian Seas, governments, technical networks and existing projects.

- **Project Financing**

33. The CCRES Project will be financed by a combination of the grant funds from the GEF International Waters Focal Area and from third parties through co-financing and parallel financing. Under CCRES a leveraged-financing ratio of more than 6:1 is anticipated due to the leverage of Australian, World Bank and other partnership funds.

34. The current direct co-financing stands at \$2.0 million from The University of Queensland, however, parallel financing is also significant with \$3.9 million in contributions from various research partners towards salary provisions, project management costs and other resources. An additional \$21.9 million in parallel co-financing is contributed from World Bank projects directly linked to CCRES: (a) COREMAP-CTI and (b) Philippines Rural Development Project, which are also part of the GEF IW Scaling Up Partnership Program.

35. The Project Executing Agency (PEA) shall be the principal recipient of the funds. The PEA shall be fully accountable for all project funds and shall ensure timely disbursement of funds to participating project implementing institutions through sub-grants and consultancy agreements following the World Bank Procurement Guidelines as appropriate.

### **Project Cost and Financing**

36. Detailed information on costs and financing sources for the CCRES is provided in Table 1 below.

**Table 1: Component Costings**

Project Components	Direct Project cost	GEF Grant Financing	Co-Financing	Parallel Financing for which Commitments have been obtained*	% Direct Financing (GEF)
1. Quantifying the value and market potential of mangrove, sea grass and coral reef ecosystem services	\$2.4	\$1.6	\$0.8	\$9.35	66%
2. Forging Community-led innovation in capturing and sustaining benefits from marine ecosystem services and enhancing resilience in the face of climate change.	\$2.3	\$1.7	\$0.6	\$8.84	30%
3. Promoting behavioural change through outreach, decision support and regional learning from results of pilot sites.	\$1.4	\$0.8	\$0.6	\$4.27	57%
4. Project Management	\$0.4	\$0.4	\$0.0	\$3.35	100%
<b>Total Baseline Costs</b>					
Physical contingencies					
Price contingencies					
Total Project Costs	\$6.5	\$4.5	\$2.0	\$25.8	69%
Interest During Implementation					
Front-End Fees					
<b>Total Financing Required</b>		\$4.5	\$2.0	N/A	

\*Outside Project management and below the line

- **Lessons Learned and Reflected in the Project Design**

37. CCRES builds on the lessons learned from a precursor project--the global Coral Reef Targeted Research and Capacity Building for Management (CRTR) Project—an applied research project which aimed to fill knowledge gaps and inform policies related to management of coral reefs in four key regions of the world. Establishing Centers of Excellence for world class, adaptive research in each region, the Project generated new tools for reef managers to respond to local threats from population and development pressures, as well as information for policymakers on how to build resilience into coral reef systems facing acute disturbance events as well as more chronic impacts linked to climate variability and change.

38. The distinctive feature of the CRTR Project was its ability to change the rules of engagement between science and management. Before the CRTR Project, much reef science was not responsive to management needs and the research that was relevant was carried out in an inefficient, fragmented fashion, involving many disparate and small research groups, and predominantly in developed countries. For the first time, research groups coalesced around specific management questions and worked collaboratively. Not only did this enhance the relevance and productivity of the science (with 176 papers published in ISI-recognized journals and an overall Web of Knowledge Impact Factor of 5.3), but it generated an international network of scientists from north to south. Moreover, the CRTR built research capacity in

developing-country institutions, management capacity across a range of sectors, and trained a new generation of scientists, each of whom are functioning as part of an international network.

39. However, other GEF IW projects also have relevant lessons that have been shared with the IW:LEARN community and have been considered by CCRES during project preparation. These relate to experiences for replication and scaling-up learning and technical applications from within Pacific Island Countries (GEF-UNDP, 2012), and a comprehensive evaluation and analysis to formalize the experiences, outcomes and lessons from previous GEF and non-GEF projects in managing coral reef marine protected areas (GEF-UNEP, 2010).

40. Some of the main lessons acquired from the CRTR Project and lessons from other GEF-IW projects include the following and have been incorporated into the CCRES project design:

- a. **Natural vs Socio-Economic Pressure:** Many of the problems facing coral reefs are not natural phenomena but rather a product of socio-economic, political, and governance factors. With the exception of unsustainable fishing and direct physical damage from mechanical means, most prevalent impacts to coral reefs originate outside the system - as land-based sources and also from climate change. These include pollution and major infrastructure development, including tourism and thus require a whole-system perspective regarding management objectives. Thus, it is necessary to complement ecological research with social science to understand the real drivers of change in coral reef and related ecosystems, to form strategic alliances with national and local government agencies and communities (and engage their traditional knowledge) to develop ownership and to raise the visibility of the issues affecting coral reef ecosystem health.
- b. **Economic Benefits of Coral Reefs:** Reefs perform a range of services including fisheries provisioning, water quality maintenance and coastal defense amongst others. Additional work to demonstrate the economic benefits of coral reefs and the services they provide is needed. Economic and other incentives need to be clearly identified and communicated in order to maintain stakeholder interests and manage expectations. Demonstrating the role of coral reefs in contributing to food security and environmental security - in addition to livelihoods and GDP through tourism for example, where benefits are captured locally, would also promote local ownership of the reef on the part of local governments, as a symbol of a community's wealth.
- c. **Broadening Project Scope:** Management of coral reef ecosystems needs to be integrated into coastal and marine spatial planning that includes zoning for different uses compatible with the maintenance of ecosystem processes. Unless these processes are understood, it will be impossible for managers to sustain or enhance the productivity of coral reef goods and services, essential to coastal economies and livelihoods. The CRTR contributed essential knowledge about coral reef ecosystem vulnerability to key drivers like climate change, ocean chemistry (acidification); overfishing of herbivores, habitat fragmentation and loss of connectivity, poor water quality, and destructive fishing. Now the challenge is to ensure that this information is effectively applied in the field. Lessons from the Pacific Islands<sup>1</sup> show that use of

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<sup>1</sup> Lessons Learned to Project Mid-Term and Opportunities for Replication and Scaling-Up IWRM in Pacific Island Countries, Nadi, Republic of Fiji, 30 July – 3 August 2012. Fourth Meeting of the Regional Project Steering

standardized and detailed reporting helps to replicate and scale-up the application of lessons and share experiences within the region and with the greater IWRM community. This helps to broaden a project's scope, and on-going standardized documentation of lessons as a matter of course facilitates stakeholder engagement and acceptance. CCRES is using these lessons to help address priority management issues in key locations.

- d. **Participatory processes (such as the role of Marine Spatial planning) help communities understand and buy into certain organizing principles, such as zoning and use regulations.** Such areas will have higher compliance and be more effective at conserving resources if they are developed with participation and are easily visible to the community. And compliance is likely to increase the longer such areas are mutually supported and enforced. Where fishers or other resource users are likely to be displaced, providing realistic, long-term options for alternative livelihoods (e.g. ecotourism, mariculture, Payments for Ecosystem Services from blue carbon or other marine conservation agreements, will stand a greater chance of long term success within the community. These concepts and lessons have been internalized in CCRES's project design and components (refer to the Annex discussion on Component I).
- e. **Translating research into policy through outreach and mentoring:** The important role of mentoring - of developing country institutions, local community members, and scientists - through partnerships and knowledge exchanges - is key to creating the necessary capacity to harness lessons for sustainable development that is transformational. Also, the external peer review of reports, through mentoring, can increase the profile, transparency and respect for the project over and beyond the project life. Communication and public awareness are vital because they build consensus and support for sustainable management initiatives, and they help engage the public in the decision-making process while also ensuring that government is also responsive to environmental and community needs. Communication should be adequately resourced up front to market messages to intended audiences, promote uptake of transformative information and tools by practitioners and to raise the general level of awareness of the public about the urgency of actions needed to prevent the wide scale loss of coral reefs.

#### IV. IMPLEMENTATION

- **Institutional and Implementation Arrangements** (refer Annex 3)

41. For a regional project with different executing entities and variation in financial management and reporting, there are very significant transaction costs to fulfill administrative and fiduciary responsibilities in project execution. Coordinating the various institutional partners, executing entities, individual scientists and stakeholders is a major challenge. Convening international meetings on a regional and global scale, fundraising, and reporting on the results to the Bank and other partners are costly and staff intensive. The ICR rated the University of

Queensland's performance as project executing agency for the CRTR Project as Highly Satisfactory. The CCRES Project will continue this institutional arrangement, with the Global Change Institute at the University of Queensland, as the official executing entity.

42. The PEA will have a fully dedicated team to oversee project implementation including the management and oversight of all activities undertaken by the component teams (see annex 2); project procurement including contract administration and management; project monitoring and evaluation; oversight of all engagement, outreach and communication activities, and; future planning (including development activities to identify future co-financing and new partnerships). The PEA will also act as the Secretariat for the Advisory Board and Technical Steering Committee, and will assist these Committees in undertaking their responsibilities.

43. The PEA will undertake the procurement of individuals or organizations as appropriate to form Component Teams to undertake the activities outlined in the implementation plan. Each Component Team will be composed of both developing and developed country researchers, technical experts and practitioners who will undertake the activities within Indonesia and the Philippines. The team will consist of the team leader, staff seconded from other institutions, as well as hired researchers or consultants to carry out the work.

#### *Integration across Components*

44. The success of the project will be dependent on integration of activities across the Components, and buy-in from stakeholders within the countries. To assist in achieving this, the PEA will establish a Technical Steering Committee consisting of Component Team Leaders, and component team members and invited external experts as appropriate. The Committee will be responsible for ensuring that integration across the components is occurring and activities are not occurring in isolation from each other. The Committee will also provide technical oversight of the program and guide strategic direction of activities across the components.

#### *Achieving Country Buy-In*

45. The importance of country input into the Component Team's activities cannot be underestimated, and country input will be critical to ensuring the project's activities are relevant and culturally appropriate. In order to achieve this input, Country Advisory Groups comprising representatives from all levels of government; international, national and local NGOs who are working in the specific countries, and; local experts will be established in year one of the project in Indonesia and the Philippines.

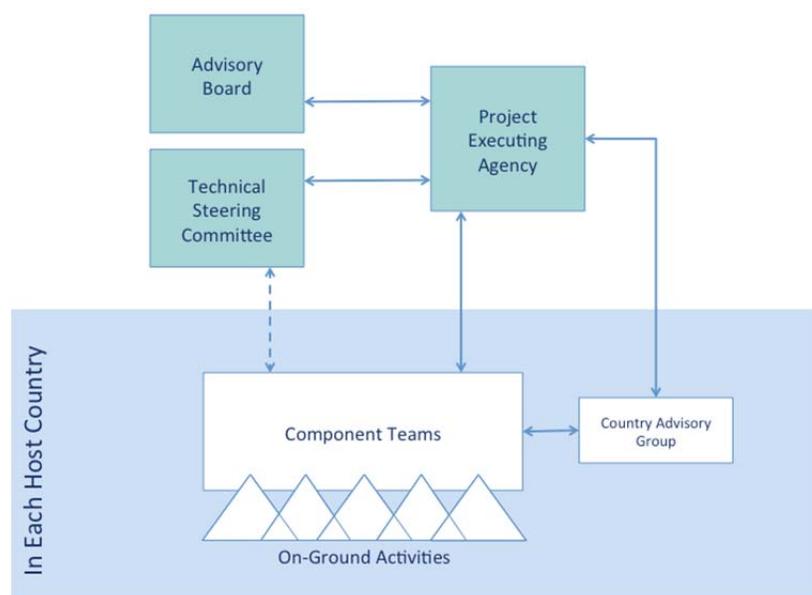
46. These Country Advisory Groups will be tasked to provide guidance on the activities being undertaken within their respective countries. It is hoped this will enable the Project to engage more fully with its stakeholder and beneficiary audiences as well as providing a unique country specific focus on the research being undertaken and ultimately on the findings and outputs being produced.

#### *Governance*

47. To adhere to the governance requirements for the project, an Advisory Board will be established. The Board will provide the independent approval process for the Component Teams

annual work plans and funding allocations, as well as provide advice on how best to link the project outputs to policy and management.

**Figure 1: CCRES Governance & Implementation Arrangements**



- **Results Monitoring and Evaluation**

48. The Project Executing Agency will be responsible for implementing the monitoring and evaluation strategy and ensuring reporting of progress against approved work plans. The Results Framework will serve as the basis for project monitoring and evaluation (M&E). Implementation progress will be monitored against Results Framework Indicators and data will be stored in the project management information system for project management and evaluation. The project will conduct a series of baseline surveys at the onset of the project implementation, followed by assessments at the mid-term and project end dates to determine the project achievements against the PDO and Key Results. In addition to monitoring key indicators, the PEA will ensure that relevant mitigation measures are in place to minimize any unforeseen environmental or social impacts. The Safeguards instruments of projects like COREMAP –CTI and the PRDP will be in place and invoked should any of the MSP models or business plans developed under CCRES be taken up under these beneficiary projects.

49. An externally engaged consultant will undertake a mid-term review and project completion review. The reviews will evaluate achievements against the Key Results Indicators and assess progress and achievements against the project components, and ultimately the project development objective.

50. Progress against annual work plans and indicators will also be reported on with the submission of annual reports prepared by the Component Teams and collated into an annual report by the PEA.

- **Sustainability**

51. CCRES intends to provide tools and models that can support the sustainability of processes forging behavioural change in two ways: (i) bring new information to decision-making that has the potential to alter business as usual approaches to development planning and; (ii) sustain the flow of information and facilitate its uptake into models and other planning tools created for a wider application. The first aspect of sustainability aims to maintain the impacts created as a result of project interventions. The project intends to promote an enabling environment for policy change at the district and local government levels, and promoting a clearer understanding of the relationship between ecosystem services and sustainable livelihoods at community level at the field sites. In working directly with stakeholder groups, it is hoped the Project will maintain the momentum and buy-in to ensure a continuation of the practices that are undertaken through the Project activities. The second aspect of the project will be a situation whereby information, resources and models (e.g., eco-business models) are created that would be widely disseminated and taken up by other governments, NGOs, and donor agency projects.

52. CCRES will focus on countries in the Coral Triangle (Indonesia and the Philippines), where coral reef and related ecosystem services are critical to livelihoods and food security. The Project will support Bank investments in the EAP region through the development and application of models in ecosystem services valuation, natural capital accounting, marine spatial planning, new eco-business development and communication and outreach. This will be undertaken in sites linked to COREMAP-CTI in Indonesia and the Philippines Rural Development Project

## V. **KEY RISKS AND MITIGATION MEASURES**

53. Given the simplicity of project design, the performance of the project executing agency and the strong procurement process put in place for appointment of implementation teams, as well as the almost assured demand for project outputs, the overall risk associated with implementation has been rated as Low. Moderate level risks associated with the CCRES Project are outlined in the ORAF.

54. The key risk associated with the Project's implementation is the potential lack of engagement and buy-in of countries, the World Bank regional projects and key stakeholder groups (e.g., governments and communities at the field sites) to the Project objectives. To mitigate against this occurring the CCRES project has already started to engage with these stakeholders to ensure ownership and buy-in during the planning phase including possible linkages and synthesis of information across projects. This has been met with early positive results. For example, the Ministry of Marine Affairs and Fisheries and LIPI in Indonesia, who are co-executing COREMAP III, have expressed an enthusiasm for CCRES to come on line because they see the clear benefits of the knowledge and scientific rigor that CCRES will bring,

particularly in terms of institutional strengthening. In the Philippines, meetings with representatives at the Department of Environment and Natural Resources (DENR) were positive with DENR commenting that CCRES is very timely, particularly with the Government's new emphasis on ecosystem services and natural resource accounting (e.g., through WAVES which the Department is managing).

55. Further strategies to be implemented to ensure stakeholder buy-in include representation on the Advisory Board and Country Advisory Groups, as well as more targeted engagement activities under the Project's outreach program.

## VI. APPRAISAL SUMMARY

- **Safeguards Policies**

56. CCRES has been rated a Category B Project, given that four WB Safeguard Policies are triggered. However the intensity of any negative environmental or social impacts is considered minimal and the risk manageable in light of mitigation measures built into the project design. Why these four Safeguard Policies (OP4.01, OP4.04, OP4.10 and OP4.12) are triggered and how the Project will address these in the course of project execution and the activities to be undertaken, are described below.

57. The management of risk is central to CCRES, with any community-based activities predicated on a process designed explicitly to identify both external and internal (project-induced) risks, such as perverse outcomes and the influence of shocks. It is the task of CCRES experts to undertake comprehensive Participatory Systems Analysis (PSA) at relevant field sites, working hand-in-hand with communities to analyze the social, economic and environmental setting of each field site. The CCRES PSA team will then map how the coupled social-ecological system at each is likely to respond to project activities as well as to external drivers, highlighting social, economic and environmental "flash points", as well as opportunities and synergies. After the initial period of field site assessment, full engagement with communities will proceed for all Components only after the PSA process has mapped the risks and indicated that the likelihood of project success is as high as it can be. Consultations and engagement with stakeholder groups will occur throughout the life of the project.

58. *Environmental Assessment OP/BP 4.01*: This Safeguard is triggered to highlight the net positive environmental outcomes that are expected as a result of the project. The project is designed to improve the way communities interact with the coastal resources on which they depend for essential ecosystem services, by making these services more explicit and mapping flows to demonstrate how and by whom these benefits are captured. Through such studies the Project can inform coastal development planning—including marine spatial plans--and promote new business opportunities based on the benefits which can accrue to both the natural environment and dependent coastal communities from healthy marine ecosystems. Although CCRES will not be supporting implementation of the marine spatial plans and business model it develops, the project will be providing the framework or processes to other Bank projects in the region, such as COREMAP and the PRDP, for possible uptake by local planning authorities. Any application of these planning frameworks would be subject to the safeguards instruments

and mitigation measures established under the beneficiary projects. Furthermore, the establishment of the Country Advisory Groups in Indonesia and the Philippines, consisting of government agencies, NGOs, businesses, research institutions, individual experts, etc., is also designed to flag any potential future risks and to develop mitigation strategies against these. The likelihood that CCRES would generate any negative environmental or social impacts is low; quite the opposite-- the net outcomes are expected to be overwhelmingly positive.

59. *Natural Habitats OP/BP 4.04.* This Policy is triggered because CCRES will be working in high biodiversity habitats such as coral reefs and sea grass beds, many of them still in a natural state. But since CCRS will not finance any civil works, and the objectives of the project are to protect these habitats and reduce the threats to them from unplanned development or unsustainable business practices, the outcomes are expected to be highly positive, and no mitigation actions are required.

60. *Involuntary Resettlement OP/BP 4.12:* This Policy is triggered because there might be some social impacts related to restriction of access to fisheries resources or restrictions on unsustainable use that could result from zoning or marine spatial plans informed by CCRES, even if not implemented by CCRES. While there is some risk of temporary economic displacement from zoning resulting in restricting certain activities in order to safeguard the flow of valuable ecosystem services to communities, the marine spatial plans and eco-business models that emerge from CCRES inputs are expected to benefit communities in the long term. The implications CCRES research findings in terms of development tradeoffs and the need to protect valuable natural capital because of its overall contribution to community welfare would be discussed with beneficiaries. CCRES would use visualization models to illustrate alternative futures, (i) without management interventions to safeguard ecosystem service flows, and (ii) with marine spatial planning and investments to protect natural capital and ecosystem benefits which create a positive feedback loop or “virtual circle” of healthy ecosystems leading to healthy people (and community welfare). In addition, Component II of CCRES would focus on identifying new eco-business models based on innovation in the capture of coral reef ecosystem services. These could generate new sources of revenue which are environmentally friendly and could be introduced and scaled up under alternative livelihood programs with support from PRDP and COREMAP CTI in the pilot locations.

61. *Indigenous Peoples OP/BP 4.10:* CCRES may undertake field activities in pilot locations where there are Indigenous People, however the final pilot sites will not be determined until early in Year 1. Should these sites include IPs, these groups would be project beneficiaries. The upfront consultations and engagement with stakeholders outlined above would precede the collection of field data. This would ensure that the views and broad community support of Indigenous Peoples are taken into account in generating information that could feed into marine spatial plans and zoning or the design of eco-business models that could affect them. If any of these models in sites with Indigenous People are selected for application in beneficiary projects like COREMAP-CTI or the PRDP, the IP Process Frameworks prepared under these projects would apply. This would help ensure that Indigenous People will benefit from these Project interventions and any unanticipated impacts would be minimized.

62. Overall, CCRES focuses on Knowledge and Innovation. It is about producing scientifically credible and peer reviewed information for use by third parties as appropriate to

inform government policy and planning processes, business innovation, or on-ground development planning with communities. Any future application of these planning frameworks would be subject to the safeguards instruments and mitigation measures established under the beneficiary projects. As with all the activities under the Project, there will also be a constant engagement process with World Bank country team members (from Indonesia and the Philippines) and with stakeholder groups the project is engaging with. Furthermore, the establishment of the Country Advisory Groups consisting of government agencies, NGOs, businesses, research institutions, individuals, etc., is also designed to flag any future risks and the development of mitigation strategies to address these.

- Gender

63. CCRES will include gender sensitive stakeholder mapping and benefit flow analysis, develop survey instruments to collect gender disaggregated information where this is missing from data sets; and incorporate gender filters in data analysis to determine the extent to which gender plays a role in outcomes (see Annex 3: Component II. Key Activities for more details).

- **Procurement and Financial Management**

64. The procurement capacity assessment has concluded that the GCI- UQ have adequate capacity to carry out procurement activities related to the proposed project given their familiarity with World Bank's procurement procedures. The assessment identified several issues that could arise during implementation and mitigation measures have been agreed as part of project preparation through procurement training. A summary of the Procurement Assessment is included under Implementation Arrangements in Annex 3. The procurement plan for the first 18 months of the project has been prepared by the recipient and cleared by the TTL. It is available in the Project Files. The Procurement Plan will be updated annually (or as required) to reflect the project implementation needs.

65. A Financial Assessment of the Project Implementing Agency's capacity to meet the Bank's Financial Management standards was undertaken, and a summary of the FM assessment is included in Annex 3, paragraph 20. The overall rating for FM risk was low, given the University of Queensland's prior experience in implementing a WB/GEF Project and the University of Queensland's auditing procedures which are consistent with international best practice.

## Key Results Framework

**Annex 1: Results Framework and Monitoring**  
**Country: Capturing Coral Reef & Related Ecosystem Services Project**

**Project Development Objective (PDO):**

The Project Development Objective is to design and support the uptake of innovative models for valuing mangrove, seagrass and coral reef ecosystem services to enhance the sustainability of marine-based enterprise and marine spatial planning in select coastal communities in Indonesia and the Philippines. The PDO aims to help communities capture more of the benefits from healthy ecosystems and promote conservation, by demonstrating the links between ecosystem health, local benefit capture and community welfare.

PDO Level Results Indicators*	Core	Unit of Measure	Baseline	Cumulative Target Values**					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition etc.)
				YR 1	YR 2	YR3	YR 4	YR 5				
<b>Indicator One:</b> Innovative models developed at two or more sites by the project, demonstrating explicit links between ecosystem health, the value of ecosystem services, and their distribution among stakeholders	<input type="checkbox"/>	Number of sites where models are developed	Zero			Piloted in at least 1 site for at least 1 ecosystem service or sector	Piloted in at least 1 site for at least 2 ecosystem services or sectors	Piloted in at least 2 sites for at least 2 ecosystem services or sectors	Mid-term Year 5	Survey of Project sites adopting the models	Component Teams	Models relate to (i) eco-system service valuation and distribution, (ii) Marine Reserve Design and Optimization; and (iii) Marine Spatial Planning
<b>Indicator Two:</b> Develop new or improve existing business models directly or indirectly linked to coastal marine zone ecosystem services in at least two sites	<input type="checkbox"/>	Number of sites with business models developed	Zero			1	2	2	Mid-term Year 5	Survey of Eco-business stakeholders	Component Teams	Profitable, competitive businesses that have products which benefit from and contribute to coastal marine ecosystems
<b>Indicator Three:</b> Project developed models and knowledge products inform the design of regional and national projects, development plans or policies and community based coastal resources management plans.		Number of projects/plans utilizing project-developed models or tools in their design	Zero			2	4	5	Mid-term Year 4 Year 5	Requests for technical assistance  Documents of projects/plans using these models	PEA	

<b>Core Indicators:</b> Direct project beneficiaries (number), of which female (percentage)		Number and percentage	tbd									
GEF IW Indicator: Plans/projects call for reducing stress to maintain value of ecosystem services	<input type="checkbox"/>	IW Indic	Number of projects/plans promoting stress reduction based on models	Zero		1	3	5		Government planning documents; GEF and WB pipeline	PEA	

**INTERMEDIATE RESULTS**

**Intermediate Result (Component I): Quantifying the value and market potential of mangrove, seagrass and coral reef ecosystem services**

Intermediate Level Results Indicators	Core	Unit of Measure	Baseline	Cumulative Target Values**					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition etc.)
				YR 1	YR 2	YR3	YR 4	YR5				
<i>Intermediate Result indicator One: At least three</i> Models of ecosystem function and services developed	<input type="checkbox"/>	Model of service or function	Zero			1	2	3	Mid-term Year 5	Articles in peer reviewed journals and reports  Protocols developed  Surveys of each field site in the project	Component Team	Three models will be developed relating to the valuation of ecosystem services, e.g., supporting reef fisheries, eco-tourism, blue carbon, coastal defense, and water filtration.
<i>Intermediate Result indicator Two:</i> Innovative, comprehensive decision support systems for marine reserve design which help optimize management objectives developed	<input type="checkbox"/>	Number of Decision support systems	Zero			1 Pilot Support System	1 Operational System	1 applied in MSP context	Mid-term Year 5	Publications  Peer reviewed journal articles  Field site	Component Team	

										surveys		
<i>Intermediate Result indicator Three:</i> Planning frameworks that incorporates models of ecosystem functions and services, <u>including coastal defense</u> , and decision support systems developed in response to stakeholder demand (e.g., local government)		MSP framework developed	Zero			1 Pilot MSP Framework	Extended MSP Framework in at least one site	Extended MSP Framework in at least two sites	Mid-term Year 5	Peer reviewed publications  Decision support system	Component Team	

**Intermediate Result (Component II): Forging Community-led innovation in capturing and sustaining benefits from marine ecosystem services and enhancing resilience in the face of climate change**

Intermediate Level Results Indicators	Core	Unit of Measure	Baseline	Cumulative Target Values**					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition etc.)
				YR 1	YR 2	YR3	YR 4	YR5				
<i>Intermediate Result indicator One:</i> Develop and analyze system maps for each site detailing interactions between specific ecosystem services and social-economic sectors	<input type="checkbox"/>	Number of sites	Zero			System Map developed four sites	System Map developed four sites	System Map developed and analyzed four sites	Year 2	Report produced  Peer reviewed journal articles  Desktop study	Component Team	Analysis of sustainable eco-business opportunities will use systems thinking and value chain perspective and approach
<i>Intermediate Result indicator Two:</i> Nurture new and/or existing businesses that offer products and services linked to ecosystem services in at least two sites	<input type="checkbox"/>	Number of sites	Zero			1	2	2	Year 3  Mid-term  Year 5	Models developed  Field site surveys	Component Team	Eco-business models will be developed for 5-6 business propositions – reef fishery; blue carbon; water filtration, eco-tourism, among others
<i>Intermediate Result indicator Three:</i> Develop affordable decision toolkit for use by stakeholders that is applicable	<input type="checkbox"/>	Toolkit yes/no						1	Mid-term  Year 5	Toolkit developed	Component Team	

across all sites												
<b>Intermediate Result (Component III): Promoting behavioral change through outreach, decision support and regional learning from results at selected field sites</b>												
Intermediate Level Results Indicators	Core	Unit of Measure	Baseline	Cumulative Target Values**					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition etc.)
				YR 1	YR 2	YR3	YR 4	YR5				
<i>Intermediate Result Indicator One:</i> Information and knowledge products shared with the Strategic Partnership for East Asian Seas, governments, technical networks and existing projects		Number of information sharing and dissemination campaigns held	Zero			10	20	40	Years 3, 4 and 5	Workshop surveys and media used to disseminate <sup>2</sup> KPs	PEA	
<i>Intermediate Result Indicator Two:</i> Stakeholders perceive benefits in incorporating information on ecosystem services into decision-making.		% of key stakeholders and formal Networks who perceive these benefits.	To be set by the values analysis surveys in Year One	Baseline			10% improvement over baseline	15% improvement over baseline		Values and attitudinal study surveys	PEA	

<sup>2</sup> Evaluation survey on the utilisation of information resources; Peer reviewed publications; training reports; anecdotal accounts; information resources database Assessment surveys in the target regions determining baseline knowledge and subsequent uptake of the information resources (baseline; midterm; end of the project); request for TAs, information resources (trainings, tools, manuals); Inclusion or adoption of project information resources in menu of EBM tools to support existing national and regional programs.

## Annex 2: Detailed Project Description

### INDONESIA AND THE PHILIPPINES: CAPTURING CORAL REEF & RELATED ECOSYSTEM SERVICES

#### Component I: Quantifying the value and market potential of mangrove, seagrass and coral reef ecosystem services

1. Component I will undertake work to quantify the value of coral reef, mangrove and seagrass ecosystem services as a function of system state. Services include reef fisheries, ornamental species (i.e. the aquarium trade), island stability, prestige diving tourism, blue carbon, and cultural benefits. By making the links between ecosystem state and ecosystem services explicit, stakeholders will gain a greater insight into how reef health affects them and the importance of conservation or a more sustainable management of the resources.
2. The information garnered through the valuation activity will be linked to the work being undertaken in Component II to form the basis for improving the marine spatial planning design and process. Engaging with researchers, natural resource managers and policy makers in advancing our understanding of how dynamics within and among the components of social and ecological systems affect the value of services provided by key marine and coastal ecosystems, of how climate change vulnerabilities may be mitigated through management, and how trade-offs among management objectives may be optimized. The research will underpin the eco-business models developed by Component II, and will ensure that the interactions among those eco-businesses are optimized within a participatory framework. Innovative tools for marine reserve design and modeling flows of services will be tailored to the specific needs of people and eco-businesses in tropical coastal areas. Tools will allow stakeholders to visualize the production and flows of ecosystem services and therefore evaluate the consequences of different scenarios for development and management.
3. Under Component I, four key activities will be undertaken to achieve the deliverables. These include:
  - ***Valuing ecosystem services that contribute to regional policy needs:*** This activity is exploring how changes in ecosystem health influence reef fisheries production (food security), the sustainability of boutique diving-based ecotourism, the stability of islands (coastal defense and sediment production), the carbon value of ex-aquaculture ponds (REDD+), and cultural associations associated with health and wellbeing. Outcomes from the activity will include:
    - a. The provision of robust baseline economic, environmental and social data that are currently lacking to support arguments for preservation of natural capital in the face of development pressures.
    - b. The information will feed into systems of national accounting being developed by the World Bank project, Wealth Accounting and Valuation of Ecosystem Services (WAVES), to help ensure that States include the value of their natural capital in their national accounts.

- c. The information will directly inform Component II eco-business models by identifying who benefits and who provides ecosystem services that may be captured through eco-business, and by locating where these eco-businesses may be viable.
- ***Mapping the distribution of ecosystem service benefits among stakeholders:*** Ecosystem services are geographical phenomena that have a source, flow, and beneficiary. For example, a mangrove might serve as a nursery habitat for juvenile reef fish. Once the fish are large enough they migrate to their adult habitat on coral reefs, where they are fished. Here, mangroves are the source, the beneficiary is the fisher, the location of the beneficiary is the reef, and the flow of services represents the migration of fish from the mangroves to the reef. Mapping the flow and magnitude of these benefits can facilitate coastal resources management and improve peoples' understanding of how they benefit from the natural environment. Simple tools are available to model and map ecosystem services and therefore support the decision-making process. The most widely used tool at present is InVEST. Component I will develop the InVEST tool so that it caters specifically for coral reef related ecosystem services in SE Asia and the Western Pacific. Outcomes from this activity will include:
    - a. Communities will be empowered to understand the distribution of their own ecosystem services
    - b. The results generated will highlight potential threats to the sources of services
    - c. The results will assist decision-making to become more equitable by identifying the beneficiaries of an ecosystem service as well as those people incurring a constraint.
  - ***Designing marine reserves to reconcile ecosystem service trade-offs:*** Marine reserves are the most widely used tool to manage fisheries and biodiversity in SE Asia and the Western Pacific. However, the design criteria of reserves differ depending on the management objective. What is lacking, however, is a set of tools that enable such information to guide practical reserve design. Component I will provide these tools by building on the widely used software Marxan with Zones. The key outcomes from this activity includes:
    - a. Attempt to maximize the benefits of marine reserves to two often conflicting ecosystem services: biodiversity support and fisheries provisioning.
    - b. The information can be used to Improve food security and economic resilience of local communities to climate change and climate variability.
    - c. Motivate, engage and support local stakeholders by providing rigorous scientific evidence to underpin community-driven initiatives.
  - ***Marine spatial planning:*** Truly integrated spatial planning would seek to maximize the use of ecosystem services by segregating conflicting activities, co-locating activities that are mutually beneficial, and preventing detrimental activities such as pollution or overfishing. Under the marine spatial planning activity, the project will attempt to achieve such integrated planning by combining the products from Activities 1-3 and the lessons learnt in Component II (eco-business). Analyses of eco-businesses under Component II will highlight the requirements of each enterprise, such as the proximity to a particular ecosystem, and opportunities to combine enterprises for mutual benefit. Thus,

the final activity of Component I is to integrate the maps of ecosystem services from InVEST, the locations of marine reserves from Marxan, and the spatial requirements of eco-businesses, in order to achieve integrated spatial planning. A participatory approach is envisioned to development of all three inputs (InVEST, marine reserve locations, eco-business requirements). The key outcomes from this activity include:

- a. The MSP framework developed will enable decision-makers to understand the ecosystem service, biodiversity, and human wellbeing trade-offs of alternative management strategies.
  - b. Ensure that the eco-business models developed by Component II integrate harmoniously with the ecosystem service landscape and with pre-existing social and economic activities.
  - c. Encourage long-term thinking in the management of natural capital assets in developing countries.
  - d. Forge greater cohesion of local-scale conservation actions, which have often been carried out on an ad hoc basis, lacking wider coordination
4. The key **deliverables** from the overall activities under Component I will be:
- Three models will be developed relating to the valuation of eco-system services, e.g., supporting reef fisheries, eco-tourism, blue carbon, coastal defense, and water filtration.
  - Innovative, comprehensive decision support systems for marine reserve design which help optimize management objectives will be developed
  - A planning framework that incorporates models of ecosystem functions and services and decision support systems will be developed in response to stakeholder demand (e.g., local government)
5. Overarching key **outcomes** from Component I will be:
- Robust economic valuation of coastal natural capital resources is enhanced, thereby removing barriers to foreign investment in developing country eco-businesses
  - Synergies among ecosystem services are captured through improved resource management planning

## **Component II: Forging community-led innovation in capturing and sustaining benefits from marine ecosystem services and enhancing resilience in the face of climate change**

6. Under Component II the Project will undertake a structured process ultimately aimed at empowering and enabling communities to transform their local economies to more sustainable 'blue economies' where natural capital assets such as mangroves, reefs and seagrass meadows are explicitly managed to convert the value of ecosystem services into economic value in a sustained manner. Component II will examine how investment in marine and coastal ecosystem services and the strengthening of community livelihoods and resilience to climate variability might be operationalized using eco-business models. Drawing on the results of Component I the Project will build business models that support the health of marine and coastal ecosystem services.

7. Working closely with Components I and III, CCRES Component II will bring this 'whole of system' business thinking to the way in which coastal communities manage their natural capital assets in ways that support sustainable livelihoods. The work will demonstrate how

communities can combine local knowledge with business knowledge and decision-making tools to create complementary suites of *eco-businesses* that promote social, environmental and financial outcomes. Using business techniques such as Value Chain Analysis and Complex System Analysis, Component II will help policy makers, community leaders, and business owners link economic value to ecosystem service value so that ecosystems and economies can mutually reinforce one another. Only when the value of ecosystem services becomes an explicit component of the local economy itself can the transition to sustainable, equitable ‘blue economies’ take place.

8. Work will begin by evaluating the existing business environment at multiple levels of analysis to understand how they impact and are impacted by various critical market forces which affect overall business performance, ranging from local to international. The resulting knowledge will feed into a participatory process of analysis and discussion that will develop locally appropriate scenarios for the improvement of existing business ventures as well as the opportunities for new entrepreneurial ventures that create local economies that are tied to coastal ecosystem services. The scenarios will ultimately inform a process of community-led Marine Spatial Planning (refer to Component I) designed to minimize resource conflicts and maximize the reinforcing relationship between eco-business activity and ecosystem health.

9. Key **activities** will include:

- (1) Development of systems maps for each site detailing interactions between specific ecosystems services and social-economic sectors (direct and indirect). This will include:
  - Site visits, site selection in both the Philippines and Indonesia (one site in each country)
  - Collation of existing data on resource condition trends, business activities, population statistics, gender balance, etc.
  - Defining the spatial extent of investigation and time horizon of investigation (how far back in time and how far forward in time do we look)
  - Engagement of stakeholders and conducting problem inventory (resource problems and socio-economic problems, resource use conflicts and how these may disproportionately affect women); determining problems trends (behaviour over time)
  - Drafting the dynamic hypothesis: conducting focus group meetings and interviews with stakeholders to map interactions among problems, ecosystem services and resource use/business activities; incorporate gender filters in data analysis to determine the extent to which gender plays a role in outcomes ; identify endogenous and exogenous variables; develop draft system maps
  - Revising the dynamic hypothesis: comparing draft systems maps with trends; conducting expert consultations; developing revised system maps
  - Final draft dynamic hypothesis: taking revised system maps back to stakeholders for review and incorporating comments
- (2) Identifying the essential balancing and reinforcing loops impacting ecosystem service-business linkages as well as key leverage points for affecting those loops. This includes:
  - Simulation model development: Converting system maps into a stock and flow model structures to replicate feedback loops

- Mining existing data sets for model parameter values
- Identifying parameter data gaps including availability of gender disaggregated data, and designing surveys or interviews to collect necessary data
- Parameterising models and running initial simulations; testing and validating models (extreme conditions tests, comparison with historical trend data); recalibrating models
- Conducting sensitivity analysis to identify system leverage points

(3) Advice on development of self-managed, community-based business that offers products and services which give consumers a clear value proposition while directly or indirectly benefiting from and contributing to coastal and marine ecosystems.

This will include:

- Compiling business scenarios: stakeholder consultations to develop business scenarios (modification of existing businesses, new business, business mixes, scaled up businesses, more businesses including women) at Site 1 and Site 2: to examine: Supply and demand assessment of business scenarios; cost-benefit analysis; value chain analysis (supply chain modeling, elasticity of supply and demand, value adding opportunities, e.g. on site processing); business plan development (infrastructure, technical expertise, human resources, gender balance, finance, etc.)
- Test business scenarios using systems model: ability of business scenarios to operate within site carrying capacities; ability of business scenarios to enhance ecosystem services; robustness of business scenarios to withstand system shocks or degradation in ecosystem services; unintended consequences of business scenarios

(4) Toolkit development for use by business entrepreneurs including:

- The development of user interfaces/dashboard for toolkit and pilot testing of toolkit, and
- The rollout of business model toolkit on the internet (within embedded video, audio and other documentation)

10. Key **deliverables** will therefore be:

- Analysis of sustainable eco-business opportunities which will use systems thinking and value chain perspectives and approaches
- Eco-business models will be developed for 5-6 business propositions – reef fishery; blue carbon; water filtration, eco-tourism, among others
  - Development of an affordable decision toolkit for use by stakeholders that is applicable across all sites

### **Component III: Promoting behavioral change through outreach, decision support and regional learning from the results at field sites**

11. Component III is the linking component across the project for the communication of results, the engagement with key stakeholder audiences (beyond technical workshops and other capacity building activities undertaken as part of Component I and II's activities), and broader outreach activities into the relevant stakeholder audiences to ensure the most effective

mechanisms are developed for the dissemination and possible uptake of the results and knowledge products developed through the life of the project.

12. Component III focuses upon supporting Components I and II through the provision of: (i) baseline information on behaviours, stakeholders, and institutional mechanisms which feed into ongoing project strategies on how to effectively utilise existing networks to ensure input into project activities and the uptake of information, and (ii) production into appropriate formats of the results and information which is generated from the Component I and II activities.

13. The two key activities as above are:

- ***Defining the drivers, incentives and interventions needed to facilitate behavioural change:*** analysing the stakeholder environment to ascertain what the values, barriers triggers, barriers and incentives associated with the marine and coastal resources are to determine how the Project needs to approach its awareness and understanding raising strategies or campaigns to trigger an increase in the relevant Government agencies and communities at the field sites in awareness and understanding of the connections between the health of the ecosystems and resources, and the use of, or sustainable development of these resources so that they have a long-term use of the resources for food security and livelihoods purpose. The results from the desktop analyses, with other inputs, will provide guidance in how the Project needs to engage with Government agencies and communities at the field sites; how it needs to target its messaging, and; how it produces the results and information outputs into appropriate formats to ensure a more effective dissemination and uptake of the knowledge.
- ***Communication, engagement and outreach:*** Component III is also responsible for working with Components I and II in communicating the Project's results and information outputs into appropriate formats for the key audiences identified in the communication, engagement and outreach strategy. This will focus on: (i) development of effective engagement mechanisms with clearly identified target stakeholders at the global and regional levels (corporate communications), and at the national and local levels (in-country communications); (ii) the development of key messaging and mechanisms such as media engagement, a web presence, social media etc., and; (iii) the development and dissemination of synthesised results, information and tools for target audiences.

14. The key deliverables for Component III will be:

1. A stakeholder analysis clearly detailing who the key beneficiaries or stakeholders and stakeholder groups the Project will be.
2. An understanding of the values, drivers, triggers and incentives at field sites for the key beneficiaries or stakeholders which will link into the Project's broader engagement and outreach strategy
3. Information products e.g., models, frameworks, toolkits etc., from the results from Components I and II
4. Broader communication products e.g., website, policy briefs, technical manuals, information packages etc.

15. The outcomes from Component III will be:
- Information and knowledge products shared with the Strategic Partnership for East Asian Seas, governments, technical networks and existing projects
  - Perceived improvement in community welfare linked to maintaining flows of ecosystems services in at least two field sites
  - Participating beneficiaries and stakeholders are requesting the services and information from the Project, and are utilizing the Project's results into their projects, coastal development models, planning etc.

#### **Component IV: Project Coordination and Management**

16. This Component will oversee project implementation including responsibility for all project reporting including bi-annual and financial reports, financial management, and procurement as well as identifying future co-financing and new partnership prospects. Furthermore, a monitoring and evaluation plan based on the Key Results Framework will be developed to provide ongoing oversight and monitoring of the project activities to ensure objectives and targets are being met. The plan will identify any risks associated with environmental and social safeguards and identify mitigation strategies towards such potential risks. Reporting against the M&E strategy will be provided as a component of the Project's annual reports to the Bank.

17. The Project Executing Agency will be responsible for leading and guiding co-ordination with other projects to which CCRES may be linked, including, COREMAP-CTI, PRDP, WAVES, PEMSEA, and other relevant initiatives in the region. Much of this stakeholder network and the strategies to be used to maintain integration and coordination will be identified in collaboration with the communication, engagement and outreach activities under Component 3.

18. Communication, engagement and outreach activities will be undertaken under Component 3, however, the Project Executing Agency will be responsible for ensuring the activities under this area are focused and achieving the goals of the project. A project website will be maintained to interface with the GEF IW: Learn network and other GEF Project websites such as the UNDP Blue Forests Project, the Marine Ecosystems Services Partnership (Duke University) and the websites of other partner institutions engaged in CCRES (e.g., University of the Philippines, De La Salle University and Cornell University). 1% of the GEF Grant (\$45,000) will be allocated to support IW: Learn activities, including attendance at IW: Learn Conferences, portfolio knowledge sharing and South –South learning exchanges.

### **Annex 3: Implementation Arrangements**

#### **EAST ASIA / PACIFIC: CAPTURING CORAL REEF & RELATED ECOSYSTEM SERVICES**

##### **A. Project Institutional and Implementation Arrangements**

###### **Project Implementing Agency**

1. The World Bank will undertake the responsibilities of the GEF Project Implementing Agency for the CCRES Project. The Bank will provide financial and technical oversight through supervision missions and an internal Bank Task Team Group, consisting of staff with relevant expertise.
2. The Bank, as the GEF IA, can help to ensure the results of the project are distilled and disseminated within the Bank, GEF and other agency channels to promote uptake of information in the Bank's country dialogue with client countries, and in the preparation of sector strategies to guide its lending and non-lending operations.

###### **Project Executing Agency**

3. The Global Change Institute at The University of Queensland (Australia) has been appointed as the Project Executing Agency (PEA). The PEA will have a fully dedicated team to oversee project implementation including the management and oversight of all activities undertaken by the component teams (and working with the Team Leaders); project procurement including contract administration and management; project monitoring and evaluation; oversight of all engagement, outreach and communication activities, and; future planning (including development activities to identify future co-financing and new partnerships). The PEA will also act as the Secretariat for the Advisory Board and Technical Steering Committee, and will assist these Committees in undertaking their responsibilities.
4. The PEA staff will include an Executive Officer, Project Coordinator and a Program/ Finance Manager who will assist the Executive Officer in the daily management of the Project. Other staff may also be involved or appointed on a part-time or casual basis as the Project develops. In addition, the PEA will hire as appropriate, short-term and long-term consultants to undertake key activities, e.g., to provide technical expertise; monitor and evaluate the project's progress; undertake the scoping studies required, and; oversee capacity building efforts in the regions.
5. The PEA will sub-contract some tasks out to established organizations within Indonesia and the Philippines to assist in the coordination of administrative and logistical support to the Component Teams and where appropriate, to the PEA. This arrangement will enable in-country assistance for logistical arrangements for field visits of the component teams including permits, visa requirements, flights, ground transport, accommodation etc. The sub-contracted organization may also undertake the role of secretariat to the Country Advisory Group.

6. The PEA will report on technical and financial progress of the Project semi-annually to the Bank. A full briefing on Project progress will be made to the Advisory Board and Technical Steering Committee during the annual meetings.

### **Implementation of Activities within Countries**

7. The PEA will undertake the procurement of individuals or organizations as appropriate to form Component Teams to undertake the activities outlined in the implementation plan. Each Component Team will be composed of both developing and developed country researchers, technical experts and practitioners who will undertake the activities within Indonesia and the Philippines. The team will consist of the team leader, staff seconded from other institutions, as well as hired researchers or consultants to carry out the work. The Team Leader may also hire assistants to help with overall Component management and administration.
8. The Component Teams would be working as field teams for prescribed periods of time in countries where activities relating to that component are sited. In doing so, they will undertake a combination of ecological fieldwork, business and economic valuation, and communication, engagement and outreach activities to respond to the Component objectives.
9. The Component Teams will be responsible for planning detailed work programs for their area of focus that will be reviewed and approved on an annual basis by the Advisory Board. The work programs must satisfy criteria of scientific and business rigor, relevance to management and policy, feasibility and cost effectiveness.
10. To ensure synthesis and integration across each of the Components, and to integrate new information into their work programs, each Component Team Leader will have a seat on the Technical Steering Committee and as appropriate, nominated expert(s) from the component (dependent on meeting focus) may also be invited to attend specific meetings.

### **B. Ensuring Integration across activities and Country input**

#### **Technical Steering Committee**

11. A major factor in the future success of the project will be the integration of activities and findings across the three components. To achieve this integration, a Technical Steering Committee will be established to ensure integration and synthesis of the activities across the components. The Committee will provide technical oversight of the program and guide strategic direction of activities across the components. The Committee will also be responsible for providing advice on arising issues and topics of interest, which could influence the project's results and impact.
12. The Committee will meet on a semi-annual basis, and at other times throughout the year (including via electronic forums). The activities of the Technical Steering Committee will include: review, interpret and integrate the research results; provide direction on the scope and budget for proposed activities; participate in an annual symposia to bring multidisciplinary perspectives to bear on research and project findings and to discuss

implications for policy; assist in the development of publications and communications in the form of peer review journal articles, policy briefs and other technical documents, and; provide direction on special studies to support the work of the Component Teams.

13. The Technical Steering Committee shall be chaired by an independent Chair and consist of the Component Team Leaders, experts from within the Component teams, the Project Executing Agency Executive Officer, and invited external experts as appropriate.
14. Full terms of reference and Committee nominees will be developed as part of the Implementation Manual.

### **Country Advisory Groups**

15. The importance of country input into the Component Team's activities cannot be underestimated, and country input will be critical to ensuring the project's activities are relevant and culturally appropriate. In order to achieve this input, Country Advisory Groups comprising representatives from all levels of government; international, national and local NGOs who are working in the specific countries, and; local experts will be established in year one of the project in Indonesia and the Philippines.
16. These Country Advisory Groups will be tasked to provide guidance on the activities being undertaken within their respective countries. It is hoped this will enable the Project to engage more fully with its stakeholder and beneficiary audiences as well as providing a unique country specific focus on the research being undertaken and ultimately on the findings and outputs being produced.
17. Full terms of reference and nominees will be developed for the Implementation Manual.

## **C. Governance Arrangements**

### **Advisory Board**

18. As part of the governance arrangements for the project, an overarching Advisory Board will be established to provide the independent approval process. The Board will convene once a year to review annual work programs and budgets submitted by the Component Teams and make decisions about resource allocations consistent with performance and research priorities agreed by the group as a whole. Terms of reference will be developed as part of the Implementation Manual.
19. The Advisory Board shall consist of:
  - a. A World Bank representative
  - b. One representative from each co-financing partner
  - c. One representative from each of the World Bank regional projects who are beneficiaries of the project information
  - d. One Government representative per country

## *Project administration mechanisms*

### **Financial Management, Disbursements, and Audits**

#### *Financial Management*

20. The ICR for the Coral Reef Targeted Research & Capacity Building for Management (CRTR) project rated the University of Queensland's performance as executing agency for the CRTR Project as Highly Satisfactory. The recommendation is to continue this institutional arrangement, with the Global Change Institute at the University of Queensland, as the official executing entity.
  
21. A financial management assessment of the GCI was carried out in the context of its being named the recipient of the GEF Project Preparation Grant for CCRES, in accordance with the Guidelines for Assessment for Financial Management Arrangements of Bank financed projects. The FM assessment noted a key strength of the University of Queensland was its previous success in implementing Bank financed projects and their high degree of Financial Management capacity with operations under a well regulated Legislative and Administrative framework. The assessment noted the University has a section dedicated to implementing externally funded programs, which is adequately staffed. Furthermore, the FM assessment noted there were no weaknesses identified for the use of funds, and the prior experience of the executing agency and strong control environment in which it operates means the risk is quite low. In as much as the GCI is accountable to and bound by UQ's FM standards, the GCI was deemed eligible to receive WB administered funds (including GEF funds) on behalf of the countries participating in CCRES.

#### *Disbursements*

22. ***Funds flow from Bank to PEA:*** The PEA shall be the principal recipient of GEF funds, other donor funds and funds to be contributed by third parties. GEF funds shall be deposited in accordance with the disbursement arrangements described below. The deposit of funds from co-financiers shall be in accordance with separate agreements between the PEA and the co-financier. The PEA shall establish a separate bank account (Project Special Account) denominated in US dollars for deposit of GEF funds. A Project Special Bank Account (SA) shall be established with a commercial bank acceptable to the Bank. The initial deposit in the amount not exceeding US\$1 million will be deposited to the SA on receipt of the first withdrawal application. The replenishment of the Special Account shall be based on Statement of Expenditures (SOE) to be submitted whenever the SA is drawn below half of its initial deposit. All GEF portions of project eligible expenditures shall be paid out of the Special Account in accordance with agreed accounting policies and procedures. The PEA shall maintain separate project accounts and supporting documents to report on the operation of the Special Account. These two accounts will be audited annually and the SA audit will be contracted out separately according to Terms of Reference approved by the Bank.

23. ***Funds flow from PEA to implementing institutions and individuals:*** A major portion of project funds will be disbursed to project participating institutes, organizations and individuals to fund activities as outlined under the approved Component work programs. These funds will cover costs including salary costs, fieldwork activities, travel, workshops, training opportunities, and communication and outreach activities. Disbursement of funds from the SA to the implementing organizations or individuals will be based upon signed agreements between the University of Queensland and the implementing institution or individual. These agreements will follow UQ policies and procedures for administration of grants and agreements and both the Special Account and the GCI Account for CCRES Project Transaction will be audited Procurement plans detailing costings against the expenditure categories, procurement arrangements and the budgetary allocations against each category will be provided to the World Bank Team Leader and the World Bank Senior Procurement Specialist on an annual basis. A draft procurement plan will be provided to the Team Leader prior to project appraisal and updated prior to the project implementation.
24. UQ accounting policies for management of agreements are given in the Financial Management Practices Manual. Based on these policies, the PEA will prepare guidance describing the preparation, administration and management of Project agreements to be included in the Implementation Manual. All other project related expenditures which are not associated with these agreements will be disbursed following UQ financial practices by the PEA. The PEA shall maintain all documentation supporting disbursement from the Special Account.
25. To accommodate any eligible expenses leading up to Project startup and the signing of the overarching agreement between the Bank and UQ, retroactive financing of up to US\$400,000 shall be allowed. Such eligible expenditures include preparation and publication of manuals, fieldwork, meetings and workshops and travel for the operation of the Project. Retroactive financing will be allowed for eligible activities carried out from September 1, 2012.
26. The Total Project cost is expected to be approximately US\$10.4 million (with GEF providing US\$4.5 million and UQ: US\$2.0 million in cash. UQ and other Institutions will also provide parallel in-kind financing on the order of US\$3.9 million). Other participating institutions may provide additional parallel financing. UQ is currently in discussion with several collaborating institutions to leverage additional support for the Project.

**Table 1: Component Costings**

Project Components	Direct Project cost	GEF Grant Financing	Co-Financing	Parallel Financing for which Commitments have been obtained*	% Direct Financing (GEF)
1. Quantifying the value and market potential of mangrove, seagrass and coral reef ecosystem services	\$2.4	\$1.6	\$0.8	\$9.35	66%
2. Forging Community-led innovation in capturing and sustaining benefits from marine ecosystem services and enhancing resilience in the face of climate change.	\$2.3	\$1.7	\$0.6	\$8.84	30%
3. Promoting behavioural change through outreach, decision support and regional learning from results of pilot sites.	\$1.4	\$0.8	\$0.6	\$4.27	57%
4. Project Management	\$0.4	\$0.4	\$0.0	\$3.35	100%
<b>Total Baseline Costs</b>					
Physical contingencies					
Price contingencies					
Total Project Costs	\$6.5	\$4.5	\$2.0	\$25.8	69%
Interest During Implementation					
Front-End Fees					
<b>Total Financing Required</b>		\$4.5	\$2.0	N/A	

\*NB: Commitments to this amount of parallel financing by partners who will retain management of the resources has been obtained by the University of Queensland. It is anticipated that significant additional parallel financing will be mobilized from partners as CCRES is rolled out, based on prior experience with UQ as the executing agency under the CRTR Project. In addition, the beneficiary WB Bank investment projects in Indonesia and the Philippines which may implement CCRES models and plans will provide substantial financial leverage on the order of tens of millions of dollars.

## Procurement

27. Procurement for the proposed project will be carried out in accordance with the Guidelines for the Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers dated January 2011, and; Guidelines: Procurement of Goods, Works and Non-consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers dated January 2011, and the provisions stipulated in the Legal Agreement.

## Selection of Consultants

28. Fixed Budget Selection (FBS) may be used for consultant services that meet the requirement of paragraph 3.2 and 3.5 of the Guidelines. Selection based on Consultants' Qualification (CQS) may be used for contracts estimated to cost less than US\$200,000 each. Short lists of consultants for services estimated to cost less than \$200,000 equivalent per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines. Services for assignments that meet the requirements of

Paragraphs 3.8 through 3.11 of the Consultants Guidelines shall be procured following Single-Source Selection. Services for assignments that meet the requirements set forth in the first sentence of paragraph 5.1 of the Consultant Guidelines may be procured under contracts awarded to individual consultants in accordance with the provisions of paragraphs 5.2 through 5.4 of the Consultant Guidelines.

### **Procurement of Works**

29. No Civil Works will be be procured under the project, however communities will be involved in the collection of data and the field work that will be required for the development of models of community-led innovation in capturing and sustaining benefits from marine ecosystem services. This will be undertaken in accordance with Community Participation in Procurement, following the procedures included in the project Operations Manual, as agreed with the Bank, in accordance with paragraph 3.19 of the Guidelines.

### **Procurement of Goods**

30. Goods to be procured under the project would include equipment (office, field and laboratory) and other goods that may be required for development of models for valuing coral reef and related ecosystem services. Shopping may be used to procure goods estimated to cost less than US\$200,000 per contract. Procurement of goods for any community-led activities will be undertaken in accordance with Community Participation in Procurement, following the procedures included in the project Operations Manual, as agreed with the Bank, in accordance with paragraph 3.19 of the Guidelines.

### **Operating Costs**

31. Operating costs relating to managing the project, including staff travel and office utilities, and supporting project operations, based on annual operating cost, will be provided in accordance with existing Queensland University prescribed limits and procedures acceptable to the Bank.

### **Advance Procurement Action**

32. Selection of the services for a number of Individual Consultants, in the aggregate estimated costs of US\$ 0.DD million, has been initiated. The GCI-UQ proceeded with the initial steps of procurement before signing the related agreement with the Bank as commencement of the services by effectiveness date is required. In such a case, the procurement procedures shall be in accordance with Bank's Consultant Guidelines for the eventual contracts to be eligible for Bank financing.

### **CONTRACTING**

33. The Project Executing Agency will undertake two types of procurement: (i) procurement through World Bank procedures for those services or expertise which have not been identified through partner parallel financing and support, and (ii) procurement of partner's resources.

1) Procurement of unidentified expertise / services

In order to obtain the identified expertise or services, the Project Executing Agency will work with the appropriate Component Team Leaders to develop a comprehensive terms of reference for the required services. The terms of reference will be distributed to national (and in some instances international) individuals or organisations seeking expressions of interest for the work. The terms of reference will outline financing requirements including salaries, goods, travel, workshops and incremental operating costs. All expressions of interest will be assessed by the Procurement Panel and the shortlisted individual/organisation will be asked to prepare a more detailed proposal for assessment.

2) Procurement of Partner's expertise

Given the considerable parallel financing by third parties in the case of salary support for their personnel to participate in the project activities, these organisations or individuals will be appointed without the need for selection under the above-mentioned methods. However, all appointments will be made based on the individual's expertise and qualifications to undertake the respective activities.

34. There are a number of personnel who will be appointed as part of the Component teams given their considerable expertise and relevant skills in the required areas, as well as the considerable parallel financing their organisations are providing towards their salary contributions under the project. These personnel include:

- 1) Component I: Quantifying the value and market potential of coral reef and mangrove ecosystem services: Professor Peter Mumby (The University of Queensland); Professor Jim Sanchirico (University of Davis); Dr Mike Mascia (WWF); Mr Arthur Webb (SOPAC); Professor Tom Baldock (The University of Queensland); Dr David Callaghan (The University of Queensland); Professor Drew Harvell (Cornell University).
- 2) Component II: Forging community-led innovation in capturing and sustaining benefits from marine ecosystem service values and building welfare in the face of climate change: Professor Mark Milstein (Cornell University); Professor Andrew Griffith (The University of Queensland); Dr Carl Smith (The University of Queensland); Dr Paul Dargusch (The University of Queensland).
- 3) Component III: Promoting behavioural change through outreach, decision support and regional learning from results in pilot sites: Mr Mark Paterson and Ms Gabrielle Sheehan (Currie Communications).

35. As mentioned, there will be no 'open' procurement for these positions. Contracts will be undertaken directly with the relevant expert through their organisation, and cover items including scholarship funding, travel, goods, incremental operating costs etc as appropriate.

**Approval of work programs and budgets**

36. All work programs and budgets beyond Year One, will be approved by the Project's Advisory Board. Given timing and the need to ensure early implementation of the activities, the first year work programs and budgets will not be tabled for the Board's approval. However, all subsequent year's work programs and budgets will need to obtain the Board's approval prior to contracting

## **Contracting Process**

37. The Project Executing Agency will work with the University of Queensland legal office to develop a contract template to be distributed to all organisations or individuals who have been procured to undertake project activities. The contract template will include terms and conditions specific to the CCRES Project, including appropriate clauses from the Grant Agreement between the World Bank and UQ.
38. Once agreement has been reached between the PEA and each individual/organisation on the terms and conditions of the contract, the contract will be formally signed by both parties. Whilst the terms and conditions will cover the length of time their services are required, if their services are required beyond one year, each subsequent year an extension letter outlining the forthcoming year's work program and budget will be negotiated between the two parties and signed. This will be following the Advisory Board's approval of the forthcoming year's activities and budgets, and following the party's adherence to meeting all Project requirements from the previous year.

### *Environmental and Social (including safeguards)*

39. Although the Project has been rated a Category B Project, CCRES is essentially a Research and Innovation/Knowledge Management Project with a very low probability of any adverse social or environmental impacts. On the contrary, the expectation is that this project will generate substantial net economic and social benefits to stakeholders. The Project has been designed to reduce the risk of any adverse social impacts through stakeholder mapping and analysis of benefit flows from ecosystem services at  $t_0$  and then over time to evaluate the consequences of different scenarios for development—who wins and who loses. Although CCRES will inform target audiences about the results of project research and how the information can be applied in development and marine spatial planning and business processes, the Project will not finance the implementation of any plans or businesses. It will be up to the investment projects in Indonesia and the Philippines, for example, whether or not the spatial plans, business models and recommended policy actions are implemented. The Safeguards instruments (e.g., Indigenous People's Plan) developed for these investment projects will be in place to both inform data collection and stakeholder consultation processes under CCRES, as well as mitigate any impacts resulting from the uptake of CCRES knowledge products under the beneficiary projects.

### *Monitoring & Evaluation*

40. During year one of the CCRES project, a monitoring and evaluation system will be developed and implemented. The system will require baseline data, including on GEF IW Tracking Tool Indicators and will be responsible for tracking the project's progress on these indicators on an annual basis.
41. The Project Executing Agency will be responsible for monitoring and evaluation of the implementation progress and outcomes of the project components. The Key Results Framework will serve as the basis for project monitoring and evaluation (M&E). In addition

to monitoring key indicators, the PEA will monitor any unforeseen environmental or social impacts and the effectiveness of mitigation measures meant to mitigate these. These include upfront and regular consultations with stakeholders, outreach and dissemination of project information and involvement of communities in any marine spatial planning exercises that could lead to the development of plans taken up in the beneficiary projects, such as COREMAP –CTI and the PRDP. The Safeguards instruments of these projects will be in place and invoked should any of the MSP models or business plans developed under CCRES be targeted for investment under these projects.

42. The progress will be monitored and its data will be stored in the project management information system for the project management and evaluation. The project will conduct a series of baseline surveys at the onset of the project implementation and impact assessments at the mid-term and project end dates to determine the project achievements against the PDO.

A mid-term review and project completion review will also be undertaken by an externally engaged consultant to determine project achievements against the PDO and to assess progress and achievements for the project components. In addition, annual reports prepared by the PEA will provide progress to-date against the Key Results Framework and other indicators as appropriate.

43. The Project will also provide regular reports as required of the project's progress against the GEF IW Tracking Tool (TT), which is designed to support the GEF's approach to results-based management. The tool will provide reporting of outcomes at the level of objectives and the IW portfolio. The TT will be submitted on an annual basis as part of the annual reporting mechanisms.

#### *Role of Partners*

44. The Global Change Institute and The University of Queensland are substantial investors in the CCRES project with funding committed for the management and coordination of the Project, as well as substantial funding towards the activities outlined under the Components. Furthermore, it is predicted research partners and institutions associated with the implementation of the project activities will also be providing substantial support towards salaries, overheads, administration costs and lab costs.
45. The CRTR Project was successful in leveraging significant co-financing - at a ratio of nearly 3:1. The CCRES Project will continue this successful financing strategy and will be financed by a combination of the grant funds from through the GEF International Waters Focal Area and from third party co-financiers. Under CCRES a co-financing ratio of at least 3:1 is anticipated due to the linkage of this phase with investment projects in the East Asia/Pacific Region, and the leverage of Australian and other partnership funds.
46. Further partnerships will also be actively pursued with institutions, governments, regional projects, NGOs and foundations with an interest in the work undertaken through the CCRES project. Future financing partnerships will be negotiated between the PEA and the funding partner with all funding where appropriate to be managed by the PEA and subject to individual agreements. In cases of the "tied" cash provided by institutions and organizations

as leveraged support for salaries and other associated costs, an agreement detailing these arrangements will also be negotiated between the PEA and the partner.